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RESEARCH REPORTS

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Contents

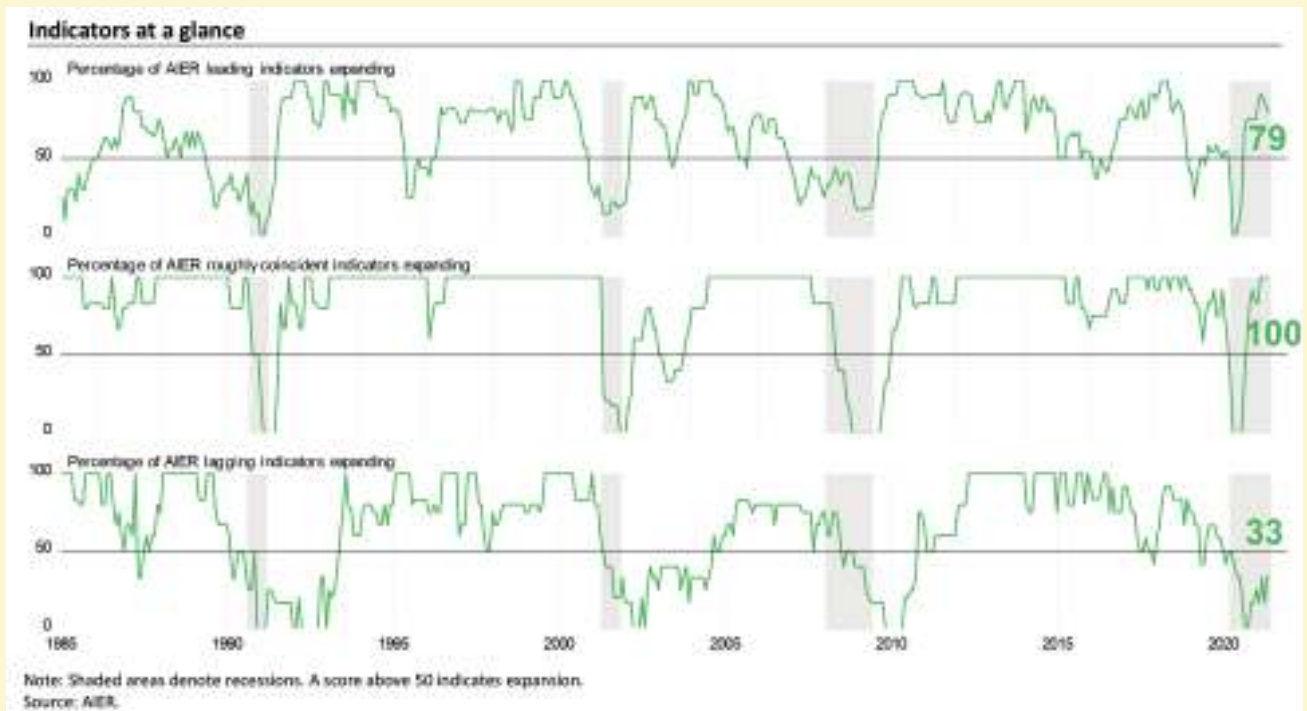
Business Conditions Monthly	
ROBERT HUGHES	1
The Origin of SARS-CoV-2	
DAVID R. HENDERSON & CHARLES L. HOOPER	11
Quacks in the Ivory Tower: How Conspiracy Theorizing Took Over Lockdown Science	
PHILLIP W. MAGNESS	17
Did the Fed Just Raise Interest Rates?	
THOMAS L. HOGAN	21
Sound Money Still Matters	
PETER C. EARLE	23
Are Digital Assets Coming of Age?	
COLIN LLOYD	25
Why Is There Such Reluctance to Discuss Natural Immunity?	
JON SANDERS	30
Climate Models: Worse Than Nothing?	
ROBERT L. BRADLEY JR.	33
Inflation Is a Dangerous Way to Get Rid of Debt Burdens	
RICHARD M. EBELING	37
Bureaucracy as Constituency	
DAVID R. HENDERSON & CHARLES L. HOOPER	44
New Leak of Taxpayer Info Is (More) Evidence of IRS Corruption	
DANIEL J. MITCHELL	47
Is Inflation Below the Fed's Target? Yes and No.	
THOMAS L. HOGAN	50

BUSINESS
CONDITIONS
MONTHLY

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AIER Leading Indicators Index Suggests Continuing Economic Expansion



Summary

AIER's Leading Indicators Index posted a third consecutive small decline in June, coming in at 79 versus 83 in May. Despite the pullbacks, the June result remains at a level consistent with solid economic growth and marks the tenth consecutive month above the neutral 50 level. The Roughly Coincident Indicators index held at 100 for a fourth consecutive month in June while the Lagging Indicators Index held at 33 for the second consecutive month (see chart). Overall, the latest results for the business cycle indicator indexes suggest continued economic expansion in the months ahead.

The cessation of restrictive government lockdown policies and reopening of the economy remain the driving forces behind the economic recovery. As restrictions are eased, economic activity increases.

Primary risks in the short term include difficult labor conditions, shortages of materials, lingering logistical issues, and rising prices. Furthermore, outbreaks of the Delta variant of the Coronavirus could worsen the supply issues and result in reinstatement of government restrictions or some retrenchment by some consumers. Despite the risks, the economic outlook remains tilted to the upside, but heightened awareness is recommended.

Leading Indicators Index Suggests Continued Economic Expansion

The AIER Leading Indicators index posted a third consecutive decline in June, decreasing to 79 from 83 in May, 88 in April, and 92 in March. The June result remains solidly above the neutral 50 threshold and suggests continued economic expansion in the months ahead.

Among the 12 leading indicators, nine were in a positive trend in June versus two trending unfavorably while one was trending flat or neutral. Just one leading indicator changed direction in June; total heavy truck unit sales, a measure of capital investment, fell from a positive trend to a neutral trend. However, real new orders for core capital goods, a broader measure of capital investment, remained in a positive trend.

The two unfavorable trends were in real new orders for consumer goods and the Treasury yield spread. The Treasury yield spread has been unfavorable for 18 months while the real new orders for consumer goods indicator has been unfavorable for just two months.

Overall, the Leading Indicators index remained above the neutral 50 level for the tenth consecutive month, suggesting continued expansion is likely. Over the last ten months, the leading indicators index has averaged 79.2, the highest level since January 2019. Government policies restricting consumers and businesses continue to be removed, supporting a recovery in economic activity. However, ripple effects from the lockdowns continue to disrupt labor supply, production, and logistics and transportation, resulting in scattered shortages of input materials and rising pressure on prices. These issues are likely to be resolved over time and unlikely to result in a 1970s-style price spiral.

The Roughly Coincident Indicators index held at a perfect 100 reading in June with all six individual Roughly Coincident indicators continuing to trend higher. The fourth consecutive month of perfect results follow four months of readings in the 83 to 92 range and are the first four-month string of perfect scores since 2017. The Roughly Coincident Indicators index has been above the neutral 50 level for nine consecutive months, posting an average reading of 88.9, the highest since May 2019.

AIER's Lagging Indicators index held a reading of 33 in June and is the eighth consecutive month

in the 17 to 33 range. Those eight months follow back-to-back readings of zero in September and October 2020 and mark the 14th consecutive month below 50. The average over the last 13 months is 22.7. Overall, four indicators were still trending lower, while two indicators were trending higher, and none were in a neutral trend.

Manufacturing Sector Sees Strong Demand but Struggles with Labor and Materials Shortages and Rising Input Prices

The Institute for Supply Management's Manufacturing Purchasing Managers' Index fell to 60.6 in June, a drop of 0.6 points over the 61.2 percent result in May. June is the 13th consecutive reading above the neutral 50 threshold and fifth consecutive month above 60. Over the past 12 months, the Purchasing Managers' Index has averaged 59.1, the highest since November 2018. The survey results suggest that the manufacturing sector continues to expand at a robust pace.

Among the key components of the Institute for Supply Management's most recent survey, the New Orders Index came in at 66.0 percent, down 1.0 percentage point from 67.0 percent in May. The New Orders Index has been above 50 for 13 consecutive months and above 60 for 12 consecutive months. The 12-month average is 64.9, the highest since September 2004. The new export orders index, a separate measure from new orders, rose to 56.2 versus 55.4 in May. The new export orders index has been above 50 for 12 consecutive months.

The Production Index registered a 60.8 percent result in June, up from 58.5 percent in May. The index has been above 60 for 11 of the last 12 months. The 12-month average is 62.4, the highest since December 2004.

The Employment Index fell in June, losing 1.0 percentage points to 49.9 percent in June. The employment index had been one of the weaker

components during the recovery from government-imposed lockdowns but had posted six consecutive months above 50 before the June result. Many of the respondents in the survey noted labor difficulties with worker absenteeism, and difficulty attracting and retaining workers.

The Backlog-of-Orders Index eased back from the record-high 70.6 percent in May, coming in at a still-high 64.5 percent for the month. The results suggest manufacturer's backlogs continue to rise but at a somewhat slower pace compared to May.

Customer inventories in June are still considered too low, with the index coming in at 30.8 percent versus 28.0 percent in the prior month (index results below 50 indicate customers' inventories are too low). The index has been below 50 for 57 consecutive months. Insufficient inventory may be a positive sign for future production.

The net percentage of manufacturers saying that prices for input materials are increasing rose in June, coming in at 84.1 versus 75.9 in May. Rising input costs reflect shortages of materials, often related to production issues as well as logistical and delivery problems. The sharp rise in input costs may squeeze profits at some manufacturers while others may be forced to pass along price increases to customers.

Supplier deliveries slowed again in June, though the pace slowing was less than in May as the index declined to 75.1 from 78.8. The Supplier Deliveries Index has been driven higher by difficulties hiring new workers, longer delivery times for raw materials, higher prices for inputs, product shortages, and logistical challenges relating to transportation.

Overall, demand for the manufacturing sector remains robust but labor difficulties and logistical problems have restrained the ability to meet that demand. It may take some time for supply to catch up with demand.

Services-Sector Survey Points to Continued Expansion in June

The Institute for Supply Management's composite services index decreased to 60.1 in June, dropping 3.9 points from 64.0 in the prior month. The index remains solidly above neutral and suggests the 13th consecutive month of expansion for the services sector and the broader economy.

Among the key components of the services index, the business-activity index (comparable to the production index in the ISM manufacturing report) decreased to 60.4 in June, down from 66.2 in May, but still a strong result. This measure has been above 50 for 13 consecutive months and above 60 for the last four months. For June, 16 industries in the services survey reported expansion versus two reporting contraction.

The services new-orders index decreased to 62.1 from 63.9 in May, a drop of 1.8 points from May. Similar to the activity index, new orders have been above 50 for 13 months and above 60 for the past four months – a strong performance overall. For June, 16 industries reported expansion in new orders in June while one reported a drop.

The new-export-orders index, a separate index that measures only orders for export, dropped to 50.7 in June versus 60.0 in May. Six industries reported growth in export orders against eight reporting no change and four reporting declines.

Backlogs of orders in the services sector likely grew as the index increased to 65.8 percent from 61.1 percent. Backlogs of orders have grown for 12 of the past 13 months. Fourteen industries reported higher backlogs in June while four reported a decrease.

The services employment index came in at 49.3 in June, down from 55.3 in May and the first drop below 50 since December. Twelve industries reported growth in employment while two reported a reduction. The report notes that survey respondents are reporting that it is “increasingly difficult to

find qualified candidates to fill open positions” and “employees have been somewhat slow to return to work, and there has been turnover as some pursue new opportunities in a hot job market.”

Supplier deliveries, a measure of delivery times for suppliers to nonmanufacturers, came in at 68.5, down from 70.4 in the prior month. It suggests suppliers are falling further behind in delivering supplies to services businesses, but the slippage has decelerated from the prior month. The slower deliveries are a result of labor constraints, production difficulties, and transportation problems. Seventeen industries reported slower deliveries in June.

The prices index continues to reflect labor and logistical issues that are restraining supply as demand surges following the easing of government lockdown restrictions. The prices paid index fell to a still-very-high 79.5, down from 80.6 in May. Seventeen industries reported paying higher prices for inputs in June while just one reported lower prices.

The latest report from the Institute of Supply Management suggests that the services sector and the broader economy expanded again in June. Several respondents to the survey mentioned robust levels of activity but also increased price pressures and materials shortages, particularly related to supply chain, logistics, and transportation issues as well as labor difficulties.

Job Openings Inch Up to Another Record High in May

The latest Job Openings and Labor Turnover Survey from the Bureau of Labor Statistics shows the total number of job openings in the economy rose to 9.209 million in May, up from 9.139 million in April. The number of open positions in the private sector increased to 8.305 million in May, up from 8.263 million in April. Both measures are at new highs.

The total job openings rate, openings divided by the sum of jobs plus openings, held at a record 6.0

percent in May while the private-sector job-openings rate remained at a record 6.3 percent.

Four industry categories have more than 1.4 million openings each: education and health care (1.646 million), trade, transportation, and utilities (1.638 million), professional and business services (1.491 million), and leisure and hospitality.

The highest openings rates were in leisure and hospitality (9.0 percent), professional and business services (6.7 percent), education and health care (6.5 percent), manufacturing (6.2 percent), and trade, transportation, and utilities (5.7 percent).

The rise in private job openings was a function of hires, separations and changing labor requirements. Private hires in May totaled 5.619 million versus 5.661 million in April. At the same time, the number of private-sector separations fell to 5.035 million in May, down from April’s 5.478 million. Within separations, private quits were 3.438 million (versus 3.810 million in April) and layoffs were 1.299 million, down from 1.365 million in the prior month.

The total separations rate fell to 3.7 percent from 4.0 percent in the prior month with the private sector experiencing a rate of 4.1 percent, off 0.4 percentage points from 4.5 percent in April.

Labor Market Recovery Continues but Full Recovery Could Be a Year Away

U.S. nonfarm payrolls added 850,000 jobs in June after a gain of 583,000 in May. April and May had net upward revisions of 15,000. The June gain is the sixth in a row and 13th in the last 14 months, bringing the six-month gain to 3.256 million and the 14-month post-plunge recovery to 15.598 million. This is still well below the 22.362 million combined loss from March and April of 2020, leaving nonfarm payrolls 6.764 million below the February 2020 peak. If payrolls continue to grow at the average over the last six months (542,667), it may take another year to fully recoup all of the job losses.

Private payrolls posted a 662,000 jobs gain in June after a 516,000 gain in May. The two prior months had a net upward revision of 31,000. The June rise in private payrolls is also the sixth in a row and 13th in the last 14 months. The June addition brings the six-month gain to 2.872 million and the 14-month recovery to 15.584 million versus a combined loss of 21.353 million in March and April of 2020, leaving private payrolls 5.769 million below the February 2020 peak. If private payrolls continue to grow at the average over the last six months (478,667), it would also take a year to fully recoup all of the job losses.

The breadth of gains for June was positive but still dominated by a few industries. Within the 662,000 gain in private payrolls, private services added 642,000 while goods-producing industries added 20,000. For private service-producing industries, the gains were led by a 343,000 surge in leisure and hospitality (following gains of 306,000 in May, 328,000 in April, 227,000 in March, and 413,000 in February), a 72,000 rise in business and professional services (with 33,000 in temporary help jobs), 67,000 new jobs in retail, and a 59,000 gain in education and health care services.

Within the 20,000 gain in goods-producing industries, construction was down 7,000, durable-goods manufacturing increased by 18,000, nondurable-goods manufacturing fell by 3,000, and mining and logging industries added 12,000.

Despite the ongoing recovery, nearly all private industry groups still have fewer employees than before the government lockdowns. Three industries - Leisure and hospitality (down 2.181 million jobs), education and health services (down 1.028), and professional and business services (off 633,000) - are down more than half a million jobs each.

On a percentage basis, the losses are more evenly distributed. Five of the 14 private industries shown in the report have declines of 4 percent or more since

February 2020. Leisure and hospitality leads with a 12.9 percent drop since February 2020, mining and logging comes in second with an 8.7 percent loss followed by information services at 6.1 percent, manufacturing at 4.4 percent, and education and health services at 4.2 percent. For the labor market as a whole, total nonfarm payrolls and private payrolls are down 4.4 percent since February 2020.

The government sector added 188,000 employees in June, with local government payrolls rising by 124,000, state government payrolls up 69,000, and the federal government cutting 5,000 workers.

Average hourly earnings rose 0.3 percent in June, putting the 12-month gain at 3.6 percent. The average hourly earnings data should be interpreted carefully, as the concentration of job losses for lower-paying jobs during the pandemic distorts the aggregate number.

The average workweek fell to 34.7 hours from 34.8 in May. Combining payrolls with hourly earnings and hours worked, the index of aggregate weekly payrolls gained 0.6 percent in June. The index is up 10.5 percent from a year ago.

