Yardeni Research

MORNING BRIEFING
August 10, 2021

Voluntary Self-Extinction of the Human Race

Check out the accompanying chart collection.

(1) Stop breeding, says VHEMT. (2) Cost-benefit analysis of having kids. (3) Ag revolution caused migration from farms to cities. (4) Urbanization has depressed fertility rates. (5) Pandemic and climate change are also depressing births. (6) The most alarming UN report on climate change yet. (7) Fahrenheit 3.6. (8) MMT might actually make sense for increasingly geriatric nations. (9) Japan as a role model for self-extinction. (10) The world according to Garp: fertility, population, and urbanization. (11) China's three-child policy. (12) US demographic trends should boost productivity.

Demography I: VHEMT. The Voluntary Human Extinction Movement (VHEMT), founded in 1991, believes that human extinction is the best way to solve the Earth's climate-change problem. The motto displayed on their *website* is "May we live long and die out," and they sell t-shirts stating, "When You Breed, the Planet Bleeds" and "Thank You for Not Breeding." Sure enough, the pace of human breeding has slowed, but for reasons that have nothing to do with the VHEMT.

Fertility rates have dropped below the population replacement rate almost everywhere around the world as a result of urbanization. Why would urbanization lower fertility rates? Families are likely to have more children in rural communities than urban ones. Housing is cheaper in the former than in the latter. In addition, rural populations are much more dependent on agricultural employment; their children are likely to be viewed as economic contributors once old enough to work in the field or tend the livestock. Adult children are expected to support and care for their extended families by housing and feeding their aging parents in their own huts and yurts. In urban environments, children tend to be expensive to house, feed, and educate. When they become urban-dwelling adults, they are less likely to welcome an extended family living arrangement together with their aging parents in a cramped city apartment.

In my opinion, the urbanization trend since the end of World War II was attributable in large part to the "Green Revolution." The resulting productivity boom in agriculture eliminated lots of jobs and forced small farmers to sell their plots to large agricultural enterprises that could use the latest technologies to feed many more people in the cities with fewer workers in the

fields. Ironically, then, the Green Revolution provided enough food to feed a population explosion, but the population instead moved from the farms to the cities and had fewer kids!

In other words, technological innovation has been boosting productivity in agriculture significantly in recent decades. The result has been migration from rural to urban areas, where children are all cost and no benefit in economic terms. Some may represent economic benefit to their parents in an urban setting, those that get jobs and support their parents in their old age. However, young adult children are less prone to do so the more that the elder care of their parents is outsourced to the government.

Demography II: Pandemic & Climate Change. How might the pandemic and climate change affect the global demographic outlook? The initial impact of the pandemic seems to be a further decline in fertility rates around the world. Uncertainty about the health and economic consequences of the pandemic seem to have convinced many couples to postpone having babies. Contributing to their caution about having children might be similar uncertainty and concerns about the effects of climate change on their lives as well. Widespread extreme weather events such as devastating floods, massive wildfires, and droughts are likely to increase anxiety about climate change.

Indeed, on Monday, the United Nations' (UN) Intergovernmental Panel on Climate Change (IPCC) issued its Sixth Assessment Report (AR6), titled *Climate Change 2021*. Here are a few of the report's distressing conclusions:

(1) "It is unequivocal that human influence has warmed the atmosphere, ocean and land."

(2) "The scale of recent changes across the climate system as a whole and the present state of many aspects of the climate system are unprecedented over many centuries to many thousands of years."

(3) "Human induced climate change is already affecting many weather and climate extremes in every region across the globe. Evidence of observed changes in extremes such as heatwaves, heavy precipitation, droughts, and tropical cyclones, and, in particular, their attribution to human influence, has strengthened since AR5."

(4) "Global surface temperature will continue to increase until at least the mid-century under all emissions scenarios considered. Global warming of 1.5°C and 2°C will be exceeded during the 21st century unless deep reductions in CO2 and other greenhouse gas emissions occur in the coming decades."

(5) “Many changes in the climate system become larger in direct relation to increasing global warming. They include increases in the frequency and intensity of hot extremes, marine heatwaves, and heavy precipitation, agricultural and ecological droughts in some regions, and proportion of intense tropical cyclones, as well as reductions in Arctic sea ice, snow cover and permafrost.”

(6) “Many changes due to past and future greenhouse gas emissions are irreversible for centuries to millennia, especially changes in the ocean, ice sheets and global sea level.”

