

# Impacts of the COVID-19 Pandemic on Global Economy and Household Wealth

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## Abstract

This paper provides an assessment of the impacts of the COVID-19 pandemic on global economic activities and household wealth creation. The results show that 81% of the economies surveyed by the World Bank suffered economic downturns in 2020. Global gross domestic product (GDP) declined by 3.29% in 2020, compared to an average annual growth rate of 3.05% over the five years prior to the outbreak of the pandemic. This amounts to a shrink of 2.8 trillion in current dollars for the economies. If we assume that the world economy in 2020 would have expanded at the average five-year pre-COVID rate of 3.05% without the pandemic, the real damage to the world economy caused by the pandemic amounts to 5.5 trillion in current dollars. However, global household wealth turned out to be resilient. Total global household wealth rose by 7.4% or \$28,716 billion in 2020. Cross-country analyses indicate that change in household wealth is positively and significantly associated with the five-year average GDP growth prior to the pandemic and with the level of wealth, suggesting that wealth begets more wealth despite the pandemic.

## Keywords

COVID-19, Pandemic, Economic Growth, Household Wealth

## 1. Introduction

The COVID-19 virus, first made a public health emergency of international concern by the World Health Organization (WHO) on January 30, 2020, has caused enormous damage to the global economy as well as human sufferings. By the time the WHO declared the end to COVID-19 as a global health emergency on May 5, 2023, the cumulative cases worldwide stood at more than 765 million, with nearly seven million deaths (WHO, 2023). The U.S. suffered a drop in life expectancy larger than the drop it suffered during the Second World War (Schöley et al., 2022).

In the aftermath of the pandemic, governments around the world took drastic and even draconian measures—including social distancing, shelter-in-place, shut-down and closure orders—to stem the spread of the coronavirus. Nevertheless, the pandemic wreaked havoc on the economies around the world. Many households and firms were ill-prepared to withstand an income shock of the length and scale of the pandemic. In response, governments around the world implemented a wide range of crisis response policies to mitigate the worst social and economic impacts of the pandemic. These policies include unprecedented, large-scale stimulus packages and the easing of monetary policy. The U.S. Congressional Budget Office (CBO, 2020) estimates that, between the first quarter of 2020 and the third quarter of 2021, the U.S. federal government deployed more than \$5 trillion in fiscal responses to deal with the COVID crisis.

Despite all the efforts, the world economy fell into recession in the wake of the pandemic. For the United States, Cutler and Summers (2020) estimate the costs of lost lives and lost GDP and call COVID the “\$16 trillion virus”. That is an amount equivalent to nearly three-quarters of the entire American GDP in 2020. In comparison, the lost economic output to the United States from the terrible 9/11 attacks was about 0.5% of real GDP growth in 2001 or \$50 billion (Roberts, 2009). Yet that amount is little more than a rounding error in comparison to the costs of the COVID war, about one percent of the \$5 trillion that the federal government spent just through the third quarter of 2021.

The purpose of this study is to provide an assessment of the impacts of the coronavirus pandemic on global economic activities and household wealth in 2020 through the lens of several key macroeconomic variables, including GDP growth, unemployment, GDP per capita, and household wealth. To this end, we combine two databases—the World Bank’s World Development Indicators database and the Credit Suisse’s Global Wealth Report.

The results show that 81% of the economies surveyed by the World Bank suffered economic downturns in 2020. Only 19% of the economies eked out a positive economic growth in the year. Global gross domestic product (GDP) declined by 3.29%. In contrast, over the five years prior to the outbreak of the pandemic, the world economy grew at an average annual growth rate of 3.05%. This amounts to a shrink of 2.8 trillion in current dollars for the global economy.

It’s reasonable to assume that, without the pandemic, the world economy in 2020 would have expanded at the five-year pre-COVID average rate of 3.05%. Under this assumption, the pandemic’s real damage to the world economy rises to 5.5 trillion in current dollars, an amount more than the size of Japan’s economy. When measured by purchasing power parity exchange rates, the damage increases to 8.1 trillion in constant 2017 dollars. In terms of GDP per capita, the world was \$708 (in constant 2017 dollars) poorer in 2020 than it was in 2019.

To put in historical perspectives, Barro et al. (2020) estimate that in the typical country, the 1918 influenza pandemic reduced real per capita GDP by 6 percent and private consumption by 8 percent, declines comparable to those seen in the

Great Recession of 2008-2009.

Despite the downturn in global economic output, global household wealth turned out to be resilient. As of year-end 2020, global total household wealth amounted to \$418,342 billion. Overall, global wealth rose by 7.4%, or \$28,716 billion, in 2020. Meanwhile, household wealth per adult, on average, increased by 6.0% to \$79,952. This result is somewhat surprising given the fact that the global economy was stricken by the pandemic.