The total number of officially unemployed increased by 168,000 in June to 9.484 million. The unemployment rate rose to 5.9 percent while the underemployed rate, referred to as the U-6 rate, fell to 10.2 percent in June. In February 2020, the unemployment rate was 3.5 percent while the underemployment rate was 9.8 percent.

The participation rate was unchanged in June, coming in at 61.6 percent versus a participation rate of 63.3 percent in February 2020. The labor force has shrunk by about 3.5 million people since January 2020.

The employment-to-population ratio, one of AIER's Roughly Coincident indicators, came in at 58.0 for June, unchanged versus May but well below the 61.1 percent in February 2020.

The June jobs report shows another strong gain in private payrolls. There were increases in most

industries though most of the total gain came from just three industries. Despite the sixth consecutive monthly gain, the labor market remains well below peak measures from before the pandemic.

Everyday Prices Rise at the Fastest Annual Pace Since 2011

The AIER Everyday Price Index increased by 0.8 percent in May, the sixth consecutive gain following back-to-back decreases in October and November. The most recent rise puts the 12-month gain at 6.5 percent, the fastest pace since September 2011.

The positive contributors to the May rise were led by motor fuels prices, up 4.1 percent and contributing 43 basis points – half of the total gain, followed by household fuels and utilities (up 0.9 percent for the month and contributing 11 basis points), food away from home (up 0.6 percent for the month and contributing 10 basis points), food at home (groceries), up 0.3 percent and adding 7 basis points, and domestic services (up 6.4 percent for the month while contributing 6 basis points).

The Everyday Price Index including apparel, a broader measure that includes clothing and shoes, rose 0.7 percent in May, and also the sixth consecutive increase. Over the past year, the Everyday Price Index including apparel is up 6.5 percent, the fastest since September 2011. Apparel prices rose 0.2 percent on a not-seasonally-adjusted basis in May, the fourth increase in the last five months. From a year ago, apparel prices are up 5.6 percent.

The Consumer Price Index, which includes everyday purchases as well as infrequently purchased, big-ticket items and contractually fixed items, rose 0.8 percent on a not-seasonally-adjusted basis in May. Over the past year, the Consumer Price Index is up 5.0 percent, the fastest pace since August 2008. The Consumer Price Index excluding food and energy rose 0.7 percent for the month (not seasonally adjusted) while the 12-month change came in at 3.8 percent.

After seasonal adjustment, the CPI rose 0.6 percent in May while the core increased 0.7 percent for the month. Within the core, core goods prices were up 1.8 percent in May and are up 6.5 percent from a year ago while core services prices rose 0.4 percent for the month and are up 2.9 percent from a year ago. Among the notable increases in the core CPI were used car and truck prices, up 7.3 percent for the month, accounting for about a third of the seasonally-adjusted increase in the total CPI. Other gainers include food – at home and at restaurants - as well as car and truck rentals, household furnishings and operations, new vehicles, airline fares, and apparel.

Like many measures of activity within the economy, many prices continue to be distorted by lingering effects from government restrictions on consumers and businesses that are causing shortages, logistical and supply chain problems, and labor problems. As activity returns to normal, supply and demand will adapt and likely lead to slower price increases, but it may take some time before the economy completely returns to normal functioning.

Industrial Output Rose in May on Broad Gains; Capacity Utilization Remains Low

Industrial production rose 0.8 percent in May, the seventh gain in the last eight months. Manufacturing output, which accounts for about 75 percent of total industrial production, increased 0.9 percent, the sixth gain in the last eight months. Over the past year, total industrial output is up 16.3 percent while manufacturing output is up 18.3 percent. Both total industrial output and manufacturing output remain just slightly below their pre-pandemic levels.

Mining output accounts for about 12 percent of total industrial output and posted a 1.2 percent increase in the latest month. Over the last 12 months, mining output is up 16.5 percent.

Utility output, which is typically related to weather patterns, is also about 12 percent of total industrial

output, and increased 0.2 percent for the month following a 1.9 percent increase in April. From a year ago, utility output is up 3.6 percent.

Among the key segments of industrial output, energy production (about 25 percent of total output) gained 1.0 percent for the month and is up 11.0 percent from a year ago.

Motor-vehicle production (about 5 percent of total output), one of the hardest-hit industries during the lockdowns and now suffering through a semiconductor chip shortage, jumped 6.7 percent in May following a 5.7 percent drop in April. Motor-vehicle production is up 140.8 percent compared with May 2020. Total vehicle assemblies rose to 9.85 million at a seasonal-ly-adjusted annual rate. That consists of 9.58 million light vehicles and 0.27 million heavy trucks. Within light vehicles, light trucks were 8.00 million while cars were 1.58 million.

High-tech industries output rose 1.5 percent in May and is up 18.1 percent versus a year ago. High-tech industries account for just 2.2 percent of total industrial output.

All other industries combined (total excluding energy, high-tech, and motor vehicles; about 68 percent of total industrial output) gained 0.4 percent in May and are 13.3 percent above May 2020.

Total industrial utilization rose to 75.2 percent in May from 74.6 percent in April. That is still well below the long-term (1972-2020) average utilization of 79.6 percent. Manufacturing utilization rose 0.7 percentage points to 75.6 percent, also still well below the long-term average of 78.2 percent.

Industrial output posted a solid gain in May despite the ongoing difficulties with labor, logistics, and materials shortages. Many of these issues are likely to be resolved in the coming months and quarters, easing some of the upward pressure on prices. Substantial excess capacity is one reassuring factor in the outlook for prices.

Outlook Remains Positive

The U.S economy continues to show significant progress on the path to recovery. The AIER Leading Indicators index posted its tenth consecutive month above the neutral 50 threshold, suggesting continued expansion in coming months. The Roughly Coincident Indicators index posted a fourth consecutive 100 reading, confirming the strengthening economic recovery.

Fading government restrictions are boosting economic activity. However, the rebound in demand continues to outpace the recovery in supply as ongoing labor difficulties including a lack of qualified workers, absenteeism, temporary shutdowns, and inability to retain talent, have led to production shortages and logistical and transportation problems. These shortages are putting upward pressure on prices, but a 1970s-style price spiral remains unlikely.

The emergence of the Delta variant could worsen the supply issues and lead to renewed government restrictions on consumers or businesses. It could also lead to some retrenchment by consumers if the perception is that the Delta variant represents a significant health risk. Careful monitoring is warranted.

CAPITAL MARKET PERFORMANCE

(Percent change)

	June	Latest 3M	Latest 12M	2020	Calendar Year			Annualized		
					2019	2018	3-year	5-year	10-year	
Equity Markets										
S&P 1500	2.0	7.8	40.0	15.8	28.3	-6.8	16.0	15.2	12.4	
S&P 500 - total return	2.3	8.6	40.8	18.4	31.5	-4.4	18.7	17.7	14.8	
S&P 500 - price only	2.2	8.2	38.6	16.3	28.9	-6.2	16.5	15.4	12.5	
S&P 400	-1.2	3.3	51.2	11.8	24.1	-12.5	11.4	12.5	10.7	
Russell 2000	1.8	4.1	60.3	18.4	23.7	-12.2	12.0	14.9	10.8	
Dow Jones Global Large-Cap Index	1.3	6.7	35.4	14.7	23.8	-10.4	12.7	15.0	7.7	
Dow Jones Global Large-Cap ex-U.S. Index	-0.7	4.4	31.8	8.8	18.2	-15.7	7.1	10.4	2.8	
STOXX Europe 600 Index	1.4	5.4	25.7	-4.0	23.2	-13.2	6.0	6.5	5.2	
Bond Markets										
iShares 20-plus Year Treasury Bond ETF	4.3	6.6	-11.9	16.4	11.5	-4.2	5.8	0.8	4.4	
iShares AAA - A Corporate Bond Fund	1.5	2.6	-1.7	7.1	9.1	-5.2	4.1	1.1	NA	
Commodity Markets										
Gold	-7.4	3.6	-1.0	24.8	18.7	-1.7	12.2	6.0	1.6	
Silver	-6.8	7.4	44.4	46.8	16.7	-8.3	17.1	7.0	-3.0	
Refinitiv CoreCommodities CRB total return index	3.7	15.4	54.8	-9.3	11.8	-10.7	3.4	3.2	-3.9	

Sources: Barrons, Dow Jones, Frank Russell, iShares, Standard & Poor's, STOXX Europe 600, Refinitiv.

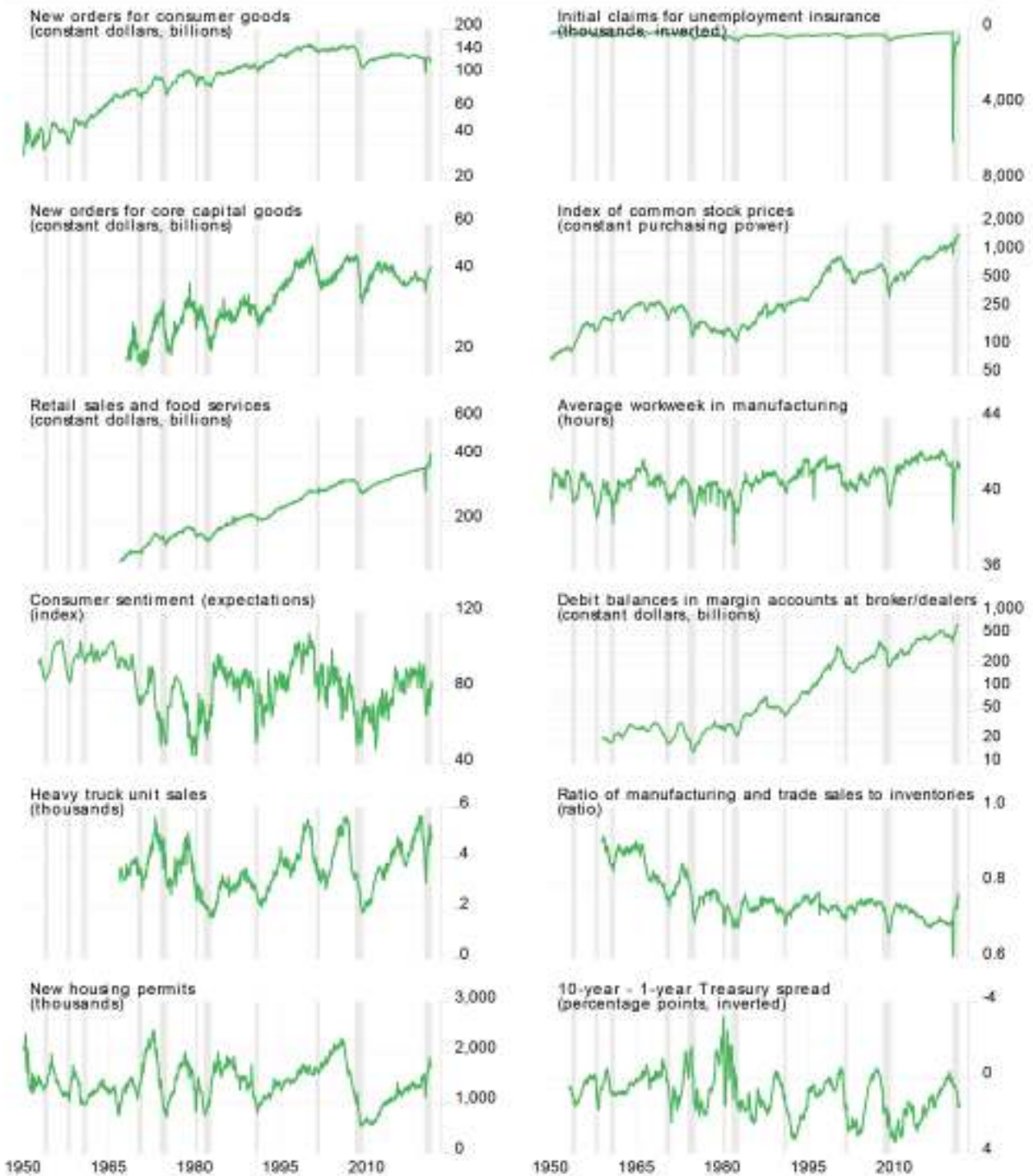
CONSUMER FINANCE RATES

(Percent)

	June	Latest 3M	Latest 12M	Average for Year			Average over Period		
				2020	2019	2018	3-year	5-year	10-year
30-yr. fixed mortgage	3.0	3.0	2.9	3.1	3.9	4.5	3.6	3.8	3.8
15-yr. fixed mortgage	2.3	2.3	2.3	2.6	3.4	4.0	3.1	3.2	3.2
5-yr. adjustable mortgage	2.6	2.7	2.8	3.1	3.6	3.8	3.3	3.3	3.1
48-month new car loan	5.2	5.2	5.1	5.1	5.4	5.0	5.2	4.9	4.8

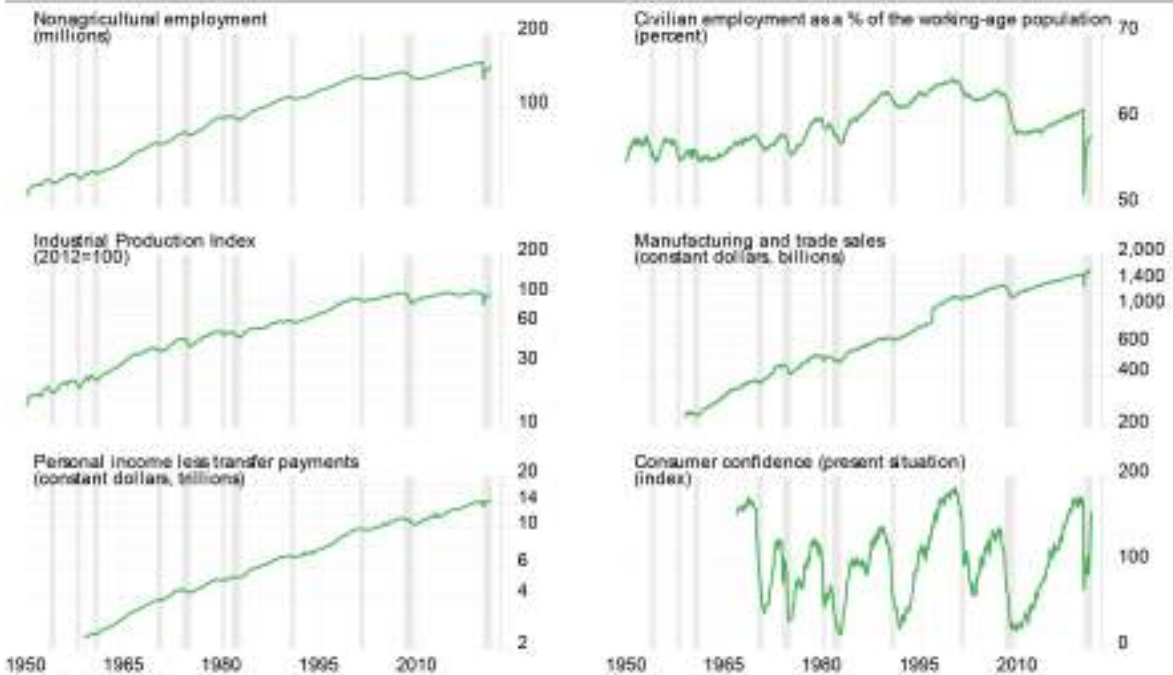
Sources: Bankrate, Federal Reserve.

LEADING INDICATORS (1950-2021)



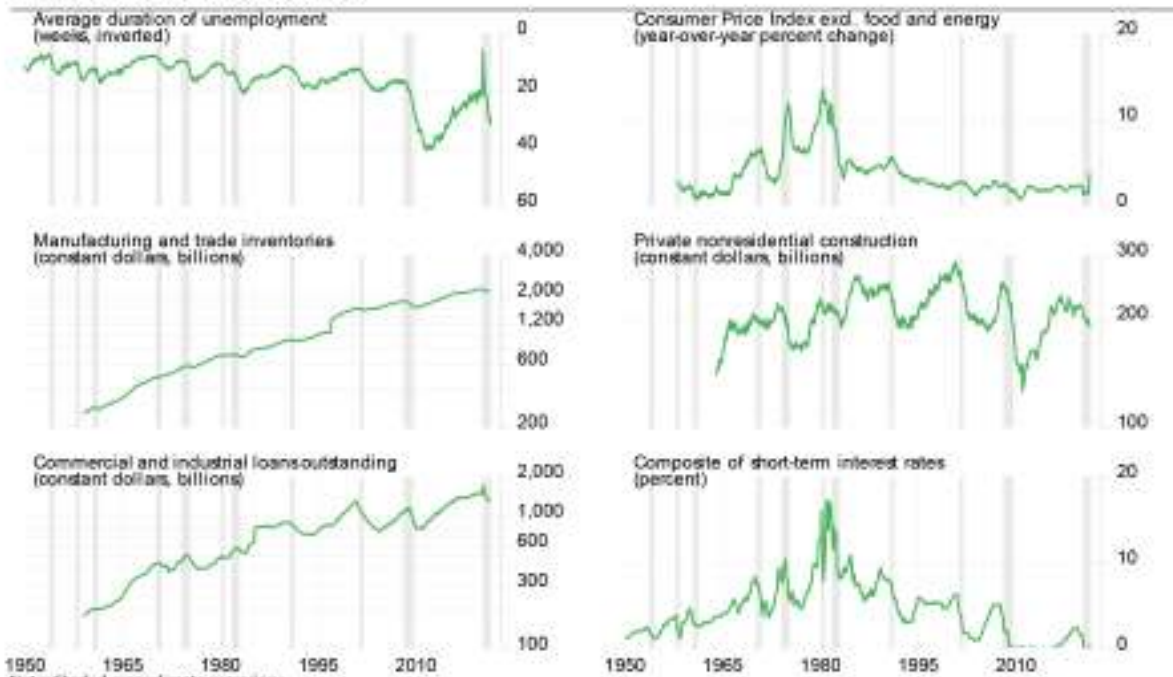
Note: Shaded areas denote recessions.
 Sources: Bureau of Economic Analysis, Bureau of Labor Statistics, The conference Board, Census Bureau, Department of Labor, Federal Reserve, Institute for Supply Management, Standard & Poor's, AER (Refinitiv).

