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Quarterly Review and Outlook

Third Quarter 2021

Rising Debt Toll

By the mid-1980's, the marginal revenue product of both nonfinancial debt and total debt (MRPD) fell below their historic ranges (MRPD is the additional dollar of GDP generated by an additional dollar of debt). The MRPD for the latest four quarters for both debt aggregates are very near the record lows that stretch back to 1945 and 1870, respectively (Chart 1). As the inefficiency of debt increased over the past four decades, numerous scholarly studies have verified this deleterious impact of debt on economic growth. The historic trends and the studies indicate that the use of debt capital has moved well beyond the productive phase. This is in accordance with the law of diminishing returns, a basic concept in economic theory.

A significant consequence of this increasing indebtedness was that in 1997 the upward trend in the velocity of money peaked. Interestingly, the acceleration in debt relative to GDP has correlated closely with the sustained decline in the velocity of money from its peak value of 2.2 in 1997 to 1.12 today. Further, in 2000 the growth of real per capita GDP began to decline relative to its long-term growth trend, again reflecting the law of diminishing returns on the overuse of debt. The U.S. appears to be walking the same economic path of the Euro Area and Japan due to the growing indebtedness, shrinking real per capita GDP growth and declining money velocity.

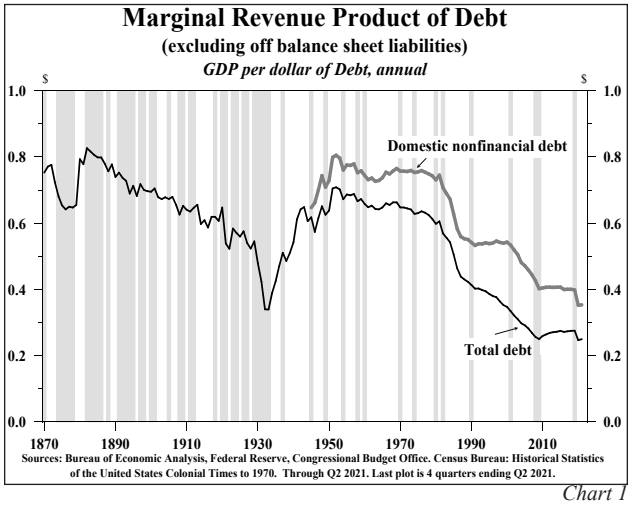


Chart 1

Real Per Capita GDP

The United States

Real GDP per capita in the second quarter of 2021 was $58,478. From 1870 until 2000, U.S. real per capita GDP rose by 2.2% per annum. Since then, the growth has been 1.1% per annum (Chart 2). The historic rate of growth fell 50% in this time frame. If the GDP per capita had grown at the pre-2000 pace, it would be nearly

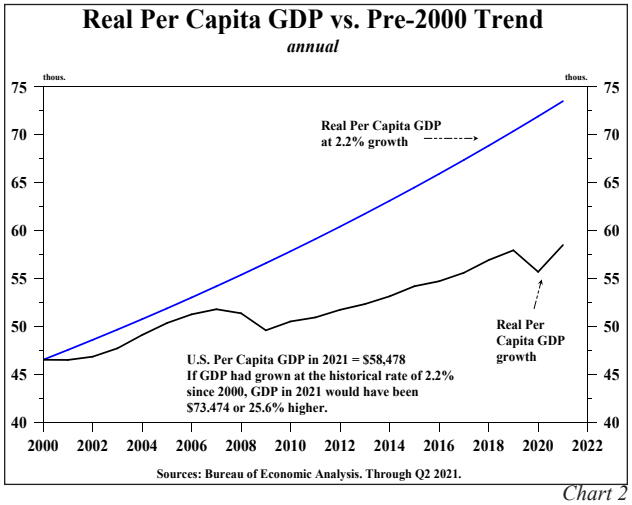


Chart 2

26% higher or $73,474. In the fourth quarter of 2019, the quarter before the pandemic disrupted economic activity, real per capita GDP was about 17% below the trend line of the historic pre-2000 growth rate. References that real GDP has recovered to the pre-pandemic level badly miss the point. As correctly documented many times, the expansion from 2009 until early 2020 was the worst in U.S. economic history. The period of subpar performance is not eleven years but nearly two decades. During this long span the pernicious effects of massive indebtedness on U.S. economic well-being has increased dramatically.

As a result of the pandemic, the economy has fallen markedly further below where the U.S. economy would be operating if it had not become as massively over-indebted. The unprecedented debt financed stimulus measures since the spring of 2020 have only produced transitory spurts in economic growth that quickly dissipated. Despite consensus wildly optimistic forecasts, the 6% plus growth of the first half of 2021 did not rectify the situation.