Cross-country analyses indicate that the five-year average GDP growth prior to the pandemic is significantly and positively associated with change in household wealth in 2020. Additionally, the level of wealth is positively and significantly related to change in wealth, suggesting that wealth begets more wealth.

The study contributes to our understanding of the impacts of the COVID-19 pandemic on the global economy and household wealth. It also sheds some light on the link between the economic growth and wealth creation. The rest of the paper is structured as follows. Section 2 introduces the data and summary statistics. Section 3 examines the economic effects of the pandemic through the lens of GDP growth, unemployment, and GDP per capita. Section 4 discusses the impacts of the pandemic on global household wealth. Section 5 conducts cross-country regression analysis on the relationship between changes in household wealth and other macroeconomic variables. Section 6 summarizes and concludes.

## 2. Data and Summary Statistics

To assess the damage to the world economy caused by the COVID-19 pandemic, we obtain economic variables from the World Bank's World Development Indicators database for the years 2015-2020. The database covers 217 economies from more than 40 regions.

**Table 1** provides the summary statistics of the macroeconomic variables used in the study. In 2020, among the 196 economies with valid data, the GDP growth rate, on average, is -4.96%, while the median growth rate is -4.03%. The best economy (Guyana) expanded by 43.48%, while the worst economy (Macao SAR, China) contracted by 54%, though both of which are small economies.

In 2020, the unemployment rate for the 187 economies with valid data is, on average, 8.41%, with a median of 6.74%. The economy with the highest unemployment rate, at 29.22%, is South Africa. The economy with the lowest unemployment rate, at 0.21%, is Qatar.

When measured in current dollars, the average GDP among the 194 economies is \$435,867 million. The largest economy is the United States, with a GDP of \$20,953 billion. The average per capita GDP is \$15,340 while the median is only \$5467, reflecting a wide range of prosperity across countries.

When calculated using the purchasing power parity (PPP) exchange rates and measured in constant 2017 dollars, the cross-country average GDP is \$664,407 million in 2020. According to this metric, the largest economy is China, with a GDP of \$23,020 billion. The average per capita GDP is \$20,098, while the median

is \$12,578.

**Table 1.** Summary statistics of major economic variables in 2020.

Variables	N	Mean	Median	Max	Min	Standard deviation
GDP growth (%)	196	-4.96	-4.03	43.48	-54.01	8.08
Unemployment (%)	187	8.41	6.74	29.22	0.21	5.89
GDP per capita, PPP (constant 2017 international \$)	190	20,098	12,578	112,227	731	20,619
GDP, PPP (constant 2017 international \$ (in millions))	190	664,407	75,886	23,020,463	52	2,373,366
GDP per capita (current US\$)	194	15,340	5467	173,688	239	23,405
GDP, current \$ (in millions)	194	435,867	32,696	20,953,030	49	1,914,610
Inflation (%)	159	7.80	1.89	557.20	-2.60	46.08

Data are obtained from the World Bank's World Development Indicators database for the years 2015-2020. The database covers 217 economies from more than 40 regions.

**Table 1** also presents the summary statistics of inflation in 2020. The average inflation rate for the 159 economies with valid data is 7.80%, while the median is 1.89%. The average is much higher than the median due to hyperinflation in just a few economies. Zimbabwe's inflation, for instance, is 557%, a staggering figure.

### 3. Impacts of the COVID-19 Pandemic on Global Economy

This section examines the economic effects of the COVID-19 pandemic through the lens of GDP growth, unemployment, and GDP per capita.

#### 3.1. Economic Growth

**Table 2** presents data on GDP growth from 2015 to 2020 for the world as a whole, for countries with different income levels, and for selected regions.

In 2020, as reported in Panel A of **Table 2**, global GDP fell by 3.29%. In comparison, in the five years (2015-2019) prior to the pandemic, the world economy grew at an average rate of 3.05% per year. Among the 196 economies with valid data, 158 (or 81%) suffered an economic downturn. Only 39 (or 19%) economies eked out a positive growth. The latter group includes China (2.35%), Türkiye (1.79%), Ireland (5.87%), Egypt (3.57%), Bangladesh (3.51%), Vietnam (2.91%), New Zealand (1.86%), and Iran (3.39%), with growth figures in parentheses.

In 2019, global GDP was 87,568 billion in current dollars. It fell to \$84,747 billion in 2020, a shrink of \$2821 billion compared to the previous year. Without the pandemic, it is reasonable to assume that the world economy in 2020 would have grown at 3.05%, which is the five-year average rate prior to the pandemic. We can