ROUGHLY COINCIDENT INDICATORS (1950-2021)



Note: Shaded areas denote recessions.
 Sources: Bureau of Economic Analysis, Bureau of Labor Statistics, The conference Board, Census Bureau, Department of Labor, Federal Reserve, Institute for Supply Management, Standard & Poor's, AER (Refinitiv).

LAGGING INDICATORS (1950-2021)



Note: Shaded areas denote recessions.
 Sources: Bureau of Economic Analysis, Bureau of Labor Statistics, The conference Board, Census Bureau, Department of Labor, Federal Reserve, Institute for Supply Management, Standard & Poor's, AER (Refinitiv).

The Origin of SARS-CoV-2

DAVID R. HENDERSON (Senior Fellow) & CHARLES L. HOOPER (Contributor)

Since March 2020, the world has reeled from the Covid-19 pandemic caused by the SARS-CoV-2 virus. According to Johns Hopkins University & Medicine, there have been 177 million known cases and 3.8 million deaths worldwide.

Covid-19 touches much more than just the medical world. It and responses to it have devastated economies around the world. But it also raised issues of free inquiry, truth, and trust. Have people in positions of power lied to us? Have they put us at undue risk?

Did the coronavirus come from nature or from a lab experiment? The answer to that question suggests the best responses for individuals and governments to take to prevent a recurrence. If we are to have any hope of successfully preventing massive deaths and economic chaos in the future, we must understand the virus's origin.

Two Theories

The two primary theories of the origin of SARS-CoV-2 are natural transmission from animals to humans, also called zoonotic transmission, and manipulation in a virus laboratory, most likely the Wuhan Institute of Virology, or WIV. Both theories have merit; neither has been proven or disproven.

With every “crime” scene, evidence can be found. Someone saw or heard something suspicious. There are notes, data, emails, footprints, fingerprints, and DNA evidence. A dog barked. Or a dog that should have barked didn't.

Viruses

Viruses exist in a nebulous realm between living and inanimate. They are essentially genetic code that attaches to the cells of living beings, enters those

cells, hijacks the cells' internal functions to produce more copies of themselves, and then exits the cells in such a way as to infect other organisms. A virus that is good at infecting, say, a bat, will probably not be good at infecting a human because we differ from bats. Viruses do move from bats to humans, but the process is typically slow and usually requires an intermediate species much closer biologically to humans.

SARS-CoV-2 is one of seven coronaviruses known to infect humans. SARS-CoV-1, MERS-CoV and SARS-CoV-2 are the more dangerous members of the family, while HKU1, NL63, OC43 and 229E are milder.[1] You've likely been infected with the milder coronaviruses many times. Coronaviruses are part of the 58-member sarbecovirus subgenus family and sarbecoviruses are part of a larger betacoronavirus genus family.

The MERS-CoV virus transferred from bats to humans via camels and the natural path of the virus was discovered in nine months. The SARS-CoV-1 virus used civets—a cat-like animal—as the intermediary and the source was discovered in four months. When such species hopping takes place, plenty of evidence is left behind. There is a reservoir of virus in the original species, a closely related but slightly different reservoir in the intermediate species, and evidence in human medical records and blood and tissue samples that the virus entered humans multiple times until it became contagious enough to transmit widely between humans.

Viruses change by two primary mechanisms. When they enter a host, because such a large number of copies are made, some errors, or mutations, may be introduced. Most of these mutations make the virus less viable. A rare mutation makes the virus

better suited and, through a survival-of-the-fittest process, the more capable virus takes over. Mutations happen at a relatively stable rate, meaning that scientists can estimate how long a virus took to transition from one form to another.

The second way that viruses change is by having two viruses from the same family infect a host simultaneously and swap genetic information. Imagine, to use an analogy, that a blond, blue-eyed virus and a dark-haired, brown-eyed virus infect a camel cell simultaneously. It is possible that the emerging virus could have dark hair and blue eyes. This is a much faster way for a virus to change, but the host must be simultaneously infected with two viruses of the same family and the resulting virus must be viable. The simultaneity requirement lowers the probability of occurrence and, if blue eyes didn't exist anywhere within the family, the resulting virus can't have blue eyes.

This explication casts doubts on the zoonotic (natural) theory. No reservoirs of similar viruses have been found in bats and intermediate hosts. The viruses identified in bats in caves in China are not genetically close enough to have changed via mutations within any reasonable amount of time to have infected humans directly. What about the possibility of the genetic transfer of key components from another virus within the same family? To answer that question, we need to introduce the ACE2 receptor.

Human ACE2 Receptor

SARS-CoV-2 has a very unusual feature: it is surprisingly good at infecting a particular type of cell that has what is known as an angiotensin-converting enzyme 2 receptor. Some other animals have ACE2 receptors, but SARS-CoV-2 works much better in human or human-like ACE2 receptors. The significance of this cannot be overemphasized.

SARS-CoV-2 needs four things to happen to infect a human. It must enter the body and it must

attach to certain cells. It must be cleaved at precisely the correct spot by the victim's cells. The remaining genetic piece must then enter and infect the cell. Every one of these four steps has a low probability of occurring by chance. The probability of *all four* of these unlikely events developing randomly through mutations is, therefore, very low.

Could SARS-CoV-2 have acquired its clever attributes from another coronavirus of the same family? Are there coronaviruses that exploit human-like ACE2 receptors? For this, we need to discuss the furin cleavage site, which is where the ACE2 receptor precisely cuts SARS-CoV-2, as described in step 3 above.

Furin Cleavage Site

Scientists Yiran Wu and Suwen Zhao published a paper claiming that other coronaviruses have the unusual feature of SARS-CoV-2, called a furin cleavage site. They state that "furin cleavage sites are common in betacoronavirus."^[2] However, others see it differently. Rossana Segreto and Yuri Deigin state that SARS-CoV-2 has "the presence of a furin cleavage site missing in other CoVs [coronaviruses] of the same group."^[3] More specifically, there are other bat coronaviruses with the furin cleavage site, but they are geographically distant from Wuhan and they come from another subgenus family, so they can't have combined to produce SARS-CoV-2.

We know that SARS-CoV-2 does exploit human-like ACE2 receptors. If that ability wasn't developed via mutations or from borrowing genetics from a family member, where could it have gotten it? Scientists engineering viruses in labs prefer to use human cell cultures and humanized laboratory mice, which are mice that have been genetically engineered to have human-like ACE2 receptors. Viruses developed in labs are designed to exploit human-like ACE2 receptors.

CGG-CGG

Here's where we find another curious piece of evidence. "Since 1992 the virology community has known that the one sure way to make a virus deadlier is to give it a furin cleavage site at the S1/S2 junction in the laboratory." [4] When scientists in a lab want to create a particular gene sequence for a furin cleavage site in a virus, they invariably use the following sequence of amino acids: CGG-CGG. There are 58 known viruses in the sarbecovirus subgenus family and between them there are 580,000 such six-letter sequences. However, *only one* of the 58, SARS-CoV-2, has the CGG-CGG sequence. [5] In other words, it is what we would expect to find in a virus created in a laboratory but not one coming from nature. In the blue-eyes analogy, we can't find blue eyes anywhere in this family. Note that the statement about CGG-CGG being rare is disputed by Kristian G. Andersen, who is quoted in more detail below.

Early Cases

Consider how viral diseases typically start. With MERS-CoV, a virus moved from bats to an intermediate species of camels. Then, over time, the virus moved from camels to humans. This doesn't happen in one great leap. Usually, one camel infects one person and that person either recovers or dies. Then another camel infects another person who recovers or dies. Only after repeated attempts does the virus change enough to successfully become transmissible between humans. Diseases that move from camels into humans and then stop aren't a big threat. It is only after a disease learns to move from one human to another that the threat becomes real.

And yet for forensic scientists, this process leaves a rich trail of evidence. The camels probably still host a closely related virus and some people show evidence of the early form of the pre-epidemic disease, whether in the form of written disease descriptions, hospital records, tissue samples, or blood samples.

In the case of Covid-19, while the Chinese government has tested 80,000 wild and domesticated animals (none tested positive), it has destroyed and withheld much of the key data. This is curious because if evidence of pre-epidemic cases could be found, it would help establish the zoonotic theory and exonerate the Wuhan lab.

Location, Location, Location

If camels infected humans in the Middle East, we wouldn't expect to see the first cluster of cases in, say, Honolulu. Early cases typically happen where the virus first became contagious. And even if people travel, they are likely to become sick or infect others en route, leaving a trail of evidence.

There are nine Metro lines and 40 hospitals in Wuhan and yet all the patients treated for Covid-19 between 1 December 2019 and early January 2020 were cared for in hospitals close to the Metro Line 2 commuter line, connecting Wuhan and WIV. That's highly unlikely by random chance alone.

Mutations Along the Way

In the camel example above, because the virus was relatively optimized for camels but then took up residence in humans, the virus needed time to optimize itself for humans. Scientists can typically see evidence of the mutations needed to make this change. It's as if the virus were testing different recipes to see which one worked best.

With SARS-CoV-2, we don't see this sort of evidence, making it appear as if the virus came designed to successfully infect humans, with no experimentation needed. "It appeared in humans already adapted into an extremely contagious version. No serious viral 'improvement' took place until a minor variation occurred many months later in England." [6]

“With CoV-2 [SARS-CoV-2], every one of the more than 294,000 virus genomes sequenced can be traced back to the first genomic cluster and in the first patient in that cluster, a 39-year-old man who was seen at the People’s Liberation Army (PLA) Hospital about one mile from the Wuhan Institute of Virology.”[7]

Denouncing the Lab Leak Theory

Covid-19 raises important considerations about truth and trust. While the genesis of Covid-19 is still shrouded in mystery, a lack of certainty didn’t stop prominent people and organizations from stating at an early date that any suggestion that SARS-CoV-2 was manipulated in a lab was not true,[8] misinformation,[9] a conjecture,[10] a conspiracy,[11] [12] false information,[13] implausible,[14] something out of a comic book,[15] extremely unlikely,[16] or already debunked,[17] and had been repeatedly disproven.[18]

Why were these people so dismissive of the lab leak theory? Were their statements based on a reasoned assessment of the data or the desire to steer public opinion toward a favored conclusion?

Some who made these claims, such as Anthony Fauci, have since backtracked and admitted that the lab leak theory has merit. Further, we now know that other prominent denouncers had privately presented evidence supporting the lab leak theory or had serious conflicts of interest due to their work with the Chinese lab in question.

Kristian G. Andersen of Scripps Research Institute, in an influential letter published in *Nature Medicine* in April 2020, called the lab leak theory implausible. The paper concluded: “Our analyses clearly show that SARS-CoV-2 is not a laboratory construct or a purposefully manipulated virus.”[19] Yet just a couple of months earlier, Andersen had emailed Fauci to report that the virus had “unusual

features” that looked “potentially engineered.” He explained that he and his team “all find the genome inconsistent with expectations from evolutionary theory.” Translation: the virus appears to have been manipulated in a lab. Why the change of heart? Andersen never explained. Nor did he allow that the lab leak theory deserved further exploration and debate.

Another person who dismissed the lab leak theory, Peter Daszak, of EcoHealth Alliance, has a serious conflict of interest: he has worked closely with Zhengli Shi, the key coronavirus scientist at WIV. Daszak was a prominent member of the WHO task force that concluded that the virus had natural origins. Not everyone at the World Health Organization was convinced: WHO Director-General Tedros Adhanom Ghebreyesus, for instance, called for further studies.

Not even Fauci is conflict free. His agency, the National Institute of Allergy and Infectious Diseases, helped fund Shi’s experiments at WIV. Shi acknowledged Fauci’s support in some of her published papers.

Supporting the Lab Leak Theory

Prominent scientists have called for more research into the lab leak theory[20] while others, including Nobel laureate and former president of Caltech, David Baltimore, and former CDC Director and virologist, Robert Redfield, have suggested that the virus shows signs of laboratory manipulation. Baltimore said the virus had “unusual features” that were “a powerful challenge to the idea of a natural origin.”

Governments Develop and Store Dangerous Bioweapons

Shortly after the 9/11 terrorist attacks in 2001, anthrax packages were mailed to various Americans, killing five and sickening another seventeen. The culprit was never positively identified, but the anthrax used was recognized as the Ames strain,

developed and stored by the U.S. Army. Whether the Army was directly involved in mailing the dangerous packages is not known, but one can reasonably ask why the Army was developing and storing such exotic and highly virulent strains of anthrax.[21] U.S. government officials deny engaging in *offensive* bioweapons research but acknowledge such research in *defensive* bioweapons. As with nuclear weapons, the distinction is of dubious significance.

Summary of Zoonosis Theory

While any individual virus's structure is extremely unlikely to happen by chance, nature finds a way to create viruses that do their job. With an astronomical number of shots on goal, the odds are good that one or more pucks will find the back of the net. History proves this time after time. SARS-CoV-2 has not been found in nature, but our knowledge of the viruses that live in the wild is limited. For instance, a natural source of the Ebola virus has never been identified.

Summary of Lab Leak Theory

We know that the WIV laboratory in Wuhan was working on viruses similar to SARS-CoV-2. We know that scientists raised concerns about the security of the lab. We know that a leak of the SARS-CoV-1 virus from a lab in Beijing in 2004 infected nine people before it was contained. We know that labs have been working on "gain of function" experiments with the goal of making viruses more contagious and virulent for humans. The SARS-CoV-2 structure looks like what we would expect to come out of a lab trying to make viruses more virulent in humans. The pandemic started in Wuhan, at hospitals near the main commuter line between Wuhan and WIV. Even after many months and much exploration, no species with a host virus similar to SARS-CoV-2 has been found. Some of the prominent people who strongly denied

the possibility of a lab leak had relationships with WIV or noted characteristics of the virus that looked engineered. The Chinese government, which has much to gain by identifying the natural source of this virus, has destroyed evidence, prevented and delayed investigations, deflected criticism, blamed others, and generally acted suspiciously. In a move suggestive of a serious discovery, the WIV research facility was put under the control of Chen Wei, a Major General of the People's Liberation Army, in January 2020.[22] Further, Wei and six of her colleagues were photographed being administered Covid-19 vaccines on 3 March 2020, nine months before the FDA gave Pfizer's vaccine an emergency use authorization in this country.[23]

Upon first hearing about Covid-19 cases, WIV researcher Zhengli Shi stated that she wondered whether the virus came from her lab: "Could they [coronaviruses causing infections in Wuhan] have come from our lab?"[24] The next thing she did was to alter the databases on the WIV website to make it more difficult to discover what work was being performed at WIV.

Unattributed U.S. government intelligence reports that several researchers inside the WIV became sick in the autumn of 2019, before the first identified case of the outbreak. An anonymous person familiar with the report said, "The information that we had coming from the various sources was of exquisite quality. It was very precise. What it didn't tell you was exactly why they got sick."[25] This raises questions about the credibility of Shi's claim that there was "zero infection" among the WIV's staff and students. Even if the virus didn't originate in the lab, it is likely that some staff and students would have contracted it in the community.

Conclusion

According to Xiao Qiang, a research scientist at Berkeley: "To understand exactly how this virus has

originated is critical knowledge for preventing this from happening in the future.”[26] Based on what we know, the lab leak theory better fits the evidence. Even if this particular virus didn’t escape from a lab, government-funded bioweapon experiments are playing with fire and the next time a dangerous virus escapes, which will eventually happen, we may not be so “lucky” as to escape with four million dead.

