The 2020 Pandemic: Economic repercussions and policy responses

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Abstract
This paper analyses the economic and financial repercussions of the 2020 COVID-19 pandemic. It argues that the pandemic has inflicted serious injuries to the labor force but has not damaged the physical capital stock. Therefore, the resolution policies of this crisis ought to be carefully tailored to supporting structural adjustments to the labor market. The analysis asserts that the impact of the pandemic crisis is exacerbated by the identification gap between the unobserved and the officially reported cases of COVID-19. The gap increases financial risks, including market-, credit-, default-, and foreign exchange risks.

KEYWORDS
financial stability, identification gap, pandemic crisis, structural adjustment policies

JEL CLASSIFICATION
G01; J63; J68

1 | INTRODUCTION

I shall begin by noting the most serious, devastating effect of the current COVID-19 pandemic crisis, which is the global loss of 972 thousand lives, including over 200 thousand deaths in the United States (by September 22, 2020). This dire outcome is irreversible and more painful than the economic repercussions of the COVID-19 virus that are the subject of our analysis.

The underlying notion of this study is that the current pandemic crisis has not damaged physical capital stock, but it has inflicted serious, long-lasting injuries to the labor force. The crisis has triggered deep structural adjustments in the labor market, strengthening job creation in health care, information technology, and various types of on-line services, while reducing jobs in travel, manufacturing, retail sales, recreation, and many other business areas. From the macroeconomic perspective, the current pandemic crisis is a special case of a “sudden stop,” that is, a massive disruption of economic activity. For financial markets and institutions, this crisis can be viewed as a special case of a “Minsky moment,” that is, a sudden decline of optimism among financial investors that entails a market correction and economic recession.¹

It is challenging if not impossible to predict the full magnitude of the economic and financial stability outcomes of the 2020 pandemic, as this is a unique systemic event that does not have a cyclical character and it has very few and rather remote episodes of historical resemblance. This study argues that repercussions of the current pandemic depend directly on the identification gap, which is defined in this study as the difference between the actual, existing infections and the officially detected and reported cases. It further asserts that this crisis should have been anticipated and counteracted with a set of predetermined, targeted policy responses. This conclusion is derived from discussions of prior virus episodes addressed in the literature.

A recognition and identification path of pandemic episodes are modeled and explained in Section II. The pronounced effects of COVID-19 on the U.S. labor force are evidenced and discussed in Section III. The impact on the stability of financial markets is examined in Section IV. The concluding Section V summarizes our key findings and proposes selected policy responses.
The COVID-19 pandemic outbreak is widely perceived as an unexpected, random shock to the global society and the economy that could not have been anticipated (Karabag, 2020; Petrosky-Nadeau/Valetta, 2020). Nevertheless, warnings against possible outbreaks of pandemic crises were expressed before. Among others, Bill Gates summarized the lessons learned from the Ebola crisis and warned that “the next epidemic could be much worse” in his speech at the TED conference (Gates, 2015). He called for building a global warning and response system aimed at preventing future pandemic outbreaks. Alarming warnings about future biological pandemics were also expressed by the authors of the Global Risks Report of the World Economic Forum (2019). I support the notion that the current pandemic should have been anticipated to some extent and better recognized. To underscore my point, I trace prevalence of the term “virus” in the literature extracted from the Google Ngram compiled for this study. Figure 1 shows the relative prevalence of notions of the terms: “virus,” “unemployment,” and “inflation” during the 1900–2019 time period. I confront the “virus” notions with the two key objectives of macroeconomic policy, as they all reflect concerns of societies and scholars. As shown in Figure 1, broadly defined virus threats have been known and discussed in the academic literature, although mostly among researchers in the medical field, with only a marginal attention in social sciences.