**Table 2.** GDP growth: 2015-2020.

	2015	2016	2017	2018	2019	2015-2019 average	2020	2020-2019 difference
<b>Panel A: The world as a whole</b>								
<b>World</b>	3.17	2.83	3.39	3.27	2.60	3.05	-3.29	-5.89
<b>Panel B: Based on income levels</b>								
<b>Low income (&lt;\$1035)</b>	-0.49	2.22	3.13	3.54	4.42	2.56	0.62	-3.79
<b>Lower middle income (\$1035 - \$4045)</b>	5.04	5.94	5.18	4.61	3.56	4.87	-3.42	-6.98
<b>Upper middle income (\$4046 - \$12,535)</b>	4.28	4.23	5.21	4.93	4.12	4.55	-0.71	-4.83
<b>High income (&gt;\$12,535)</b>	2.50	1.83	2.38	2.35	1.76	2.16	-4.49	-6.25
<b>Panel C: Selected regions</b>								
<b>Africa Eastern and Southern</b>	2.93	2.02	2.54	2.48	2.08	2.41	-2.94	-5.02
<b>Africa Western and Central</b>	2.75	0.13	2.32	2.95	3.19	2.27	-0.88	-4.08
<b>Arab World</b>	3.00	3.20	0.93	2.40	2.05	2.32	-5.28	-7.33
<b>Caribbean small states</b>	1.07	-1.14	0.09	1.87	0.62	0.50	-8.16	-8.78
<b>East Asia &amp; Pacific</b>	4.71	4.66	5.05	4.73	4.06	4.64	-0.13	-4.20
<b>European Union</b>	2.31	2.01	2.81	2.07	1.82	2.20	-5.96	-7.77
<b>Latin America &amp; Caribbean</b>	0.54	-0.15	1.88	1.63	0.80	0.94	-6.72	-7.52
<b>North America</b>	2.88	1.65	2.39	2.98	2.14	2.41	-3.55	-5.69
<b>OECD members</b>	2.59	1.85	2.51	2.37	1.74	2.21	-4.47	-6.21
<b>Pacific island small states</b>	3.67	3.73	4.35	2.92	0.91	3.11	-9.90	-10.81
<b>South Asia</b>	7.37	7.67	6.60	6.44	4.04	6.43	-5.71	-9.75
<b>Sub-Saharan Africa</b>	2.84	1.16	2.44	2.69	2.58	2.34	-2.01	-4.59

Data are obtained from the World Bank's World Development Indicators database for the years 2015-2020. The database covers 217 economies from more than 40 regions. The four income levels are based on gross national income (GNI) per capita in current 2021 U.S. dollars, as classified by the World Bank.

thus have an estimate of the true damage to the world economy. Under this assumption, the damage to the world economy would be a staggering \$5492 billion.

There are two drawbacks associated with using current dollars. One is that current dollars fail to adjust for inflation. Another is that national GDP figures are converted to dollars using the prevailing market exchange rates, which might not reflect the purchasing powers. A more accurate and commonly used measure of the world GDP is to convert national GDP figures by using PPP-implied exchange

rates and at the same time, adjust for inflation by using constant 2017 dollars. When GDP is recalculated using the purchasing power parity (PPP) exchange rates and measured in constant 2017 dollars, global GDP was \$129,828 billion in 2019, a figure which is much larger than measured in current dollars. The difference arises mainly from the fact that most currencies of developing economies are undervalued against the dollar. Using this measure, the world economy fell to \$125,654 billion in 2020. This implies that the global economy in 2020 is smaller by more than 4 trillion in constant 2017 dollars due to the pandemic.

Assuming that, without the pandemic, the world economy in 2020 would have grown at the pre-pandemic five-year average rate of 3.05%, we can obtain an estimate of the pandemic's damage to the world economy. Under this assumption, the damage exceeds \$8 trillion in constant 2017 dollars.

We next examine the economic impacts on different regions and income groups. The World Bank assigns the world's economies to four income groups: low, lower-middle, upper-middle, and high-income economies. The classifications are updated each year on July 1 and are based on gross national income (GNI) per capita in current U.S. dollars. According to the standard by the World Bank, the hurdle to becoming a high-income country is to have a gross national income (GNI) per capita of at least \$12,535. Upper-middle income countries have a GNI per capita of \$4046 - \$12,535. Lower-middle income countries are those with a GNI per capita of \$1035 - \$4045. Low-income countries are defined as having a GNI per capita below \$1035.

Panel B of **Table 2** presents the results for these four income groups. The results show that high-income economies suffered the most compared to other income groups. In 2020, high-income economies declined by 4.49%. Low-income countries actually edged up by 0.62%. Meanwhile, lower-middle income countries fell by 3.42%, while upper-middle income countries fell by 0.71%.

**Table 2** also presents the results of economic growth in selected regions. Not surprisingly, the Pacific island and small states and the Caribbean small states suffered the most because of their heavy reliance on tourism. Consistent with the results in Panel B indicating that the damage to high-income countries is more pronounced than other income groups, the economy of the Organization of Economic Cooperation and Development (OECD), a club of rich economies, declined by 4.47%, and the European Union's (EU) economy fell by almost 6%. The region least affected is East Asia & Pacific, the GDP of which dropped by merely 0.13%.

