# THE ECONOMIC IMPACT OF INCREASING PRIVATE DEBT

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**Abstract:**

*Private debt which includes household and corporate debt, as a percentage of GDP is now higher in many countries than before the global financial crisis, with detrimental effects on real economy and acting as a precursor to a downturn in the economy. This paper seeks to explore the re – emergence of private debt and its impact on the real economy. For the purpose of analysis we have selected those economies that as per the World Bank data have private debt to GDP ratio higher than 100% as of 2014-15. We have further grouped these economies in to five groups – US, Asia Pacific, European Union, Australia and China. In order to examine the impact of growing levels of private debt as a percentage of GDP on growth rate in above mentioned economies, data series on private debt as a percentage of GDP and annual growth rate from the year 1980 to 2014 have been selected from the data base of World Bank. The methodology used to examine the relation between the two is Pearson's Correlation Coefficient. Except for China and Australia, the rest of the economies have significant negative correlation coefficients. This can be understood that over the period 1980 to 2014, in these economies high levels of private debt to GDP has been followed by lower annual GDP growth rates, after a lag of two years. To aim for stronger growth it thus is mandatory to hold the reins of private debt very tightly.*

Key Words: Correlation, GDP growth rate, Private Debt-to-GDP, Household debt, Non-financial companies' debt

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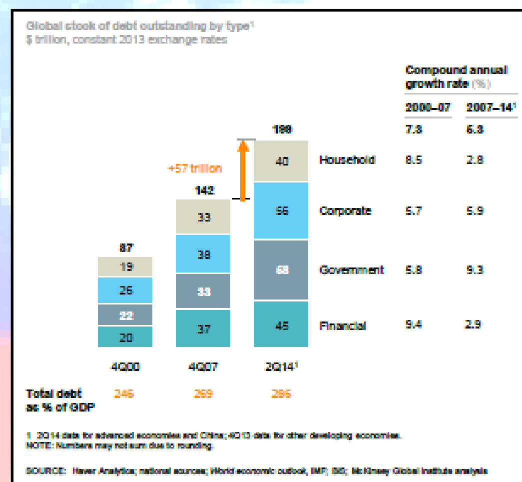
## Introduction:

Private debt is defined as money owed by individuals and businesses within a given country. Post the Financial Crisis of 2008, there has been a re-emergence of private debt in many economies. Private debt which includes household and corporate debt, as a percentage of GDP is now higher in many countries than before the global financial crisis, with detrimental effects on real economy and acting as a precursor to a downturn in the economy. The following diagram shows the pace of increase in debt globally. It is evident that outstanding debt as a whole has increased significantly between 2000-07 and 2007-14. A large contributor to the overall debt has been household and corporate debt. The following diagrams show the growth and composition of Global Debt.

Fig 1: Growth and Composition of Global Debt:

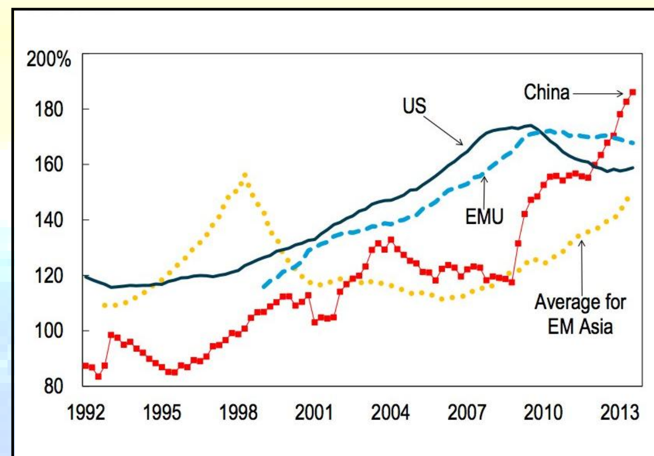



Source: Debt and (not much) deleveraging – MGI Report, 2015

As long as increasing debt finances production, the resulting income created is sufficient to pay for the debt. However, if private debt is used to speculate on stocks and real estate without enhancing any productivity, it becomes a matter of concern. Private debt is often used to speculate on assets prices, typically stocks and real estate, creating a bubble effect. There has been increasing concern that those countries with high levels of debt especially private debt relative to GDP have weaker prospects of future growth. In fact there is a possibility of a vicious cycle of falling consumption, employment and a slowdown in the near future. This paper seeks to explore the re – emergence of private debt and its impact on the real economy. For the purpose

of analysis we have selected those economies that as per the World Bank data have private debt to GDP ratio higher than 100% as of 2014-15. We have further grouped these economies in to five groups – US, Asia Pacific, European Union, Australia and China. The following graph shows the comparison of private debt in US, China, European Monetary Union (EMU) and Emerging markets of Asia.