As implied by the Google Ngram, the term “virus” was noted more times than “inflation” for over five decades between 1920 and 1970, trailing only concerns over “unemployment.” Since the mid-2000s, the notions of a “virus” have prevailed over both “inflation” and “unemployment.” Active discussions on “viruses” during the first decade of this century were related to HIV, West Nile Virus, Ebola outbreaks in Africa, hantavirus, and later on also to computer viruses. One may argue that virus episodes are mainly exogenous to human actions, with a notable exception of computer viruses. In contrast, surges in inflation and unemployment can be attributed to human errors and policy mistakes. Pandemic outbreaks might be more difficult if not impossible to contain with macroeconomic policy responses since they are not deliberately triggered by human actions. As argued by Goldberg (2020), they should be contained mainly with health remedies, not economic policies. Therefore, governments ought to respond to a pandemic crisis by giving top priority to testing, providing support for the development and distribution of vaccines and by promoting measures aimed at containing inflections, such as “social distancing” and wearing facial masks and other protective gear. They shall not begin with an indiscriminate, hasty adoption of fiscal or monetary stimulus measures that could become misguided.

Because the pandemic virus outbreaks are seemingly unrelated to human actions, one may infer that the actual, initially unobserved virus curve may have a predictable, albeit not necessarily a normal Gaussian distribution. Early testing and detection of actual cases could improve information about the exact shape and statistical properties of the virus curve. Nevertheless, the societies, governments, and economic agents react only to the observed cases. Therefore, the observed curve, that is, the identified trajectory of the virus is asymmetric—it has a fast ascend and a very slow descend, as shown in Figure 2. There is a perceived identification gap between the actual unobserved and the observed, officially reported infections. Such identification gap stems from a variety of factors including limited testing, incorrect political assumptions, and rhetoric, as well as delayed learning by medical professionals.

I allege that the identification gap is a key factor affecting economic and financial forecasts, as well as financial markets’ reactions. Economic and financial risks related to the gap are particularly damaging to financial markets and to the economic
growth. The descending path of the virus is believed to be related to the advances in medical responses and adjustments in social behavioral norms including social distancing, quarantines for travelers, and other mandatory preventive measures (Goldberg, 2020; Nicola et al., 2020). Considering the present ambiguities surrounding COVID-19, it seems that its descend may take a longer time. The lingering pandemic risk can make the return of the financial markets and, particularly, the real economy to their pre-COVID-19 course rather protracted.

A presumably slow descend has made any assumptions of the v-shaped recovery tenuous and unrealistic. Regardless, many business economists and politicians expressed unsubstantiated confidence in a v-shaped recovery well into the summer of 2020, in spite of the vast evidence indicating the persistence of structural unemployment. They also seemed to dismiss clear indications that consumers and businesses would suffer from long-lasting effects of the financial dislocations and health fears.

3 | IMPACT OF COVID-19 ON THE U.S. LABOR FORCE

As noted above, I argue that the most pronounced effect of the COVID-19 pandemic is its devastating impact on labor, while its damages to other factors of production are much smaller and possibly negligible. The most painful repercussion is the loss of human lives. Total deaths in the United States from COVID-19 have exceeded 200 thousand by mid-September 2020. By comparison, total deaths in 2017 caused by heart diseases were 647, malignant neoplasms (cancer) 599, and automobile accidents 170 (Center for Disease Control data for the United States in ’000). The death toll of COVID-19 in the United States by the end of the third quarter of 2020 has been greater than the total annual deaths caused by automobile accidents. At the time of this writing, it seems that COVID-19 has become the third largest cause of total death, trailing only annual loss of lives caused by heart diseases and cancer. The resulting delayed purchases of durable goods and a plunge in demand for many services (restaurant, air travel, leisure, sport events, etc.) have caused massive structural unemployment.

The impact of the current pandemic crisis on labor has been addressed in the recent literature by Gopinath (2020) and Petrosky-Nadeau/Valletta (2020), among others, and recognized by the majority of studies examining the economic and social consequences of COVID-19. Selected measures of the devastating effects of the 2020 pandemic on the U.S. labor are shown in Table 1.

The first two rows show proliferation of COVID-19 cases and death in 2020. The actual pandemic outbreak likely took place in the beginning of 2020, but it was not officially recognized until March, implying prevalence of the above-noted identification gap. The average daily cases have not subsided in the United States at the time of this writing in late August—they show an increasing trajectory between March and July. Further evidence of the identification gap is provided by the path of the average daily deaths, which lag behind the actual infections. The death count peaked already in April. It slowed down in May and June, but increased again in July likely due to a premature relaxation of preventive measures in many United States.