### 3.2. Unemployment

The initial government responses to the outbreak of the pandemic, including shelter-in-place, shut-down and closure orders, caused tremendous job losses, especially in the early stage of the pandemic. Though the labor market gradually improved in the second half of the year, the world unemployment rate increased by 1.22 percentage points, from 5.36% in 2019 to 6.573% in 2020, as shown in Panel A of **Table 3**.

**Table 3.** Unemployment rate: 2015-2020.

	2015	2016	2017	2018	2019	2015-2019 average	2020	2020-2019 difference
<b>Panel A: The world as a whole</b>								
<b>World</b>	5.62	5.66	5.56	5.39	5.36	5.52	6.57	1.22
<b>Panel B: Based on income levels</b>								
<b>Low income (&lt;\$1035)</b>	4.90	4.91	4.90	4.89	4.89	4.90	5.62	0.73
<b>Lower middle income (\$1035 - \$4045)</b>	5.19	5.29	5.28	5.24	5.07	5.21	6.61	1.54
<b>Upper middle income (\$4046 - \$12,535)</b>	5.67	5.91	5.93	5.77	6.00	5.85	6.77	0.77
<b>High income (&gt;\$12,535)</b>	6.64	6.16	5.60	5.09	4.79	5.66	6.49	1.70
<b>Panel C: Selected regions</b>								
<b>Africa Eastern and Southern</b>	6.49	6.61	6.71	6.73	6.91	6.69	7.56	0.65
<b>Africa Western and Central</b>	4.63	5.57	6.02	6.04	6.06	5.66	6.77	0.71
<b>Arab World</b>	10.97	10.76	10.90	10.50	10.01	10.63	11.49	1.48
<b>Caribbean small states</b>	10.55	10.61	9.76	8.71	8.02	9.53	9.83	1.81
<b>East Asia &amp; Pacific</b>	4.07	3.98	3.86	3.73	3.82	3.89	4.32	0.49
<b>European Union</b>	10.03	9.12	8.14	7.27	6.69	8.25	7.05	0.35
<b>Latin America &amp; Caribbean</b>	6.63	7.72	7.99	7.87	7.93	7.63	10.06	2.13
<b>North America</b>	5.46	5.10	4.58	4.11	3.89	4.63	8.21	4.32
<b>OECD members</b>	6.85	6.43	5.90	5.46	5.40	6.01	7.10	1.70
<b>Pacific island small states</b>	2.88	2.83	2.82	2.85	2.88	2.85	3.13	0.26
<b>South Asia</b>	5.14	5.15	5.12	5.12	5.02	5.11	7.24	2.22
<b>Sub-Saharan Africa</b>	5.82	6.24	6.47	6.48	6.61	6.32	7.28	0.67

Data are obtained from the World Bank's World Development Indicators database for the years 2015-2020. The four income levels are based on gross national income (GNI) per capita in current 2021 U.S. dollars, as classified by the World Bank.

Panel B of **Table 3** shows that, unlike economic growth, unemployment in 2020 was not much different across the four income groups, ranging from 5.62% for low-income economies to 6.77% for economies with upper-middle income. Nevertheless, unemployment in all income groups rose in 2020. In particular, the unemployment rate of the high-income economies rose by 1.7 percentage points from the 2019 level.

When we break down the data by region, as shown in Panel C of **Table 3**, the Arab world had the highest unemployment, at 11.49%, in 2020. It should be noted, however, that this high figure should not be totally attributable to the pandemic, for the region had the highest unemployment (10.63%) in 2019 as well.

It is North America that suffered the most in terms of job losses as its unemployment rose from 3.89% in 2019 to 8.21% in 2020. For example, the unemployment

rate in the United States escalated from 3.678% in 2019 to 8.05% in 2020. The unemployment rate of OECD members rose to 7.1% in 2020, compared to 5.4% in 2019, while the corresponding figures for the EU are 7.05% and 6.69%, respectively.

To be sure, the annual unemployment figures belie the immediate shocks in the labor market. For instance, at the worst point, the unemployment rate in the U.S. exceeded 10%. Additionally, people with low income and fewer skills were disproportionately affected by the pandemic.