Almost all countries have signed the 2015 Paris climate accord, which aims to limit global warming to an increase of 2 degrees Celsius (3.6 Fahrenheit) above the pre-industrial average by 2100. The agreement says that ideally the increase would be no more than 1.5 degrees Celsius (2.7 degrees Fahrenheit). But the IPCC report’s 200-plus authors looked at five scenarios, and all concluded that the world will cross the 1.5-degree threshold in the 2030s—sooner than previous predictions. Three of those scenarios also involve temperatures rising 2 degrees Celsius.

UN Secretary-General António Guterres described the report as “a code red for humanity.” Guterres added, “The alarm bells are deafening, and the evidence is irrefutable: greenhouse gas emissions from fossil fuel burning and deforestation are choking our planet and putting billions of people at immediate risk.” In just the last few weeks, floods have wreaked havoc in Europe, China, and India; toxic smoke plumes have blanketed Siberia; and wildfires have burned out of control in the US, Canada, Greece, and Turkey.

The global fertility rate is likely to remain below the population replacement rate for the foreseeable future as a result of urbanization, the pandemic, and climate change.

Demography III: MMT to the Rescue. In addition to having fewer babies, people are living longer almost everywhere. That is also making demographic profiles more geriatric around the world, which is pressuring governments to borrow more and accumulate more debt to provide retirement support programs for their rapidly increasing senior cohort. Their central banks have provided plenty of monetary accommodation to enable increased deficit-financed government spending. This development was greatly accelerated by the pandemic, as governments rushed to provide lots of additional monetary and fiscal stimulus to revive economic growth following the lockdown recessions imposed to enforce social distancing.

The result has been a mix of monetary and fiscal policies that can best be described as "Modern Monetary Theory (MMT) in practice." MMT postulates that a government that issues its own currency can run much larger budget deficits to fund fiscal spending than generally believed, especially if the central bank provides accommodative monetary policies by keeping interest rates low and purchasing the government's bonds. That seems like a sure way to boost inflation. Sure enough, inflation has increased in recent months in the US, though the jury is out on whether this is just a "transitory" pandemic-related development as Fed Chair Jerome Powell claims or a longer lasting one.

In any case, could it be that MMT actually is the right policy response to the voluntary self-extinction of the human race in countries like Japan, where fertility rates remain below the population replacement rate? The Japanese government and the Bank of Japan (BOJ) joined the battle against demographically induced deflation many years ago with MMT. Consider the following:

(1) *Demographics and debt.* Japan has a rapidly declining and aging population. The total population has decreased by 2.4 million since July 2007 through July of this year, while the population aged 15 years and older is down 0.2 million over the period through June, less than the total population has dropped because people are living longer (*Fig. 1*). The percentage of seniors 65 years old and older has increased from 25.0% of the total population during October 2013 to 29.0% during July of this year (*Fig. 2*).

The 12-month sum of deaths has exceeded births since July 2007, with deaths at a record high of 1.16 million and births at a record low of 0.68 million through March (*Fig. 3*). The 12-month sum of marriages dropped to a record-low 493,807 during February, moving up to 517,294 in March—which was down from 613,237 a year ago (*Fig. 4*). The growth rate of the labor force peaked recently at 2.2% during November 2018. The labor force has been essentially flat between 65 million and 70 million since the mid-1990s (*Fig. 5*)!

The Japanese government has been running huge budget deficits for many years, mostly to offset the deflationary consequences of Japan's rapidly aging demographic profile. In effect, the government has been building bridges and roads to nowhere that nobody needs because old people don't venture out much. As a result, the national government debt has skyrocketed from 50% of nominal GDP during 1993 to 225% during Q1-2021 (*Fig. 6*).

(2) *Monetary policy.* The BOJ first introduced its zero-interest-rate policy at the start of 1999. During the first half of the 2000s, the BOJ implemented its first round of quantitative easing (QE), resulting in a 69% increase in the monetary base. The BOJ's second round of

QE started during April 2013 and continues to this day. The monetary base has increased 336% since then through July of this year (*Fig. 7*). The ratio of the national government debt to the monetary base has dropped from 7.2 to 1.9 this May (*Fig. 8*).

(3) *Negative bond yields.* Japan's 10-year government bond yield has been hovering around zero since mid-2016 (*Fig. 9*). And by the way, the yield in Germany, which also has a very geriatric demographic profile, has been negative since May 2019. The geriatric trend in global demographic profiles does support a case for negative nominal and real interest rates if the trend leads to a combination of slow economic growth and deflation. Negative interest rates on that debt might reflect the voluntary self-extinction of the human race attributable to the collapse of fertility rates around the world. Dwindling populations, particularly of younger people, will put downward pressure on the prices of real assets, owing to less demand for them.