As a result of mandatory quarantines, layoffs and furloughs, total job losses have been very severe. Total U.S. jobs fell from over 152 million in February to 130 million in April, over just a two months period. Their rebound has been very slow thus far, which supports the notion of a sluggish recovery stated in the previous section. Layoffs and furloughs entail a significant increase in the initial claims for unemployment benefits. During the initial stage of the pandemic between January and April, more than 22 million U.S. workers filed for unemployment. The monthly average claims climbed from 211 thousand in
February to the peak of 5,040 thousand in April. Their gradual decline to 1,369 by July is somewhat promising, as the initial claims for unemployment are considered to be one of the leading indicators of real GDP. It shall be further noted that in addition to the number of people receiving regular unemployment insurance, there were hundreds of thousands of individuals on supplemental pandemic assistance programs.

The unemployment rate follows a corresponding path. It jumped significantly from 3.5 percent in February to 14.7 percent in April. It has receded gradually to the most recently reported 10.2 percent for the month of July.

Another meaningful effect is the downfall in the labor force participation rate, which fell from over 63 percent in February to just over 60 percent in April. The 3 percent drop can be considered as a major dive in the trend in the U.S. total labor force participation rate that has been steadily declining from its peak level of 67.3 percent in January 2000. In addition, there is a dramatic increase in the job losers in relation to the unemployed, as shown by the data in Table 1. This ratio jumped considerably from just below 47 to above 89 percent between February and April. The data show further that much of the lost jobs occurred in the manufacturing sector. The job losses have been directly associated with a considerable decline in the index of industrial production from its pre-crisis level of 109 in February to the lowest of 91 in April.

In sum, the negative shock and the most serious damage to the U.S. labor force took place mainly between February and April of 2020. Diffusion of this shock has been rather meager thus far since all of the presented labor force indicators have not regained their pre-crisis strengths. This sluggish rebound implies that the crisis has triggered the deep structural adjustment in the labor market that will take a long time to conclude. Arguably, the deep structural changes in the labor market will continue with job gains expected in health care, technology, and communication sectors. At the same time further job losses anticipated in travel, hospitality, traditional retail, and other sectors that are not well-suited for the post-crisis digital economy that will rely heavily on information technology and artificial intelligence.

### 4 | THE PANDEMIC RISK AND FINANCIAL MARKETS

The repercussions of COVID-19 pandemic for financial stability have been different than those inflicted on labor. Injuries of the pandemic to financial markets and institutions have been deep, although their impact may be rather short-lived and seemingly self-correcting. The financial investors normally react to uncertainty and risks related to unanticipated shocks. Ambiguity about the COVID-19 scope and effects has entailed significant risk aversion among financial investors and a cautionary approach to credit by lenders. It is therefore plausible to assume that financial investors and institutions do react to imperfect information about the pandemic shock—they seem to respond negatively to the above-noted identification gap. They may regain optimism rather quickly as the path of the pandemic and the scope of its repercussions become more predictable.

These general points are underscored by the data shown in Table 2. The pandemic crisis has eroded optimism of individuals and households about the economy. The consumer sentiment index compiled by the University of Michigan plunged from 101 to below 72 between February and April, that is, during the first two months of the official crisis outbreak. The index gradually
increased to 78 in June, but it fell again in July as the COVID-19 infections and deaths began to accelerate again, likely in response to the premature relaxation of preventive measures in many United States and regions.

Financial investors responded to the crisis outbreak with anxiety and agitation. Market risk proxied by the Chicago Board Options Exchange VIX volatility index jumped from an already elevated level of 19.6 in February to an extremely high level of 57.7 in March, which is just a bit shy of its highest monthly average of 62.2 at the peak of the financial crisis in November 2008. It has receded gradually to 26.8 by July, which still falls within the zone of a ‘turbulent’ market, as discussed by Orlowski and Soper (2019). Correspondingly, the equity markets experienced a rather short-term correction. After a steady increase to record levels before the pandemic crisis, the S&P500 index experienced a decline (on an annual percentage change basis) in March and April. It has regained its upward trend since May, reacting to a narrower identification gap—a clearer picture about the path and the scope of infections and deaths. This is by far more upbeat, optimistic effect of the COVID-19 pandemic particularly in the context of the damage to the labor force discussed in the previous section.

