Private Debt's Role in Stock Market and Real Estate Cycles

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In the paper titled Cycles Within the US Stock and Real Estate Markets we looked at 3 prominent cycles that provide structure to the stock and real estate markets. In this paper we will explore the role that private debt plays in these cycles and in the booms and busts that permeate these cycles. While the debt build-up and crashes are largely related to the real estate portion of the cycle, the stock market can be drastically impacted by these build ups and crashes as the economy rises and falls. In particular, homebuilder stocks, retail stocks and banking stocks can fluctuate wildly based on the amount of private debt in the financial system as we progress through the cycle.

In Cycles Within the US Stock and Real Estate Markets we showed that major stock and real estate market peaks and bottoms follow a regular path based on repeating lengths of time. Is it also possible then to be able to know to what degree and in which area of the economy a bubble and collapse may take place at those cycle peaks and troughs? I believe the answer to that question is yes, and I hope to make a case for such a claim in the following pages.

Private Debt vs. Public Debt

When economists, analysts and politicians talk about the dangers of too much debt, they are almost entirely focused on the levels of public debt. We hear constantly about the unsustainability of government debt levels around the world and how currencies will collapse, and governments will default any day now. We rarely hear about the dangers of private debt building up in the financial system. Private debt is seen as a positive because it drives consumption, which drives GDP higher. Public debt is seen as dangerous because it causes governments to run deficits and push for higher taxes. But what if the story is being told backwards?

Let's think through this question by stepping back from economic theory and looking at it practically. Public debt can almost always be pushed further down the road as long as the government issuing the debt has a printing press. Of course, states, municipalities and countries who have pegged their currencies to other currencies do not have the luxury of a printing press and must be more careful when issuing large amounts of debt. These government entities also tend to be small and a collapse by one typically does not have a systemically negative impact on the larger government structure whether that be a municipality impacting a state, a state impacting a federal government or a small country impacting the globe.

When the Asian Tiger countries' debt collapsed in 1998, there was a global market sell off that lasted a month or two and cost about 20 percentage points on the S&P 500. That is not what I would call a long term impact to the global financial system. Then there are situations like Weimar Germany and Zimbabwe that are used over and over as examples of what can happen when governments print too much money. It can be argued that Weimar had outside forces thrust upon them that were beyond their control and Zimbabwe is an example of small country letting their currency printing get out of hand. Zimbabwe hardly impacted the global economy.

There are also other factors to consider when thinking through high levels of government debt that are beyond the scope of this paper such as: increased taxes dragging on consumption, downgrading of a country's credit rating, foreign governments using ownership of debt as a bargaining chip and many more. We won't get into those types of issues because they aren't central to the thesis of this paper.

Private debt buildup is what causes consumers to become strapped with monthly debt payments they can't afford. This is the debt that pushes consumers to the brink when they lose a job, have an unexpected expense or any other financial surprise that inevitably arise in our lives. And when these consumers miss a payment, it is the lenders that are then impacted negatively. Now of course, lenders build in contingencies for a certain percentage of loans to go bad precisely for the reasons I mentioned above, but what about when loans start

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going bad en masse when lending standards have become too lax and debt levels nationwide have risen too high too fast?

If consumers take on too much debt and have to start juggling payments each month to make ends meet or have to depend on continued rising asset prices in order to have a chance of paying off the debt, then things can turn south pretty quickly. And studies have shown that this exact situation is what happens over and over again at the peak of the 18.6-year cycle we talked about in the aforementioned paper. Too much private debt is pushed into the economy which causes asset prices to rise too high and consumers to take on payments they cannot sustain. When asset prices stall and turn down, financial crises happen.

This exact scenario was alluded to many times in the book Secret Life of Real Estate and Banking by Phillip J. Anderson as he described 200 plus years of the 18.6-year real estate cycle. It was also studied in depth in two different books by Richard Vague. Those books are The Next Economic Disaster and A Brief History of Doom. Steve Keen also wrote about this scenario in his book Can We Avoid Another Financial Crisis? We will focus on the work of Richard Vague and Phillip J. Anderson as we attempt to tie it into the 18.6-year cycle structure.