Fig 2: Global comparison of Private Debt:




Source : Debt and (not much) deleveraging – MGI Report, 2015

## Current levels of Private debt to GDP:

Increasing Private Debt to GDP has been the common factor in US crisis of 1920s, the Japanese decline after the "economic miracle" of the '80s, and the South East Asian crisis Asian boom of the '90s which brought these economies to the edge of economic debacle.

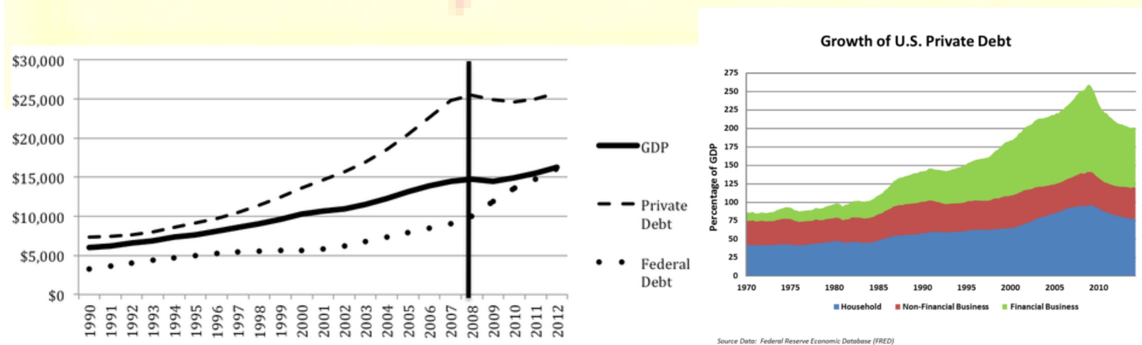
The reason why a high private debt impedes economic growth is that the incomes earned which should saved and channelized towards investment, cars, homes is used to make payments on the growing debt. This is especially true for the middle and lower income households which drive consumption to push economic growth. Hence, increasing debt impedes consumption increasingly. The middle class tends to grow when there is too little capacity and low private debt. High levels of gross debt tend to harm economic growth and may generate financial crisis (e.g. Bornhorst and Arranz, 2014).

Financing needs typically increase with indebtedness, lowering the ability of the borrowers to absorb shocks and generally depressing their (perceived) creditworthiness. As a result, high debt levels usually involve higher interest payments, which may restrict consumption and investment spending. Refinancing and servicing debt can become expensive and problematic, feeding back into lower creditworthiness. Furthermore, high (especially private) credit growth often precedes financial crises, with sometimes long-term negative effects on economic growth and employment. Post-crisis, highly indebted households, firms and governments generally strengthen their balance sheets and pay down debt. This creates a negative cycle of falling demand, economic growth and employment that intensifies or prolongs a downturn (RaboBank Economic Report, 2015). We will now look at each economy/ country group.

**United States of America:**

According To Richard Vague, in his book, "The Next Economic Disaster", the next financial crisis can be foreseen by keeping sight on a few economic indicators especially levels of private debt to GDP. The surge in the growth of private debt to GDP, linked to home mortgages, in the US before the financial crisis was a warning that was not heeded. The author found that in most of the financial crises, rapid debt growth along with high overall levels of private debt has led to crises. The following figures show the trends in public and private debt between 1990 to 2012 in the US Economy.