– June 18, 2021

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Quacks in the Ivory Tower: How Conspiracy Theorizing Took Over Lockdown Science

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Is the Great Barrington Declaration (GBD) simply a front for a secret global eugenics plot, hatched at AIER by the British Ministry of Defence and financed by the Koch Brothers as part of an ongoing effort to force climate change, tobacco, and Covid-19 infections on our senior citizens? Such claims may sound like the farcical ravings of an internet paranoiac, yet precisely this narrative has gained a shocking amount of currency among ostensibly serious public health scientists and journalists since the Declaration launched last October 4th.

This outcome is the result of a disturbing turn in the academic discourse around Covid-19 policy over the past several months, with scientific disagreement taking a back seat to the political vilification of anyone who questions the wisdom of lockdown ideology – even as the lockdowns themselves utterly failed at their stated aims. Rather than debating the evidence around these policies and evaluating their performance over the last year, it has now become the norm to accuse anyone who questions “the science” of lockdowns of being beholden to secretive “dark money” interests and operating in the service of nefarious profiteering and political malice.

This bizarre string of conspiratorial attacks on AIER began in the days after the GBD’s release last fall. Self-described “journalists” with dubious backgrounds led the charge from peripheral media outlets that nonetheless provided a political message for the GBD’s opponents.

Consider the case of Nafeez Ahmed, a writer from a London-based blog called the *Byline Times* who has spent the better part of the last year posting conspiratorial bromides against scientists who question lockdown ideology. Fresh off of an

unsuccessful Twitter campaign to flood the GBD’s website with fraudulent signatures during the week after it went live, Ahmed shifted his tack in mid-October with a new charge. In a succession of blog posts, he purported to show that the GBD was part of an elaborate scheme by libertarian billionaire Charles Koch to force the reopening of the American economy in spite of Covid’s risks, using AIER as its front. After outlining the financial portion of his conspiracy theory, Ahmed quickly appended a new “partner” in the alleged plot: the British Ministry of Defence, which he implied to be the source behind the GBD’s website. To top it off, this growing plot was allegedly orchestrated through the owner of a resort hotel in Wales, operating amid a web of military contracts that somehow or another pointed back to the GBD authors and AIER.

If that sounds like loony talk, it is.

Contrary to Ahmed’s wild imagination, Charles Koch had absolutely no involvement with the Great Barrington Declaration or AIER’s hosting of the conference that produced it. While I cannot say with certainty where Mr. Koch himself stands on these issues, his philanthropic organizations appear to have mostly stayed away from Covid-19 policy debates (the few exceptions where a Koch-network organization has weighed in on the subject at all tend to take a pro-lockdown stance, such as the Mercatus Center’s Tyler Cowen, who awarded a research prize to Neil Ferguson of Imperial College for his Covid-19 lockdown model. AIER was one of the first high-profile critics of Ferguson’s model and continues to track its abysmal performance over the last year.)

It is the right of philanthropic foundations, including both Cowen and Koch, to direct their

grants and donations to projects of their own choosing. Indeed, AIER partnered with Koch in 2018 on a small grant to co-sponsor an economics conference in North Carolina – the apparent origin of Ahmed’s confused claims. But it also appears that we find ourselves taking different approaches to pandemic policy issues, and not by conspiratorial design but rather honest disagreement of the type that has unfortunately been lost amid the heated debates over the last year.

Oh, and that bit about the British Ministry of Defence supposedly orchestrating the GBD’s website through some hotel in Wales that nobody at AIER has even heard of? Utter nonsense – our web developer put it together on-site during the GBD conference, pulling an all-night marathon to ensure that it would be ready to go live the day of the release.

Although Ahmed’s batty narrative about the GBD’s origins does not withstand even minimal scrutiny, his conspiracy theories spread like wildfire on the pro-lockdown side of the epidemiology profession, and among the journalistic outlets that support them. For a brief period back in October, Google News inexplicably boosted the fringe *Byline Times* blog on search results for the Great Barrington Declaration, ranking Ahmed’s postings above coverage in mainstream outlets such as the *Wall Street Journal*, Bloomberg, and Fox. Paul Krugman even promoted the product of Ahmed’s ravings in his *New York Times* column.

Several of the most widely-quoted critics of the Great Barrington Declaration in the press seized on the same narrative and began repeating tall tales about nonexistent funding sources and the wholly imaginary British Ministry of Defense website scheme. Some even added new fringe theories of their own to augment the salacious charges.

David Gorski, a professor of medicine at Wayne State University and one of the media’s favorite

go-to sources for quotes denouncing the GBD, published a blog post on October 12th where he liberally quoted and endorsed Ahmed’s conspiracy theories. Not to be outdone by the *Byline Times* blogger, Gorski appended his own paranoid attack by branding the GBD a “eugenics-adjacent” plot to cull and “sacrific[e] the elderly” in the name of economics. Even though the GBD drew tens of thousands of co-signers in the medical and public health professions, Gorski went on to label it a “magnified minority” campaign – his term for a propaganda initiative to dupe the public into accepting the secret eugenics scheme he repeatedly claimed to have uncovered. Gorski’s attacks are not only symptomatic of a deeply disturbed state of mind – they’re unbecoming of a scientific professional, let alone one that the media enlists for expert quotations as a primary interlocutor of the GBD.

Gorski was far from the only lockdowner in the public health world to embrace Ahmed’s conspiracist blogging. So did Eric Feigl-Ding, one of social media’s most aggressive promoters of school closures and the fringe “Zero Covid” theory. Deepti Gurdasani of Queen Mary University in London, a principal organizer of the pro-lockdown John Snow Memorandum, has promoted the *Byline Times* conspiracy theories about the GBD’s funding on multiple occasions, pairing it with another conspiracy theory of her own that tries to fault the GBD authors for the failure of three successive lockdowns in Britain. As has Gabriel Scally, a UK-based epidemiologist who serves the pro-lockdown “Independent SAGE” group. David Fisman, a Canadian epidemiologist who aggressively pushed for lockdowns and school closures in Ontario, is another fan of Ahmed’s conspiracy theories, praising him for providing “important context” to the policy debate.

Justin Feldman, a self-described “epidemiologist of social inequality” at Harvard, added his own twist to Ahmed’s favorite conspiracy by alleging an

elaborate plot to place favorable media coverage of the GBD on the UK's Unherd website, only to walk it back a day later when he realized he had confused Unherd with another outlet. The public misstep did little to shed Feldman of his conspiracist tendencies though. His Twitter feed since that time has published a nonstop stream of frenzied allegations against lockdown critics in the public health profession, usually consisting of unsubstantiated innuendo about shady pecuniary motives behind their scholarship.

Duke University epidemiologist Gavin Yamey offered a "huge shoutout to Dr. Nafeez Ahmed" for supposedly uncovering the bizarre conspiracy linking the GBD website to the British Ministry of Defense and the Welsh hotel proprietor. Elsewhere he praised the *Byline Times's* "great investigative journalism" about the GBD. Half a year later he still asserts that "Charles Koch shaped [pandemic] policy in the US" through a group of scientists who have no tangible connection to Koch's philanthropy. Indeed, Yamey's twitter feed contains dozens of examples of him promoting the *Byline Times* articles. Naturally, this whole-hearted believer of Ahmed's conspiracy theories is also one of the journalism world's favorite sources for an expert quotation denouncing the GBD, and a principal co-signer of a letter to *the Lancet* arguing against the petition's scientific merits.

Columbia University virologist Angela Rasmussen, another frequent critic of the GBD in the press, embraced the funding conspiracy theory without the slightest skepticism or investigation of its assertions. "The GBD authors don't actually mean well," she continued, accusing the three scientists of being part of a "propaganda campaign" in the service of AIER's supposed goal of "ignore the pandemic, let's get back to making money via unfettered capitalism."

Martin McKee, a public health professor at the

London School of Hygiene and Tropical Medicine who denounced the GBD as a "fringe view" shortly after its publication, has a habit of giving his endorsement to Ahmed's conspiracy theories about the very same document. Ahmed's crazy tales of intrigue have another fan in Robert Dickinson, a professor of medicine at Imperial College London and signer of the pro-lockdown John Snow Memorandum. Snow Memorandum signer Hisham Ziauddeen promotes the same conspiratorial claims, in addition to his own blogging against the GBD for Ahmed's outlet. Epidemiologist Gregg Gonsalves of Yale, another of the media's favorite sources for ad hominem-laced anti-GBD hot takes, apparently concurs with Ahmed's paranoid ravings. So does the University of Washington's Carl Bergstrom, another press favorite for expert statements defending lockdowns.

Keep in mind that these endorsements of Ahmed involve claims that are not simply dubious or uncharitable interpretations – they are factual falsehoods that have entered the talking points of scientific experts who simply agree with their associated political connotations and believe that repeating them enough will discredit an opposing viewpoint. As matters of scientific analysis though, it would not be inaccurate at this point to state that leading academics on the pro-lockdown side of the Covid political debate are now regularly relying upon the paranoid ravings of a conspiracist blogger as one of their primary sources for attacks upon the Great Barrington Declaration.

Had these academics, public health professionals, and journalists spent even a moment investigating the source of their parroted stories about "dark money," the British Ministry of Defense, and obscure hotel properties in Wales, they might have exercised more reservations before credulously repeating such unreliable claims.

Ahmed himself is no stranger to fringe political causes. The late Christopher Hitchens once described

this particular writer as “a risible individual wedded to half-baked conspiracy-mongering.” Indeed, for almost two decades prior to Covid-19, Ahmed was a recurring presence in the circles around the so-called 9/11 Truth movement – the motley band of internet oddballs and kooks who claim that the terrorist attacks on the World Trade Center were actually a controlled demolition carried out on behalf of some sort of “false flag” operation. In 2006, he added his own version of “jet fuel doesn’t melt steel beams” to their cause. As Ahmed wrote in an article to commemorate the fifth anniversary of the attacks:

“[I]t is agreed by all that the fires never burned hot enough to melt the steel columns. Whether or not the steel was hot enough to buckle, the official account fails to explain the deposits of molten metal found after the collapses. If not the fires, what could have caused the steel to melt?”

Reiterating his own contributing interests in 9/11 Trutherism, Ahmed continued with a stunning assessment of the “jet fuel” claim. “Shocking and absurd conspiraloonery? Not really. That’s the easy way out. The scientific validity of [9/11 conspiracy writer Steve] Jones’ line of inquiry has been supported by several other experts,” upon which he proceeded to name a long list of Truther cranks and crackpots who maintain that the terrorist attacks by Al Qaeda were really an inside job. (Ahmed quietly scrubbed this article from his personal blog in late 2020 after it became an embarrassment in light of his more recent attacks on the GBD, but an archived copy remains.)

With no small irony, many of the same scientists who frequently attack skepticism of lockdowns by labeling it a “fringe” and “unscientific” position have not the slightest compunction about taking their own cues on the GBD from an unmistakably fringe source of their own. That source’s ramblings remain

equally mired in the same brand of “absurd conspiraloonery” he’s peddled on other topics for decades.

Sadly, several distinguished scientific figures in the epidemiology and public health professions have decided to seize onto and adopt Ahmed and the *Byline Times*’s paranoid style as their own, now that their star writer has shifted the focus of his attention away from World Trade Center Building 7 and onto anyone who dares to question the efficacy of Covid-19 lockdowns. The immediate result is both comical and horrifying, yet the real damage to epidemiology will play out for years to come. Scientific inquiry has succumbed to a proliferation of quacks in the ivory tower.

– June 19, 2021

Did the Fed Just Raise Interest Rates?

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The Federal Open Market Committee (FOMC) met this week to decide the stance of the Federal Reserve's monetary policy. In its official statement, the committee chose to maintain its effective federal funds rate target in the range of zero to 0.25 percent and ongoing open market purchases of \$120 billion per month.

The Fed did, however, have an important change listed in its Implementation Note. It raised the interest rates that the Fed pays to banks and other financial institutions. How should consumers and investors interpret this change in Fed policy?

The Fed's monetary policy tools

Up to 2008, the Fed conducted monetary policy through open market operations, the buying and selling of short-term Treasury bonds. In 2008, it expanded these purchases to include mortgage-backed securities (MBSs). Rather than only buying or selling when rates need to be adjusted, the Fed is currently conducting ongoing purchases of \$80 billion in Treasuries and \$40 billion in MBSs per month.

In addition, the Fed switched from a corridor system of monetary policy to a floor system. It introduced a new rate of interest on reserves (IOR) that it pays to US banks, which became the key tool of monetary policy. Unfortunately, the rate of IOR was not as effective as the Fed had expected in establishing a floor for short-term interest rates. The Fed was forced to create another tool, a facility for overnight reverse repurchase (ONRRP) transactions, the rate for which became the "subfloor" for short-term interest rates.

At the end of 2008, the Fed also switched from

targeting a single interest rate to a fed funds target *range*. The rate of IOER was previously set equal to the top of the target range and the ONRRP rate at the bottom end, but that is no longer the case. Since 2018, these rates have often been set somewhere within the fed funds target range.

The Fed also sets the discount rate as a ceiling for bank borrowing, making a total of six tools for monetary policy: five different administered rates in addition to its open market operations.

The Fed's new policy

Fed officials now plan to keep interest rates at their current lows through at least 2022 and not raise their targets until sometime in 2023, although recent signs of inflation have caused some to indicate that changes may come sooner.

In addition, Fed officials expect their asset purchases to continue for some time. At his recent press conference, Fed Chair Jerome Powell said that despite signs of potential inflation, the FOMC would "give advanced notice before announcing any decision" on planned changes in asset purchases.

Why is the Fed so hesitant to trim asset purchases? Fed officials fear a negative financial market response such as the so-called Taper Tantrum of 2013. Then Chair Ben Bernanke's announcement that the Fed would "taper down" its open market purchases led to a huge selloff in the bond market, which pushed up interest rates – something the Fed did not want. To preempt such a response, Powell has stressed that any reduction in asset purchases would be announced well in advance in order to set expectations and minimize financial market disruptions.

Fed officials have backed themselves into a corner

here. Their pre-announced interest rate and asset purchase plans for the coming years were intended to set market expectations. It may have worked too well. Now they are afraid to change those plans so as not to disrupt expectations.

Ironically, these expectations ignore the Fed's more important policy tools. In a floor system, open market purchases add reserves to the banking system, but that money never gets to the economy if the rate of IOR is sufficiently high. Similarly, the target range for the fed funds rate is important for setting expectations, but unlike the rates of IOR and ONRRPs, it has little effect on the incentives for banks or financial institutions.

In the Fed's current floor system, the rate of IOR is the key tool of monetary policy. If the Fed raised the rate of IOR, then it raised interest rates.

What does it mean for the economy?

The proliferation of monetary policy tools has made Fed policy difficult to evaluate, much less predict. The FOMC's statement says "Nothing to see here," but its actions whisper "Rates should be higher." Expectations aside, raising the rate of IOR has a bigger monetary policy effect than a change in the target range announced by the FOMC.

The complexity of these monetary policies is confusing and counterproductive. The Fed is putting money into the economy with one hand through open market purchases. But with the other hand, it is taking money out by paying banks and financial institutions to deposit those funds back at the Fed. Raising the rate of IOR can help limit inflation, but combined with open market purchases, it will build up banks' excess reserve holdings, distort their investment incentives, and heighten the Fed's political profile.

With little fanfare, the Fed quietly raised the rate of IOR. This contractionary policy will slow the rate of money growth in the economy. But paying higher interest rates on bank reserves while adding

more money to the economy will increase banks' hoarding of cash reserves and misallocate credit in the financial system.

– June 20, 2021

Sound Money Still Matters

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Research Fellow

Let the record reflect: sound money still matters. The tremendous fiscal, monetary, and social interventions throughout 2021, in addition to what appears to be the long-posit-ed return of inflation, are fueling a resurgence of interest in gold and silver. Cryptocurrencies, farmland, and less conventional hedges have led the way, but a handful of developments suggest that the “barbarous relic” and its cousins are returning to mainstream attention.

Most recently, the State of Tennessee announced that it is considering setting up a gold depository. On Wednesday, June 2nd, the two measures (House Bill 353 and Senate Bill 279) passed unanimously through their respective committees with voting tallies of 90-0 and 32-0. A report on the feasibility of doing so, as well as steps which would be required, is due on or before 1 January 2022.

CPI (YoY) and performance of competing inflation hedges: gold, silver, the NCREIF Farmland Index, the Bloomberg Galaxy Crypto Index, and the Live-Ex Fine Wine 100 Index (1 Jan 2019 – 31 March 2021)



(Source: Bloomberg Finance, LP)

Currently the only US state with its own gold depository is Texas. The fully-insured, privately managed Texas Bullion Depository opened in Leander, TX in 2019. A hoped-for wave of other

states following suit has not yet materialized, but Tennessee may lead a wider contingent. (Oklahoma investigated setting up a bullion depository in 2016 but has not yet done so.)

A state facility housing precious metals would have two primary benefits: first, in the event that Tennessee sought to hedge state pensions and other financial resources against an inflationary draft, it could do so without paying an out-of-state firm. And second, concerns about gold leasing and other practices would be assuaged: possession is, after all, nine-tenths of the law.