Japan and Europe

While data impediments do not permit a complete comparison of U.S. figures with those in the Euro Area and Japan, relevant comparisons of MRPD and real per capita GDP can be made over the last two decades (Chart 3). The MRPD

Diminishing Returns From Debt
(Marginal Revenue Product of Debt i.e., GDP Per Dollar of Total Debt)

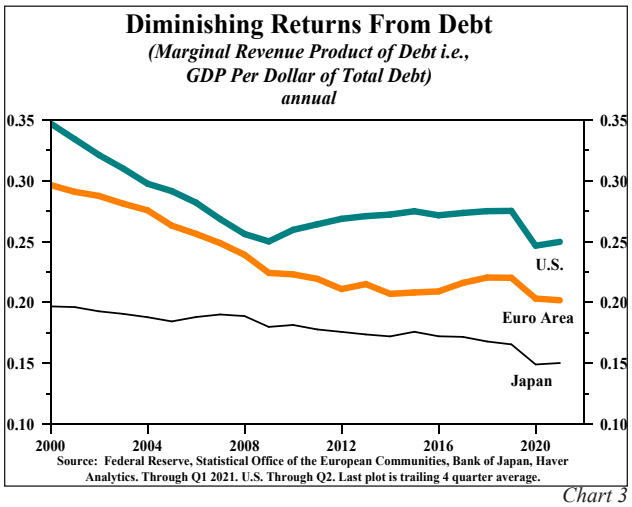
		1870-1997	1945-1997	1945-1985	1998-2020	2000-2020	latest
		A.	B.	C.	D.	E.	F.
1.	U.S. Total Debt	0.62	0.59	0.64	0.29	0.28	0.25
2.	U.S. Nonfinancial Debt		0.68	0.74	0.43	0.43	0.35
3.	Japan					0.18	0.15
4.	Euro Area					0.24	0.20

Source: Federal Reserve, Statistical Office of the European Communities, Bank of Japan, Haver Analytics. Through Q1 2021. U.S. through Q2. Last plot 4 quarter trailing average.

Table 1

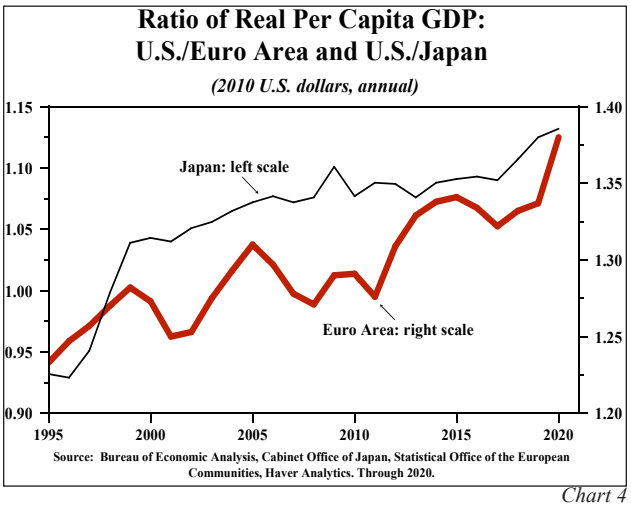
was significantly lower in Japan and the Euro Area since 2000 than in the U.S. and the relative deterioration in the Euro Area and Japan continued in the latest available data (Table 1). Quite significantly, the MRPD of the U.S. has moved into the range of MRPD for the Euro Area and Japan that originally existed twenty years ago. Clearly, the U.S. is in the throes of a debt trap like the long prevailing ones in Euro Area and Japan.

The loss in real per capital GDP in the Euro Area and Japan relative to that in the U.S. is remarkable since 1995 (Chart 4). Both series are measured in 2010 U.S. real dollars. In 1995, in relative terms, the U.S. standard of living was 7% lower than in Japan. At that time, Japan was a highly prosperous economy. Many books were pouring out on the theme of the predominance



Source: Federal Reserve, Statistical Office of the European Communities, Bank of Japan, Haver Analytics. Through Q1 2021. U.S. Through Q2. Last plot is trailing 4 quarter average.

Chart 3



Source: Bureau of Economic Analysis, Cabinet Office of Japan, Statistical Office of the European Communities, Haver Analytics. Through 2020.

Chart 4

of 'Rising Sun' economics. In the latest year, the U.S. was 13% higher than Japan, a swing of 20 percentage points, measured on the left-hand axis of Chart 4. This massive shift should not be surprising as Japan experienced five recessions in the past twelve years while the U.S. had only one.

