



Policy Note

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WHEN TWO MINSKYAN PROCESSES MEET A LARGE SHOCK: THE ECONOMIC IMPLICATIONS OF THE PANDEMIC

MICHALIS NIKIFOROS¹

The spread of the new coronavirus (COVID-19), which was recently declared a pandemic by the World Health Organization, is a major shock for the US and global economies. Initially, the hope that the virus could be contained in China limited this shock to the possible disruption of global supply chains and whatever economic effect this might have. However, the recent escalation in Europe and the United States makes it increasingly clear that the impact will be much more direct and severe.

The direct impact has both supply and demand dimensions. As a large share of production has stopped or will stop, output will decrease from the supply side. On the other hand, the uncertainty caused by the pandemic, the restrictions imposed by the authorities (e.g., the travel ban to Europe that was recently announced), and the drop in the level of economic activity globally will have an adverse impact on most components of aggregate demand.

This economic shock has also led to a severe drop in the stock market. After its peak on February 19th, the S&P 500 index descended into a bear market—commonly defined as a drop in the index of more than 20 percent from its peak—in only 16 days, the quickest on record. As of

MICHALIS NIKIFOROS is a Research Scholar at the Levy Economics Institute of Bard College.

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March 18th, the S&P 500 index was 30 percent below its peak. March 12th and March 16th saw two of the biggest one-day drops in the market. In absolute terms, they are the two biggest drops in history. In percentage terms, the March 16th plunge is second only to the October 1987 Black Monday, and greater than the drops in late October 1929. March 12th, 2020 is fifth on the list. Stock trading was halted on both of these days.

This fall has continued despite the cut in the federal funds rate by half a percentage point on March 3rd. That had been the largest one-time rate cut since 2008—at least until March 15th, when the Federal Reserve Board cut its rate by a whole percentage point, to, effectively, zero.

Most analyses attribute the drop in the stock market to the COVID-19 shock and its severe effects on the macroeconomy. To get an idea of the magnitude of the disruption, some preliminary Chinese data show that in the first two months of 2020 retail sales decreased by 20.5 percent compared with a year ago, while industrial production and investment fell by 13.5 percent and 24.5 percent, respectively (note that the Chinese economy was affected only after the lockdown in Wuhan on January 23rd).

At the same time, we cannot understand the drop in the stock market, and more importantly the economic implications of the shock and the challenges that the US and global economies face right now, without reference to two Minskyan

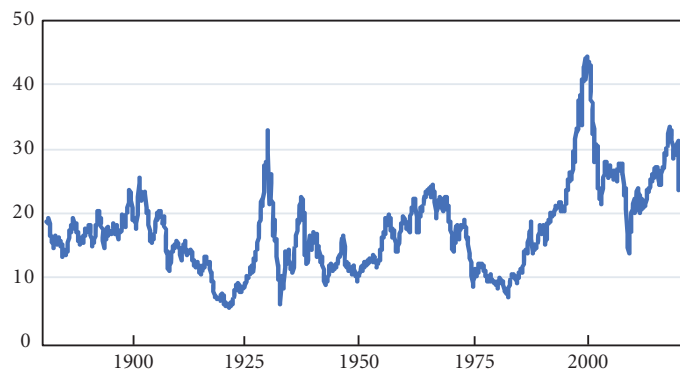
processes that were at play over the last years: the growing divergence of stock market prices from output prices and the increasing fragility in corporate balance sheets. More generally, Minsky’s emphasis on the potentially cumulative and circular causation between current flows and outstanding stocks is crucial to fully appreciate the economic consequences of the pandemic.

Hyman Minsky’s approach to how an actual economy works centers on the dynamic feedback effects between current flows and outstanding stocks of real and financial assets. A central proposition of Minskyan analysis is that the underlying conditions in the capitalist economy can best be understood from the fact that production and investment are financed by borrowing. The pandemic is thus important, not only for its direct impact on supply and demand, but because of the effect of this shock on the ability of economic agents—households and firms—to finance a sustained level of production, expenditure, and employment.

