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The following is an excerpt from the Fall 2019 edition of The Linneman Letter.

How Will the Recovery End?

Through the third quarter of 2019, the recovery is 123 months old and the longest in U.S. history. But we believe that it is essential to realize that real GDP is still only 20.7% above the previous peak and 16% below trend. When previous recoveries ended, they were on average 22% above the previous peak and around the long-term real GDP trend. This recovery will continue for at least another year, as unlike the peaks of previous recoveries, there are no notable excesses. And in fact, we still have auto and housing production shortfalls, accounting for more than half of the nearly $3.8 billion GDP gap.

In the past two years, U.S. real GDP has grown by 5.6% and added 4.6 million jobs. Year-over-year, real GDP has grown 2.3% versus the post-WWII average of 3.2%, and nearly 2.1 million jobs have been added, a 1.4% increase. And no end is (yet) in sight, even though the drag of the trade war with China has reduced economic growth by about 50 bps. However, this drag has had less of an impact than we have seen during past trade wars due to the fact that manufacturing is a less important part of the economy.

In the second quarter of 2019, the economy grew by an annualized 2.0%, while per capita real GDP grew by 1.9% over the trailing four quarters. Per capita real GDP is the highest in history and is 11% above the level registered at its cyclical peak in 2007. This is a real per capita increase of $6,010 in 12 years. In contrast to the erratic recovery pattern of 2010-2015, per capita growth has been sustained since 2016.

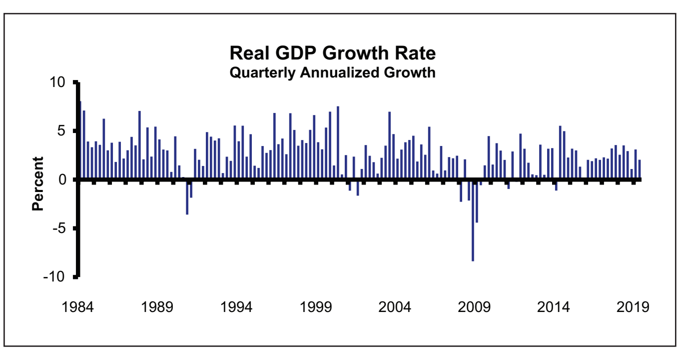

figure 1

This growth is fueled by lower taxes, reduced regulatory intrusions, and closer-to-market interest rates. However, rates remain too low, and excessive federal spending is crowding out more productive private borrowing. In particular, artificially low short-term interest rates continue to suppress single-family housing starts by reducing down payment capacity.

So how will it end? The culprit in the past has always been a combination of consumer and producer excesses and crazed government policy decisions. Thus far, consumers and firms are generally living within their means, and excesses do not exist in auto production or housing and commercial construction. Absent

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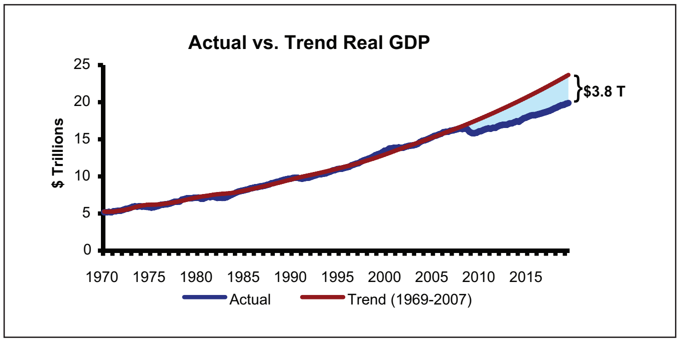

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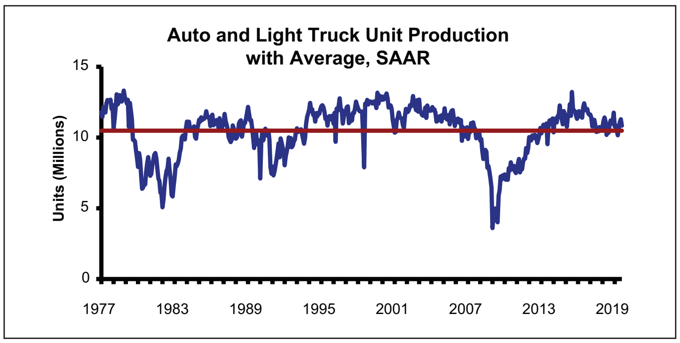

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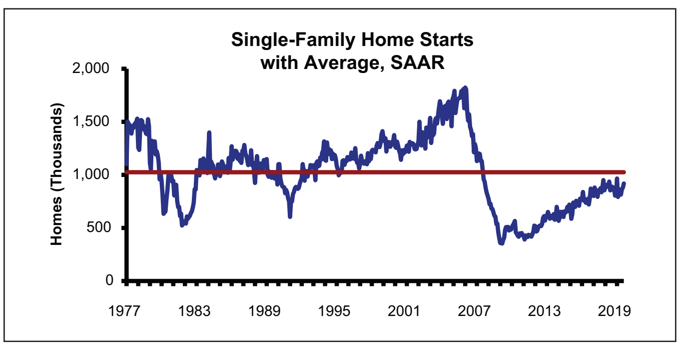