### 3.3. GDP per Capita

**Table 4** presents data on GDP per capita in years 2015-2020. In terms of GDP per

**Table 4.** GDP per capita: 2015-2020.

	2015	2016	2017	2018	2019	2015-2019 average	2020	2020-2019 difference
<b>Panel A: The world as a whole</b>								
<b>World</b>	15,481	15,804	16,211	16,608	16,897	16,572	16,189	-708
<b>Panel B: Based on income levels</b>								
<b>Low income (&lt;\$1035)</b>	1889	1930	1964	1987	2022	1958	1988	-34
<b>Lower middle income (\$1035 - \$4045)</b>	6188	6477	6728	6958	7115	6693	6765	-350
<b>Upper middle income (\$4046 - \$12,535)</b>	15,090	15,558	16,204	16,847	17,393	16,218	17,103	-291
<b>High income (&gt;\$12,535)</b>	47,400	48,002	48,897	49,816	50,495	48,922	48,028	-2467
<b>Panel C: Selected regions</b>								
<b>Africa Eastern and Southern</b>	3727	3722	3727	3727	3711	3723	3516	-195
<b>Africa Western and Central</b>	4216	4121	4116	4133	4159	4149	4022	-138
<b>Arab World</b>	14,115	14,311	14,215	14,309	14,340	14,258	13,399	-940
<b>Caribbean small states</b>	16,126	15,818	15,738	15,955	15,976	15,922	14,814	-1162
<b>East Asia &amp; Pacific</b>	14,928	15,561	16,278	16,996	17,649	16,282	17,549	-100
<b>European Union</b>	40,752	41,516	42,677	43,556	44,388	42,578	41,684	-2704
<b>Latin America &amp; Caribbean</b>	15,917	15,773	15,929	16,056	16,043	15,944	14,826	-1217
<b>North America</b>	57,440	57,944	58,922	60,304	61,253	59,173	58,823	-2430
<b>OECD members</b>	42,019	42,538	43,390	44,166	44,701	43,363	42,486	-2215
<b>Pacific island small states</b>	6933	7071	7291	7412	7339	7209	6390	-949
<b>South Asia</b>	5.14	5.15	5.12	5.12	5.02	5.11	7.24	2.22
<b>Sub-Saharan Africa</b>	5.82	6.24	6.47	6.48	6.61	6.32	7.28	0.67

Data are obtained from the World Bank's World Development Indicators database for the years 2015-2020. The four income levels are based on gross national income (GNI) per capita in current 2021 U.S. dollars, as classified by the World Bank.

capita measured in constant 2017 international dollars, the world was \$708 poorer in 2020 than it was in 2019, a drop of 4.3%. The drop in per capita GDP is more pronounced in high-income economies than in other income groups. Evidence from regional data is consistent. In particular, per capita GDP decreased by \$2215, \$2704, and \$2430 in OECD, EU, and North America, respectively.

Bear in mind that though low-income countries suffer less in dollar terms, they are poor to begin with. A loss of a dollar in income means much more to them than rich economies. In fact, when measured in percentage loss, the region that suffered the most in 2020 is Pacific island small states, with a drop of 13.2% in per capita income.

#### **4. Impacts of the COVID-19 Pandemic on Global Household Wealth**

This section examines the impacts of the pandemic on global household wealth. In a normal year, wealth creation is expected to move together with economic growth. The year 2020 is of course far from a normal year. The pandemic caused severe economic downturns around the globe, as discussed in previous sessions. It is of interest to examine the wealth effect caused by the pandemic.

Data on global household wealth is collected from the 2021 edition of the Credit Suisse Global Wealth Report. The Credit Suisse Global Wealth Report is an annual publication that provides insights into the wealth and assets of people around the world. The report is compiled by the Credit Suisse Research Institute, which is part of the Credit Suisse Group, one of the world's leading financial services providers. The Global Wealth Report uses a variety of data sources, including national accounts, household surveys, and market research, to estimate the size and distribution of global wealth. It includes information on a wide range of topics, including household wealth, asset allocation, and wealth inequality.

The 2021 annual report, now in its 12th edition, provides up-to-date source of information on average household wealth for 168 countries. Household wealth refers to the net worth of all the assets, including financial and non-financial assets, owned by individuals or families in a household, minus any liabilities such as debts or mortgages. Financial assets include cash, savings, investments, and retirement accounts. Non-financial assets, such as a family home or a business, can also contribute significantly to household wealth.

**Table 5** summarizes the main features of changes in household wealth for selected countries and regions as well as for the world in 2020. It turns out that global wealth creation was rather resilient in the year. As of year-end 2020, global total household wealth amounted to \$418,342 billion. Overall, global wealth rose by 7.4% or \$28,716 billion in 2020. Meanwhile, household wealth per adult on average increased by 6.0% to \$79,952. This result is somewhat surprising given the fact that the global economy was stricken by the pandemic.

In 2020, developed economies had more salient growth in wealth creation. Household wealth rose by 9.8% in North America and 9.8% in Europe, compared to

**Table 5.** Change in household wealth in 2020, by region.

	Total wealth (US\$ billions)	Change in total wealth (US\$ billions)	Change in total wealth (%)	Wealth per adult (US\$)	Change in wealth per adult (%)
<b>Africa</b>	4946	36	0.7	7371	-2.1
<b>Asia-Pacific (excluding China and India)</b>	75,277	4694	6.7	60,790	5.0
<b>China</b>	74,884	4246	6.0	67,771	5.4
<b>India</b>	12,866	-594	-4.4	14,252	-6.1
<b>Europe</b>	103,213	9179	9.8	174,836	9.8
<b>Latin America</b>	10,872	-1215	-10.1	24,301	-11.4
<b>North America</b>	136,316	12,370	10	486,930	9.1
<b>World</b>	418,342	28,716	7.4	79,952	6.0

Data on household wealth are collected from the 2021 edition of the Credit Suisse Global Wealth Report.

