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The following is an excerpt from the Fall 2020 edition of The Linneman Letter.

The True Employment Situation

The U.S. economy hit bottom in mid-June and is now on a path toward rebuilding a stalled economy. It is useful to remember that the economy was quite strong prior to the virus reaching the U.S. Then the shutdown occurred, first for 14 days and eventually for about 100 days. All hiring stopped, businesses closed (many to never reopen), workers were furloughed and fired, and natural attrition through retirements and deaths occurred. We estimate that 55 million people, particularly those in the retail, entertainment, and hospitality sectors at least temporarily lost their jobs due to the shutdown, which is still ongoing to varying degrees in different cities and states.

Unemployment figures reported by the Bureau of Labor Statistics (BLS) Payroll Survey, ADP, and even BLS' Household Survey are much too low, and employment too high. This is because the nature of the reported unemployment rate is so focused by industry, geography, and demographics so as to fool typical sampling techniques. The reported peak unemployment rate was 14.7% in April 2020 and has since declined to 8.4% in August. The official rate reflects "only" about 13.6 million unemployed workers. The gap exists in part because millions of unemployed people have dropped out of the labor force and were not replaced by new entrants. This simply reflects the fact that people who would have normally entered the labor force realize

it is a largely hopeless effort to seek a job. Going forward, we will use the official job data, but the reader needs to be aware that "unemployment" is higher than it appears.

We estimate that on an apples-to-apples comparison, the unemployment rate peaked at 22-25% in early June. Our basic math for estimating unemployment relative to February 2020 is simple. There were about 5.8 million unemployed at the end of February 2020. Since then, 61 million new unemployment claims were filed and (at most) 35 million workers were newly hired over the same period, resulting in at least 26 million not working and an estimated apples-to-apples unemployment rate of 16% using the February labor force. Even if an unlikely 40 million were hired during this period, the unemployment rate would be about

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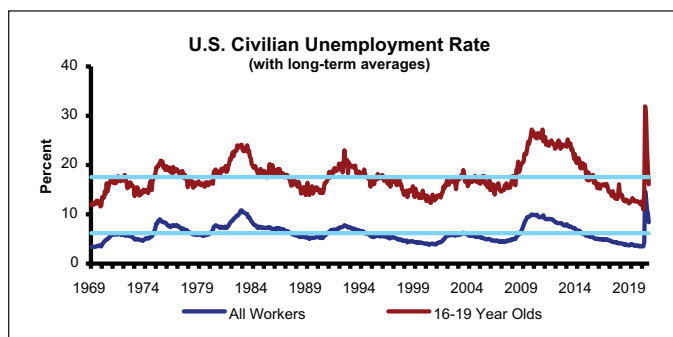


figure 1

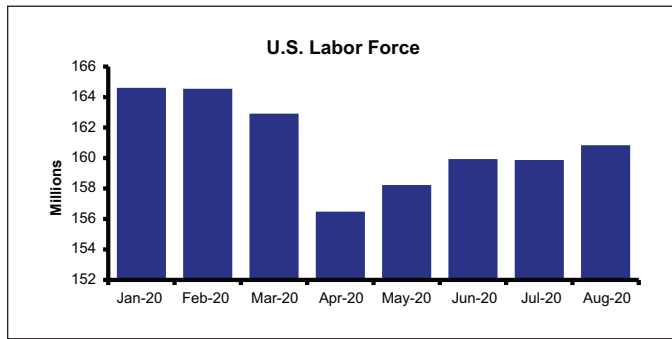


figure 2

13%, well above the official 8.4% in August. Further, we can all feel that the economy is far weaker today than when the unemployment rate was 10.3% in 2009.

An alternative estimate is that the BLS Household Survey reported a labor force of 164.5 million (which was rising by about 125,000 per month) and 158.8 million employed in February 2020, resulting in an unem-

ployment rate of 3.5%. In August, reported Household Survey labor force and employment were 161 million and almost 147 million, respectively. However, adding six months of projected growth of the February labor force yields an apples-to-apples labor force of over 165 million and an unemployment rate of 10.9% in August 2020.

A third approach to estimate "true" employment is to compare it to the roughly 10% decline in GDP. If employment fell roughly proportionate to GDP, it has fallen by 10%, which when added to the 3.5% February unemployment rate, generates at least a 13.5% apples-to-apples unemployment rate. The point is that any way you cut it, the "true" unemployment rate is 12-16%, far above the 8.4% official rate.