figure 4

such excesses, it is difficult to see the giddy run-up and subsequent recessionary drop taking place. However, we examined automobile and light truck production and single-family housing starts relative to their respective long-term averages (1977-2019) at each of the last five business cycle peaks, as defined by the National Bureau of Economic Research. Surprisingly, we found that auto and light truck production at the previous business cycle peaks was, on average, 3.9% below the long-term average on the eve of (with hindsight) the recession. Today, auto and light truck production is 4.3% above average. Similarly, single-family housing starts averaged 11.3% below the long-term average as the last five business cycles ran out of steam, while today they are 10.3% below the long-term average. But more telling is that previous cyclical peaks were proceeded by prolonged periods of above-average auto and single-family production, while cumulative shorfalls exist today.

The culprit in the past has always been a combination of consumer and producer excesses and crazed government policy decisions.

In terms of economic policies, the Fed continues to maintain interest rates well below market-driven rates in the mistaken belief that artificially low rates spur the mythical concept of "aggregate demand." But like unicorns, there is no such thing as aggregate demand, as there are only tens of thousands of individual markets trying to maximize profits and productivity. Artificially low (and high) prices only serve to misallocate resources. Thus, the Fed's ever lower rates continue to slow growth, as they have over the past decade. But they have yet to reach the policy insanity of negative

Business Cycle Peak	Auto and Light Truck Production (000 SAAR)	LT Average (1977-2019)	% From LT Average	Business Cycle Peak	Single-Family Starts (000 SAAR)	LT Average (1977-2019)	% From LT Average
31-Jan-80	7.9	10.5	-24.4	31-Jan-80	940	1,025	-8.3
31-Jul-81	8.5	10.5	-18.6	31-Jul-81	698	1,025	-31.9
31-Jul-90	10.2	10.5	-2.7	31-Jul-90	883	1,025	-13.9
31-Mar-01	11.2	10.5	7.2	31-Mar-01	1,218	1,025	18.8
31-Dec-07	10.3	10.5	-1.6	31-Dec-07	805	1,025	-21.5
Historical Average			**-3.9**	**Historical Average**			**-11.3**
31-Aug-19	10.8	10.5	**3.4**	31-Aug-19	919	1,025	**-10.3**

figure 5

rates which plague growth in Europe and Japan. We keep asking ourselves: can't they see that low rates and slow growth are cause and effect? They clearly are no more a cure than the practice of bleeding patients with leeches in days of old. Such misinformed approaches may make the "doctor" feel good but only weaken the "patient." Apparently, this was not taught at Cambridge. Despite the maddening endurance of distorted interest rates, in the absence of major excesses, we see the economy growing through 2020.

The main excess we see today is that too many negative cash flow companies are valued as if they are highly profitable in spite of losing billions of dollars. As a consumer, we like Uber, love Netflix and Spotify, adore next-day delivery, and understand the attraction of WeWork for some tenants. Yet, while none of these efforts have proven to be cash flow-positive, they command stratospheric valuations. Consider us old-fashioned, but we believe the ability to make money is a critical determinant of value.

If investors finally lose faith in these new economy darlings, their valuations will tumble without an obvious floor, knocking a couple of trillion dollars off household wealth. The disastrous reception of WeWork's IPO and recent pricing of Uber suggest investors are starting to question if the Emperor is "clothed." A 2-3% fall in wealth could result in a panic that causes consumers to retrench and capital markets to freeze. This would hit asset valuations in general, creating a negative feedback effect. While this would only be temporary, it is the most likely recessionary trigger we see today.

Should a recession play out in the next two years, there is a silver lining. A major difference "this time" is that the U.S. (though not European) banking system has enormous excess lending capacity for the only time in its history as a result of policy efforts to create such buffers. When a downturn in value occurs and causes borrowers to struggle with loan repayment to the point of default, banks will still have plenty of regulatory capital available to lend. This would make a recession relatively moderate in severity, as the underpinning of capital markets would still have the capacity to provide liquidity.

About Dr. Peter Linneman

Dr. Linneman, who holds both Masters and Doctorate degrees in economics from the University of Chicago, is the Principal of Linneman Associates. For nearly four decades, he has provided strategic and financial advice to leading corporations. Through Linneman Associates, he provides strategic and M&A analysis, market studies, and feasibility analysis to a number of leading U.S. and international companies. In addition, he serves as an advisor to and a board member of several public and private firms.

Dr. Linneman is the author of the leading real estate finance textbook, *Real Estate Finance and Investments: Risks and Opportunities*, now in its fifth edition. His teaching and research focuses on real estate and investment strategies, mergers and acquisitions, and international markets. He has published over 100 articles during his career. He is widely recognized as one of the leading strategic thinkers in the real estate industry.

He also served as the Albert Sussman Professor of Real Estate, Finance, and Business and Public Policy at the Wharton School of Business at the University of Pennsylvania until his retirement in 2011. A member of Wharton's faculty since 1979, he served as the founding chairman of Wharton's Real Estate Department and the Director of Wharton's Zell-Lurie Real Estate Center for 13 years. He is the founding co-editor of *The Wharton Real Estate Review*.

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