ECONOMIC OUTLOOK



June 2019

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Send In The Robots. But Only The Benevolent Ones...

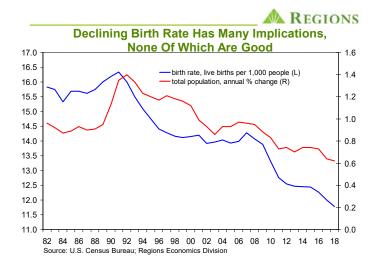
We spend a fair amount of time on the road speaking to a variety of groups about the economic outlook. And while few things about the economy may actually be predictable, it is about as close to a sure thing as there is that when we open these talks up for Q&A, no matter what town we're in or what group we're speaking to, two topics are bound to come up – the national debt and the robots. The specific wording may change but the general themes are the same – there's too much debt, and the robots are going to take all the jobs. There are times when, rather than being asked questions, we're being lectured to, particularly when we're not as fired up about either topic to nearly the same degree as some in the crowd are. Indeed, in the extreme cases, it's hard to not flee the room in terror when someone is painting a bleak picture of a world in which the robots are in charge and the humans are left to fend for themselves, as if acting out scenes from "The Road."

Sure, it's hard to put any sort of positive spin on the growing national debt. About the best you can do is to point out that we have a window of about eight to ten years to take steps to fend off what, if we do nothing, will be an unsustainable mess. Left unsaid, at least on those occasions when we are actually able to suppress cynical self, is that the odds of taking meaningful steps to avert that outcome are virtually nil, particularly in an ever polarized political environment. Concerns over robots taking all the jobs, well, at least some of the jobs, can be addressed by couching the discussion in the context of broader demographic trends.

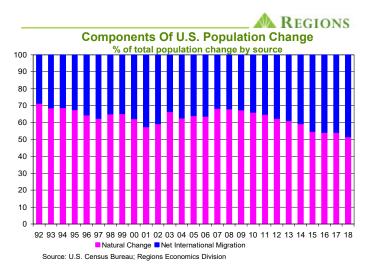
We were again reminded of this point when the Centers for Disease Control and Prevention (CDC) reported that the birth rate in the United States had fallen in 2018, the fourth consecutive year in which the birth rate declined. Though it got less attention, the U.S. Census Bureau actually beat CDC to the punch a few months ago when Census released their annual data on components of population change, the basis for our discussion here. While the numbers published by Census and CDC are not exact matches, the patterns in the two data series are identical. Either way, the birth rate is the lowest it has been in decades, which is one factor behind a steadily declining rate of population growth.

For the U.S. as a whole, there are two sources of population change. One is "natural change," or, the difference between the number of births and deaths in a given time period. The other is net international migration, or, the difference between the number of people who move into the U.S. from abroad and the number of people who move from the U.S. to abroad in a given time period. Note that on a sub-national level (i.e., state, metro area, county, . . .), net domestic migration, or, the difference between the number of people who move into a given geographic area from elsewhere in the U.S. and the number of people who leave a given

geographic area for somewhere else in the U.S., is a third component of population change. Obviously, for the U.S. as a whole net domestic migration is zero.



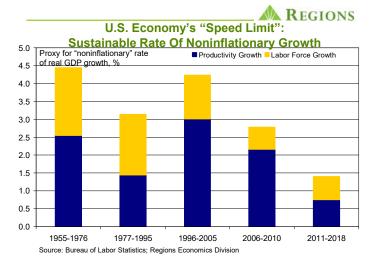
The above chart shows the steady decline in the birth rate, which has coincided with a steadily decelerating rate of total population growth. The other component of "natural" change, i.e., the death rate (or, the number of deaths per 1,000 people) actually turned higher in 2017 and rose further in 2018. As of 2018, Census puts the birth rate at 11.784 per 1,000 people, with the death rate at 8.601 per 1,000 people, while the total population of the U.S. increased by just 0.621 percent in 2018. According to Census data, this is the slowest annual growth since 1937.



As seen in the above chart, net international migration has accounted for an increasing share of total population growth in the

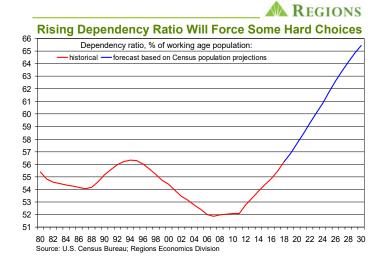
U.S., but this has in a sense been by default, as a declining birth rate has held down natural change. After having hit the highest level since 2002 in both 2015 and 2016, net international migration fell in 2017 and was little changed in 2018. This contributed to the marked slowdown in total population growth over the past two years following a six-year period of fairly stable population growth. It seems unlikely that there will be a meaningful and sustained pick-up in either the birth rate or the rate of international migration (net) any time soon, meaning that population growth is likely to remain fairly listless over coming years.