Historical Comparisons. In our last issue, we examined the nature of job losses in every U.S. recession since WWII. We update this analysis in Figures 3 and 4. In each figure, the red shaded numbers

Cycle Peak (Qtr)	Cycle Trough (Qtr)	Natural resources and mining	Construction	Manufacturing	Trade, transportation and utilities	Retail Trade	Office-Using	Information	Financial activities	Professional and business services	Education and health services	Leisure and hospitality	Other services	Government
February 1945 (I)	October 1945 (IV)	-97	40	-3,094	230	114	-144	-135	58	-67	66	63	24	-385
November 1948 (IV)	October 1949 (IV)	-397	-62	-1,401	-311	-49	-188	-131	26	-83	18	-18	8	101
July 1953 (II)	May 1954 (II)	304	-78	23	-1,379	-194	-109	-194	-109	66	-44	33	-9	14
August 1957 (III)	April 1958 (II)	-85	-153	-1,343	-370	-88	-177	-131	30	-76	13	-41	6	255
April 1960 (II)	February 1961 (I)	-64	-121	-829	-306	-156	-5	-69	53	11	80	-67	31	95
December 1969 (IV)	November 1970 (IV)	-14	-64	-1,461	76	42	82	-51	96	37	102	55	39	353
November 1973 (IV)	March 1975 (I)	79	-604	-1,920	-10	42	62	-101	61	102	241	69	92	719
January 1980 (I)	July 1980 (III)	29	-274	-1,006	-171	-74	79	-52	71	60	135	-20	51	217
July 1981 (III)	November 1982 (IV)	-151	-352	-2,063	-324	-42	-17	-113	50	46	194	25	71	-198
July 1990 (III)	March 1991 (I)	-10	-393	-564	-314	-227	-237	-9	-28	-200	371	-27	-4	-72
March 2001 (I)	November 2001 (IV)	-9	-78	-1,113	-503	-196	-796	-182	55	-669	415	-15	113	381
December 2007 (IV)	June 2009 (II)	-54	-1,480	-2,020	-1,805	-1,036	-2,297	-228	462	-1,607	690	-474	-144	200
February 2020 (I)	Low Month (varies)	-97	-1,083	-1,363	-3,355	-2,384	-2,860	-327	-279	-2,296	-2,781	-8,318	-1,370	-1,480
Month of Shutdown Employment Low	Aug-20	0	658	643	1,984	1,729	882	15	88	821	1,324	4,179	839	649
Change from Shutdown Low to Latest		-97	-425	-720	-1,371	-655	-1,978	-312	-191	-1,475	-1,457	-4,139	-531	-831
Net Loss														

Source: National Bureau of Economic Research, Linneman Associates
Employment changes are calculated from the indicated peak and trough months.
Red highlighting indicates the greatest absolute employment losses (or smallest gains) in each row. Blue highlighting indicates the rest of the top five absolute employment losses (greatest gains) in each row.