(4) *Bottom line.* All of the above implies that the BOJ in effect embraced MMT many years ahead of the other major central banks, which did so only after the pandemic started early last year. Yet inflation remains remarkably subdued near zero in Japan (*Fig. 10*). Japan may very well be a trend setter for other governments that have embraced MMT to offset the contractionary and deflationary impacts of the pandemic, climate change, and their increasingly geriatric demographic profiles.

Demography IV: The World According to Garp. John Irving's best-selling novel *The World According to Garp* (1978) is a strange story about a man born out of wedlock to a feminist icon. T.S. Garp was his mother's only child. That's half as many children per couple as required for population replacement. In most of our similarly demographically dysfunctional world, humans are not having enough babies to replace themselves. A few places represent significant exceptions, such as India and Africa. Working-age populations are projected to decline along with general populations in coming years in Asia (excluding India), Europe, and Latin America. The US has a brighter future, though the pace of its population growth is projected to slow significantly in coming years. Consider the following:

(1) *World fertility.* The world fertility rate was around 5.0 children per woman in the mid-1950s through the 1960s (*Fig. 11*). It dropped to 2.5 by 2016. The UN projects that it will fall to 2.0 by the end of this century. Many countries are already below 2.0. Here is a selection of them with their fertility rates during 2020: US (1.8), Japan (1.4), Germany (1.6), France (1.9), Spain (1.3), Italy (1.3), UK (1.8), China (1.7), India (2.2), Russia (1.8), Asia (2.2), Africa (4.4), and Latin America (2.0). (See our *Global Demography: Fertility Rates*.)

(2) *World population.* The world population is expected to grow by 3.1 billion from 2020 through 2099, reaching 10.9 billion (*Fig. 12*). However, the annual growth rate is projected to decline from 1.1% during 2020 to half that by mid-century and nearly zero by the end of the century (*Fig. 13*). Here is a selection of the latest available population growth rates during 2020 and the projections for 2050: US (0.6%, 0.3%), Japan (-0.3, -0.7), Germany (0.3, -0.3), France (0.2, -0.1), Spain (0.0, -0.5), Italy (-0.1, -0.6), UK (0.5, 0.2), China (0.4, -0.4), India (1.0,0.2), Russia (0.0, -0.2), Asia (0.9, 0.1), Africa (2.5, 1.7), and Latin America (0..9, 0.2). (See our *Global Demography: Population Growth Rates*.)

(3) *World working-age populations.* As a result of the global birth dearth in recent years, working-age populations have peaked or will soon peak around the world. Here is a selection of the percent changes in working-age populations from 2020 through 2050: US (7.7%), Japan (-28.3), Germany (-16.2), France (-5.1), Spain (-27.5), Italy (-26.1), UK (1.2), China (-17.2), India (19.7), Russia (-15.5), Asia (8.0), Africa (106.0), and Latin America (11.0). (See our *Global Demography: Working-Age Population*.)

(4) *World urbanization.* There are many explanations for the decline in fertility rates around the world to below the population replacement rate—estimated to be 2.1 children born per woman in developed countries and higher in developing countries, where mortality rates are higher. I believe that the most logical explanation is urbanization. The UN estimates that the percentage of the world population living in urban communities rose from 30% in 1950 to 53% during 2013. This percentage is projected to rise to 66% by 2050 (*Fig. 14*). Here is a selection of urbanization rates during 2020 and projected for 2050: World (56%, 66%), US (83, 87), Europe (75, 82), Africa (43, 56), Latin America (81, 86), China (61, 76), and India (35, 50) (*Fig. 15*).

(5) *Government incentives.* Some governments are starting to provide incentive for couples to have more babies, but without much success so far. In 1980, China introduced a one-child policy to slow its surging population growth. The government limited most urban couples to one child and rural couples to two if their firstborn was a girl. China officially ended its one-child policy on January 1, 2016, when the country, trying to cope with an aging population and shrinking workforce, passed a law allowing all married couples to have a second child. On May 31, 2021, the limit was raised to three children.

The policy change comes with “supportive measures” including lower educational costs for families, stepped up tax and housing support, strengthened legal protections for working women, a clamp down on “sky-high” dowries, and “marriage and love” education for young people.

Demography V: Birth Dearth & Senior Surplus. Debbie and I are optimistic about the outlook for productivity growth in the US because we are pessimistic about the outlook for labor force growth, which the pandemic has worsened, at least over the short run. Since early last year, births have declined and deaths have increased. More seniors have been retiring. The population under 16 years old isn't growing, reflecting the downward trend in births since early 2008. The resulting shortage of workers is driving wages up at a faster pace, which is already forcing companies to scramble to boost their productivity.