There are a number of factors behind the declining birth rate, and no single factor can entirely account for it. That of course does not stop some from trying to isolate a given factor, say, student loan debt, as "the" explanation. Anyone tempted to do so, however, should keep in mind that: a) the birth rate has been declining for almost three decades; and b) a declining birth rate is not unique to the U.S. but instead is common across the major industrialized nations. A proper discussion of the factors behind falling birth rates is another *Outlook* for another month, but for this month we want to focus not on the causes of a declining U.S. birth rate but instead on the implications of a declining U.S. birth rate.



One way to think about this is in the context of the chart above, a/k/a our "little speed limit chart." We often use this chart in our discussions of productivity growth and, indeed, we used this chart in the context of that discussion in last month's Outlook. While we seldom use our speed limit chart to discuss labor force growth, that seems like a natural extension of a discussion of the impacts of a declining birth rate. In other words, one main factor behind what has been a notably slower pace of labor force growth over the past decade or so is the declining birth rate. As the birth rate continues to drift lower, that pretty much rules out a meaningful increase in the rate of labor force growth for a number of years. While it is true that an increase in labor force participation rates would yield faster growth in the labor force for a population of a given size, the reality is that the participation rate has also been trending lower and most of this decline is structural, as opposed to cyclical, in nature. As such, anyone counting on a materially higher labor force participation rate as a solution to anemic growth in the labor force is likely to be disappointed. Greater international in-migration could support faster growth in the labor force, but a comprehensive, bi-partisan plan to bring this about does not seem likely any time soon.

As such, there is little reason to expect a meaningful and sustained pick-up in the pace of labor force growth for years, if not decades, to come. It is for this reason we place so much emphasis on raising the rate of labor productivity growth as a means of raising the economy's "speed limit," or, the rate at which the economy can grow on a sustained basis without igniting inflation pressures. Still, even if productivity growth settled back at its historical norm of about 2.1 percent per year, persistently weak labor force growth means the economy's speed limit will remain below historical norms. That in turn has many implications, including how we will be able to finance rapidly growing entitlement programs.



The dependency ratio is a useful way to illustrate the effects of shifts in the age structure of the population over time. The dependency ratio is the ratio of the non-working age population, or, the dependent population, to the working age population. For the U.S., the working age population, as defined by the Bureau of Labor Statistics (BLS) includes those aged 16-to-64 years old. This definition varies internationally, which means that the value of the dependency ratio will vary slightly depending on the source. Also, not everyone in the 16-to-64 year old age group works, while some work beyond the age of 64. As such, the focus should not be on the specific value of the dependency ratio, but instead on the trend over time. As seen in the above chart, that trend is not our friend, and will become increasingly unfriendly over the next decade. Based on Census projections of population by age groups, the dependency ratio for the U.S. will continue rising steadily through the early 2030s, and rather than a rapidly rising pool of younger people, the rising dependency ratio will be due to rapid growth in the elderly population, a distinction that matters.

This simply reflects the prolonged period of a declining birth rate which is weighing on, and will continue to weigh on, the rate of labor force growth. As the population ages, spending on entitlement programs such as Social Security and Medicare will rise at an increasingly rapid rate, but the burden of these rising costs will fall on an increasingly smaller share of the total population, i.e., those in the working age years. That will leave us with a few choices, which range from bad to worse. Either taxes will have to

go up on those in the working age cohort, spending in other areas, such as national defense, will have to be cut, or government borrowing will have to rise at an increasingly rapid rate. In reality, it would likely be some combination of these three options.

Circling back to our earlier comments, we stated that we see an eight to ten year window in which to take steps to fend off having to make some hard choices. That time frame coincides with the dependency ratio approaching its peak. One factor that would mitigate the impact of the steadily rising dependency ratio would be a faster trend rate of economic growth. For instance, steadily rising government debt would pose less of a burden on the economy at higher trend rates of GDP growth. More generally, an economy growing at a faster rate would have greater capacity to absorb rising entitlement burdens.