Private Debt's Crisis Formula

Now that we have established that we want to focus on private debt and its role in the boom-and-bust phases of the 18.6-year cycle, we should look for data that would provide a clue as to when an economy might be approaching dangerous levels of private lending. Are there any clues in the history of financial crises around the world that might provide warning signs for us going forward? As a matter of fact, there are levels of absolute private debt coupled with private debt growth levels that combine to provide a formula for potential financial crises.

In his books, A Brief History of Doom and The Next Economic Disaster, Richard Vague looked at financial crises over the last 200 years. He looked at major global economies worldwide to see if there was a common thread amongst them. His work was weighted more heavily on the United States and crises after 1913, since that's where the most data was available. He came up with some very interesting conclusions. He found that there is a formula, which when met, encompassed more than 80% of the financial crises studied in his work. That formula is an absolute private debt to GDP ratio of 150% or greater coupled with at least an 18% increase in private debt to GDP over a 5-year period. Time and time again this combination of factors preceded a major financial crisis.

This formula holds true for every crisis that was studied after the modern banking era started in 1913 with the exception of the United States and the United Kingdom in 1990. In these cases, total private debt/GDP was 124% and 126% respectively, but total private debt/GDP growth was quite rapid over the 5 years leading up to the crisis. Before 1913, the banking system and economy was much less stable due to the fact that there was no consolidated national banking system but was a patchwork system of state-chartered banks. Due to this structure, the financial system was less robust and experienced crises at much lower levels of total private debt/GDP.

The 150% private debt/GDP absolute level seems to be the point at which modern economies have taken on so much debt that it becomes difficult to support. Much like an overindebted household that struggles to continue making payments, this debt ratio is a signal that the consumers in an economy have become overextended.

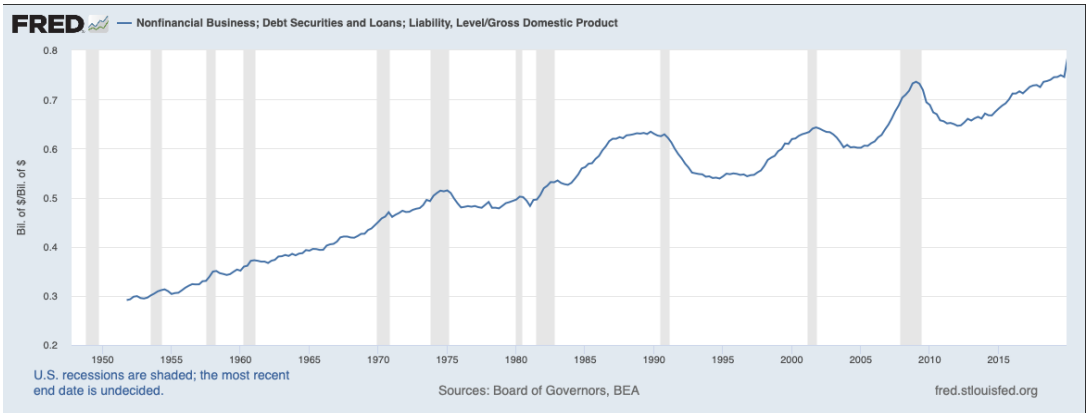
Additionally, the rapid growth in the private debt/GDP level as illustrated by the 26% growth threshold over the 2003-2008 period in the United States, points to lending standards being reduced to the point of funding speculation in an economy or economic sector. When these two factors are combined, we end up with an unsustainable debt load made up of a significant portion with poor credit quality. This was the case in the most recent financial crisis in 2008 where we saw subprime loan growth explode in the years leading up to the crisis.

The Private Debt Formula in Action

In figure 1, we can see the total private debt/GDP ratio back to 1951. We can see it rise through time. The ratio started at approximately 55% after World War 2 and rose to 171% in the 1Q2009. The critical level of 150% was first crossed in 4Q2005. This was the first sign that a financial catastrophe was potentially in the making. In 4Q2019, the ratio had declined to 147%.

The second variable in the formula (private debt/GDP growth) was an increase of 26% over the 5 years leading up to the crisis. So, both variables of the formula were signaling that a financial crisis could be in the near future. This will be a key chart to follow as we move forward through time.