Fig 3: U.S. GDP, Public Debt, and Private Debt (in Billions)



GDP data comes from the Bureau of Economic Analysis, private-debt data from the Federal Reserve, and Federal-debt data from the Treasury. (Richard Vague)

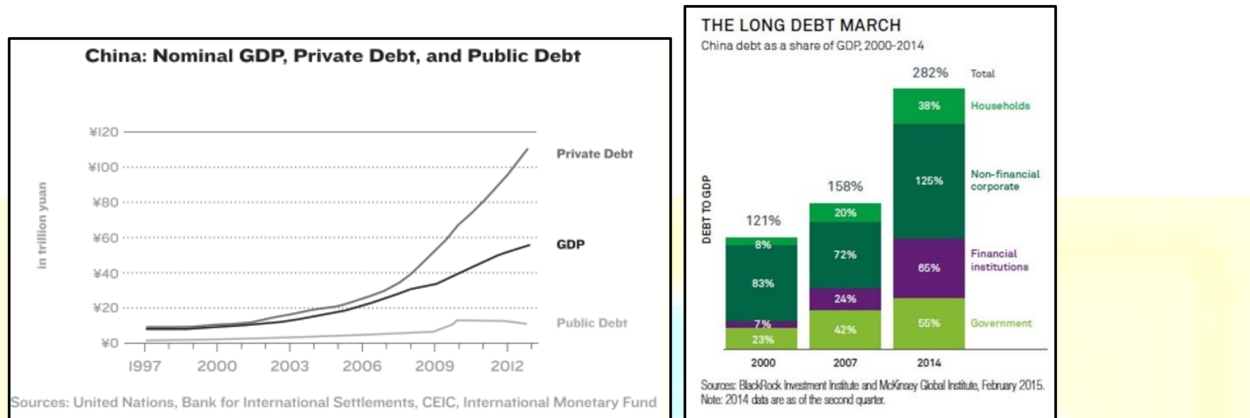
Between 2000 and 2008, the U.S. private sector, mainly households and financial businesses, significantly increased their level of debt relative to the size of the economy (GDP) in the years leading up to the crisis. Banks were indeed enthusiastic about residential real-estate-based lending. Besides banks, finance from "shadow banking" institutions like money market funds and investment banks had come to make up more than half the US banking system. Free-market ideology blinded policymakers to the dangers of growing financial debt, as with the vast number of underfunded mortgages. Household leverage significantly increased in developed countries worldwide between 2000 and 2008, growing from 96 per cent to 128 per cent of disposable income during this period in the United States. In this period, national mortgage debt almost doubled, and the amount of mortgage debt per household rose more than 63% from $91,500 to $149,500, even while wages were essentially stagnant. So when house prices fell, the related drop in consumption caused U.S. GDP to suffer a significant decline beginning in the fourth quarter 2008 and continuing throughout 2009.

**China:**

In China, corporate debt is the largest component of private debt driver, unlike in Malaysia and Thailand, where very high levels of household debt are caused the huge private debt to skyrocket.

These high levels of private debt are now becoming unsustainable and this unsustainability has a negative impact on economic growth. Growth rate in China is on the deceleration trend where first-quarter of 2015 growth rates at a low of 7 percent year-on-year. According to Bloomberg, outstanding loans for companies and households in China stood at a record 207% of gross domestic product at the end of June 2015, which is  double the 125% level seen in 2008. The main reasons for such a mammoth growth are cited as four rate cuts and three reserve-ratio requirement reductions as well as the implementation of debt-swap facilities to reduce financing costs for local government authorities in the past nine months as well as the renewed stimulus provided by the Peoples Bank of China. The following figure shows the composition and growth of China's debt.

Fig 4: Composition of Debt In China



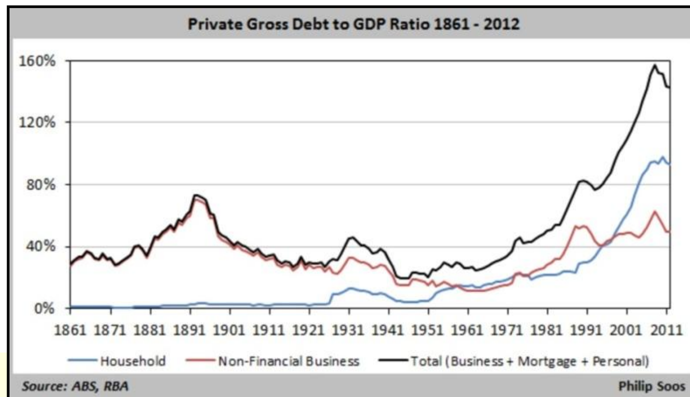

Non financial corporate debt increased from 83% to 125% of GDP and it has the highest weightage in the total debt of the country. This has been a major concern for the economy as most of it has been directed towards the property market, thereby creating a bubble in the property market. This excess creation of real estate projects has led to declining prices and the situation is similar to what happened in the US housing market prior to the crisis. Many of these new projects will find it increasingly difficult to recover their costs and repayment may become an issue.