The average age of Americans is increasing. Older consumers are more likely to resist price increases than younger ones. That makes it harder for companies to pass wage costs through to selling prices—all the more reason to boost productivity. Consider the following facts of life and death:

(1) *Births and deaths.* The 12-month sum of births fell through March to 3.6 million, the slowest pace since August 1980 and down from a record high of 4.3 million during February 2008. Over the same period through March, the number of deaths totaled 3.5 million, which is a record since the start of the monthly data in December 1972 (*Fig. 16*).

Based on the 12-month sums, births are down 180,000 since one a year ago, while deaths are up 636,000 since a year ago. The difference between births and deaths, on a 12-month basis, fell almost to zero through March.

(2) *Seniors.* The oldest Baby Boomers turned 65 years old in 2011. Since January of that year through January 2020, the population of seniors has increased by 17.1 million to 56.2 million (*Fig. 17*). It is up 1.6 million over the past 12 months. Quite a few of them stayed in the labor force. The number of seniors in the labor force (ILFs) rose 3.4 million from January 2011 through July 2021, while the number not in the labor force (NILFs) rose 13.7 million over that same period.

The trends may be changing as a result of the pandemic and the aging of the Baby Boomers, the oldest of which turn 75 years old this year. From January 2020 through July of this year, the population of seniors and the number of senior NILFs increased 2.4 million and 3.2 million, respectively, while the number of senior ILFs fell 645,000. The labor force participation rate of seniors was down to 18.3% during July from a recent peak of 20.8% during February 2020 (*Fig. 18*).

(3) *Youngins.* The populations aged 0-15 years old and 16-24 years old have been

essentially flat for the past two decades. The labor force hasn't been replenished by a crop of more young people. Instead, it's been boosted by senior Baby Boomers working longer. But now they are dropping out of the labor force either because they are retiring or because they're passing away.

Calendars

US: Tues: Nonfarm Productivity & Unit Labor Costs 3.5%/1.2%, NFIB Small Business Optimism Index, MBA Delinquency Rates, API Crude Oil Inventories. **Wed:** Headline & Core CPI 5.3%/4.3% y/y, Federal Budget Balance -$307.0b, MBA Mortgage Applications, Crude Oil Inventories. (Bloomberg estimates)

Global: Tues: Germany ZEW Economic Sentiment & Current Conditions 57.0/30.0. **Wed:** Germany CPI 0.9%m/m/3.8%y/y, Italy CPI 0.8%m/m/1.8%y/y, Japan Machine Tool Orders, China New Loans & Chinese Social Financing. (Bloomberg estimates)

Strategy Indicators

S&P 500/400/600 Forward Earnings (*link*): LargeCap's forward earnings dropped 0.6% last week for the first time since mid-December due to Amazon's negative earnings guidance, albeit from a record as the SMidCaps rose to new record highs. MidCap's was at a record for a 26th straight week and SmallCap's posted its 26th gain in 28 weeks. In what has shaped up to be an extraordinary V-shaped recovery, LargeCap's forward earnings has risen during 62 of the past 64 weeks, with the two down weeks due to Tesla's addition to the index and Amazon's earnings shortfall. MidCap's is up in 60 of the past 62 weeks, and SmallCap's posted 60 gains in the past 63 weeks. LargeCap's forward earnings is now up 50.0% from its lowest level since August 2017; MidCap's has risen 92.2% from its lowest level since May 2015; and SmallCap's is up 146.0% from its lowest point since August 2013. These indexes had been on a forward-earnings uptrend from November 2019 until mid-February, before tumbling due to the Covid-19 economic shutdown. The yearly change in forward earnings soared to cyclical highs during 2018 due to the boost from the Tax Cuts and Jobs Act but began to tumble in October 2018 as y/y comparisons became more difficult. In the latest week, the yearly rate of change in LargeCap's forward earnings dropped to 39.0% y/y from a record-high 42.2%. That's up from -19.3% in May 2020, which

was the lowest since October 2009. The yearly rate of change in MidCap's forward earnings rose 2.4ppt w/w to 74.0% y/y. That's down from a record high of 78.8% at the end of May and up from a record low of -32.7% in May 2020. SmallCap's rate gained 3.4ppts to 121.1%; it's down from a record high of 124.2% in late June and up from a record low of -41.5% in June 2020. Companies have been beating consensus estimates quite handily since the Q2-2020 earnings season, causing analysts' y/y earnings growth forecasts for 2021 to improve instead of decline as is typical. Here are the latest consensus earnings growth rates for 2021 and 2022: LargeCap (43.6%, 9.2%), MidCap (69.2, 7.6), and SmallCap (105.9, 14.5).