Figure 1 – Total Private Debt/GDP 1951-2019



Source: St. Louis Federal Reserve, BEA

Other historical crises are shown in figure 2 below. We can see how the two variables looked in the time period leading up to each crisis. As we can clearly see, the 2008 financial crisis was not unique when we compare the private debt equation attributes to historical crises.

Figure 2

Crisis Year	Country	Growth Period	Private Debt/GDP Ratio	Private Debt/GDP Growth	Largest Sector of Debt	Largest Sector Debt Growth
1837	United States	1832-1837	43%	14%	Construction	91%
1857	United States	1852-1857	47%	9%	Railroads/Mortgages	57%
1874	United States	1869-1874	61%	22%	Railroads/Mortgages	58%
1893	United States	1886-1891	92%	18%	Railroads/Mortgages	42%
1907	United States	1902-1907	99%	6%	Railroads/Mortgages	42%
1929	United States	1923-1928	161%	25%	Household/Commerical Mortgages	47%
1989	United States	1983-1988	124%	21%	Household/Commerical Mortgages	84%
1989	Japan	1985-1990	182%	38%	Household/Commerical Mortgages	150%
1990	United Kingdom	1985-1990	126%	41%	Household Mortgages	141%
1998	South Korea	1992-1997	164%	36%	Corporate Debt	148%
2008	United Kingdom	2003-2008	194%	34%	Household/Commerical Mortgages	54%
2008	Spain	2003-2008	214%	72%	Household/Commerical Mortgages	121%
2008	United States	2002-2007	171%	26%	Household/Commerical Mortgages	55%

Source: A Brief History of Doom by Richard Vague

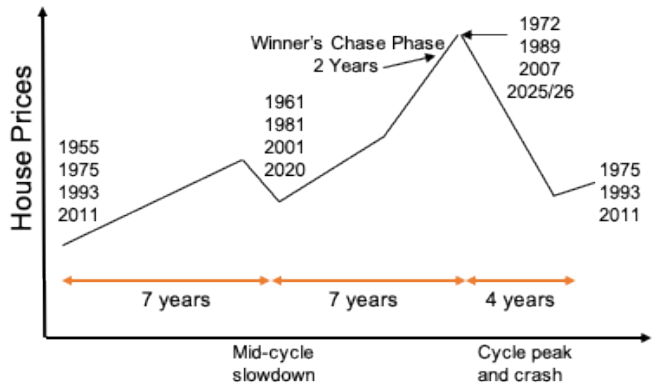
Private Debt Crises' Relationship to the 18.6-Year Cycle

The goal of this paper is to show that private debt build-up is a driving force in the 18.6-year financial cycle. Up to this point we have been building the case that private debt build-up is the factor we should be focusing on, that its dangers can be seen in advance and that it has been common to many crises throughout the years. Now we will look at how it fits into the 18.6-year structure and how the timing and the build-up of private debt work hand in hand.

Let's look at a quick reminder of the structure of the 18.6-year cycle specifically as it pertains to real estate. In 2012, Phillip J Anderson wrote a book about the 18.6-year cycle entitled The Secret Life of Real Estate and Banking. Based on my study of market and economic history, Mr. Anderson's work provides a more informative structure for determining economic and stock market moves. Mr. Anderson studied real estate cycles going back to the 1600's in England up through the Great Financial Crisis of 2008. He found that the economy, which is driven by this 18.6-year real estate cycle, moves in very predictable ways throughout the cycle and events can be determined well ahead of time. In fact, a man named Fred Harrison predicted the 2008 real estate financial crisis using this cycle as far back as the 1990's.

The structure of the cycle consists of a 7-year recovery from the previous real estate decline, followed by a 1-2-year mid-cycle slow down. This mid-cycle slowdown leads to the bull phase of the real estate cycle of approximately 5 years. This 5-year bull phase is followed by a 2-year bubble phase which ultimately leads to the 4-year real estate decline. Mr. Anderson laid out the structure of the real estate cycle as shown in figure 3 below.