figure 3

Cycle Peak (Qtr)	Cycle Trough (Qtr)	Natural resources and mining	Construction	Manufacturing	Trade, transportation and utilities	Retail Trade	Office-Using	Information	Financial activities	Professional and business services	Education and health services	Leisure and hospitality	Other services	Government
February 1945 (I)	October 1945 (IV)	-10.9%	3.4%	-19.9%	2.9%	3.2%	-2.6%	-8.3%	4.1%	-2.6%	4.0%	2.9%	3.7%	-6.2%
November 1948 (IV)	October 1949 (IV)	-38.7%	-2.7%	-9.8%	-3.2%	-1.1%	-3.0%	-7.9%	1.5%	-2.8%	0.9%	-0.7%	1.0%	1.7%
July 1953 (II)	May 1954 (II)	1.6%	-8.7%	0.9%	-8.4%	-1.8%	-6.0%	-1.8%	-6.0%	3.2%	-1.4%	1.4%	-0.3%	1.5%
August 1957 (III)	April 1958 (II)	-9.7%	-5.1%	-8.5%	-3.4%	-1.7%	-2.3%	-7.3%	1.3%	-2.2%	0.5%	-1.3%	0.6%	3.3%
April 1960 (II)	February 1961 (I)	-8.1%	-4.0%	-5.3%	-2.7%	-2.8%	-0.1%	-3.9%	2.1%	0.3%	2.7%	-1.9%	2.7%	1.1%
December 1969 (IV)	November 1970 (IV)	-2.0%	-1.7%	-7.9%	0.5%	0.6%	0.8%	-2.5%	2.8%	0.7%	2.3%	1.2%	2.2%	2.8%
November 1973 (IV)	March 1975 (I)	11.1%	-14.3%	-10.2%	-0.1%	0.5%	0.5%	-4.7%	1.5%	1.7%	4.6%	1.3%	4.5%	5.1%
January 1980 (I)	July 1980 (III)	2.8%	-5.9%	-5.2%	-0.9%	-0.7%	0.5%	-2.2%	1.4%	0.8%	1.9%	-0.3%	1.9%	1.3%
July 1981 (III)	November 1982 (IV)	-12.4%	-8.2%	-11.0%	-1.7%	-0.4%	-0.1%	-4.7%	1.0%	0.6%	2.6%	0.4%	2.5%	-1.2%
July 1990 (III)	March 1991 (I)	-1.3%	-7.5%	-3.2%	-1.4%	-1.7%	-1.2%	-0.3%	-0.4%	-1.8%	3.4%	-0.3%	-0.1%	-0.4%
March 2001 (I)	November 2001 (IV)	-1.5%	-1.1%	-6.6%	-1.9%	-1.3%	-2.8%	-4.9%	0.7%	-4.0%	2.7%	-0.1%	2.2%	1.8%
December 2007 (IV)	June 2009 (II)	-7.3%	-19.8%	-14.7%	-6.8%	-6.7%	-7.8%	-7.5%	-5.6%	-8.9%	3.6%	-3.5%	-2.6%	0.9%
February 2020 (I)	Low Month (varies)	-13.6%	-14.2%	-10.6%	-12.1%	-15.2%	-8.6%	-11.3%	-3.2%	-10.7%	-11.3%	-49.3%	-23.1%	-6.5%
Month of Shutdown Employment Low	Aug-20	0.0%	60.8%	47.2%	59.1%	72.5%	30.8%	4.6%	31.5%	35.8%	47.6%	50.2%	61.2%	43.9%
Percent Jobs Recovered		-13.6%	-5.6%					-10.8%				-24.5%	-8.9%	-3.7%
Net Loss														

Source: National Bureau of Economic Research, Linneman Associates
Employment changes are calculated from the indicated peak and trough months.
Red highlighting indicates the greatest employment percentage losses (or smallest gains) in each row. Blue highlighting indicates the rest of the top employment percentage losses (greatest gains) in each row.

figure 4

Percent Change in Labor Force During Recessions		
Peak	Trough	Percent Change
November 1948 (IV)	October 1949 (IV)	2.4
July 1953 (II)	May 1954 (II)	1.0
August 1957 (III)	April 1958 (II)	1.4
April 1960 (II)	February 1961 (I)	1.2
December 1969 (IV)	November 1970 (IV)	2.4
November 1973 (IV)	March 1975 (I)	2.7
January 1980 (I)	July 1980 (III)	0.6
July 1981 (III)	November 1982 (IV)	2.3
July 1990 (III)	March 1991 (I)	0.4
March 2001 (I)	November 2001 (IV)	0.2
December 2007 (IV)	June 2009 (II)	0.5
February 2020 (2019 IV)	as of August 2020	-2.3

Source: NBER, BLS, Linneman Associates

figure 5

represent the sectors with the largest absolute or percentage job losses during each recession, while the blue shading rounds out the top five sector losses. For the 2020 Depression, we examined sectoral job losses that occurred between February 2020 and the low point of each sector during the pandemic. Most sectors bottomed in April 2020, while the government (May 2020), natural resources, and information sectors (both July 2020) continued to see job losses. In all cases, we utilize official employment data even though this data understates actual job losses.

Of the 12 recessions between 1945 and 2009, 10 saw the largest job losses in the manufacturing sector. During the Financial Crisis, office-using employment, which primarily includes financial activities and professional and business services, suffered the greatest job loss. The largest sectoral losses in previous recessions had a range of just 560,000-1.3 million jobs, significantly lower than today's sectoral losses.