S&P 500/400/600 Valuation (*link*): LargeCap's forward P/E rose 0.3pt last week to 21.0 from an eight-month low of 20.7, but the SMidCaps were at or near multi-month lows. LargeCap's forward P/E compares to a 19-year high of 22.7 in early January and is up from 13.3 in March 2020, which was the lowest since March 2013. MidCap's ticked down to 17.1 from 17.2, but is above its 15-month low of 17.0 in mid-July. That's down from a seven-month high of 20.5 in early March and is 5.7pts below its record high of 22.9 in June 2020. SmallCap's dropped 0.4pts to an 18-month low of 16.4. It's now down 10.3pts from its record high of 26.7 in early June 2020. During March 2020, MidCap's 10.7 and SmallCap's 11.1 were their lowest readings since March 2009. LargeCap's forward P/E in February 2020—before Covid-19 decimated forward earnings—was 18.9, the highest level since June 2002. Of course, that high was still well below the tech-bubble record high of 25.7 in July 1999. Last week's level compares to the post-Lehman-meltdown P/E of 9.3 in October 2008. MidCap's P/E was below LargeCap's P/E yet again last week, as it has been for most of the time since August 2018. In contrast, it was last solidly above LargeCap's from April 2009 to August 2017. SmallCap's P/E was below LargeCap's for a 44th week. That's the longest stretch at a discount since last May and during 2002-03. SmallCap's P/E had been mostly below LargeCap's from May 2019 to May 2020 after being solidly above since 2003. SmallCap's P/E was at a discount to MidCap's for a seventh straight week and its biggest in 15 years. It had been at an atypical discount to MidCap's around the start of the year for 10 straight weeks.

S&P 500 Sectors Quarterly Earnings Outlook (*link*): Since the Q2-2020 earnings season—which came in substantially better than greatly reduced forecasts—analysts as a whole have been raising their consensus forecasts for all future quarters instead of lowering them as is the norm. Those gains have endured even through the earnings warnings season, when forecasts typically decline. In the latest week, the S&P 500's Q2-2021 blended earnings-per-share estimate rose 95 cents to $51.95 due to positive earnings surprises. That $51.95 estimate for Q2-2021 represents a gain of 85.7% y/y on a frozen

actual basis and a 93.1% y/y gain on a pro forma basis. That estimate also would mark the second straight quarter of double-digit percentage growth and compares to a pro forma 52.8% gain in Q1-2021. All 11 sectors are expected to post positive y/y earnings growth during Q2-2021, up from 10 during Q1-2021. Here are the S&P 500 sectors' latest expected earnings growth rates for Q2-2021 versus their final Q1-2021 growth rates: Industrials (671.6% in Q2-2021 versus 3.0% in Q1-2021), Consumer Discretionary (343.2, 226.1), Energy (244.5, 28.0), Financials (154.9, 138.0), Materials (134.6, 62.4), S&P 500 (93.1, 52.8), Communication Services (71.3, 53.1), Information Technology (47.6, 44.9), Real Estate (39.0, 5.8), Health Care (25.7, 26.7), Consumer Staples (16.1, 11.1), and Utilities (12.7, -0.9).

US Economic Indicators

JOLTS (*link*): Job openings hit yet another new record high in June, increasing for the sixth month this year. They jumped 590,000 in June—and are up 3.3 million ytd—to 10.1 million. Openings in March (at 8.3 million) had surpassed the previous record high of 7.6 million, posted in November 2018, by 714,000. Job openings were as low as 4.63 million last April. The biggest ytd increases in job openings have occurred in accommodations & food services (753,000), followed by retail trade (389,000), `manufacturing (347,000), health care & social assistance (315,000), professional & business services (311,000), and state & local government education (226,000). Total hires jumped 697,000 in June—and 1.3 million ytd—to 6.7 million, the highest since last June. The biggest ytd gains in hirings were also led by accommodations & food services (481,000) and retail trade (309,000), with arts & entertainment (114,000) and state & local government employment (102,000) finishing third and fourth. Total separations—which includes quits, layoffs, and discharges—rebounded 254,000 to 5.6 million in June after falling 473,000 in May, as quits rebounded from May's decline. Quits are generally voluntary separations initiated by the employee, and therefore can be viewed as the workers' willingness or ability to leave jobs. Quits jumped 239,000 in June, to 3.9 million, after May's 362,000 decline—which followed a three-month surge of 686,000 to a record-high 4.0 million in April.

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