China, encouraged by increasing lending, has produced housing, steel, iron, and other commodities much in excess of demand. This excess production has reduced prices thereby reducing returns and resulted in bad loans.

**Australia:**

There has been a sharp rise in private debt in Australia led primarily by household debt. The following figure shows the trends.

Fig 5: Private debt to Gross GDP ratio in Australia:

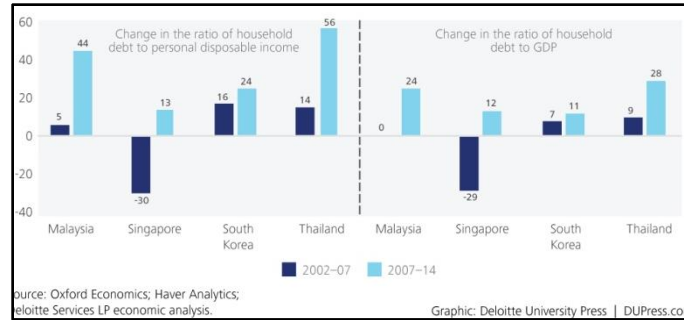


As is shown in the above figure, the sharp rise in the debt to GDP ratio occurred in 1890 s, 1930s and again in 2010. The first two periods saw the creation of bubbles in the real estate market followed by the depressions in 1890s and 1930s. The total private debt to GDP ratio reached a historical high of 158% in 2008, creating a large bubble once again in the real estate sector. A large part of the Australian private debt is household debt. In 1990, average household debt represented less than six months of annual income. The same is now three times at 18 months of annual income. The following figure shows the growth of Household debt as a percentage of GDP compared to other forms of debt.

**Asia Pacific Region:**

Levels of Debt have surged in many Asian economies as seen in the figure above. Asian governments, corporations, and households have accumulated debt worth 205 per cent of total annual economic output according to the McKinsey Global Institute report on debt and deleveraging, 2015. In comparison, the debt-to-GDP ratio in Asia was 144 per cent before the global financial crisis in 2007, and 136 per cent in 1996, before the Asian financial crisis. The following figure shows the trends in Private gross debt in Asia.

Fig 6: Private Gross Debt in Asia

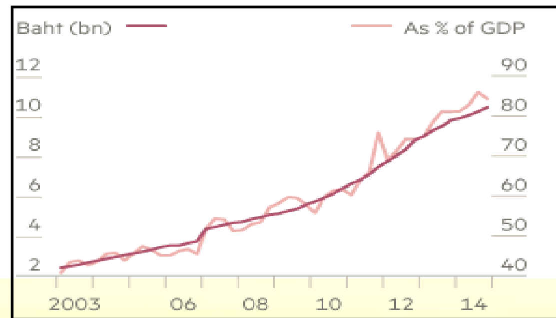



As shown in the above figure, Thailand, Malaysia and South Korea has significant levels of household debt to both GDP and personal disposable income.

**Thailand:**

In Thailand, private debt has increased significantly since the Asian crisis in 1998. The largest component in Thai private debt is household debt. Thai household debt has grown at 13.6 percent per year between 2008 -14, causing the household debt-to-GDP ratio to increase to 77 per cent. Currently, Thailand now has one of the highest household debt-to-GDP ratios in Asia. This has led to increasing concern about the ability of Thai households to repay their increasing debt. In the last three years, the debt-service ratio (the ratio of required debt payments to disposable income) has increased from 30 to 34 percent. This increase in credit has been accompanied by a growing property bubble. Housing prices have increased 9.4 and 6.9 percent respectively in the first Quarter of 2013. In the same period, total transactions for land and buildings increased by 35.3 percent, reaching a total value of THB 219 billion. Total outstanding property credits increased by a dramatic 13.3 percent. The Central Bank of Thailand has already warned about a possible credit bubble and associated risks to financial stability. There are concerns about Thailand's sluggish economic growth and its effect on the sustainability of household debt. The following figure shows the increase in household debt in Thailand as a percentage of GDP.