6.7% in Asia-Pacific, excluding China and India. China's total household wealth rose by 6.0%, while India's decreased by 4.4%.

In Africa, total household wealth increased by 0.7%, but wealth per adult fell by 2.1%. Latin America was the only region where both household wealth and wealth per adult fell, by 10.1% and 11.4%, respectively.

At country levels, 89 countries experienced increases in total household wealth, 56 countries suffered declines, and the remainder had no change in total wealth. The average percent change in total household wealth across all countries is 1.90%, with a median of 1.79%. The average is much smaller than the overall increase of 7.4% in global total wealth, suggesting that the latter is skewed by large wealth increases in a few countries.

## 5. Cross-Sectional Analysis of GDP Growth and Wealth Creation

There are empirical studies in the literature on the economic and wealth effects caused by the COVID-19 pandemic. However, these studies typically examine the two effects separately (e.g. Cutler & Summers, 2020; Bundervoet, Dávalos, & Garcia, 2021). The link between them is little studied. To shed some light on the relationship between macroeconomic variables and change in total household wealth, we combine the two datasets mentioned above. After those with incomplete data are excluded, the final sample consists of 137 countries.

**Table 6** presents the variables used in cross-country regression analysis. *GDPGrowth2020* is the GDP growth for a given economy in 2020. *GDPGrowth\_5Yr* is the average GDP growth rate in the five years (2015-2019) prior to 2020. *Inflation\_5Yr* is the average annual inflation in years 2015-2019. *GDP2019* and *GDP2020*

are the GDP in 2019 and 2020, where GDP is measured in billion U.S. dollars. *GDPPerCapita* is the GDP per capita. *Wealth2019* and *Wealth2020* are total household wealth in 2019 and 2020, measured in US\$ billions. *ChangeWealth* is the percent change in total household wealth in 2020. *Fin/TotalWealth* is the proportion of financial assets in total household wealth.

**Table 6.** Descriptive statistics of economic and wealth variables.

	Minimum	Maximum	Mean	Standard deviation
<b>GDPGrowth2020 (%)</b>	-33.50	43.48	-4.23	6.74
<b>GDPGrowth_5yr (%)</b>	-7.16	10.02	3.07	2.33
<b>Inflation_5yr (%)</b>	-0.28	52.57	3.97	6.45
<b>Inflation2020 (%)</b>	-2.60	557.20	8.64	49.55
<b>GDP2019 (US\$ billions)</b>	1.81	21,433	615	2280
<b>GDP2020 (US\$ billions)</b>	1.87	20,953	595	2260
<b>GDPPerCapita2019 (US\$)</b>	228.21	113,219	17,248	21,517
<b>GDPPerCapita2020 (US\$)</b>	238.99	116,015	16,231	20,941
<b>Wealth2019 (US\$ billions)</b>	2.00	114,932	2775	11,860
<b>Fin/TotalWealth2019</b>	0.04	0.93	0.42	0.19
<b>Wealth2020 (US\$ billions)</b>	2.00	126,340	2980	12,911
<b>Fin/TotalWealth2020</b>	0.04	0.92	0.43	0.19
<b>ChangeWealth</b>	-0.248	0.261	0.019	0.105
<b>ChangeFinWealth</b>	-0.230	0.203	0.022	0.089

Data on economic variables are obtained from the World Bank's World Development Indicators database for the years 2015-2020. The database covers 217 economies from more than 40 regions. Data on global household wealth are collected from the 2021 edition of the Credit Suisse Global Wealth Report. The Credit Suisse Global Wealth Report is an annual publication that provides insights into the wealth and assets of people around the world.

