

Hope all goes well... “Can't believe we did it. I'm really just pretty numb,” said Sarah Thomas, sitting on wet pebbles, having extended the boundary of what we imagine possible. She swam the English Channel four times in 54hrs. It's an 84-mile journey, but with currents Sarah swam 130. “There were a lot of people on the beach to meet me, wish me well, and it was really nice of them, but I feel just mostly stunned,” she added. In 1875 Matt Webb swam the channel. In 1961 Antonio Abertondo swam back and forth. In 1981 Jon Erikson made three crossings. “As I was doing 20-mile swims, it occurred to me that I could do more and I wanted to see what that more was,” said Sarah of her journey into ultra-endurance. “I'm pretty tired right now.”

**Overall:** “You know it's time for change when children act like leaders and leaders act like children,” read the hand-painted placards in Bangladesh and Berlin. “There is no Planet B,” read signs in Sydney and Santiago. “We are skipping our lessons to teach you one,” chanted millions of children, skipping school, in every major nation except for China, which banned the Sept 20th Climate Strike protests. “This is just the beginning. Change is coming - like it or not,” tweeted Greta Thunberg, the 16yr old Swedish climate activist, an emerging environmental icon. And of course, she's right. Change is our only constant. Earth's infinitely complex systems are always in flux and connected in ways we are only now beginning to measure, let alone understand. We've entered earth's sixth mass extinction. Insect biomass collapsed by upwards of 75% during the past few decades and is falling 2.5% annually. Some 80% of wild plants rely on insects for pollination; 60% of birds rely on insects for food. 25% of the North American bird population disappeared since 1970. The ocean's fish population is 50% lower in that time, many commercial species are down 75% or more. Marine mammals, birds and reptile populations are 50% smaller. These statistics are often lost amidst the intense focus on greenhouse emissions which are rising 2.5% per year. Amongst the many unpredictable consequences of such rapid change is the rise of youth activism across the planet. They're connected and coordinating in ways humanity has never experienced. While our ageing central bankers gradually come to terms with the fact they do not understand the complexity of the system that they themselves created, our global youth are forming a new vision of their future. And while it's notoriously difficult to predict the behavior of such complex systems, it seems a fair bet to expect a global green new deal, funded by bonds, bought by bankers.

**Week-in-Review (expressed in YoY terms):** **Mon:** Chinese industrial output -0.4 to +4.4% (lowest since 2002), Chinese retail sales +7.5% (exp +7.9%), Moody's cuts Hong Kong rating amid unrest, missile and drone attack hits Saudi oil center (cuts 50% of production), WTI oil +14.7% (largest daily rise since 1991 Gulf War), Houthi rebels take credit for attack (Iran denies responsibility), Fed intervenes in repo market as rates spike, S&P -0.3%; **Tue:** Singapore exports fall for 6th month, UK CPI -0.4 to +1.7% (core CPI -0.4 to +1.5%), German economic sentiment rebounds from deeply distressed levels, Swedish unemployment +0.3 to 7.1%, S&P +0.3%; **Wed:** Japan exports -8.8% (9th monthly decline), Japan imports -12%, Saudi's restore half of lost production and forecast full production in 2wks, Saudis blame Iran for attack, Israel elections too close to call, Fed cuts rates 25bps as expected, housing starts hit 12yr high, Fed continues to intervene in repo markets, S&P flat; **Thur:** BOJ rates unch (hints at Oct easing), Aussie unemployment +0.1 to 5.3% (10yr bond yields hit +1.07%), NZ Q2 GDP -0.4 to +2.1% (slowest in 5yrs), Indonesia cuts rates, Israel's Gantz leads Netanyahu with 98% of votes counted, Norway hikes rates, Switzerland rates unch at -0.75% (lowers GDP and inflation)

forecasts), UK rates unch at +0.75% (adopts dovish tone), Junker on Brexit “I still think we can have a deal by Oct 31st,” Brazil cuts 50bps to +5.50%, S&P flat; **Fri:** China shaves 1yr Prime Loan Rate 5bps to +4.20% (5yr LPR rate used to set mortgages remains at +4.85%), China’s trade delegation will not travel to the US Midwest this weekend, Japan core CPI -0.1 to +0.5% (2yr low), Japan core-core CPI unch at +0.6%, India introduces tax stimulus (stocks surge +5.3%), Junker reiterates belief that Brexit deal by Oct 31 is feasible, Trump is looking for a “complete trade deal” with China rather than a “partial deal” and does not need one before the election, Fed promises to continue providing liquidity via the repo market through at least Oct 10th, S&P -0.5%; **Sat/Sun:** US to send weapons and troops to Saudi Arabia, Saudi vow to retaliate for attacks on their oil facilities, protests break out across Egypt calling for el-Sisi the dictator to step down, Yellow-Vest protestors return to Paris (137 detained), clashes erupt in HK with protestors throwing gas bombs.