Fig 7: Private debt as percentage of GDP in Thailand.

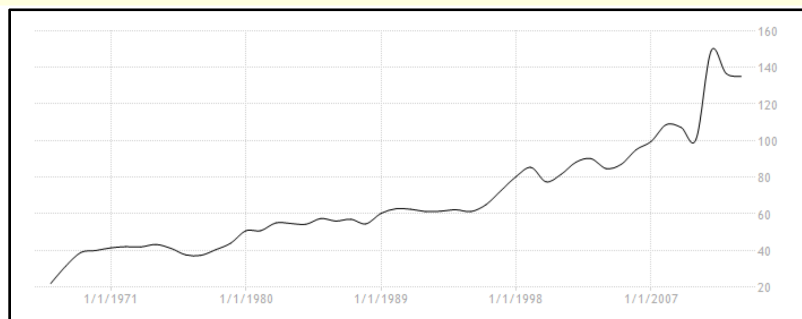



A large part of this household debt is due to the populist Government of Shinawatra after 2001 which continued with the next ruling party as well with tax breaks on housing and automobile purchases.

**Korea:**

Korea has a very high household debt levels in the world, even exceeding the U.S. prior to the housing crisis. Outstanding household debt which includes loans from banks and other financial institutions rose 2.8% at the end of the fourth quarter from a quarter earlier, according to the Central Bank of Korea. Household debt has recently increased in Korea due to low borrowing costs and easier mortgage rules. This relaxation is expected to support the property market and also encourage the stalling growth. However in spite of two rate cuts, the domestic consumption has not increased especially amongst the low income groups thus causing growth to slow down. McKinsey & Co, in a report, named South Korea among seven countries with unsustainable household debt. The following figure shows the steep increase in private debt to GDP in Korea between 1971 to 2007.

Fig 8: Domestic Credit to private sector as percent of GDP.

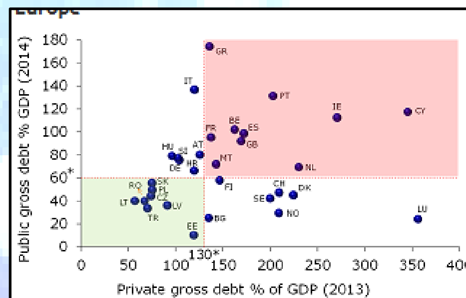


Source: Trading Economics .com

**European region:**

According to the Rabobank report on Europe's (public) debt challenge, both private and public sector debt is substantially high in European countries. Most of the Euro zone economies and also the UK have surpassed the EU standard of no more public debt than 60% of GDP. Moreover most economies have also surpassed the Union's macroeconomic imbalances procedure with private debt ratios above 130% of GDP. The Nordic economies, Switzerland and Luxembourg have breached the private debt levels. The following figure shows the private gross debt as a percent of GDP for the region.

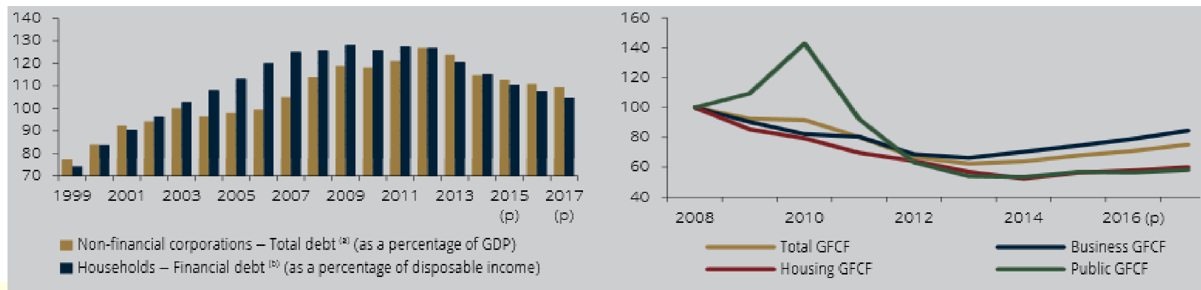
Fig 9: Private Gross Debt in Europe:




**Portugal:**

Portugal has faced a severe recession comprising corporate financial distress, a stressed banking sector and increasing public debt. The high financial leverage of Portuguese corporate sector carries on to be an impediment in growth of corporate performance and more so economic recovery. Households' debt has most certainly witnessed a decline after the 2008 financial crisis. However, the very high indebtedness of non-financial corporations, even in comparison to other euro area economies, remains a major weakness of the economy. Recent research has suggested that corporate debt levels above 90% of GDP can act as a major obstruction in economic growth, as higher indebted companies are less likely to invest and employ. Portuguese private corporate debt stood at 149.2 per cent of GDP in September 2014. In recent times the real GDP has been growing in year-on-year terms since the fourth quarter of 2013, following eleven consecutive quarters of negative growth.

Fig 10: Debt of Non Financial Private sector and breakdown of GFCF

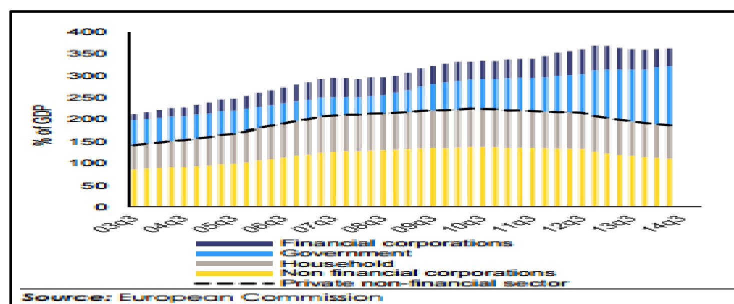



Source: Banco de Portugal

**Spain:**

In the years following Spain's decision to enter the Euro Zone, low-cost debt was used for consumption and residential investment, which in turn led a real estate bubble. Spain also has high private debt related to the real estate bubble. The private sector had increased its debt burden in the years before the crisis and even now after deleveraging in 2014, the total stock of private sector debt amounted to 182 per cent of GDP including 72.4 per cent household debt and 109.7 per cent non-financial corporations' debt. The collapse of the real estate bubble also impacted the banks asset portfolios. Economic recession and the burst of the real estate bubble forced banks to contract credit and readjust their balance sheets. After three years of recession, growth resumed again in 2014 and prospects for 2015 and 2016 are on the rise. The positive growth outlook is backed by better labour market prospects, loosening of financial conditions, improved confidence and reduced uncertainty about the strength of the recovery, and lower energy and oil prices. These factors are expected to continue to support growth in the short to medium term, although the burden of high private and public debt levels continue to impede growth.

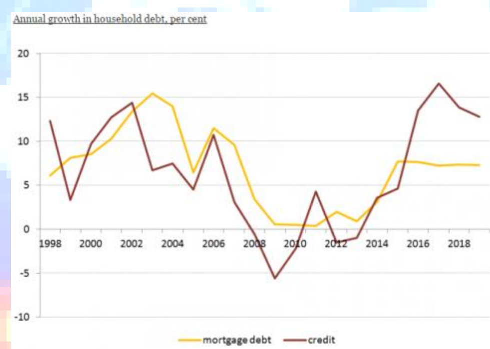
Fig 11: Composition of Debt in Spain:



**United Kingdom:**

United Kingdom has the distinction of having the highest private debt in the world. The debt includes not only mortgage debt and the housing market expansion, but also surging use of credit by households. In fact the growth of credit is predicted to surpass pre-crisis peaks. In 2014, unsecured debt climbed by 9 per cent to an all-time high and in cash terms, close to £9,000 per UK household taking the total household debt to income ratio close to 172 per cent exceeding its old high prior to the financial crisis. Households in the U.K. are confident about repayment of the current debt however there are concerns, "The prospects are for more austerity and economic prospects are uncertain. People may turn to credit as the only accessible way to try and plug the gap. If and when we see an interest rate rise, many more people will struggle." The following figure shows the growth of credit and mortgage debt in UK.