Figure 3



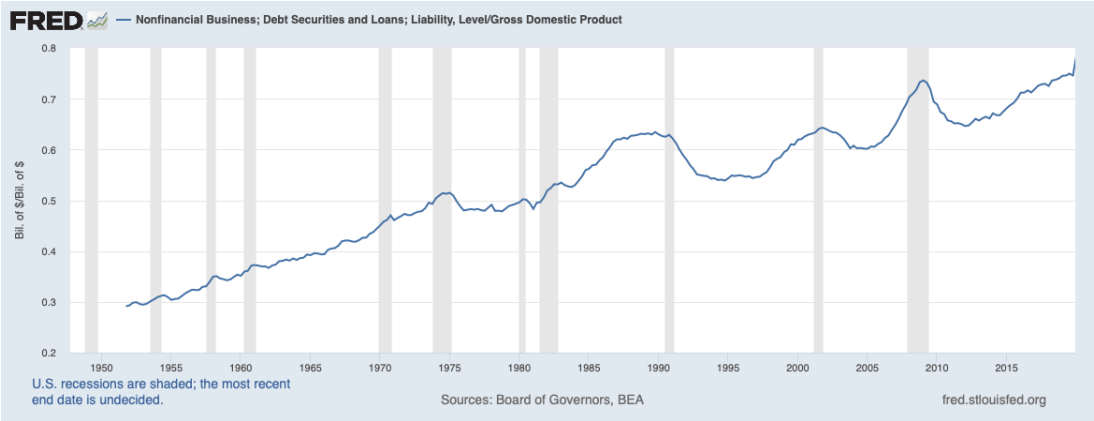
Source: The Secret Life of Real Estate and Banking Phillip J. Anderson; Akhil Patel

It should be noted that Phillip Anderson also referenced over indebtedness specifically as it pertained to real estate debt as the cause of the financial crises that he studied in his book The Secret Life of Real Estate and Banking, but his focus was on the establishment of the 18.6-year cycle rather than private debt specifically as the cause of the booms and busts.

Now that we are again familiar with the structure of the cycle, let's look at how private debt build up occurs throughout the cycle. Typically, we see a major write down of debt during the declining phase of the cycle. After the Great Depression, private debt/GDP declined from 161% to 55%. This allowed for approximately 50 years of increasing debt before the next 18.6-year cycle crisis would come along. There were downturns at each cycle decline point over that 50-year period, but because debt levels were at such a small level compared to GDP, there were no crises. As a side note, private debt/GDP did not markedly decline after the 2008 financial crisis due to intervention from central banks and governments around the world. This all has setup a potential scenario to watch for when 2026 rolls around.

After the major debt write downs in the declining phase of the cycle, private debt build-up begins to surge once more. Only this time around, banks are gun shy from lending to consumers who have just defaulted on their loans, so they lend to corporations and businesses of different sizes. This allows the banks to spread the risk across many sectors of corporate debt which does serve to reduce risk. This is precisely why mid-cycle slowdowns are just that, slowdowns, and not full-on crises like we see at the end of cycles. This is shown quite well in figure 4 below. Corporate debt builds up after the debt from the previous crisis is written down and then typically falls after the mid-cycle slowdown and the crisis phase of each cycle.

Figure 4



Source: St. Louis Federal Reserve, BEA

After a significant build-up of corporate debt, we enter the mid-cycle slowdown phase of the 18.6-year cycle. This phase typically lasts about 1-2 years and can experience sharp and painful recessions. Previous examples