With respect to the currency markets, the impact of the pandemic on the U.S. Dollar is rather subdued. In mid-2020, many financial analysts have expected a considerable depreciation of the U.S. Dollar against the major currencies because of the dismal, high record of infections in the U.S. relative to other industrial countries (Akinci et al., 2020). The dollar has depreciated in euro terms from its highest value of 0.93 on March 2020, to the lowest of 0.85 on August 18. However, there is a continuous appreciation of the dollar against major global currencies throughout the pandemic crisis as underscored in Table 2 by the trade-weighted US dollar index compiled by the Federal Reserve. Evidently, the United States dollar still performs its function of a leading international reserve currency, particularly at global crises times.

In an attempt to avert an outbreak of systemic risk, the Federal Reserve responded to the pandemic crisis with a massive monetary stimulus. As shown in Table 2, the Federal Reserve’s balance sheet increased considerably in the aftermath of the pandemic crisis outbreak. In nominal terms, the monthly average total assets of the Federal Reserve increased from $4,170 billion in March to the unprecedented peak of $7,127 billion in June, which was approximately 36.6 percent of nominal GDP, based on 2020Q2 data. This extraordinary and perhaps haphazard injection of liquidity has not yet been fully transformed into total credit. Much of this liquidity injection has been kept by depository institutions as excess reserves, which increased at an annual rate of 135 percent just in May, reaching a record level of $3,211 billion (16.5 percent of GDP). This is an “idle liquidity,” as labeled by Orlowski (2015), that has not spurred consumption or business fixed investment. Nevertheless, the monetary expansion has helped bolster total bank credit to a large extent. As shown in Table 2, the total credit steadily increased by an annual rate exceeding 10 percent between April and July. It certainly helped alleviate the painful effects of the pandemic crisis, particularly for households and small businesses (Gali, 2020).

Credit risk in the U.S. economy has been exacerbated by the pandemic as well. The increase in credit risk in the corporate sector is underscored by the rising spread between the yields on Moody’s Baa-rated corporate bonds and on 10-year U.S. Treasury Notes shown in Table 2. The spread widened considerably during the first two months of the pandemic crisis. It has declined only gradually since April. These dynamic changes in the spread have been additionally affected by the extraordinary

### Table 2: COVID-19 and financial markets—selected monthly indicators in 2020

| Variable | February | March | April | May | June | July |
|----------|----------|-------|-------|-----|------|------|
| Consumer Sentiment Index (University of Michigan) Index 1996Q1 = 100 | 101.0 | 89.1 | 71.8 | 72.3 | 78.1 | 72.5 |
| The Federal Reserve Total Assets percent change from year ago | +4.2 | +16.5 | +60.1 | +79.4 | +85.5 | +83.0 |
| Total Commercial Bank Credit percent change from year ago | +5.4 | +7.9 | +10.9 | +10.9 | +10.2 | +10.0 |
| Excess Reserves of Depository Institutions percent change from year ago | −0.3 | +13.0 | +98.7 | +134.6 | +120.1 | +100.1 |
| CBOE VIX | 19.63 | 57.74 | 41.45 | 30.90 | 31.12 | 26.84 |
| Moody’s Baa Corporate Bond Yield Relative to 10Y Treasury Note Yield (%) | 2.11 | 3.42 | 3.47 | 3.28 | 2.91 | 2.69 |
| S&P500 Index percent change from year ago | +19.0 | −5.4 | −4.9 | +2.3 | +7.4 | +7.1 |
| Trade Weighted US Dollar Broad Index percent change from year ago | +2.1 | +5.7 | +7.6 | +6.1 | +4.0 | +3.5 |
| CPI-Based Inflation Rate year-on-year | +2.3 | +1.5 | +0.4 | +0.2 | +0.7 | +1.0 |
| TED Spread in basis points | 16 | 82 | 96 | 28 | 15 | 14 |

Note: Data Source: Federal Reserve Bank of St. Louis—Federal Reserve Economic Data.
The involvement of the Federal Reserve in corporate credit and municipal bonds purchases during the pandemic. Moreover, the path of credit risk deterioration fully coincides with the timing of changes in consumer sentiment and in market risk. In addition, the increase in counter-party risk in the banking sector as proxied by the TED spread, that is, the spread between the 3-months USD Libor rate and the yield on 3M U.S. Treasury Bill, took place at the same initial two months period. Between February and April, the TED spread jumped from 16 to 96 basis points. Coordinated global monetary policy responses brought it back to a more stable 14 basis points level only in July. Thus evidently, the monetary easing has helped avert a major liquidity crisis in the banking sector and abate a major systemic crisis.