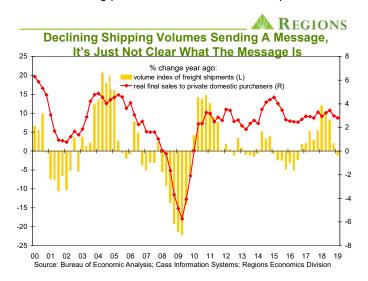
This gets us back to our emphasis on productivity growth. That labor force growth is likely to remain fairly listless simply heightens the importance of generating faster productivity growth, and this means an increasing reliance on automation. Those who fear the robots are going to take all the jobs never seem to consider the demographic math, which dictates a steadily decelerating trend rate of economic growth in the absence of greater automation. To be sure, there will be workers displaced by automation, but that means our emphasis should be on enhancing training/re-training programs so that we have a more technologically adept labor force. Perhaps not surprisingly, we are well behind where we should be on this front. The bottom line, however, is that rather than fearing the robots will take all of the jobs, we should hope the robots can facilitate a faster rate of overall economic growth despite what in coming years are likely to be increasingly binding constraints on the rate of labor force growth.

How Concerned Should We Be Over Slipping Freight Volumes?

Anyone who has followed the economic data for any length of time knows that the data can be maddeningly inconsistent. This is often the case with individual data series, some of which can send starkly contradictory signals from one month to the next. It can also be the case with multiple data series sending contradictory signals in a given month, leaving you to wonder which way is up. Of course, these mixed signals make it easy for someone pushing a particularly point of view - "it's all good" or "it's all horrible" - as there is always a data point they can latch on to as support for their view. It's quite different, however, for anyone trying to piece the data together into a plausible narrative of where the economy may be heading. That is especially the case at present – while the pace of economic growth has clearly slowed, growing uncertainty over trade policy and fading business sentiment are combining to raise concerns that decelerating economic growth could give way to something much worse.

One economic indicator that has for the most part toiled in relative obscurity despite having been a fairly reliable indicator of turns in the economic cycle is freight volumes. Sure, we get it, freight volumes don't have the star power of the monthly employment reports, nor do they have the oddly alluring bad boy volatility of durable goods orders. Nonetheless, freight volumes are a useful indicator of patterns in overall economic activity, and are more

timely and less encumbered by measurement issues than is the case with many of the top-tier economic data series. It is a fairly simple premise – if consumers and businesses are purchasing more (fewer) goods, then manufacturers will be producing more (fewer) goods, and therefore freight volumes will be rising (falling), and in many cases freight volumes are the more timely indicator of shifting patterns in the broader economy.



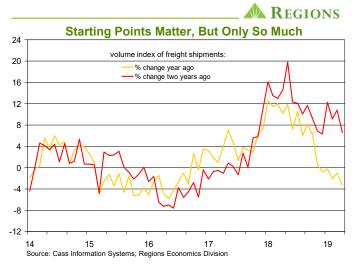
The above chart shows the year-on-year percentage change in real private domestic demand (or, combined business and household spending) and the year-on-year percentage change in the Cass Freight Index based on shipment volumes. Cass Information Systems handles freight payments, with annual volume of roughly \$28 billion, and as such has access to data from hundreds of large shippers covering a wide range of industry groups. They compile this data into two monthly indexes, one on freight volumes, one on freight expenditures, and publish detailed, not to mention highly informative, monthly reports covering trends in domestic and international freight movement. As seen in the above chart, freight shipment volumes began to tail off markedly in Q4 2018 and fell even further in Q1 2019, leaving the index of freight shipment volumes down on an over-the-year basis. This coincided with a slowdown in growth of real private domestic demand.

The monthly data (the above chart shows a quarterly frequency) are sending an even more disturbing message. As of April, the index of freight shipments had declined on an over-the-year basis in five consecutive months, as we show in the chart on the following page. At the same time, other measures show more idle shipping capacity and declining spot prices for transportation services, both of which are especially true of trucking. All of which implies a marked deceleration in the pace of economic growth, both domestic and foreign (the monthly reports discuss trends in Europe and Asia). Both the monthly and quarterly data show freight shipment volumes turned lower ahead of the 2001 recession and the 2007-09 recession, as has been the case with each recession in the post-World War II era.

Note, however, that not all slumps in freight shipment volumes are followed by recession. For instance, the precipitous decline in crude oil prices in 2015 dealt a harsh blow to the industrial sector of the U.S. economy, accounting for the bulk of the decline in

freight shipment volumes, but this did not spill over into the broader economy. This is one reason we think it too soon to interpret the recent decline in shipping volumes as a signal that the U.S. economy is on the verge of slipping into recession.