**Weekly Close:** S&P 500 -0.5% and VIX +1.58 at +15.32. Nikkei +0.4%, Shanghai -0.8%, Euro Stoxx +0.3%, Bovespa +1.3%, MSCI World -0.1%, and MSCI Emerging -1.0%. USD rose +2.5% vs South Africa, +1.7% vs Australia, +1.6% vs Brazil, +1.5% vs Chile, +1.3% vs Bitcoin, +1.0% vs Sweden, +0.9% vs Turkey, +0.6% vs Indonesia, +0.5% vs Euro, +0.2% vs Mexico, +0.2% vs Sterling, +0.2% vs China, and flat vs India. USD fell -16.5% vs Ethereum, -0.5% vs Russia, -0.5% vs Yen, and -0.1% vs Canada. Gold +1.8%, Silver +2.9%, Oil +6.8%, Copper -4.1%, Iron Ore -5.7%, Corn +0.5%. 5y5y inflation swaps (EU -6bps at 1.25%, US -5bps at 1.99%, JP +1bp at 0.12%, and UK -3bps at 3.64%). 2yr Notes -12bps at 1.68% and 10yr Notes -18bps at 1.72%.

**YTD Equity Index Returns:** Greece +37.3% priced in US dollars (+42.9% priced in euros), Russia +28.5% priced in dollars (+18% in rubles), NASDAQ +22.3%, Israel +22.1% (+14.6%), Canada +21.1% (+18%), S&P 500 +19.4%, Switzerland +18.3% (+19.3%), China +16.9% (+20.6%), Italy +16.2% (+20.7%), Russell +15.7%, France +15.6% (+20.3%), New Zealand +14.6% (+22.9%), Australia +14.5% (+19.2%), Euro Stoxx 50 +14.4% (+19%), Netherlands +13.8% (+18.4%), Germany +13.6% (+18.1%), Japan +12.9% (+10.3%), Denmark +12.8% (+17.2%), Portugal +11.9% (+16.4%), Thailand +11.7% (+4.6%), Colombia +11.2% (+16.3%), Taiwan +10.8% (+12.4%), Belgium +10.8% (+15.3%), Brazil +10.8% (+19.3%), Sweden +9% (+18.3%), Norway +8.6% (+12.6%), Austria +7.5% (+11.7%), Ireland +7.4% (+11.7%), UK +6.9% (+9.2%), Philippines +6.5% (+5.4%), Mexico +5.7% (+4.6%), Finland +4.8% (+8.9%), UAE +4.3% (+4.3%), Indonesia +3.8% (+0.6%), South Africa +3.5% (+7.7%), Spain +3.3% (+7.5%), Czech Republic +2.9% (+7.5%), HK +2.2% (+2.3%), Singapore +2% (+3%), India +1.8% (+3.8%), Turkey +1.3% (+9.8%), Saudi Arabia +1.3% (+1.3%), Hungary -2.7% (+5.1%), Chile -3.5% (-0.6%), Korea -4% (+2.5%), Poland -5.7% (-0.4%), Malaysia -6.5% (-5.5%), and Argentina -33.9% (-0.6%).

**Great Depressions:** 443mm years ago a severe ice age lowered sea levels 100 meters, wiping out 60-70% of all species which were predominantly ocean dwellers. Soon after, the ice melted leaving oceans starved of oxygen. Then 360mm years ago a mysterious prolonged climate change event, hitting life in shallow seas very hard, killed 70% of species including almost all corals. 250mm years ago came the big one, strongly linked to massive volcanic eruptions in Siberia that caused a savage episode of global warming. More than 95% of species perished.