10 year US Treasury/10 year TIPS spread: a market estimate of an average annual rate of inflation of 2.43% over the next 10 years (4 June 2021)



(Source: Bloomberg Finance, LP)

The April CPI YoY (year-over-year Consumer Price Index) of 4.2% has revived long-dormant inflation fears, although whether and to what extent more inflationary pressures will emerge remains to be seen. The 4.2% increase was the largest 12-month increase since between Sept 2007 and Sept 2008, when it was 4.9%.

The formation of state bullion depositories comes at a time where a number of nations are entering the gold markets to build reserves or repatriating bullion

and bars held abroad. Gold hit an all-time high price of \$2,051.50 on 8 August 2021, and has recently been trading between \$1,700 and \$1,900/ounce.

State depositories of gold, silver, and other precious metals could foster competition in money as well. They could facilitate payments in metals ranging from retail to institutional through the creation of depository receipts, gold/silver/etc-funded checking accounts, or debit cards. By doing so, what is currently a clumsy, costly link between saving/investing in precious metals and transactions would become nearly seamless. (That disconnect, incidentally, is a source of much of the preference for Bitcoin and other cryptocurrencies over gold and silver.) By making precious metals a more integral and understandable part of citizens' lives in a period that may feature rising inflation, a movement for sound money is likely to become more widespread.

US 10-year zero coupon inflation swap: a market estimate of an average annual rate of inflation of 2.57% over the next 10 years (4 June 2021)



(Source: Bloomberg Finance, LP)

State depositories are a single facet of this slow but clear shift. Five US states currently impose no sales taxes on gold or silver transactions: Alaska, Delaware, Montana, New Hampshire, and Oregon. Another 34 use tax exemptions on precious metal coins and bullion. It would not be especially surprising, if trends continue, to see other states follow the example set by Utah in 2011 when it

recognized gold and silver coins as legal tender.

The Sound Money Index compiled annually by the Sound Money Defense League tracks 12 indicators that gauge the degree to which acquiring and using precious metals is permitted in each state. (For the TLDR crowd: in 2020, Wyoming, Texas, and Utah were the most gold friendly; New Jersey, Arkansas, and Vermont the least so.)

On June 10th, the US Bureau of Labor Statistics will release year-over-year CPI data for May 2021. According to Bloomberg current predictions range from 4.2% to 4.9%, with a median of 4.7% and an average of 4.6%. If the current inflation subsides (or doesn't increase as much as some predictions hold), will the renewed interest fizzle out? Possibly. But considering the acceleration of fiscal recklessness and the traction of concepts like Modern Monetary Theory, a safer bet is that the road toward sound or sounder money will be one for which despite an occasional step back, there will be two or three forward.

– June 7, 2021

Are Digital Assets Coming of Age?

COLIN LLOYD

Contributor

Last month more than 12,000 delegates descended on Miami for the 2021 Bitcoin Conference. This year’s event attracted six times the number who attended the 2019 event. With luminaries ranging from Twitter and Square CEO, Jack Dorsey, to libertarian icon, Ron Paul, in attendance, it begs the question, ‘Have digital assets finally come of age?’

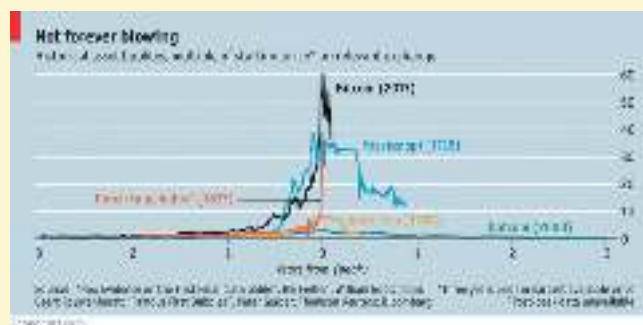
Finally? Cryptocurrencies and digital assets have actually been around for several decades. Most people think of Bitcoin as the starting point but as I wrote back in December 2020: –

Since the Great Financial Crisis in 2008, cryptocurrencies have come of age. The advent of Bitcoin in 2009 is often thought to have been the beginning of cryptocurrencies, but as early as 1983, American Cryptographer David Chaum had invented the blinding formula, an extension of the RSA algorithm which is still used today for web encryption. Chaum went on to create DigiCash in 1989.

The backbone of modern cryptocurrencies is distributed ledger technology (DLT), which developed out of the public key infrastructure of the early 1990’s. There are numerous reasons why it took so long for cryptocurrencies to gain traction, but the financial crisis of 2008 was undoubtedly a catalyst. It was a crisis of trust; trust in the banking system, trust in the honesty of public institutions, trust in the value of fiat money itself. In the aftermath of the crisis, gold, along with other stores of value, rose in price, but Bitcoin, endowed with anonymity and a finite money supply, captured the imagination of a new generation

of investors for whom gold was a technologically barbarous relic.

During the last five years Bitcoin has gained prominence. A rally in 2017 led to comparisons with some of the great asset bubbles in history. This chart, taken from a January 2018 Economist article, sets the scene: –



Source: The Economist

Unlike tulips, however, the price of Bitcoin has been resurgent and a second digital asset, Ether, has now captured more than a third of the market: –



Source: Highcharts, Coingecko

Total digital asset market capitalization, even after the recent correction, stands at \$1.35trln (22nd June). The Crypto Winter of 2018 to 2020 gave way to a broader based *glorious summer*, although the chart above suggests autumn may have arrived with the solstice this year.

During the intervening three years since the first speculative frenzy, many aspects of the digital asset marketplace have evolved. Regulators, eager not to be left behind, have begun to impose controls aimed at protecting investors. Meanwhile central bankers have announced the creation of their own digital assets – Central Bank Digital Currencies (CBDC) – for more on this topic please see my December 2020 article.

In the last month, China, which has been in the vanguard of CBDC development, announced a ban on financial institutions and payment companies from providing services related to cryptocurrency transactions; they also warned investors against speculative crypto trading. The ban is not new, merely an extension of restrictions first imposed in 2017. Institutions are no longer permitted to accept digital currencies for payment or settlement, nor can they provide exchange services between cryptocurrencies and the yuan or foreign currencies. Saving, fiduciary pledging services and crypto-related financial products are also prohibited.

China’s actions need to be viewed in a wider context. Across the globe, just five countries have declared digital currencies illegal and only 15, including China, Russia and Canada, have imposed some form of banking restriction. India currently has no restrictions, but the Cryptocurrency and Regulation of Official Digital Currency Bill, 2021 was introduced in the spring to slow adoption and protect investors. For undisclosed reasons, no action has yet been taken but uncertainty remains. It is heartening to note, therefore, that no restrictions exist in the EU or any G7 country, although

environmental concerns remain over the carbon footprint of Bitcoin especially. A recent leader in the Economist – Can bitcoin be bettered? explains: –

...the mechanism bitcoin uses to verify transactions and put new coins into circulation, known as “proof of work” (POW). In periods of high activity, as witnessed during much of 2021, bitcoin burns more energy than the whole of Argentina. The glaring inefficiencies of that process also explain why payments in bitcoin are slow and costly, and thus a rarity. That has fed appetite for alternative mechanisms, the most popular of which is dubbed “proof of stake” (POS). Ether, the second-most popular cryptocurrency after bitcoin, is preparing to switch to it; smaller coins already use it.

This chart is also revealing: –

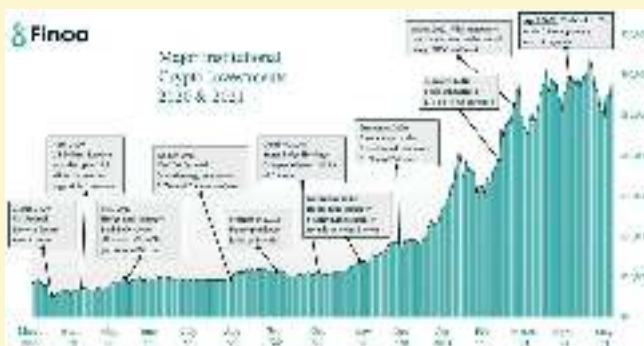


Source: The Economist, Cambridge bitcoin electricity index

The recent correction in the price of digital assets may be partly a response to the threat of a Chinese ban but it is more likely due to a wave of profit-taking after an exceptionally strong run, fueled, at least in part, by the monetary and fiscal pump-priming of central banks and governments in response to the Covid-related economic shock.

Digital Institutionalization

Looking beyond the short-term gyrations in cryptocurrency prices, however, digital asset markets have broadened and deepened. A number of high profile institutions have invested in the sector. In June of last year a survey from crypto-custodian, Fidelity Digital Assets, revealed 36% of US and European institutional investors had already allocated to the space. Hedge funds led the charge, but in December 2020, insurance giant Massachusetts Mutual announced that it had allocated \$100mln to Bitcoin. Meanwhile, across the pond, mainstream UK asset manager Ruffer declared a £550mln allocation. The chart below, from digital exchange operator, Finno, shows some of the highlights from the past 18 months: –



Source: Finno

Not shown in the chart above is the official decision taken by Goldman Sachs to start offering a digital asset service to their customers. Rumors they were about to enter the market, back in May 2018, were quickly denied as the Crypto Winter began; however, since May 2021 they have been facilitating derivative transactions. Other mainstream operators starting to offer digital asset products include Cowen and Standard Chartered. Meanwhile global custodian BNY Mellon has backed Fireblocks, a leading crypto-custodian.

Whilst Bitcoin remains the largest digital asset by market capitalisation, its performance this year has

been eclipsed by a widening array of challengers. There are now more than 80 digital assets with a market capitalization in excess of \$500mln. Of these, only nine underperformed Bitcoin year to date (22nd June). The snap-shot below (taken at 14:00 UK time on 22nd June) shows the ten largest digital assets by market capitalization; they include stablecoins, which are tightly tied to the price of the US\$: –

Source: Messari.io

According to Coingecko.com, a digital asset service provider, there are some 8,036 coins and 476 recognized exchanges offering both Spot and Derivatives. It is worth mentioning that the total volume of derivative transactions is normally higher than that for deliverable Spot transactions – on a fairly average day, 21st June, it exceeded \$200bln. To facilitate the dramatic growth in institutional volume over the past year, exchanges and other technology providers have introduced a range of additional security services including crypto-custody, of which there are now more than 100 providers.

Asset managers have also been quick to respond to demand, offering a range of investment vehicles. The simplest products, many of which are now available as exchange-traded-funds on conventional stock exchanges, track individual coins or baskets of coins. One of the largest offerings is the Grayscale trusts, which provide new institutional investors with access via private placements – their latest reported AUM (31st March) was \$40.3bln.

Other investment products take a long-only

discretionary approach, attempting to provide a similar upside with lower volatility. Then come the venture-capital funds, investing in both coins, other digital assets and traditional private or public equities of the multitude of startup companies involved in the industry.

The final category are the hedge funds which invest both long and short, taking advantage of asset appreciation and arbitrage opportunities, including inter-exchange arbitrage, basis trading between Spot and Derivative exchanges and yield-harvesting through asset lending programmes. There is an active borrowing and lending market for digital assets and the yields available, even for Stablecoins, which are linked to the price of fiat currencies, can be considerable. The rates below were taken at 14:30 UK time on 22nd June: –

Coll.	Asset Lend	Asset Borrow	Bitcoin Lend	Bitcoin Borrow	Stable Lend	Stable Borrow	Deriv Lend	Deriv Borrow
2017 Bitcoin	5.7%	8.0%	5.0%	7.0%	8.0%	5.0%	5.7%	7.0%
SOH 2 (Stable Cash)	5.7%	8.0%	5.0%	7.0%	8.0%	5.0%	5.7%	7.0%
SOH 3 (Bitcoin Cash)	5.7%	8.0%	5.0%	7.0%	8.0%	5.0%	5.7%	7.0%
SOH 4 (Stable)	5.7%	8.0%	5.0%	7.0%	8.0%	5.0%	5.7%	7.0%
SOH 5 (Bitcoin US)	5.7%	8.0%	5.0%	7.0%	8.0%	5.0%	5.7%	7.0%
SOH 6 (Bitcoin)	5.7%	8.0%	5.0%	7.0%	8.0%	5.0%	5.7%	7.0%
SOH 7 (Stable)	5.7%	8.0%	5.0%	7.0%	8.0%	5.0%	5.7%	7.0%
USDT Tether	1.44%	2.48%	1.26%	1.7%	2.33%	1.2%	1.4%	1.7%
SOH 8 (Stable)	5.7%	8.0%	5.0%	7.0%	8.0%	5.0%	5.7%	7.0%

Source: Difrata.com

The lack of pricing and variability between venues and in the wide variations in the spread between the bid and offer is a clear indication of the nascent nature of the current market. However, in a world where fiat interest rates, for the world’s principal currencies, hover close to the zero bound, these interest rates are interesting. Caveat emptor, this is not a free lunch; the interest rates are a function of borrowing demand from highly leveraged market participants and the credit risk associated with different exchanges, platforms and technologies. During periods of high demand – usually when digital asset prices are rising and leveraged borrower demand is high – rates can briefly soar in much the

same way that the stock-loan price of the acquirer’s stock increases during a high-profile merger. The marketplace is fragmented and inefficient but the potential rewards are clear.

My recent research has identified more than 1,200 active hedge funds, the majority of which remain unregulated. The number of funds which have closed since the previous bubble in 2017 is almost as high but with the new bubble have come new entrants, many of which are sophisticated, seasoned financial market professionals seeking institutional customers. They are building well-managed products designed to attract the discerning investor, and their focus is on risk-management and drawdown control. The objective? Better risk-adjusted returns.

Just when you thought it was safe to go back in the water

During the past month, digital asset markets have reminded investors that what goes up can come back down even faster. Bitcoin as a means of exchange remains too volatile for widespread adoption; as a store of value it has its advocates, but for the majority of investors it remains a highly speculative investment.

Setting aside the volatility of the majority of digital assets, there are constraints on adoption imposed by the underlying decentralized and permissionless nature of distributed ledger technologies. The cost of transactions, based on *proof of work* verification, which requires increasingly onerous computational (and energy) resources, imposes a limit on the number of transactions which can be processed in a given time. Regardless of the carbon footprint, the current architecture remains limited.

Solutions are in train which will increase the speed and transactional capacity of the digital asset marketplace. The constant stream of venture capital flowing into the industry bodes well for the future. Meanwhile, despite the bottlenecks mentioned above, the industry is rapidly becoming institutional

in its approach. Leading participants have generally welcomed regulation and oversight as it lends them official legitimacy.

A nagging doubt remains. Why would any government willingly cede sovereignty over the issuance of currency to disruptive challengers? Here I believe the regulators have already shown their hand. From a regulatory perspective, digital assets are regarded as either commodities (regulated by the CFTC) or securities (the purview of the SEC), none are considered to be currencies in their own right, even though officials discuss some of them, such as Bitcoin, as if they were.

China, along with other totalitarian regimes, may seek to outlaw their use, but prohibition does not eradicate ownership; it simply drives it underground. In more open and developed democratic countries, I believe, digital assets will become increasingly regulated and legitimized, but that doubt remains. This week the BIS – CBDCs: an opportunity for the monetary system – provided an update on the advantages of CBDCs. Among their conclusions, these remarks suggest that investors should adopt a cautious approach: –

Central banks stand at the centre of a rapid transformation of the financial sector and the payment system. Innovations such as cryptocurrencies, stablecoins and the walled garden ecosystems of big techs all tend to work against the public good element that underpins the payment system...

CBDCs represent a unique opportunity to design a technologically advanced representation of central bank money, one that offers the unique features of finality, liquidity and integrity.

Back in 2016 I attended a lecture at which a highly respected economist denounced Bitcoin as, ‘Merely a means of exchange for the criminal

underclass.’ During the intervening five years, much has happened to support the case for digital assets and this month a bipartisan bill, the Blockchain Innovation Act, requiring additional study on the use of blockchain technology and digital tokens, passed easily through the US House of Representatives. More legitimacy will be needed to satisfy the institutional investment community, but it is reasonable to conclude that digital assets have finally come of age.

– June 27, 2021

Why Is There Such Reluctance to Discuss Natural Immunity?

JON SANDERS

Contributor

If you're among those of us who aren't tribally invested in Covid politics but would like good information about when life will resume as normal, chances are you're interested in herd immunity. You're likely *not* interested in having to rely on the Internet Archive for good information on herd immunity. Alas, it's become a go-to place for retrieving, as it were, previously published information on herd immunity that became inconvenient post-vaccine and then virtually Memory-Holed.