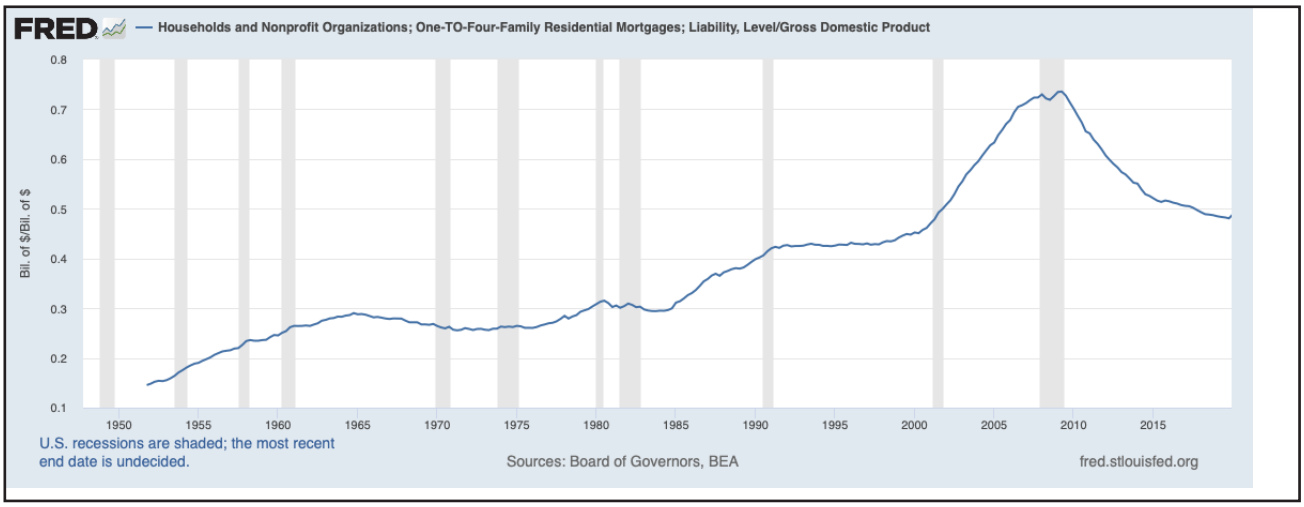
of this slowdown phase are the 1980-82 recession, the 2000 Dotcom bust and, most recently, the Covid-19 crash in the first half of 2020. This recession is usually easily recoverable with government intervention because the banking system is not at risk due to the debt build-up being spread across many sectors with each sector being small enough as to not pose a systemic threat to the financial system.

Typically, during the mid-cycle slowdown governments start to talk about large fiscal stimulus and central banks cut rates and pump money into the financial system. Along with these measures, banking regulations are inevitably relaxed to the point of pressuring banks to make loans to stimulate the economy. This begins the build-up to the bubble phase of the 18.6-year cycle. This build-up typically lasts about 4-5 years which is enough time to fully shake off the damage that was inflicted by the mid-cycle recession. It also allows consumers to start feeling confident about their financial position after a few years of rising household net worth.

This is when the bubble phase kicks into high gear. Banks start to make large profits from consumer borrowing and as bank bonuses spiral upwards, lenders start to move further and further out on the risk curve when making loans. Loan requirements decline to the point of speculation as lower and lower credit worthy borrowers are approved for loans that would never be approved in previous phases of the cycle. As this behavior builds on itself, total private debt/GDP and private debt/GDP growth both move higher and higher. This is when the mortgage debt levels begin to rise in earnest. These mortgages are typically a combination of commercial and residential with residential making up the bulk of the debt. This is where things become systemically dangerous.

As we can see below in figure 5, mortgage debt has been building through each cycle since just after World War 2. Mortgage Debt/GDP dipped slightly in the early 1970's during the declining phase of that 18.6-year cycle only to move to a higher level by the time the 1990 Savings and Loan Crisis came around. The ratio moved sideways for the better part of a decade before exploding into its peak during the Great Financial Crisis. As shown so blatantly in the chart, the Mortgage Debt/GDP ratio has seen its largest decline in 70 years since 2009.

Figure 5



Source: St. Louis Federal Reserve, BEA

This decline is also shown in Total Private Debt/GDP in figure 1. The rise in corporate debt since 2009 has not been enough to offset the massive decline the Mortgage Debt/GDP ratio. As a side note, this is likely a large contributing factor to the struggle that the Federal Reserve has had in generating inflation over the last 11 years despite trillions of dollars in stimulus. All of that stimulus has not been enough to offset the deflationary forces unleashed by this massive debt decline.

Why Are Mortgages Such a Large Factor?

The question thus becomes, why are mortgages such a large factor in this cycle and debt bubbles and busts? The answer is that mortgages typically comprise a massive portion of private debt outstanding compared to

all other sectors. As figure 6 shows, in 2017 household and commercial mortgages made up 48% of all private debt outstanding in the United States. This was after the massive decline in mortgage levels from 2009 to 2017. The next largest debt total as a percentage of total private debt was Other Businesses at only 7% of the total. Even Student Loans which we hear so much about only comprised 5% of total private debt. Likewise, Utilities and Consumer Discretionary each comprised 5% of total private debt. The combination of Commercial and Household Mortgage debt is massive compared to any other portion of US private debt.