Drawing lessons from more recent episodes of global financial crises, some analysts have surmised a danger of deflation stemming from the decline in consumer and investment spending (Christensen et al., 2020). The recent data on CPI-based inflation shown in Table 2 (as well as a range of other inflation indicators) have not supported fears of deflation. The U.S. headline CPI inflation declined to a dangerously low annualized level of 0.2 percent in May. It has increased to a more stable 1.0 percent in July, due to the accommodative monetary policy response.

One may conclude from the above analysis that monetary authorities as well as financial markets and institutions react decisively to predictability of the path of cases and fatalities of COVID-19. When risks related to the virus abate and its future path becomes more foreseeable, financial markets are likely to recover. Their rebound will almost certainly take place well ahead of a possible recovery of the real economy.

5 | CONCLUDING REMARKS

This study advances several key points in the recent discussion on the economic and financial consequences of the COVID-19 pandemic crisis. The main notion guiding this analysis is that, unlike most of the recent global economic and financial crises episodes, the 2020 pandemic has not damaged physical capital stock. However, it is inflicting serious, long-lasting injuries to the labor force. This crisis seems to induce and to accelerate deep structural changes in the labor market.

In comparison with its impact on labor, the COVID-19 damage to financial markets and institutions has been also deep, but rather short-lived and countered by government policy responses. The more severe damage to labor calls for policy responses that should be carefully tailored to structural changes in the labor market. Indiscriminate and disorderly fiscal and monetary easing might be counterproductive and potentially destabilizing, contributing largely to proliferation of the public debt.

It is unfortunate that societies have not been financially prepared for such an extraordinary crisis. They have not sufficiently accumulated precautionary savings and cash holdings that would help shield them from harmful effects of this pandemic. The prior discussions and concerns about various types of viruses have not led to a better recognition and design of optimal policy responses as shown by the Google Ngram presented in this paper.

I further argue that the identification gap is an important factor in the policy makers’ and economic agents’ reaction to the pandemic crisis. The magnitude of the identification gap defined as a difference between the actual unobserved and the observed, officially reported infections decides about the effectiveness of policy responses. Therefore, a comprehensive testing and recognition of the actual infections narrows the identification gap, leading to a better information about the scope of the pandemic and its anticipated social and economic consequences. This in turn helps policy makers devise more prudent and better-targeted policy responses.

At the time of this writing, much is still unknown about the COVID-19 virus. Yet, some general conclusions can be now formulated with a high degree of certainty. Among them are expectations of deep structural changes in the labor market including job gains in health care, technology, and digital communication services, with a gradual decline in traditional jobs outside of the new digital economy.

Macroeconomic policies in the United States and across the globe will also likely change. This paper argues that such policies ought to be selective, supporting structural changes in the labor market. It becomes apparent that governments will focus on adopting new policy measures in response to COVID-19. In addition to measures aimed at the labor market, they will possibly include stricter border controls, confinement, and inward-looking protectionist policies, all of which posing a setback to globalization and international cooperation

On a positive note, one may be cautiously optimistic that a new, more resilient economy will emerge from the current pandemic crisis, although a clear path of necessary structural changes is not yet fully in sight. It will emerge when effective medical, social, and financial remedies are in place. In efforts to contain the pandemic risk more effectively, a multinational cooperation between governments, research, business, and financial institutions will play a vital role.
ENDNOTES

1 Most of the episodes of “Minsky moments”, coined in the literature by Hyman Minsky (1982), have been attributed to debt cycles and bubbles, global supply shocks and inflation surges. They have been all induced by human actions and policy errors (see for instance Minsky, 1982; Orlowski, 2008). The COVID-19 pandemic outbreak is exogenous to human choices.