Over the past 15 months, the litany of Experts' True Facts and Science regarding various aspects of SARS-CoV-2 has changed more often than the starting lineup of a bad minor league ball club. Covid-19 is spread by droplets, especially from asymptomatic people, until one day it was airborne all along and people who weren't sick in all likelihood weren't even sick. Stay at home, you're safer indoors, even stay away from parks and beaches; well, actually, outdoors is the place to be. Masks don't work against viruses and are actually unhealthy to wear if you're not sick, then suddenly they did work and without one you might as well be shooting people. Everyone knows and PolitiFact verified that the virus couldn't have been created in the prominent infectious disease lab doing gain-of-function research on coronaviruses in bats coincidentally at Covid Ground Zero until, one day, PolitiFact had to retract the entire "Pants on Fire!" article. And so forth.

Unfortunately, information about herd immunity has also not been immune to this kind of meddling. Until recent months, people readily understood that active immunity came about either by natural immunity or vaccine-induced immunity. Natural

immunity comes from battling and defeating an actual infection, then having your immune system primed for the rest of your life to fight it off if it ever shows up again. This immunity is achieved at a sometimes very high personal price.

Vaccine-induced immunity is to prime your immune system with a weaker, non-threatening form of the invading infection, so that it's ready to fight off the real thing should you ever encounter it, and without your having first to risk severe illness or death.

Those interested in herd immunity in itself likely don't have a moral or political preference for one form of immunity to the exclusion of the other. *Immunity is immunity*, regardless of whether a particular person has it naturally or by a vaccine. All immunity contributes to herd immunity.

Others, however, are much less circumspect. They seem to have forgotten the ultimate goal of the public campaign for people to receive vaccination against Covid-19. It's not to *be vaccinated*; it's to *have immunity*. People with natural immunity — i.e., people whose immune systems have faced Covid-19 and won — don't need a vaccine.

They do, however, need to be considered in any good-faith discussion of herd immunity. There are two prongs to herd immunity, as we used to all know, and those with natural immunity are the prong that's being ignored. It's not just mere oversight, however. Fostering such ignorance can lead to several bad outcomes:

- People with natural immunity could be kept from employment, education, travel, normal commerce, and who knows what other things if they don't submit to a vaccine they don't need

in order to fulfill a head count that confuses a means with the end

- The nation could already be at herd immunity while governors and health bureaucrats continue to exert extreme emergency powers, harming people's liberties and livelihoods
- People already terrified of Covid — including especially those who've already had it — would continue to live in fear, avoiding human interaction and worrying beyond all reason
- People could come to distrust even sound advice from experts about important matters, as they witness and grow to expect how what "the experts" counsel diverges from what they know to be wise counsel while it conforms to and amplifies the temporary needs of the political class

Those of us wanting good information certainly don't want any of those outcomes. But others seem perfectly fine to risk them. They include not only elected officials, members of the media, political talking heads, self-important bureaucrats, and their wide-eyed acolytes harassing shoppers, but strangely also highly prominent health organizations.

For example, late last year Jeffrey Tucker showed that the World Health Organization (WHO) suddenly, and "for reasons unknown," changed its definition of "herd immunity." Using screenshots from a cached version on the Internet Archive, Tucker showed how the WHO altered its definition in such a way as to erase completely the role of natural immunity. Before, the WHO rightly said it "happens when a population is immune either through vaccination or immunity developed through previous infection." The WHO's change stated that it happens "if a threshold of vaccination is reached." Not long after Tucker's piece appeared, the WHO restored natural immunity to its definition.

The Food and Drug Administration (FDA),

seemingly apropos of nothing, on May 19 issued a "safety communication" to warn that FDA-authorized SARS-CoV-2 antibody tests "should not be used to evaluate immunity or protection from COVID-19 at any time." The FDA's concern appears to be that taking an antibody test too soon after receiving a vaccination may fail to show vaccine-induced antibodies, but why preclude its use for "identifying people with an adaptive immune response to SARS-CoV-2 from a recent or prior infection?" Especially after stating outright that "Antibody tests can play an important role in identifying individuals who may have been exposed to the SARS-CoV-2 virus and may have developed an adaptive immune response."

Then there is the National Institute of Allergy and Infectious Diseases director, Dr. Anthony Fauci, that ubiquitous font of fatuous guidance. He had told people that herd immunity would be at 60 to 70 percent immunity, and then he started publicly cinching those numbers up: 75 percent, 80 percent, 85 percent, even 90 percent (as if Covid-19 were as infectious as measles). He is quoted in the *New York Times* admitting to doing so deliberately to affect people's behavior:

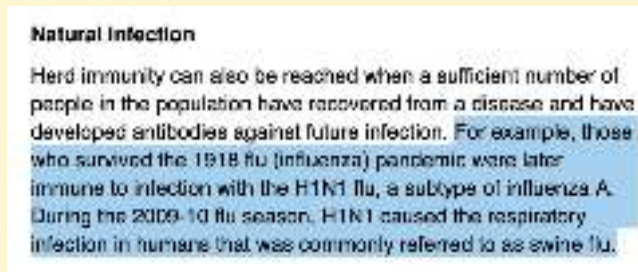
"When polls said only about half of all Americans would take a vaccine, I was saying herd immunity would take 70 to 75 percent," Dr. Fauci said. "Then, when newer surveys said 60 percent or more would take it, I thought, 'I can nudge this up a bit,' so I went to 80, 85."

Now — or better put, *as of this writing* — Fauci has taken to arguing herd immunity is a "mystical elusive number," a distracting "endgame," and therefore not worth considering. Only vaccinations are worth counting. As he put it recently, "We don't want to get too hung up on reaching this endgame

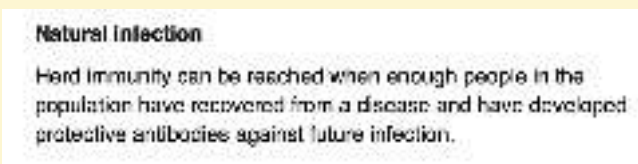
of herd immunity because every day that you put 2 million to 3 million vaccinations into people [it] makes society be more and more protected.”

While composing an article about natural immunity and herd immunity for my home state of North Carolina, I happened to notice that the Mayo Clinic had removed a compelling factoid about natural immunity. It’s something I had quoted in an earlier discussion of the matter and wanted to revisit it.

Here’s what the Mayo Clinic once wanted people to know in its page on “Herd Immunity and COVID-19” with respect to natural immunity: “[T] hose who survived the 1918 flu (influenza) pandemic were later immune to infection with the H1N1 flu, a subtype of influenza A.” The Mayo Clinic pointed out that H1N1 was during the 2009-10 flu season, which would be *92 years later*. That finding attested to just how powerful and long-lived natural immunity could be.



As can be seen from the Internet Archive, however, sometime after April 14 the Mayo Clinic removed that compelling historical aside:



The Mayo Clinic also reoriented its page to feature vaccination over “the natural infection method” (*method?*) and added a section on “the outlook for achieving herd immunity in the U.S.” This new section stated that “it’s not clear if or

when the U.S. will achieve herd immunity” but encouraged people nonetheless that “the FDA-authorized COVID-19 vaccines are highly effective at protecting against severe illness requiring hospitalization and death ... allowing people to better be able to live with the virus.”

Why, from people who know better, is there so much interest in downplaying or erasing natural immunity?

Is it because it’s hard to quantify how many people have natural immunity? Is it out of a mix of good intentions and worry, that discussing natural immunity would somehow discourage (“nudge,” in Fauci’s term) people from getting vaccines who otherwise would? Is it simple oversight, being so focused on vaccinations that they just plain forgot about natural immunity? Or is something else at work?

Whatever the reason, it’s keeping Americans in the dark about how many people have active immunity from Covid-19. It’s keeping people needlessly fearful and suspicious of each other. It’s empowering executive overreach. Worst of all, it’s tempting people to consider government and business restrictions on the unvaccinated, regardless of their actual immunity.

– June 4, 2021

Climate Models: Worse Than Nothing?

ROBERT L. BRADLEY JR.

Contributor

“Climate modeling is central
to climate science....”
(Stephen Koonin, below)

When the history of climate modeling comes to be written in some distant future, the major story may well be how the easy, computable answer turned out to be the wrong one, resulting in overestimated warming and false scares from the enhanced (man-made) greenhouse effect.

Meanwhile, empirical and theoretical evidence is mounting toward this game-changing verdict despite the best efforts of the establishment to look the other way.

Consider a press release this month from the University of Colorado Boulder, “Warmer Clouds, Cooler Planet,” subtitled “precipitation-related ‘feedback’ cycle means models may overestimate warming.”

“Today’s climate models are showing more warmth than their predecessors,” the announcement begins.

But a paper published this week highlights how models may err on the side of too much warming: Earth’s warming clouds cool the surface more than anticipated, the German-led team reported in *Nature Climate Change*.

“Our work shows that the increase in climate sensitivity from the last generation of climate models should be taken with a huge grain of salt,” said CIRES Fellow Jennifer Kay, an associate professor of atmospheric and oceanic sciences at CU Boulder and co-author on the paper.

The press release goes on to state how incorporating this negative feedback will improve next-generation climate models, something that is of the utmost importance given the upcoming Sixth Assessment of the Intergovernmental Panel on Climate Change (IPCC). But will conflicted modelers and the politicized IPCC be upfront with the elephant in the room?

Background

Strong positive feedbacks from the release of carbon dioxide (CO₂) and other manmade greenhouse gases (GHG) are what turn a modest and even positive warming into the opposite. The assumption has been that increased evaporation in a warmer world (from oceans, primarily) causes a strongly *positive* feedback, doubling or even tripling the primary warming.

In technical terms, water molecules trap heat, and clouds or vapor in the upper tropical troposphere – where the air is extremely dry – trap substantially more heat, thickening the greenhouse. How water inhabits this upper layer (≈30,000–50,000 feet) to either block (magnify) or release (diminish) the heat is in debate, leaving the sign of the externality unknown for climate economics. And it is the upper troposphere where climate models are data-confounding.

Assuming fixed relative atmospheric humidity allows modelers to invoke *ceteris paribus* against altered physical processes that might well negate the secondary warming. This controversial assumption opens the door for hyper-modeling that is at odds with reality. (For economists, the analogy would be assuming “perfect competition” to unleash hyper theorizing.)

For decades, model critics have questioned the simplified treatment of complexity. Meanwhile, climate models have predicted much more warming than has transpired.

Theoreticians have long been at odds with model technicians. MIT's Richard Lindzen, author of *Dynamics in Atmospheric Physics*, has advanced different hypotheses about why water-vapor feedback is much less than modeled. Judith Curry, whose blog *Climate Etc.* is a leading source to follow physical-science and related developments, is another critic of high-sensitivity models.

"There's a range of credible perspectives that I try to consider," she states. "It's a very complex problem, and we don't have the answers yet."

And now we have way too much confidence in some very dubious climate models and inadequate data sets. And we're not really framing the problem broadly enough to ... make credible projections about the range of things that we could possibly see in the 21st century.

Mainstream Recognition

Climate scientists know that climate models are extremely complicated and fragile. In *What We Know About Climate Change* (2018, p. 30), Kerry Emanuel of MIT explains:

Computer modeling of global climate is perhaps the most complex endeavor ever undertaken by humankind. A typical climate model consists of millions of lines of computer instructions designed to simulate an enormous range of physical phenomena....

Although the equations representing the physical and chemical processes in the climate system are well known, they cannot be solved exactly. The problem here is that many important processes happen at much smaller scales.

The *parameterization problem* is akin to the fallacies of macroeconomics, where the crucial causality of individual action is ignored. Microphysics is the driver of climate change, yet the equations are unsettled and sub-grid scale. Like macroeconomics, macro-climatology should have been highly qualified and demoted long ago.

My mentor Gerald North, former head of the climatology department at Texas A&M, had a number of observations about the crude, overrated nature of climate models back in 1998–99 that are still relevant today.

We do not know much about modeling climate. It is as though we are modeling a human being. Models are in position at last to tell us the creature has two arms and two legs, but we are being asked to cure cancer.

There is a good reason for a lack of consensus on the science. It is simply too early. The problem is difficult, and there are pitifully few ways to test climate models.

One has to fill in what goes on between 5 km and the surface. The standard way is through atmospheric models. I cannot make a better excuse.

The different models couple to the oceans differently. There is quite a bit of slack here (undetermined fudge factors). If a model is too sensitive, one can just couple in a little more ocean to make it agree with the record. This is why models with different sensitivities all seem to mock the record about equally well. (Modelers would be insulted by my explanation, but I think it is correct.)

[Model results] could also be sociological: getting the socially acceptable answer.

The IPCC 5th assessment (2013), the "official" or mainstream report, recognizes fundamental

uncertainty while accepting model methodology and results at face value. “The complexity of models,” it is stated (p. 824), “has increased substantially since the IPCC First Assessment Report in 1990....”

However, every bit of added complexity, while intended to improve some aspect of simulated climate, also introduces new sources of possible error (e.g., via uncertain parameters) and new interactions between model components that may, if only temporarily, degrade a model’s simulation of other aspects of the climate system. Furthermore, despite the progress that has been made, scientific uncertainty regarding the details of many processes remains.

The humbling nature of climate modeling was publicized by *The Economist* in 2019. “Predicting the Climate Future is Riddled with Uncertainty” explained:

[Climate modeling] is a complicated process. A model’s code has to represent everything from the laws of thermodynamics to the intricacies of how air molecules interact with one another. Running it means performing quadrillions of mathematical operations a second—hence the need for supercomputers.

[S]uch models are crude. Millions of grid cells might sound a lot, but it means that an individual cell’s area, seen from above, is about 10,000 square kilometres, while an air or ocean cell may have a volume of as much as 100,000km³. Treating these enormous areas and volumes as points misses much detail.

Clouds, for instance, present a particular challenge to modellers. Depending on how they form and where, they can either warm or cool the climate. But a cloud is far smaller than even the smallest grid-cells, so its individual

effect cannot be captured. The same is true of regional effects caused by things like topographic features or islands.

Building models is also made hard by lack of knowledge about the ways that carbon—the central atom in molecules of carbon dioxide and methane, the main heat-capturing greenhouse gases other than water vapour—moves through the environment.

“But researchers are doing the best they can,” *The Economist* concluded.

Climate models, in fact, are significantly overestimating warming, even by one-half. And the gap is widening as a coolish 2021 is well underway. And as for the future, anthropogenic warming is constrained by the logarithmic rather than linear effect of GHG forcing. The saturation effect means that as the atmosphere contains more CO₂, the warming increase becomes less and less. The warming from a doubling of CO₂, in other words, does not reoccur at a tripling but a quadrupling.

The mitigation window is rapidly closing, in other words, explaining the shrill language from prominent politicians. But it is the underlying climate models, not the climate itself, that is running out of time.

“Unsettled” Goes Mainstream

The crude methodology and false conclusions of climate modeling is emerging from the shadows. Physicist and computer expert Steven Koonin, in his influential *Unsettled: What Climate Science Tells Us, What it Doesn’t, and Why It Matters* (chapter 4) explains:

Climate modeling is central to climate science.... Yet many important phenomena occur on scales smaller than the 100 km (60 mile) grid size (such as mountains, clouds, and thunderstorms), and so researchers must make

“subgrid” assumptions to build a complete model...

Since the results generally don't much look like the climate system we observe, modelers then adjust (“tune”) these parameters to get a better match with some features of the real climate system.

Undertuning leaves the model unrealistic, but overtuning “risks cooking the books—that is, pre-determining the answer,” adds Koonin. He then quotes from a paper co-authored by 15 world-class modelers:

... tuning is often seen as an unavoidable but dirty part of climate modeling, more engineering than science, an act of tinkering that does not merit recording in the scientific literature... Tuning may be seen indeed as an unspeakable way to compensate for model errors.

Conclusion

Climate modeling has arguably been worse than nothing because false information has been presented as true and “consensus.” Alarmism and disruptive policy activism (forced substitution of inferior energies; challenges to lifestyle norms) have taken on a life of their own. Fire, ready, aim has substituted for prudence, from science to public policy.

Data continue to confound naïve climate models. Very difficult theory is slowly but surely explaining why. The climate debate is back to the physical science, where it never should have left.

– June 23, 2021

Inflation Is a Dangerous Way to Get Rid of Debt Burdens

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Suppose you lent someone \$100, and when they paid you back they only handed you, say, \$99 or \$80. Would you consider the borrower to have kept his promise and contractual obligation? Or would you think that he had cheated you out of a part of the money you had lent him in good faith? Well, there are those who say that doing so is just fine, if it's done through price inflation so the borrower repays the lender in depreciated dollars.

Binyamin Appelbaum, who makes this argument, is the lead writer for *The New York Times* on financial and economic affairs. He approaches economic and social policy issues from a consciously “progressive” perspective on the regulatory role and redistributive responsibility of the U.S. federal government. Indeed, he is so “progressive” in his thinking that in a recent article on the opinion page of *The New York Times*, Mr. Appelbaum made it clear that he considers FDR’s New Deal to be, well, almost socially “reactionary.”