In 1995, U.S. real per capita GDP was 23% higher than in the Euro Area. But in the latest year the U.S. level was 38% higher, a change of 15 percentage points, measured on the right-hand axis. The Euro Area had one more recession than the U.S. in the past twelve years plus three growth recessions. Thus, both Japan and the Euro Area confirm that massive debt overhangs are detrimental to economic growth and that the real per capita GDP growth is worse in the countries that have a lower MRPD.

Excessive indebtedness acts as a tax on future growth and it is also consistent with Hyman Minsky's concept of "Ponzi finance," which is that the size and type of debt being added cannot generate a cash flow to repay principal and interest. While the debt has not resulted in the sustained instability in financial markets envisioned by Minsky, the slow reduction in economic growth and the standard of living is more insidious. While the debt was taken on with presumably good intentions, the result has been an increased wealth and income divide. By inference, economic growth will be poor, and the massive amount of debt taken on over the past year to deal with the pandemic will require that interest rates remain lower for longer in order to allow the ever more debt-ridden economies to carry this burden.

Velocity

The velocity of money (V) demonstrated a major inflection point in 1997, peaking at about 2.2 in the third quarter of that year. By the second quarter of 2021, V had declined nearly 49%, to 1.12. Over that same time span, the MRPD dropped about 33.9% and the loan to deposit ratio (LDR) of the commercial banks fell 37%. Giving equal weight to MRPD and LDR, both of which are worsened by increasing over-indebtedness, the decline was 35%. As velocity declines, each dollar of money produces less GDP. The drop in velocity to lower levels indicates that monetary policy becomes increasingly asymmetric in its capabilities. While tightening operations are effective, Fed actions to support the economy are largely counterproductive even when they are novel in scope and massive in size. Benefits can accrue but their impact on economic growth has proved to be extremely minimal. The Fed is able to increase money supply growth but the ongoing decline in velocity means that the new liquidity is trapped in the financial markets rather than advancing the standard of living by moving into the real economy.

As the MRPD has fallen to lower levels in the Euro Area and Japan, China has not been immune to this situation where velocity has dropped to much lower levels than in the U.S. In Japan, where velocity can be calculated for a much longer span than the Euro Area or China, there exhibits a horrific decline since 1968. For the second quarter of this year, Japan's M2 velocity was 0.47, down from 1.54 in 1968. In the latest quarter, Japanese V was 58% lower than in the U.S. with MRPD in Japan 44% lower than in the United States. In the second quarter, velocity in China was also about 0.5, down from 0.81 in 1998. In the Euro Area velocity was 0.84, down from 1.77 in 1995, the year of origin for the data. The fact that velocity is declining precipitously in all three regions demonstrates that the same forces are at work. Money and debt are created simultaneously. If the debt produces a sustaining income stream to repay principal and interest, then velocity will rise since GDP will eventually increase beyond the initial borrowing. If advancing debt produces increasingly smaller gains in GDP, then V falls. Debt financed private and governmental projects may temporarily boost GDP and velocity over short timespans, but if the projects do not generate new funds to meet longer

term debt servicing obligations, then velocity falls as the historical statistics confirm.

Scholarly Studies

In 2008 and 2009 Carmen Reinhart and Ken Rogoff (R&R) published research that indicated from an extensive quantitative analysis of highly indebted economies that their economic growth was significantly diminished once they become highly over-indebted. In one of their Excel spreadsheets, the figures for two relatively minor countries were entered incorrectly. As a result, some jumped to erroneous conclusion that the R&R analysis was faulty and that it could be disregarded. Beginning in 2010, we have been able to identify sixteen scholarly studies produced from around the world that confirmed their findings were correct. These voluminous findings are consistent with the historical work of Irving Fisher, Charles Kindleberger and others. Moreover, none of the post-2009 research is in any way dependent on R&R's original work. The more recent studies, however, are consistent with Chart 1 showing the related declines in the MRPD, the velocity of money and relative performance of the high and even more highly over-indebted economies. Four of these studies deserve particular emphasis.

First, Swedish econometricians Andreas Bergh and Magnus Henrekson, writing in the prestigious *Journal of Economic Surveys* in 2011, substantiate that there is a "significant negative correlation" between the size of government and economic growth. Specifically, "an increase in government size by 10 percentage points is associated with a 0.5% to 1% lower annual growth rate." This suggests that if spending increases, the government expenditure multiplier will become more negative over time.

Second, Ethan Ilsetzki (London School of Economics), Enrique Mendoza (University of Pennsylvania), and Carlos Vegh (University of Maryland) in a study published by peer reviewed the *Journal of Monetary Economics* in 2013, concluded that the government spending multiplier is sharply negative in highly indebted countries. The definition of highly indebted is central government debt exceeding 60% of GDP, a condition that is met by most of the major economies of the world.