The leisure and hospitality sector took the greatest battering during the COVID-19 shutdown, with the loss of over 8.3 million jobs between February and April 2020. The trade, transportation and utilities sector lost nearly 3.4 million jobs, and education and health services lost an unprecedented 2.8 million jobs over the same period. However, all three of those sectors markedly improved through August. Between April and August, the leisure and hospitality sector added nearly 4.2 million jobs, leaving it with a net loss of 4.1 million jobs; trade, transportation, and utilities added nearly two million jobs since the bottom, leaving a net loss of 1.4 million jobs; while education and health services added 1.3 million jobs, leaving

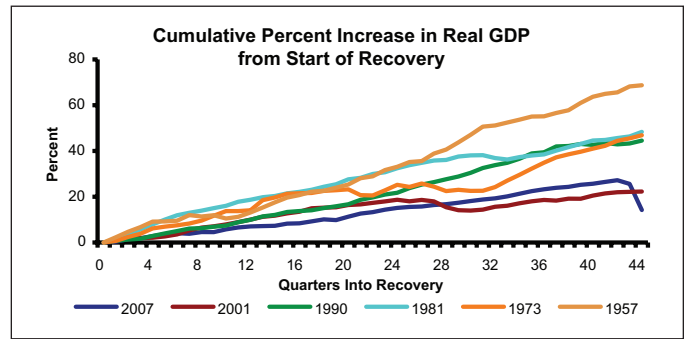


figure 6

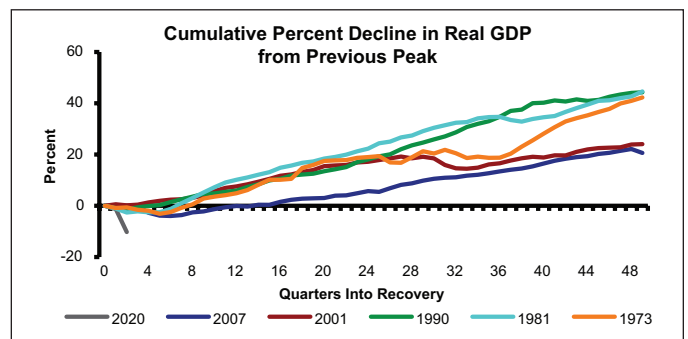


figure 7

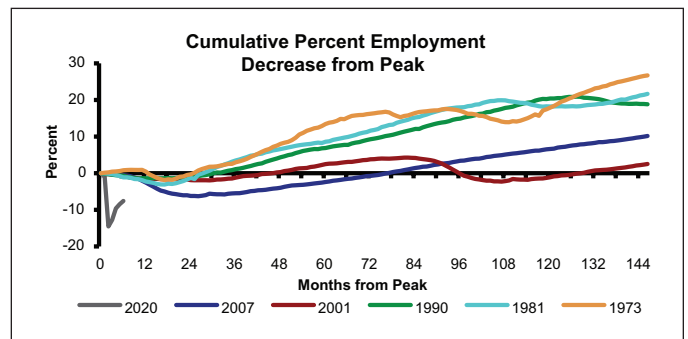


figure 8

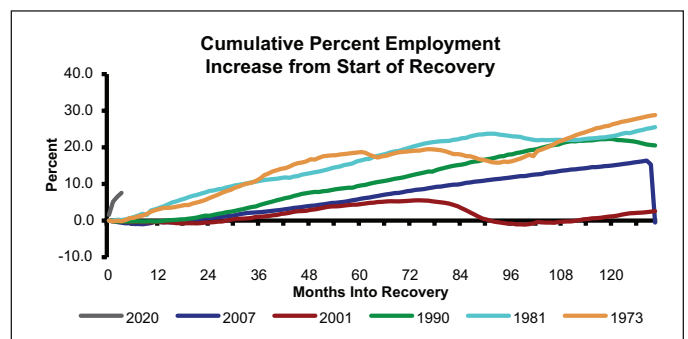


figure 9

a net loss of 1.5 million jobs. Through August, net office-using employment was down by 2 million jobs versus February, while retail trade (655,000 net jobs lost), professional and business services (-1.5 million), government (-831,000), manufacturing (-720,000), and other services (-530,000) also saw devastating losses. Private sector employment officially fell by nearly 21.2 million net jobs between February and April 2020 but regained 10.5 million jobs through August, resulting in an official net loss of 10.7 million jobs.

On a percentage basis, the largest job losses during previous recessions have been in natural resources and mining, construction, and manufacturing. In contrast, the shutdown depression was dominated by a 49.3% decline in leisure and hospitality jobs, followed by other services (-23.1%) and retail trade (-15.2%). Most major sectors bottomed in April, while government (May), information (July), and natural resources (still declining) saw prolonged losses.

About Dr. Peter Linneman

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

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

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