The New Deal was enlightened government reform by men in government for men out of government, and designed to make it easier for the “little woman” to stay at home rather than enter the world of “man’s” work. Equally “backwards,” Roosevelt’s policies did not mandate that the private sector had to provide paid family leave or paid sick leave. How “unprogressive” for Roosevelt to presume to leave such questions and issues to the people themselves, based on marketplace voluntary association and agreement.

Wanting Government to Do So Much More, and More

True political enlightenment is to use the threat of

government regulatory force to make people do what “the enlightened” know to be right and better for “the people,” than those people themselves. Some might consider such political paternalism to be examples of arrogance and hubris on the part of those in political authority (and by those who are advising them) to presume to dictate how people are to live and work and interact. But not Mr. Appelbaum.

He is absolutely delighted that Joe Biden has such big budgetary plans to rectify all the policy blinders and inadequacies that even past “progressive” Democratic administrations have failed to advance and implement. Government will subsidize more of parents’ child care costs, and the caregivers of such services will be boosted with more government-insisted upon wages and benefits. Plus, government will more widely subsidize the expense of people staying home from work to care for sick or elderly family members.

In an earlier opinion piece, Mr. Appelbaum was equally delighted with the widened definition of “infrastructure” to be found in Joe Biden’s spending agenda. He said, “When we define infrastructure, we are asserting a public responsibility to make certain things possible. Infrastructure is the stuff people don’t have to worry about.” Many people may think that infrastructure means things like roads, bridges, a dam, or a dredged harbor, or maybe a lighthouse. But that would clearly show that any such person was not enlightened and “progressive” enough in his thinking. (See my article, “Biden’s ‘Democratic’ Agenda of Paternalism and Planning”.)

What Joe Biden and Binyamin Appelbaum mean by infrastructure is to provide “the means to address the inequalities of wealth, health and

opportunity plaguing our society,” which include educating the young, caring for the old, planning the physical environment in the face of “climate change,” and directing and subsidizing the ability for “people to travel in electric vehicles.” Plus, a wide variety of other welfare redistributive “good things.” One wonders if Mr. Appelbaum has ever seen or imagined a human activity not requiring the paternalistic and intrusive hand of government, or the political financing of it in some way. If he does, he does not talk about it much.

Big Spending Requires Big Taxes and More Borrowing

So how will all of this be paid for? Like Joe Biden, Mr. Appelbaum knows the answer: significantly raise taxes on “the rich,” along with on big businesses and large corporations. Make them pay their “fair share,” assuming that that phrase means anything other than what people like Mr. Appelbaum think is the right amount according to their own subjective and arbitrary sense of “social justice.” Or in more direct and unambiguous language: “I think you have too much, and I’m going to use government to take it by force, since I know the right uses for it better than you, especially since I know you are a greedy, selfish person who does not care about others the way I do. Thank goodness there are people like me around!”

Joe Biden’s fiscal plan calls for increasing those taxes on “the rich” and on corporate America to the tune of \$3.6 trillion over the coming years. But as an article in *The Washington Post* (May 28, 2021) pointed out, even if all of Biden’s tax increase proposals were to successfully pass through Congress, their effect in raising federal government revenues would not be fully felt for years ahead.

So, the Biden budget proposal assumes a deficit of \$1.8 trillion in fiscal year 2022, based on \$6 trillion of government spending (or almost one-third of total planned federal expenditures); and there will

be budget deficits for many years after that of at least \$1.3 trillion per year. Given the current national debt of over \$28.3 trillion, if this were to be the pattern of government spending and borrowing over, say, the next ten years, then, in 2031, the accumulated national debt would reach more than \$42 trillion.

How will the federal government ever succeed in paying off this debt? Or even covering the interest payments on the accumulated debt? According to the Congressional Budget Office, in *An Overview of the 2021 Long-Term Budget Outlook* (May 20, 2021), by 2031, almost half of all money borrowed by the government in that fiscal year will be used just to pay the interest owed on the national debt at that time. So, over the next decade the government will be borrowing huge sums of money merely to stay current with the interest payments due on all the years of past deficit spending.

This, now, finally, gets us to the question raised in the opening paragraph about how you might feel if a borrower failed to repay all that you had lent him, and whether you would consider this to be a breaking of a promise and a breach of a loan agreement. This is also why I have taken the time to share Binyamin Appelbaum’s views on government spending and taxing and what, clearly, will be needed borrowing to cover all the expenditures that he sees Joe Biden trying to implement, and with which he wholeheartedly agrees.

Inflation to Do “Good Things” and Reduce the Real Value of the Debt

In a series of tweets on May 25, 2021, Mr. Appelbaum, said that,

“I find the fixation on 1970s inflation puzzling for several reasons. Inflation really wasn’t that high, certainly not by the standards of ‘historically memorable inflations.’ Also, high inflation was good for a lot of people. Student

loans disappeared! Home ownership spiked! . . .

“Describing inflation as the ‘primary risk’ to the U.S. economy strikes me as overstating the risk of inflation and overstating the consequences. The primary risk to the economy is that half the population isn’t vaccinated. Second place is the need for jobs . . .

“P.S. You know how we dealt with the massive federal debt incurred during World War II? I-N-F-L-A-T-I-O-N.”

It is easy enough for him to say that the “fixation on 1970s inflation” seems “puzzling,” since Mr. Appelbaum was only born in the late 1970s, and would only have any earliest personal memory, no doubt, from when he was a small child in the early 1980s, when Paul Volcker, then Federal Reserve Chairman, put the brakes on monetary expansion and brought price inflation way down. While price inflation as measured by the Consumer Price Index (CPI) followed a rollercoaster path during the decade of the 1970s, it, nonetheless, saw the highest price inflation experienced in the United States since about hundred years earlier during the American Civil War.

The Harmful Effects from 1970s Inflation

In 1975, the CPI rose for a period of time at a 12 percent annualized rate, and then in 1979-1980, it again spiked, reaching an annualized rate of about 15 percent. Mr. Appelbaum may shrug that off, but it means that something that cost, say, \$100 at the beginning of the year cost \$115 at the end of the year at that annualized rate. Unless someone’s income had risen over that period by a comparable 15 percent, that person would have experienced a noticeable decline in their real income. Labor unions at the time pushed for increases in nominal wages for members in an attempt to maintain their average real income with the CPI as a benchmark.

But it needs to be recalled that price inflations never bring about rises in all prices at the same rate and at the same time. Monetary expansions are non-neutral in their impact affect due to the temporal-sequence of how new money is injected into the economy and how that money is spent and then received as higher revenues due to the patterns of the resulting increasing demands for different goods and services in different amounts, at different times, and different places in the economy in the process. (See my articles, “Monetary Inflation’s Game of Hide-and-Seek” and “Macro Aggregates Hide the Real Market Processes at Work”.)

Thus, some selling prices may have been running ahead of increases in particular wages in an industry negotiated based on the CPI estimate of a change in the cost of living, while in other instances, money wages negotiated up in a sector of the economy at a higher rate based on that CPI estimate of changes in price inflation may have been more than the particular prices for the specific goods those workers were employed in manufacturing.

For instance, if selling prices for a set of particular goods were increasing at, say, 7 percent, while revised money wages in that part of the economy were only rising at a CPI-based negotiated rate of 5 percent, then employers would have experienced a decline in their real labor costs; however, if in some other sectors or industries CPI-based money wage adjustments were increasing at that 5 percent annual rate, while the selling prices of the goods in those sectors or industries were only rising at a 3 percent annual rate, those employers would have experienced a rise in the real wage in employing labor, thus making it more costly and less profitable to increase or maintain all those at work in that part of the economy.

This is because the “real wage” as estimated on the basis of the employee’s general cost of living as calculated by a consumer price index for finished

goods as a whole, is not the same as the “real wage” from an employer’s perspective who is comparing the money selling price for his own particular good (which may or may not be rising at the same average increase as prices in general), and the money wage that may be insisted upon by employees or negotiated by labor unions based on the CPI.

The Era of Stagflation – Rising Prices and Increasing Unemployment

This is part of the reason behind the period of the 1970s known as the era of “stagflation;” that is, generally rising prices combined with increasing unemployment. This was exacerbated by the downward rigidity of a wide variety of money wages at the time, such that if the rate of price inflation declined, the money wage demands of, especially, unionized workers did not moderate, which further increased the real cost of employing labor from the employers’ perspective.

This dilemma was summarized at the time by Austrian-born economist, Gottfried Haberler, in an essay on, “Stagflation: An Analysis of Its Causes and Cures” (American Enterprise Institute, March 1977):

“It is well known that every prolonged inflation tends to become cumulative and to accelerate. This does, of course, not mean that every creeping inflation must inexorably become a trotting and a galloping one. What it does mean is that to provide the same stimulus inflation must accelerate. The reason is that prolonged inflation generates inflationary expectations: Nominal interest rates rise because borrowers and lenders expect higher prices; unions press for higher wages to protect their members from the expected price rise; businessmen place orders ahead of time and accumulate inventories, etc.

“Expectations of price rises may even run

ahead of reality which is essentially an unstable situation. No wonder that sooner or later a stage is reached where a slowdown of the rate of inflation, or perhaps a mere reduction in the rate of acceleration, leads to unemployment and recession. If most people expect prices to rise at 15 percent and the actual price rise then turns out to be only 7 or 8 percent, the consequence for the economy will be the same as a complete stop of inflation would have had at an earlier stage. This is stagflation.”

Inflation May Benefit Some, But at Others’ Expense

Mr. Appelbaum seems quite happy that some student loans during the 1970s were being paid back in depreciated dollars, which reduced the real burden of the debt. But does he forget that for every borrower there is a lender, who, as a consequence, will have received less in real buying terms when the loan was repaid? He, no doubt, thinks of the lenders as greedy “bankers” sitting in their offices, feet up on their desks, wearing a top hat with a cigar in their mouth, like a caricature from the Monopoly game.

But, to use Frederic Bastiat’s term, “what is unseen” are all the bank depositors behind that more visible bank officer, whose individual savings have been pooled to extend loans, including to those attending college. Those savers often are families attempting to build up enough, themselves, to make a down payment on a house or a car, or to be accumulating a fund so when their own son or daughter goes off to college they would not have to possibly go as much into debt to pay for their higher education; or household members may be saving for their retirement at some point in their future.

The real value of their savings – and the personal and family financial hopes and dreams behind it – were and are damaged in terms of the real purchasing power that is lost with every percentage rise in the cost of living as time goes by, along with

the reduced real interest income to the extent that nominal rates of interest do not rise sufficiently to fully compensate for the general increase in prices. Inflationary premiums added on to nominal interest rates to adjust for expected rises in prices rarely can be formed precisely, particularly due to that non-neutral, “ragged,” manner that monetary expansions generate rising prices in those different ways and at different times.

Home ownership rose in the 1970s, but this was partly due to the housing market becoming a casino, in which people bought and sold – “flipped” – property and houses in speculative attempts to make quick profits on a house that could be bought at price “x” one day, and resold not long after at, possibly, price “x+2”. The housing market saw a noticeable retreat once the price inflation came to an end in the early 1980s. And, no doubt, some who bought housing property for real or speculative purposes in the late 1970s suffered losses a few years later than the inflation expectations frenzy subsided. But this, too, does not seem to enter Mr. Appelbaum’s story.

Irrelevant Talk About Vaccinations and a Lack of Jobs

He says that the concerns right now should not be about “inflation” but people not getting vaccinated and “the need for jobs.” Big government spending and expanded welfare programs under the camouflage of “infrastructure” do not get people to get their Covid-19 vaccinations. For most people the vaccine is already either covered by insurance policies or are heavily subsidized. There has been so much confusing and contradictory talk about the efficacy and the possible side effects from the injections that some people just don’t believe what they hear in favor of vaccination anymore, or consider that if they are not elderly and do not have a serious “precondition,” there is little need to worry

that much if they just wait it all out.

Does Mr. Appelbaum think people should be forced to be vaccinated against the virus? If so, he can consider himself comfortably in the company of the government authorities in the Russian region of Yakutia in Siberia where mandatory vaccination has been made the local law. Given that he clearly has little problem with government taking one group of people’s monies and deciding how others will be made or influenced to live through how those taxed away or borrowed dollars are politically spent, maybe he might apply for U.S.-Yakutian dual citizenship.

Mr. Appelbaum also insists that a far more important issue is the “need for jobs.” But there is no such abstract or amorphous thing called “jobs.” Production and employment are means to ends, the better and fuller satisfaction of the demands of consumers in society for useful and desired specific goods and services. As long as there are unfulfilled ends and wants, there is work to be done. So, willing hands can always find employments. But this will not happen if either governments command people not to work and, therefore, not to earn, as was done in 2020, due to the government lockdowns and shutdowns; or if you subsidize some people not to work, by sending supplementary government checks that sufficiently add to already received unemployment benefits that it is more financially attractive for some to stay at home than to accept gainful employment at a more market-based wage.

Applying the Inflation Swindle to Eliminate the Debt Burden

Finally, what is to be done with the huge and growing national debt? As far as Mr. Appelbaum is concerned, the answer is simple: just inflate it away through debasement of the currency so the nominal dollars paid back to creditors in depreciated units of money makes its real burden just go away. This

type of swindle is certainly not a new one. We can turn to Adam Smith in *The Wealth of Nations* (1776, Book V, Chapter III: “Of Public Debts”):

“When national debts have once been accumulated to a certain degree, there is scarce, I believe, a single instance of its having been fairly and completely paid. The liberation of the public revenue, if it has ever been brought about at all, has always been brought about by a bankruptcy; sometimes by an avowed [an admitted] one, but always by a real one, though frequently by a pretended payment. “The raising of the denomination of the coin [debasement of the currency through inflation] has been the usual expedient by which a real public bankruptcy has been disguised under the appearance of a pretended payment.”

It has long been understood that price inflation is a form of tax, under which portions of the citizenry’s income and wealth is taken from them through reducing the real buying power of the nominal sums of money held by all those in the private sector and the general public. But, as has also been pointed out many times, while actual taxation is targeted in various ways at defined groups in society, price inflation is indiscriminate in negatively affecting the real incomes earned by various segments of the overall population. It is far more arbitrary and deleterious in its effects on people.

Considering that Mr. Appelbaum is a lead writer for *The New York Times* on financial and economic policy issues, perhaps it would be useful to quote at some length on this issue from one of his predecessors in that staff position at the Times. Henry Hazlitt (1894-1993) was, also, from 1934 to 1946 the editorial writer for *The New York Times* on financial and economic issues. Toward the end of his stint in that position, in 1946, he wrote and published

his most famous book, *Economics in One Lesson*. He discusses the very inflation that Mr. Appelbaum argues for. Said Henry Hazlitt in a chapter on “The Mirage of Inflation:”

“If no honest attempt is made to pay off the accumulated [government] debt, and resort is had to outright inflation instead, then the results follow that we have already described. For the country as a whole cannot get anything without paying for it. Inflation is a form of taxation. It is perhaps the worst possible form, which usually bears hardest on those least able to pay.

“On the assumption that inflation affected everyone and everything evenly (which we have seen, is not true), it would be tantamount to a flat sales tax of the same percentage on all commodities, with the rate as high on bread and milk as on diamonds and furs. Or it might be thought of as an equivalent to a flat tax of the same percentage, without exemptions, on everyone’s income. It is a tax not only on every individual’s expenditures, but on his savings account and life insurance. It is, in fact, a flat capital levy, without exemptions, in which the poor man pays as high a percentage as the rich man.

“But the situation is even worse than this, because, as we have seen, inflation does not and cannot affect everyone evenly. Some suffer more than others. The poor may be more heavily taxed by inflation, in percentage terms, than the rich. For inflation is a kind of tax that is out of the control of the tax authorities. It strikes wantonly in all directions. The rate of tax imposed by inflation is not a fixed one; it cannot be determined in advance. We know what it is today; we do not know what it will be tomorrow; and tomorrow we shall not know

what it will be on the day after.

“Like every other tax, inflation acts to determine the individual and business policies we are forced to follow. It discourages all prudence and thrift. It encourages squandering, gambling, reckless waste of all kinds. It often makes it more profitable to speculate than to produce. It tears apart the whole fabric of stable economic relationships. Its inexcusable injustices drive men toward desperate remedies. It plants seeds of fascism and communism. It leads men to demand totalitarian controls. It ends invariably in bitter disillusion and collapse.”

The United States is in dangerous waters if it becomes “general wisdom” and “popular opinion” among public policy analysts and politicians that governments can spend all they want, in any amount, by just running huge annual budget deficits and expanding the national debt because it can all be made to go away through a magician’s trick of monetary expansion and currency debasement. It needs to be remembered that the political magician’s conjuring does not change reality; he merely succeeds in diverting our attention from what is really going on through a temporary illusion. It does not go away with the longer-term harmful consequences that cannot be made to disappear.