**Great Depressions II:** 200mm years ago 75% of species were lost, most likely due to another huge outburst of volcanism. It left Earth clear for dinosaurs to flourish. 65mm years ago a giant asteroid struck Mexico just after large volcanic eruptions occurred in what is now India, and this saw the end of the dinosaurs. Mammals, and then humans, filled the vacuum. We flourished. And today, the rate of extinction is estimated at 100x-1,000x higher than the historical average rate, and 10x-100x higher than in any previous mass extinction in Earth's tumultuous history.

**Friday's for Future:** "We had minimal expectations and still were disappointed," said the youth campaign group 'Friday's for Future.' Angela Merkel's gov't had emerged from a 19hr negotiation to hammer out a \$60bln spending plan to reduce greenhouse emissions 55% by 2030 compared to 1990 levels. Being Germans, the package was obviously deficit neutral, meaning spending will be matched by tax hikes. "The plan is a declaration of bankruptcy," said Friday's for Future, criticizing it for failing to bring forward the 2038 deadline for phasing out coal.

**Friday's for Future II:** In a nod to 16yr old Greta Thunberg, Germany's 65yr old leader agreed it is "time to unite behind science." 100,000 protesters swarmed Berlin. 1.4mm marched through Germany. "Young people are justified in demanding we do something so they, too, have good chances in life," said Merkel, hoping to guide her agitated young activists toward a gradualist position. "Politics is doing what's possible, and we explored those possibilities," explained Merkel. But the youth had heard such cynicism from their parents and would listen no more.

**Divided:** Climate change and generational conflict are the most important themes that will unfold in coming years/decades, he thought. Of course, central bank impotence is a critical theme too, and the growing admission by our monetary magicians that they need politicians to pull the fiscal levers signals its arrival. But the intersection of climate and youth is something truly new. Climate issues concern global youth far more than matters of money. And for decades, the adult obsession has been on GDP, debt, productivity, interest rates, profit margins, taxes.

**Divided II:** Japan's bubble burst in 1989 and its adults chose economic stability over creative destruction. The cost was endless stagnation. Parents got the deflation they wanted. Kids forfeited hopes for a dynamic future. And now we fear the same fate for Europe, China, the US. But as the global youth organizes around a plan to address a changing climate that their parents seem content to mostly ignore, they will find they have more economic and political issues in common with one another than with their parents. And they will reject the Japanese bargain.

**Reunited:** One thing certain in a fiat currency system is that money's value diminishes over time, he thought. Japan is the exception proving the rule, but even there, stability will pass. And so, if the youth care more for the environment than they do about money, and if ageing parents care about their money more than they do about their children, then generational conflict looms. However, one possible way to defer this clash involves the oldest trick in the book. And that is more money for everyone; for the GND, for Medicare, Medicaid, Soc Sec, tax cuts. Enter MMT.

**Anecdote:** "When the board asked me to lead this course, I wondered how to hold the student's attention for 3yrs," said the teacher, intelligent, passionate, perfect. Mara and I hustled class-to-class, getting fifteen-minute intros to our kid's courses. Olivia insisted we visit this 3yr independent-study class. "But I quickly found we were pressed for time," added the teacher.

Darien high school sophomores can opt for a 3yr class to research any topic, then publish their results senior spring. The teacher guides them and helps students cultivate mentors from academia and the private sector. “My students spend summers at Yale Medical School, Sloan Kettering, MIT and various national labs. But I have a real soft spot for kids who love our furry companions, we have one studying brown bears now,” he admitted, blushing with pride. I recalled my high school experience; algebraic equations, Boo Radley, the photography darkroom, Great Gatsby, dissecting a cat named Ignatius, formaldehyde, Frankenstein, the green glow of barium in Bunsen burners, Big Brother, Animal Farm, Orwell. These things form our foundation. “New sophomores this year chose interesting topics: Treating teenage depression without chemicals; Microbiomes; Neuroplasticity,” he said, and I smiled. Olivia dragged a massive book to the mountains this summer titled Neuroplasticity, which refers to our brain’s ability to form and reorganize synaptic connections, especially in response to learning, experience, or following injury. I was taught the brain was unable to repair itself - humanity’s greatest minds had reached that conclusion. As we climbed at altitude, Olivia told me the story of a few tenacious doctors who discovered unmistakable signs that our collective thinking was wrong. They endured peer ridicule for years. But their research proved incontrovertible, and this completely re-framed our understanding of the most magnificent creation in the universe – the human brain. The story electrified her. “These young people are incredible. I’m just so excited to see what they discover – and the beautiful future they’ll help create.”

Good luck out there,

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