Fig 12: Growth of debt in UK

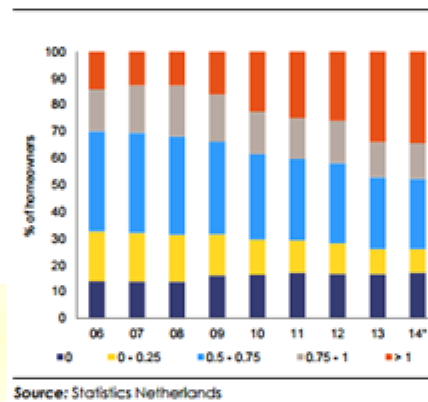



Source: National Accounts and OBR

**Netherlands:**

The Dutch are heavily indebted on account of the credit-led housing boom that started in the 1990s carrying large liabilities, in particular mortgage debt, compounded with large illiquid assets in the form of housing wealth and pension wealth. In 2012, the ratio of total debt to disposable income stood at 250 per cent, one of the highest in the euro area wherein private sector debt as a percentage of GDP in 2010 stood at its highest levels at 234.1 per cent of GDP. And this deleveraging by households is likely to impede the speed of economic recovery. The Dutch economy returned to growth of an estimated +0.7 per cent in 2014.

Fig 13: Rising Loan to value ratios of homeowners



Source: Statistics Netherlands

**Theoretical Underpinnings:**

The idea that unsustainable private debt as a percentage to GDP leads to fall in economic growth in the future emanates from the theories explaining Business Cycles.

The Pure Monetary Theory states that business cycle is a result of changes in monetary and credit market conditions. According to Hawtrey, the main supporter of this theory, money supply positively impacts prices and output and in this banks play a very important role in increasing money flow by providing credit. Economic conditions improve with availability of credit and vice versa. On contraction of loans by banks, investment reduces leading to the decrease in the demand for consumer and capital goods, prices, and consumption leading to the onset of the symptoms of recession.

The Monetary Over-Investment Theory focuses mainly on the imbalance between actual and desired investments. Hayek put forth that the investment and consumption patterns of an economy should match with each other to bring the economy in equilibrium. Investment spending can increase either due to low interest rates or increased marginal efficiency of capital or increase in expectations in the economy and banks of support by offering loans at attractive rates of interest. With inflation picking up along with economic growth, the purchasing power of individuals reduces. The real demand for products does not increase at the same rate at which the investment increases. As a result, it is difficult to maintain the current rate of investment. The demand of consumer goods would be dependent on the income of individuals.

Keynes Theory, a reply to classical economist who staunchly believed in the equilibrating ability of the 'invisible hand', put forth that investment is the play between the expected rates of profit is greater than the current rate of interest. In the expansion phase of business cycle, investors are positive about economic conditions, thus, they overestimate the rate of return from an investment. The rate of return increases until the full employment condition is not achieved and in the rush for profits investors are not able to diagnose the fall in marginal efficiency of capital and even do not consider the rate of interest. As a result, when the profit from investments begin to decline due to the increase in the cost of investment and production of goods and services. This situation results in the contraction or recession in economy.

Samuelson's Model of Multiplier Accelerator Interaction explained that it is the interaction of the multiplier and accelerator with each other that generates income, consumption and demand of investment. But this interplay could also lead to economic fluctuations. Autonomous investment leads to multiplier effect that result in derived investment. This is called acceleration of investment. Derived investment would make the accelerator to come into action. This is termed as multiplier-acceleration interaction.

The two concepts introduced were autonomous and derived investment. Autonomous investment refers to the investment due to outside factors, such as new product, production technique, and market whereas derived investment refers to the increase in the investment of capital goods produced due to increase in the demand of consumer goods. The consumption affects the demand of investment. This is referred as derived investment. This marks the starting of the acceleration process, which results in further increase in income level. Hence, conversely when consumption declines, so does

According to Hicks, autonomous investment results in the increase of output. The multiplier increases output and employment. The multiplier-accelerator interaction results in the growth of the economy. The increased output makes the induced investment to work that further results in accelerator process to work till the economy reaches full employment condition. The increase in induced investment becomes stable and the growth of economy starts declining. The expansion of the economy is governed by induced investment only.