– June 1, 2021

Bureaucracy as Constituency

DAVID R. HENDERSON & CHARLES L. HOOPER

Contributors

Anyone who has taken a civics class knows the Framers created a federal government with three co-equal branches. James Madison in *Federalist 51* stressed that the ambitions of some could be made to counteract the ambitions of others. Why? Because the same people who had a hand in framing our government in the first place didn't place a whole lot of trust in their creation. Madison was perfectly blunt: "It may be a reflection on human nature," he wrote, "that such devices should be necessary to control the abuses of government. But what is government itself, but the greatest of all reflections on human nature?"

"If men were angels," he continued, "no government would be necessary. If angels were to govern men, neither external nor internal controls on government would be necessary. In framing a government which is to be administered by men over men, the great difficulty lies in this: you must first enable the government to control the governed; and in the next place oblige it to control itself."

It's that last bit that has been so difficult over the years. Each branch of the federal government has clearly grown well beyond its constitutional limits. But things are so much worse than they first appear. The system of checks and balances, the very thing that was supposed to keep the three branches in their proper places, started failing wholesale in the early part of the 20th century. And when the separate branches of the government started colluding to their collective benefit, all bets were off when it came to implementing brave and imaginative extra-constitutional institutions like the federal government's massive bureaucracy.

How massive is it? The federal government

employs almost two million civilians. For perspective, that's over 25 percent more employees than Walmart, which is otherwise the country's largest employer. Those who occupy the federal bureaucracy benefit from bigger government because the larger the government, the more power and funding flow to those in this unelected and largely unchecked "branch" of government.

That the federal bureaucracy has become a constituency of sorts isn't surprising. What is surprising (and dangerous) is that it has become a weaponized constituency. As the federal government has become larger and more complex, it has become ever more difficult for Congress to do its job. Long gone are the days when Congress could debate the particulars of any bill. Formulating rules now often requires bureaucrats specializing in finance, economics, statistics, and numerous fields of science. Congress has not merely come to rely more heavily on the bureaucracy, the Congress has actually delegated much of its legislative power to it. Technically, federal regulatory bodies don't make laws, they write regulations. But any regulation that carries with it the fines or jail time for noncompliance is, for all practical purposes, indistinguishable from a law.

So here we have innumerable federal agencies, commissions, administrations, and programs populated by unelected bureaucrats, many of whom are empowered to create what are, in effect, laws. And "innumerable" is not an exaggeration.

In 1993, the federal government enacted the Government Performance and Results Act (GPRA), which required that federal agencies set goals, measure results, and report progress. In 2010, the GPRA Modernization Act extended GPRA by

requiring that all government programs produce quarterly performance assessments. At the least, these two acts should have provided taxpayers with a list of all government programs. To date, no such list exists. Even the government itself seems not to know how many government programs exist.

In many instances, the programs themselves become tools that politicians use to win elections. Faced with a problem, be it real or imagined, that stirs voters, politicians propose new programs to solve the problem. We thus have programs to address food insecurity, healthcare, children's health, housing, financial assistance, education, unemployment...the list goes on and on. And when problems don't present themselves, politicians invent them by exaggerating and grandstanding. We thus have proposals involving rifles, wealth, wages, immigration, and all manner of problems whose realities pale in comparison to politicians' characterizations.

Meanwhile, each program is designed not so much to solve people's problems as to micro-manage them into behaviors that benefit favored constituencies. If, in the process, the problems never get solved, that's actually to the politician's benefit. Unsolved problems can be used again in the next election cycle by blaming the other party for thwarting the programs.

Consider the Supplemental Nutrition Assistance Program (SNAP), formerly known as "food stamps." SNAP benefits can be used to buy food, but not vitamins, cleaning supplies, or hygiene items. To be eligible for SNAP, a working-age person who is able to work must be working at least 30 hours per week or, if not working, caring for a child under age 6. Or, the person must be unable to work due to a physical or mental limitation, or participating in an alcohol or drug treatment program, or a full-time student (but not a college student). Otherwise, the person must register for work, participate in SNAP employment training, and take a suitable job if offered.

This is just an introduction to the micromanagement involved in qualifying for SNAP. There are additional rules for continuing to receive SNAP, different rules for adults without dependents, and still other rules for people older than 49 or younger than 18. Just figuring out who is and is not eligible is a fulltime job.

Who sets these byzantine rules? The US Department of Agriculture. Except the USDA was not created to serve the poor. The USDA was created to serve farmers. From the USDA's website: "We have a vision to provide economic opportunity through innovation, helping rural America to thrive; to promote agriculture production that better nourishes Americans while also helping feed others throughout the world; and to preserve our nation's natural resources through conservation, restored forests, improved watersheds, and healthy private working lands." The USDA exists principally to promote the production of food, which explains why SNAP benefits can't be used for vitamins, cleaning supplies, and hygiene items.

The focus here is clearly not on the needs of the poor, but on the needs of favored constituencies. All this micromanagement requires armies of bureaucrats to create rules, determine eligibility, monitor compliance, and dispense benefits. The bureaucracy itself becomes a constituency wherein bureaucrats' livelihoods rely on the existence of SNAP recipients. And it's the same story with literally every other bureaucratic arm of the state. There is no clarity, and there is no accountability. The job of the politician has become one of using social problems to generate election wins. Similarly, the job of the bureaucrat has become one of using citizens who depend on social programs to create and maintain bureaucrats' jobs.

It is a well-choreographed dance that emerges, and the dancers take it as given that they will never be judged on what they achieve because failure can always be blamed on the other party,

or on the fact that they weren't allowed to spend more. Their intentions will be all that matter. Voters with much goodwill but little attention reward the politicians whose intentions sound most noble. Politicians, unable to solve complex problems, hand the problems over to bureaucrats. Bureaucrats, unaccountable to voters, craft solutions that call for more bureaucracy. And our problems are never solved because no one in the system is rewarded for solving them.

But as Madison asked, "What is government, after all, but the greatest of all reflections on human nature?" And as long as the federal bureaucracy remains largely unchecked, expect to see that bureaucracy grow unabated. Expect to see laws getting longer and more complex by the year. And expect to see no one in Washington taking responsibility for a federal government that has been out of control for the better part of a century.

– June 11, 2021

New Leak of Taxpayer Info Is (More) Evidence of IRS Corruption

DANIEL J. MITCHELL

Contributor

Isometimes try to go easy on the IRS. After all, our wretched tax system is largely the fault of politicians, who have spent the past 108 years creating a punitive and corrupt set of tax laws.

But there is still plenty of IRS behavior to criticize. Most notably, the tax agency allowed itself to be weaponized by the Obama White House, using its power to persecute and harass organizations associated with the “Tea Party.”

That grotesque abuse of power largely was designed to weaken opposition to Obama’s statist agenda and make it easier for him to win re-election.

Now there’s a new IRS scandal. In hopes of advancing President Biden’s class-warfare agenda, the bureaucrats have leaked confidential taxpayer information to ProPublica, a left-wing website.

Here’s some of what that group posted.

ProPublica has obtained a vast trove of Internal Revenue Service data on the tax returns of thousands of the nation’s wealthiest people, covering more than 15 years. ...ProPublica undertook an analysis that has never been done before. We compared how much in taxes the 25 richest Americans paid each year to how much Forbes estimated their wealth grew in that same time period. We’re going to call this their true tax rate. ...those 25 people saw their worth rise a collective \$401 billion from 2014 to 2018. They paid a total of \$13.6 billion in federal income taxes in those five years, the IRS data shows. That’s a staggering sum, but it amounts to a true tax rate of only 3.4%.

Since I’m a policy wonk, I’ll first point out that *ProPublica* created a make-believe number. We (thankfully) don’t tax wealth in the United States.

So Elon Musk’s income is completely unrelated to what happened to the value of his Tesla shares. The same is true for Jeff Bezos’ income and the value of his Amazon stock.

And the same thing is true for the rest of us. If our IRA or 401(k) rises in value, that doesn’t mean our taxable income has increased. If our home becomes more valuable, that also doesn’t count as taxable income.

The *Wall Street Journal* opined on this topic today and made a similar point.

There is no evidence of illegality in the ProPublica story. ...ProPublica knows this, so its story tries to invent a scandal by calculating what it calls the “true tax rate” these fellows are paying. This is a phony construct that exists nowhere in the law and compares how much the “wealth” of these individuals increased from 2014 to 2018 compared to how much income tax they paid. ...what Americans pay is a tax on income, not wealth.

Some journalists don’t understand this distinction between income and wealth.

Or perhaps they do understand, but pretend otherwise because they see their role as being handmaidens of the Biden Administration.

Consider these excerpts from a column by Binyamin Appelbaum of the *New York Times*.

Jeff Bezos...added an estimated \$99 billion in wealth between 2014 and 2018 but reported only \$4.22 billion in taxable income during that period. Warren Buffett, who amassed \$24.3 billion in new wealth over those years, reported \$125 million in taxable income. ... some of the wealthiest people in the United States essentially live under a different system of income taxation from the rest of us.

Mr. Appelbaum is wrong. The rich have a lot more assets than the rest of us, but they operate under the same rules.

If I have an asset that increases in value, that doesn't count as taxable income. And it isn't income. It's merely a change in net wealth.

And the same is true if Bill Gates has an asset that increases in value.

Now that we've addressed the policy mistakes, let's turn our attention to the scandal of IRS misbehavior.

The *WSJ's* editorial addresses the agency's grotesque actions.

Less than half a year into the Biden Presidency, the Internal Revenue Service is already at the center of an abuse-of-power scandal. ...ProPublica, a website whose journalism promotes progressive causes, published information from what it said are 15 years of the tax returns of Jeff Bezos, Warren Buffett and other rich Americans. ...The story arrives amid the Biden Administration's effort to pass the largest tax increase as a share of the economy since 1968. ...The timing here is no coincidence, comrade. ...someone leaked confidential IRS information about individuals to serve a political agenda. This is the same tax agency that pursued a vendetta

against conservative nonprofit groups during the Obama Administration. Remember Lois Lerner? This is also the same IRS that Democrats now want to infuse with \$80 billion more... As part of this effort, Mr. Biden wants the IRS to collect "gross inflows and outflows on all business and personal accounts from financial institutions." Why? So the information can be leaked to ProPublica? ...Congress should also not trust the IRS with any more power and money than it already has.

And Charles Cooke of *National Review* also weighs in on the implications of a weaponized and partisan IRS.

We cannot trust the IRS. "Oh, who *cares*?" you might ask. "The victims are billionaires!" And indeed, they are. But I care. For a start, they're American citizens, and they're entitled to the same rights — and protected by the same laws — as everyone else. ...Besides, even if one wants to be entirely amoral about it, one should consider that if *their* information can be spilled onto the Internet, *anyone's* can. ...A government that is this reckless or sinister with the information of men who are lawyered to the eyeballs is unlikely to worry too much about being reckless or sinister with your information. ...The IRS wields an extraordinary amount of power, and there will always be somebody somewhere who thinks that it should be used to advance their favorite political cause. Our refusal to indulge their calls is one of the many things that prevents us from descending into the caprice and chaos of your average banana republic. ...Does that bother you? It should.

What's especially disgusting is that the Biden Administration wants to reward IRS corruption with giant budget increases, bolstered by utterly fraudulent numbers.

Needless to say, that would be a terrible idea (sadly, Republicans in the past have been sympathetic to expanding the size of the tax bureaucracy).

– June 9, 2021

Is Inflation Below the Fed’s Target? Yes and No.

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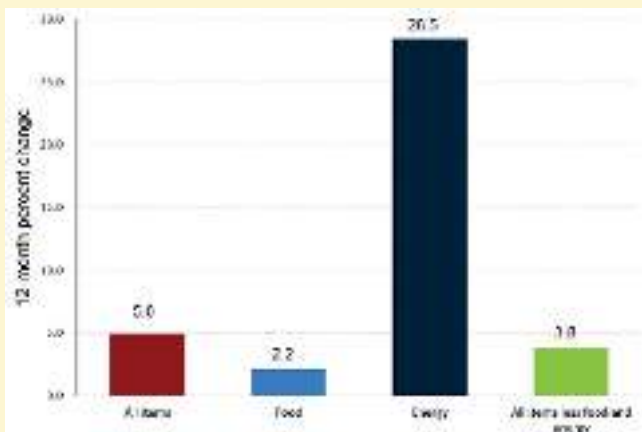
Economists from both the political left and right are worried about inflation. The most recent data from the Bureau of Labor Statistics show that the consumer price index (CPI) rose by 5.0 percent over the past 12 months. This is the highest rate of inflation since before the 2008 financial crisis. For comparison, the Federal Reserve targets an average rate of 2 percent inflation over time (although Fed economists use personal consumption expenditures as their preferred inflation measure).

What is causing the recent changes in the CPI? Should consumers be worried? How should the Fed respond?

What’s driving CPI inflation?

Figure 1 shows the increase in the CPI over the past year broken out into three main components: food, energy, and all other items. It’s clear that the 28.5 percent increase in energy prices is far larger than the other components. Food increased just 2.2 percent, and the average of all other items was 3.8 percent.

Figure 1. One-year change in CPI and major components



Source: Bureau of Labor Statistics

What caused the huge increase in energy prices over the past 12 months? Did the price of oil suddenly skyrocket?

Actually, the opposite. It happens that oil prices collapsed last year in April and May. You may remember an event at that time that caused many people to stay at home. This, in turn, caused the price of gasoline, and thus the price of oil, to plummet. The price increase over the past year has little to do with supply or demand today but rather the lack of demand one year ago.

Figure 2. Price of crude oil (WTI), January 2020-June 2021



Source: US Energy Information Agency via the Federal Reserve Bank of St. Louis

What about core CPI?

Swings in the price of oil demonstrates why many economists rely on “core” rates of inflation, which exclude volatile food and energy prices. But even the core rate of CPI inflation, shown in Figure 1, was 3.8 percent, almost double the 2 percent average targeted by the Fed.

Recent supply shortages have driven up prices in many industries. The production of inputs such as lumber and iron slowed during the pandemic. With the strong economic recovery, suppliers have been unable to keep up with demand, resulting in higher

prices for consumers.

The most dramatic example is the market for used cars. For many, public transportation was not available during the pandemic, which increased the demand for cars and decreased the supply as people were less willing to sell their old ones. That trend gave way around the end of 2020 but was replaced by another shock: a shortage of semiconductors used in automotive computer chips slowed the production of new cars, which drove up demand for used cars as well.

Figure 3 shows several of the main categories in the core CPI as well as subcategories with the greatest changes over the past year. The largest increases are related to auto prices: car rentals, vehicle insurance, and used car and truck prices (each of which is a subcategory of transportation services or transportation commodities). Airline fares also show a major increase which, like the price of oil, is predominantly due to severe declines in early 2020.

Figure 3. One-year change in Core CPI and major components



Source: Bureau of Labor Statistics

How much do these categories affect the rate of inflation? Using the current CPI category weights, excluding just the subcategories of car rentals, motor vehicle insurance, and used car and truck prices

reduces the rates of core CPI to just 1.89 percent. If not for the shortage of auto electronics, core CPI would be below the Fed's 2 percent average target rate.

Excluding airfares further reduces the change in core CPI to just 1.72 percent over the past year.

Too low, or too high?

If adjusting for supply-side factors puts inflation below the Fed's 2 percent average target rate, does that mean inflation is actually too low?

The standard view is that the Fed should not respond to real shocks. When prices rise due to supply shortages, especially in just a few industries, the high prices serve as signals to producers. Seeing the elevated prices, they seek out profits by increasing production, which thus eliminates the shortage.

If the Fed were to respond to supply-side inflation by contracting the money supply, the decline in prices would distort relative prices between industries, making profit opportunities more difficult to identify. Furthermore, it would cause production in other industries to decline, making the supply shortage even worse. In this view, it would be preferable to allow short-term above-target inflation as markets alleviate the shortages.

Other views, however, may find even 2 percent inflation to be too high. Studies of the optimal rate of inflation tend to find it should be very close to zero. If the Federal Open Market Committee's (FOMC's) mean forecast of 7 percent real GDP growth in 2021 is correct, then monetary rules like the Taylor Rule and Nominal GDP growth targets would imply the Fed should target rates of inflation that are below 2 percent, possibly even negative. Targeting the level of NGDP, on the other hand, would allow some leeway for inflation until the economy returns to its long-run growth path.

The Fed must also take caution that its current policies do not sow the seeds of future inflation.

Some economists worry that even transient inflation can increase inflation expectations and create a self-fulfilling prophecy, but it is not clear that this is much of a problem in practice. The FOMC plans to continue the Fed's open market purchases, but it recently raised the rate of interest paid on bank reserves. This combination will distort their investment allocations and further increase banks' ample reserve holdings, which could fuel inflation in the future.

Adjusting for oil and auto prices puts the rate of inflation below the Fed's 2 percent average target rate. Still, high rates of NGDP growth and mounting bank reserves should cause Fed officials to be leery of high inflation going forward.

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