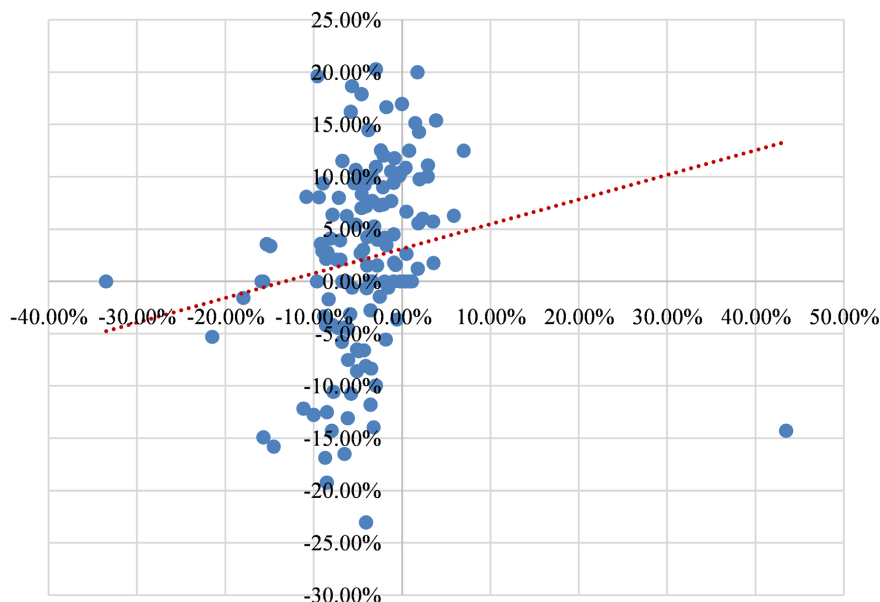
Among the 137 countries with complete data, the average GDP growth in 2020 is -4.23%, with a minimum of -33.55% and a maximum of 43.48%. In comparison, the five-year average annual growth prior to the breakout of the pandemic is 3.07%. On average, the five-year annual inflation prior to the pandemic is 3.97%, compared to 8.64% in 2020. The higher inflation in 2020 is mainly due to the extremely high inflation in a few countries, as manifested in the maximum inflation of 557.2%.

In 2019, the mean GDP is \$615 billion. In 2020, the figure is \$595 billion. The average household wealth is \$2775 billion in 2019 and \$2980 in 2020. Financial assets account for 42% of total wealth in 2019 and 43% in 2020. The change in total household wealth, on average, is 2.2%. The change in total financial assets, on average, is 1.9%. The correlation between change in total household wealth and

change in financial assets, not reported in the table, is 0.82.

As the first attempt, **Figure 1** illustrates the relationship between change in total household wealth and GDP growth in 2020. A simple linear regression yields the following relationship:

$$\text{ChangeWealth} = 0.0315 + 0.2355 * \text{GDPGrowth2020} \quad R^2 = 0.0315$$



**Figure 1.** Change in wealth and GDP growth in 2020. The figure illustrates the relationship between the percentage change in total household wealth and GDP growth in 2020 for 137 countries. The Y-axis represents the change in wealth, while the X-axis represents GDP growth in 2020.

Though the coefficient estimate is positive, it is not statistically significant. This means that there is no association between economic growth and wealth creation in 2020. In addition,  $R^2$ , at 0.0315, is very small. In other words, economic growth itself explains, if any, very little of the variation of changes in household wealth.

**Figure 2** depicts the relationship between change in total household wealth and five-year average GDP growth. A simple linear regression yields the following relationship:

$$\text{ChangeWealth} = -0.0236 + 1.4723 * \text{GDPGrowth\_5Yr} \quad R^2 = 0.1472$$

The coefficient estimate is positive and statistically significant. The value of  $R^2$  implies that the five-year average GDP growth rate explains about 15% of the variation in changes in household wealth across countries.

We next run the following the cross-country regression:

$$\text{ChangeWealth} = a + b1 * \text{GDPGrowth2020} + b2 * \text{GDPGrowth\_5Yr} + b3 * \text{Inflation\_5Yr} + b4 * \text{Ln}(\text{GDP2020}) + b5 * \text{Ln}(\text{Wealth2020}) + b6 * \text{Fin/ToalWealth}$$

The results are presented in **Table 7**. In the first regression, the two GDP growth rates are included as the sole independent variables. The coefficient estimate of

$GDPGrowth\_5Yr$  is positive and significant at the 1% significance level. The coefficient on  $GDPGrowth2020$  is also positive, though it is not statistically significant.



**Figure 2.** Change in wealth and five-year average GDP growth rate. The figure illustrates the relationship between the percentage change in total household wealth and the five-year average GDP growth rate for 137 countries. The Y-axis represents the change in wealth, while the X-axis represents the five-year GDP growth.

**Table 7.** Cross-country regression analysis of change in total household wealth in 2020.

	1	2	3	4
<b>Constant</b>	-0.016 (0.013)	-0.053 (0.022)**	-0.055 (0.022)**	-0.028 (0.028)
<b>GDPGrowth2020</b>	0.001 (0.001)	0.001 (0.001)	0.002 (0.001)*	0.002 (0.001)*
<b>GDPGrowth_5Yr</b>	0.014 (0.003)***	0.014 (0.003)***	0.014 (0.003)***	0.012 (0.003)***
<b>Inflation_5Yr</b>		0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
<b>Ln(GDP2020)</b>		0.008 (0.004)**	-0.028 (0.018)	-0.028 (0.018)
<b>Ln(Wealth2020)</b>			0.03 (0.015)**	0.032 (0.015)**
<b>Fin/TotalWealth</b>				-0.062 [0.042]
<b>Adj R<sup>2</sup></b>	0.144	0.16	0.18	0.187
<b>F-value</b>	12.43***	7.50***	6.96***	6.22***

Data on economic variables are obtained from the World Bank's World Development Indicators database for the years 2015-2020. Data on global household wealth are collected from the 2021 edition of the Credit Suisse Global Wealth Report. Standard errors are in brackets. \* indicates 10% significance level, \*\* indicates 5% significance level, and \*\*\* indicates 1% significance level.