2 The Google Ngram charts word frequencies from books only. In spite of this limited sourcing, it broadly reflects changes in a scientific focus on given terms and concepts.

3 It is worth noting that the initial unemployment claims and the labor participation rates in Table 1 are seasonally adjusted. Such adjustments might be somewhat misleading in an abnormal pandemic crisis, which is likely to distort the typical seasonal patterns.

4 All calculations in this section are based on the Federal Reserve Bank of St. Louis – Federal Reserve Economic Data.

5 A similar viewpoint is also expressed by Cochrane (2020).

6 See Kohlscheen et al. (2020) for an exhaustive discussion of new policy measures in the aftermath of the pandemic crisis.

REFERENCES

Akinci, O., Benigno, G., & Queralto, A. 2020. Modeling the global effects of COVID-19 sudden stop in capital flows. Board of Governors of the Federal Reserve System – FEDS Notes, July 2.

Christensen, J. H. E., Gamble, J. M. IV, & Zhu, S. 2020. Coronavirus and the risk of deflation. Federal Reserve Bank of San Francisco – Economic Letter No. 2020–11.

Cochrane, J. 2020. Coronavirus monetary policy. In R. Baldwin & B. Weder di Mauro (Eds.), Economics in the time of COVID-19. Center for Economic Policy Research, , March 6, pp. 105–108.

Gali, J. 2020. Helicopter money: The time is now. In R. Baldwin & B. Weder di Mauro (Eds.), Mitigating the COVID economic crisis: Act fast and do whatever it takes. Center for Economic Policy Research, , March 18, pp. 57–61.

Gates, W. 2015. The next outbreak? We are not ready. Talk at the TED (Technology, Entertainment and Design) conference, Vancouver, Canada, March 15.

Goldberg, P. 2020. Policy in the time of coronavirus. In R. Baldwin & B. Weder di Mauro (Eds.), Mitigating the COVID economic crisis: Act fast and do whatever it takes. Center for Economic Policy Research, , March 18, pp. 197–202.

Gopinath, G. 2020. Limiting the economic fallout of the coronavirus with large targeted policies. In R. Baldwin and B. Weder di Mauro (Eds.), Mitigating the COVID economic crisis: Act fast and do whatever it takes. Center for Economic Policy Research, , March 18, pp. 41–47.

Karabag, S. F. (2020). An unprecedented global crisis! The global, regional, national, political, economic and commercial impact of the coronavirus pandemic. Journal of Applied Economics and Business Research, 10(1), 1–6.

Kohlscheen, E., Mojon, B., & Rees, D. (2020). The macroeconomic spillover effects of the pandemic on the global economy. Bank for International Settlements – BIS Bulletin No., 4.

Minsky, H. P. (1982). Can “It” Happen Again? Essays on Instability and Finance. M.E. Sharpe Publ. Co.

Nicola, M., Alsafi, Z., Sohrabi, C., Kerwan, A., Al-Jabir, A., Iosifidis, C., Agha, M., & Ahga, R. (2020). The socio-economic implications of the coronavirus pandemic (COVID-19): A review. International Journal of Surgery, 78, 185–193. https://doi.org/10.1016/j.ijssu.2020.04.018

Orlowski, L. T. (2008). Stages of the 2007/2008 global financial crisis: Is there a wandering asset price bubble? Economics E-Journal, Discussion Paper No. 2008-43.

Orlowski, L. T. (2015). Monetary expansion and bank credit: A lack of spark. Journal of Policy Modeling, 37(3), 510–520. https://doi.org/10.1016/j.jpolmod.2015.03.013

Orlowski, L. T., & Soper, C. C. (2019). Market risk and market-implied inflation expectations. International Review of Financial Analysis, 66(1), Article 101389. https://doi.org/10.1016/j.irfa.2019.101389

Petrosky-Nadeau, N., & Valletta, R. G. (2020). Unemployment path in a pandemic economy. IZA Discussion Paper, No. 13294.

World Economic Forum. Going Viral: The Transformation of Biological Risks. The Global Risks Report 2019, 14th ed., pp. 44–53.

How to cite this article: Orlowski LT. The 2020 Pandemic: Economic repercussions and policy responses. Rev Financ Econ. 2021;39:20–26. https://doi.org/10.1002/rfe.1123