Another reason we think so is that the declines in freight shipment volumes are coming off of what were notably strong shipment volumes over much of 2018, particularly the early months of the year. This reflected firms, domestic and foreign, pulling ahead orders and shipments of goods as a hedge against a deteriorating global trade environment, or, more specifically, trade disputes ending up with tariffs/retaliatory tariffs placed on international shipments of goods. This is something we've been discussing for some time now in the context of the manufacturing sector, and the behavior of freight shipment volumes is simply the natural extension of production of goods having been pulled forward.



The above chart, based on the monthly Cass Freight Index for shipments helps illustrate our point. The year-on-year percentage change in the monthly index is shown with the gold line and, as noted above, the index has been down year-on-year in each of the last five months. The red line shows the two-year percentage change in the monthly index, or, the percentage change from the same month two years earlier. One could argue that, given the 2018 data were biased materially higher due to uncertainty over trade policy, a comparison with 2017 shipment volumes is a better gauge of the vitality of freight shipments, and it is worth noting that the gap between the one-year ago and two-years ago measures has been unusually wide over the past several months. For instance, as of April, the index of freight shipment volumes was down 3.24 percent year-on-year, but measured against April 2017 the index was 6.17 percent higher.

To be sure, the strength of the freight market in 2018 set a high bar for growth in 2019. That said, unlike some analysts we've heard, we aren't willing to use that as a basis to dismiss out of hand the softness in the freight market thus far in 2019. Keep in mind that we do not yet have the May freight data, but given the further escalation of the U.S-China trade dispute and the clear deterioration in global manufacturing conditions, shipping volumes and pricing are likely to weaken further over coming months. It is also worth keeping in mind that while firms can reconfigure supply chains to avoid the effects of tariffs, doing so takes time and

alternative production centers, such as Viet Nam, have nowhere near the productive capacity or the shipping capacity possessed by China, and this void will further weigh on the freight market if there is not a benign resolution of the trade dispute between the U.S. and China. To the extent that there are other potential fronts for trade disputes – Mexico, Europe – that poses an even higher hurdle for the freight market. If sustained, weakness in the industrial and transportation sectors of the economy will ultimately spill over into the broader economy, which is one reason to pay close attention to the freight market in the months ahead, even if interpreting the message may be more difficult than normal.

May Employment Report

The May employment report was surprisingly weak. Total nonfarm employment rose by just 75,000 jobs, prior estimates of job growth in March and April were revised down by a net 75,000 jobs, hiring was less dispersed across private sector industry groups than in any month over the past two years, and the average length of the workweek failed to rebound from April's decline. That's a lot to not like from a single report. Still, as we routinely note, the economic data do not move in smooth, straight lines, and that's just as true of the data on nonfarm employment as it is of any other data series. The question, then, is whether the May employment report is just another example of the maddening inconsistency we referred to in the prior section, or whether the May employment report is sending a more ominous message. The obvious, but admittedly not very satisfying, answer is "ask us again on July 5," or, the release date of the June employment report, when we'll have revisions to the initial May estimates, the first estimate of June job growth, and, key to us, the June hiring diffusion index. For now, though, we'll note that while the trend rate of job growth has clearly slowed, this is in line with what we and most others expected to see in 2019, and the trend rate of job growth remains more than sufficient to keep downward pressure on the jobless rate and upward pressure on wage growth.

That said, it is the extent to which job growth slowed in May that comes as a jolt, particularly as it comes in the broader context of the clear softening in the industrial sector and in freight markets, heightened trade tensions, and an inverted yield curve. This is why it is more than reasonable to ask whether there is something more than normal volatility behind the sharp deceleration in job growth in May. Some are pointing to rising trade tensions as having weighed on hiring in May. That trade tensions ratcheted up in May likely had little impact on the May job growth numbers, but it is reasonable to ask whether the cumulative effects of lingering trade tensions are becoming more apparent in the broader economy and whether the employment data are simply starting to reflect this.

This is what the FOMC will ponder as they meet later this month. We see it as highly unlikely that the FOMC would pull the trigger on a Fed funds rate cut at this month's meeting, but do see them adopting an easing bias. After all, if the FOMC is truly acting as a risk manager, mounting downside risks to growth and listless inflation give the FOMC room to cut the Fed funds rate, particularly with foreign central banks now back in/deeper in easing mode. That the FOMC's next move will be to cut the funds rate seems a given at this point, the only question being when, and under what circumstances, they will do so. At present, we are incorporating 25-basis point cuts in the Fed funds rate at the September and December FOMC meetings into our baseline forecast.