In the second regression, *Inflation\_5Yr* and *Ln(GDP2020)* are added as independent variables. *Ln(GDP2020)* is significantly and positively associated with change in wealth, suggesting that large economies are associated with more wealth increases. The coefficient on *Inflation2020\_5Yr*, on the other hand, is not significant. The results of the two GDP growth variables are not materially affected. In particular, the coefficient on *GDPGrowth\_5Yr* remains positive and significant at the 1% level.

In the third regression, *Ln(Wealth2020)* is added while keeping all the previously used independent variables. *Ln(Wealth)* is significantly and positively associated with change in wealth, suggesting that wealthier countries are associated with more wealth increases. Meanwhile, *Ln(GDP2020)* becomes insignificant, though its coefficient is positive. These results imply that *Ln(Wealth)* has more explanatory power than *Ln(GDP2020)* in explaining the variation of changes in household wealth. Now, both *GDPGrowth2020* and *GDPGrowth\_5Yr* are significantly and positively associated with change in household wealth.

In the fourth regression, *Finl TotalWealth* is added to the list of independent variables already used. The coefficient estimate of the new variable is not significant, however. And the results of the other variables remain basically unaffected.

In each of the regressions, the F-value is significant at least at the 1% level.

In sum, the cross-country regression results indicate that change in total household wealth is positively associated with the average annual GDP growth over the five years prior to the breakout of the pandemic. Change in household wealth is also positively related to the level of wealth.

## 6. Summary, Conclusion, and Policy Implications

The COVID-19 virus has caused enormous damage to the global economy as well as human sufferings. In the aftermath of the pandemic, governments around the world took drastic and even draconian measures—including social distancing, shelter-in-place, shut-down and closure orders—to stem the spread of the coronavirus. Nevertheless, the pandemic wreaked havoc on the economies around the world. In response, governments around the world implemented a wide range of crisis response policies to mitigate the worst social and economic impacts of the pandemic. These policies include unprecedented, large-scale stimulus packages and the easing of monetary policy.

This study provides an assessment of the impacts of the COVID-19 pandemic on the world economy and household wealth at country levels. It also examines the association between changes in household wealth and economic growth across countries.

The results show that 81% of the economies surveyed by the World Bank suffered economic downturns in 2020. Only 19% of them eked out positive economic growth in the year. Global gross domestic product (GDP) declined by 3.29% in 2020, compared to an average annual growth rate of 3.05% over the five years prior to the outbreak of the pandemic. This amounts to a shrink of 2.8 trillion in current dollars for the economies.

If we assume that the world economy in 2020 would expand at the average five-year pre-COVID rate of 3.05% without the pandemic, the real damage to the world economy caused by the pandemic amounts to 5.5 trillion in current U.S. dollars, more than the size of Japan's economy. When measured by purchasing power parity exchange rates, the damage is 8.1 trillion in constant 2017 dollars. In terms of GDP per capita, the world was \$708 (in constant 2017 dollars) poorer in 2020 than it was in 2019.

Despite the downturn in economic output, global household wealth turned out to be resilient. As of year-end 2020, global total household wealth amounted to \$418,342 billion. Overall, global wealth rose by 7.4% or \$28,716 billion in 2020. Meanwhile, household wealth per adult on average increased by 6.0% to \$79,952. This result is somewhat surprising given the fact that the global economy was stricken by the pandemic.

Cross-country regression results indicate that the five-year average GDP growth prior to the pandemic is significantly and positively associated with wealth change in 2020. Additionally, wealth per adult is positively and significantly related to change in household wealth at country levels, suggesting that wealth begets more wealth.

Our results have a couple of policy implications. First, the sheer magnitude of the pandemic's damage to the global economy points to the importance of early and timely prevention and suppression responses such as quarantine and lock-down. Second, though household wealth is more resilient than economic activity in the aftermath of the pandemic, wealth creation is not evenly distributed across countries. The economic impacts of the pandemic were especially severe in emerging economies, while developed and wealthy economies are associated with more wealth creation. The crisis had a dramatic impact on global poverty and inequality. Global leaders and international organizations should learn from this result when they make global policy decisions in the future.

This study, which is focused on 2020, the year the pandemic broke out as a global health threat, and is based on country-level data, raises several opportunities for future research. For one thing, the pandemic did not end in 2020. In fact, it would continue to wreak havoc for more than three years before the WHO declared its end in May 2023. More research is therefore necessary to evaluate the long-term effects of the pandemic at country levels. Another future research area is to evaluate the impacts on household finances within a given country. A breakdown of household wealth into various asset classes such as real estate and financial assets also deserves further research.

### **Conflicts of Interest**

The author declares no conflicts of interest regarding the publication of this paper.

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