Figure 6

2017 Sector Debt in Trillions of Dollars			
Sector	**2017 Total Sector Debt**		**Debt Percentage of Total**
Materials	$	0.38	1%
Telecom	$	0.55	2%
Consumer Staples	$	0.55	2%
Energy	$	0.90	3%
Healthcare	$	0.92	3%
IT	$	0.93	3%
Industrials	$	1.05	4%
Utilities	$	1.33	5%
Consumer Discretionary	$	1.52	5%
Other Business	$	2.08	7%
Other Household	$	1.18	4%
Credit Card	$	0.83	3%
Auto Loan	$	1.22	4%
Student Loan	$	1.38	5%
Revolving Debt	$	0.44	1%
Commercial Real Estate	$	4.07	14%
Home Mortgage	$	10.08	34%
Total Private Debt	$	29.4	100%

Source: A Brief History of Doom by Richard Vague

Mortgage debt becomes even more of an issue when we reach the speculative phase at the end of the 18.6-year cycle. Figure 7 shows the peak levels of Mortgage Debt/GDP for each crisis that we showed in figure 2 going back to 1837. After the banking system changed in 1913, mortgages became a larger and larger portion of Total Private Debt/GDP going into each crisis. The 1929 level of 78% kicked off one of the worst depressions our country has ever seen, only to be outdone in 2008 when the ratio reached an astounding 99% in the United States.

Figure 7

Crisis Year	Country	Growth Period	Largest Sector of Debt	Largest Sector Debt/GDP
1837	United States	1832-1837	Construction	28%
1857	United States	1852-1857	Railroads/Mortgages	45%
1874	United States	1869-1874	Railroads/Mortgages	49%
1893	United States	1886-1891	Railroads/Mortgages	71%
1907	United States	1902-1907	Railroads/Mortgages	47%
1929	United States	1923-1928	Household/Commerical Mortgages	78%
1989	United States	1983-1988	Household/Commerical Mortgages	61%
1989	Japan	1985-1990	Household/Commerical Mortgages	73%
1990	United Kingdom	1985-1990	Household Mortgages	38%
1998	South Korea	1992-1997	Corporate Debt	111%
2008	United Kingdom	2003-2008	Household/Commerical Mortgages	94%
2008	Spain	2003-2008	Household/Commerical Mortgages	97%
2008	United States	2002-2007	Household/Commerical Mortgages	99%

Source: A Brief History of Doom by Richard Vague

In the years since the Great Financial Crisis, the Mortgage Debt/GDP ratio has declined to approximately 48%, which is still the highest starting point we have seen going into the second half of the cycle in the last 70 years. As we move toward the 2026 cycle peak, this high starting Mortgage Debt/GDP level combined with the astronomical starting Total Private Debt/GDP level has the potential to set up the financial system for an even larger crisis than we saw in 2008.

Why Should Stock Investors Care?

After all of the talk in the preceding pages about cycles, private debt levels and how it all relates to real estate, why should stock investors care about any of this? On the face of it, this information seems to be related only to the real estate sector and the cycles within that sector. There is much more to this story than just the real estate sector though! As shown in Cycles Within the US Stock and Real Estate Markets, real estate and stock cycles are interlocked.

When the real estate cycle pauses at the mid-cycle slowdown, we have stock market declines such as the 1982 stock market sell off, the 2000 Dotcom bubble collapse and the 2020 Covid-19 market crash. At the end

of the cycle when real estate prices decline and mortgages default in large numbers, the financial system as a whole is put at risk if the overall debt levels are large enough. This has a massive negative impact on stocks, especially those stocks tied to the mortgages that are defaulting on real estate industry underlying those mortgages. In 2008-09 the bank index fell 85%. Similarly, the homebuilders index fell 88%. The markets overall plunged by approximately 58% as measured by the S&P 500.

These are massive events for pensions, 401(k)'s IRA's and anyone else investing for the future. These events take years to recover from. Wouldn't it be nice to have an idea in advance when the cycles suggest a market turn might be coming combined with some relative idea of how impactful that turn could be? I believe what the combination of the 11 and 18.6 year cycles along with the private debt level information laid out within this paper has provided us is a more thoughtful way to analyze markets and their cycles in an order to help make more informed investment decisions. Combining all of this information can be helpful in assisting investors in making more informed allocation decisions for their portfolios both now and in the future.