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Q4 '18 (a)	Q1 '19 (p)	Q2 '19 (f)	Q3 '19 (f)	Q4 '19 (f)	Q1 '20 (f)	Q2 '20 (f)	Q3 '20 (f)		2016 (a)	2017 (a)	2018 (a)	2019 (f)	2020 (f)
2.2	3.1	1.4	1.9	2.2	2.0	1.8	1.6	Real GDP ¹	1.6	2.2	2.9	2.5	1.9
2.5	1.3	3.1	2.6	2.7	2.4	2.3	2.1	Real Personal Consumption ¹	2.7	2.5	2.6	2.5	2.4
								Real Business Fixed Investment:					
8.3	2.3	1.4	4.8	4.5	4.0	4.0	3.0	Equipment, Software, & IP ¹	2.1	5.5	7.5	4.2	3.8
-3.9	1.7	-5.6	-0.6	-0.5	0.5	0.5	1.6	Structures ¹	-5.0	4.6	5.0	-1.1	-0.1
-4.7	-3.5	-3.6	-0.5	-0.9	2.2	3.5	3.4	Real Residential Fixed Investment ¹	6.5	3.3	-0.3	-3.1	1.3
-0.4	2.5	3.9	1.6	0.3	0.4	0.0	0.1	Real Government Expenditures ¹	1.4	-0.1	1.5	2.0	0.6
-955.7	-903.6	-906.6	-902.4	-915.7	-928.4	-941.6	-961.3	Real Net Exports ²	-786.2	-858.7	-912.2	-907.1	-949.1
828	854	843	852	868	888	908	920	Single Family Housing Starts, ths. of units ³	786	852	873	854	910
357	349	368	355	351	350	347	340	Multi-Family Housing Starts, ths. of units ³	392	357	377	356	343
17.5	16.8	16.7	16.6	16.5	16.3	16.4	16.3	Vehicle Sales, millions of units ³	17.5	17.1	17.2	16.7	16.3
			2.5								2.0		
3.8	3.9	3.6	3.6	3.5	3.5	3.4	3.4	Unemployment Rate, % ⁴	4.9	4.4	3.9	3.6	3.4
1.8	1.8	1.6	1.4	1.2	1.0	1.1	1.0	Non-Farm Employment⁵	1.8	1.6	1.7	1.5	1.0
3.2	2.2	1.0	1.5	2.2	2.0	1.7	1.4	Real Disposable Personal Income ¹	1.7	2.6	2.8	2.1	1.7
2.2	1.8	1.6	1.9	2.1	2.6	2.5	2.4	GDP Price Index ⁵	1.1	1.9	2.3	1.8	2.4
1.9	1.4	1.4	1.5	1.7	2.1	2.1	2.1	PCE Deflator ⁵	1.1	1.8	2.0	1.5	2.1
2.2	1.6	2.1	1.8	1.9	2.1	1.6	1.7	Consumer Price Index ⁵	1.3	2.1	2.4	1.9	1.8
1.9	1.6	1.6	1.7	1.8	2.1	2.1	2.1	Core PCE Deflator⁵	1.7	1.6	1.9	1.7	2.1
2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.1	Core Consumer Price Index ⁵	2.2	1.8	2.1	2.0	2.0
2.16	2.38	2.38	2.34	2.07	1.88	1.88	1.88	Fed Funds Target Rate Range Mid-Point, %4	0.39	0.97	1.78	2.29	1.88
3.03	2.65	2.34	2.12	2.17	2.22	2.24	2.23	10-Year Treasury Note Yield, % ⁴	1.84	2.33	2.91	2.32	2.22
4.78	4.37	4.08	3.93	3.93	3.99	4.01	4.01	30-Year Fixed Mortgage, % ⁴	3.65	3.99	4.54	4.08	4.00
-2.6	-2.4	-2.5	-2.7	-2.7	-2.8	-2.8	-2.9	Current Account, % of GDP	-2.3	-2.3	-2.4	-2.6	-2.9

a = actual; f = forecast; p = preliminary

Notes: 1 - annualized percentage change

- 2 chained 2012 \$ billions
- 3 annualized rate
- 4 quarterly average
- 5 year-over-year percentage change