Third, an econometric study by Alberto Alesina, Carlo Favero and Francesco Giavazzi in the *Journal of International Economics* in 2015, corroborates that the tax and expenditure multipliers are both negative, with the tax multiplier more negative. Quite significantly, these conclusions are supported by domestic as well as international data. Alesina is a Professor at Harvard, while Favero and Giavazzi are professors at IGIER-Bocconi.

Fourth, Cristina Checherita and Philip Rother, in research for the European Central Bank (ECB) published in 2014, investigated the average effect of government debt on per capita GDP growth in twelve Euro Area countries over a period of about four decades beginning in 1970. Dr. Checherita, now head of the fiscal affairs division of the ECB and Dr. Rother, chief economist of the European Economic Community, found that a government debt to GDP ratio above the turning point of 90-100% has a "deleterious" impact on long-term growth. In addition, they find that there is a non-linear impact of debt on growth beyond this turning point. A non-linear relationship means that as the government debt rises to higher and higher levels, the adverse growth consequences accelerate. Results across all models "show a highly statistically significant non-linear relationship between the government debt ratio and per capita GDP for the 12 pooled Euro Area countries included in their sample." Moreover, confidence intervals for the debt turning point suggest that the negative growth rate effect of high debt may start from levels of around 70-80% of GDP. The non-linear relationship between debt and real per capital GDP suggested to us the underlying causality is the nonlinear law of diminishing returns.

Prospects

In the third quarter, economic growth slowed sharply, registering a fraction of the growth rate in the first half. Coincidentally, consumer confidence fell sharply as consumers cut back significantly on their buying plans as expectations for increases in future income slumped. This slowdown occurred just one quarter after $2 trillion of debt financed government transfer payments were made to moderate- and lower-income households. Although the size of this operation was larger than the "shovel ready projects" of 2009 and the 2018 tax cuts that were also debt financed, the effects of the massive additional increase in debt did not last any longer. This is consistent with the many studies which indicate that the government spending multiplier is negative. Also working against the economy are the supply side disruptions that have led to faster inflation. Unfortunately, early-stage economic expansions do not fare well when inflation and interest rates are not declining at this stage of the business cycle, which is not the normal historical role, or the path indicated by economic theory. As this year has once again confirmed, in early expansion inflationary episodes, prices rise faster than real wages, thereby stunting consumer spending. The faster inflation also thwarts the needed continuing cyclical decline in money and bond yields, which are necessary to gain economic momentum.

We expect the third quarter's weakness to continue over the balance of this year and into 2022. The main lift from inventory investment occurred in the third quarter of 2021. U.S. money supply growth decelerated sharply over the first three quarters of this year, mirroring the pattern in the Euro Area, Japan and China. Moreover, the downtrend in money velocity continued in all four of these major economic powers. The deterioration in money and velocity is worse outside the U.S. in the more heavily over-indebted countries and where economic growth has consistently underperformed that of the U.S. Adding to the situation, the most widely followed measure of the U.S. dollar at the end of the third quarter was at the highest level in a year. This combination of considerations should transmit economic weakness from the foreign into the domestic economy.

The U.S. economy has clearly experienced an unprecedented set of supply side disruptions, which serve to shift the upward sloping aggregate supply curve inward. In a graph, with aggregate prices on the vertical axis and real GDP on the horizontal axis, this causes the aggregate supply and demand curves to intersect at a higher price level and lower level of real GDP. This drop in real GDP, often referred to as a supply side recession, increases what is known as the deflationary gap, which means that the level of real GDP falls further from the level of potential GDP. This deflationary gap in turn leads to demand destruction setting in motion a process that will eventually reverse the rise in inflation. In the 1970s, the economy was beset by a string of such supply curve shifts primarily because of falling oil production. Then the inflation rate did not fall but continued to march higher. However, before Paul Volcker was made Fed chair late in the decade, the Fed actions allowed money supply to accelerate steadily. During the 1970s, unlike currently, the velocity of money was stable (although not constant). As a result, the aggregate demand curve ($C + I + G + X = M \times V$) also shifted steadily outward. This allowed the inflation from the supply side disruptions to become entrenched. Currently, however, the decline in money growth and velocity indicate that the inflation induced supply side shocks will eventually be reversed. In this environment, Treasury bond yields could temporarily be pushed higher in response to inflation. These sporadic moves will not be maintained. The trend in longer yields remains downward.

Hoisington Investment Management

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