In more modern times, Steve Keen, founder of the Center for Economic Stability, has put forth the unconventional economic theory called "The Financial Instability Hypothesis", which is credited to the economist, Hyman Minsky. Minsky claimed that in good times, when corporate cash flow is greater than required to pay off debt, speculation develops, and debts exceed what borrowers can pay off from their incoming revenues, which is the onset of a financial crisis. Minsky's hypothesis emphasizes the importance of private debt in the economy where the rising ratio of private debt to GDP can indicate that a serious financial crisis was about to occur.

Steve Keen has explained his correct prediction of and warning about the 2008 financial crash based on his analysis of private debt to GDP. According to Keen, aggregate demand is current income plus the *change* in debt.

> *Consider an economy with a GDP of $1000 billion that is growing 10% per annum, where this is half due to inflation and half due to real growth, and which has a debt level of $1250 billion that is growing at 20% per annum. AD will therefore be $1250 billion: $1000 billion from GDP, and $250 billion from the increase in debt.*
>
> *Imagine that the following year, GDP continues to grow at the same 10% rate, but debt growth slows down from 20% per annum to 10%. Demand from income will be $1,100 billion – 10% higher than the previous year – while demand from additional debt will be $150 billion.*
>
> *Aggregate demand this year will therefore be $1250 billion – exactly the same as the year before. However, since inflation is running at 5%, that will mean a fall in output of 5% – a serious recession. So just a slowdown in the rate of growth of debt can be enough to trigger a recession.*

**Data, Methodology and Findings:**

In order to examine the impact of growing levels of private debt as a percentage of GDP on growth rate in above mentioned economies, data series on private debt as a percentage of GDP and annual growth rate from the year 1980 to 2014 have been selected from the data base of World Bank. The methodology used to examine the relation between the two is Pearson's Correlation Coefficient.

**Pearson's *r*** is a measure of the linear correlation between two variables *X* and *Y*, giving a value between +1 and −1 inclusive, where 1 is total positive correlation, 0 is no correlation, and −1 is total negative correlation. It is widely used in the sciences as a measure of the degree of linear dependence between two variables.

In order to prove that high levels of private debt as a percentage to GDP are followed by lower economic growth rates, the present study has computed correlation coefficient between the **'t'** values of Private debt to GDP and **'t+2'** values of growth rates. The study has used growth rate values at a lag of two periods.

The results are as follows:

| | USGDP | AUSGDP | CHINAGDP | | |
|---|---|---|---|---|---|
| Pearson Correlation | -.430* | -0.094 | -0.161 | | |
| P value | 0.01 | 0.60 | 0.37 | | |
| | **Asia Pacific Region** | | | | |
| | THAIGDP | JAPANGDP | KOREAGDP | | |
| Pearson Correlation | -.542** | -.509** | -.579** | | |
| P value | 0.00 | 0.00 | 0.00 | | |
| | **European Region** | | | | |
| | PORTGDP | SPAINGDP | UKGDP | GREECEGDP | NETHERGDP |
| Pearson Correlation | -.590** | -.671** | -.439* | -.578** | -.415* |
| P value | 0.00 | 0.00 | 0.01 | 0.00 | 0.02 |

Except for China and Australia, the rest of the economies have significant negative correlation coefficients. This means that over the period 1980 to 2014, in these economies high levels of private debt to GDP has been followed by lower annual GDP growth rates, after a lag of two years.

During this period, China has consistently had high growth rates; hence the correlation coefficient although negative is not statistically significant. Australia, on the other hand, also has a negative correlation however statistically not significant which can be attributed to their low but consistent growth rate over the years with hardly any dips or peaks.

**Conclusion**:

It is ironical that very little attention has been given to the problem of the extremely high ratio of private debt to GDP. It not only makes the countries vulnerable to crisis but also impedes economic growth. The above analysis clearly shows that debt, once accumulated, constrains demand in the next time period. Ideally, when there is demand higher than capacity, growth is nurtured. Increasing private debt has created just the opposite situation. As a result there is no economy which is showing a combination of low private debt as well as under-capacity. Excessive private debt is also increasing income inequality. It is important for economies now to treat private debt as strongly as public debt and aim to reduce it through deleveraging or debt restructuring. There seems to be no dearth of examples to show that rising private debt to GDP levels will increase the probability of entering recessions higher. To aim for stronger growth it thus is mandatory to hold the reins of private debt very tightly.

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