From this point of view, Minsky identifies two (interrelated) endogenous tendencies toward economic weakness and instability. The first one is associated with the evolution of stock prices. For Minsky, output prices represent the validation of equity prices by generating increasing earnings on sales, thus there cannot be a perpetually growing divergence between the

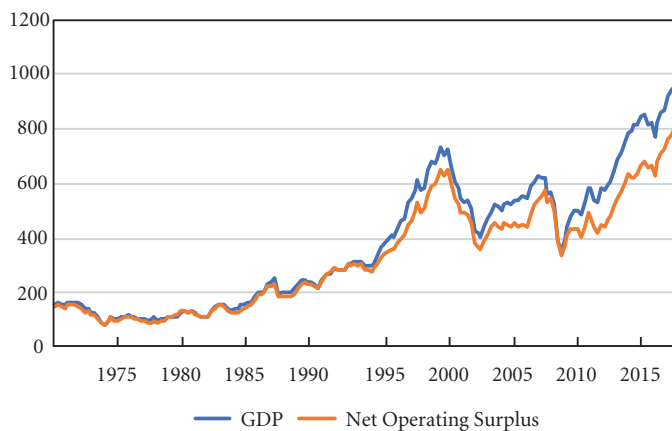
Figure 1 Measures of Stock Market Valuation

(a) Shiller Cyclically Adjusted Price-Earnings Ratio P/E 10, 1881-2020



Source: econ.yale.edu/~shiller/data.htm

(b) Ratio of Market Capitalization to GDP and Net Operating Surplus 1971Q1-2019Q4 (1975Q1=100)



Source: BEA; Wilshire Associates; author’s calculations

Note: The index is calculated as the ratio of end-of-period Wilshire 5000 index to GDP and net operating surplus, respectively

two. The second tendency is associated with the fragility of corporate (and household) balance sheets. Periods of economic stability lead to periods in which corporations and households assume more and more liabilities and transition from a hedge, to a speculative, and eventually to a Ponzi position (Minsky 1986, 1992).

Was This Time Different?

In all of the reports we published over the last several years (Papadimitriou, Nikiforos, and Zezza 2016, 2019, 2020; Nikiforos and Zezza 2017, 2018), we highlighted important dangers for the US economy related to these two Minskyan processes. Figure 1a shows the cyclically adjusted price–earnings

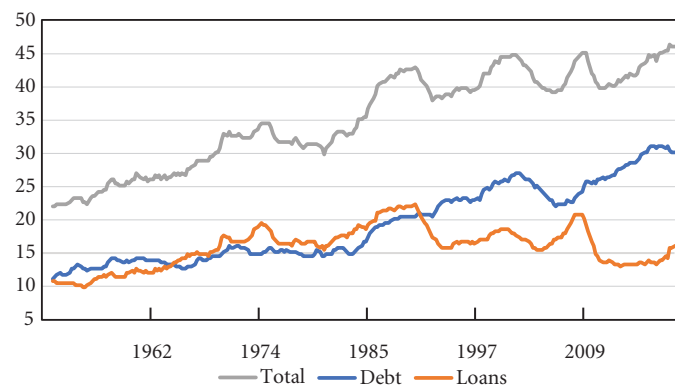
(PE) ratio. It is clear that the level of the ratio over the last couple of years has been similar—at some points even higher—to that of September 1929, and much higher than it was before the 2007–9 crisis. It is surpassed only by the late 1990s level. Other measures of stock market valuation, such as the ratio of market capitalization to nominal GDP (or net operating surplus) presented in Figure 1b, point to a valuation that exceeds even that of the 1990s.

At the same time, US corporate balance sheets have become increasingly fragile. Figure 2a shows that the sum of firms’ debt and loan liabilities is now much higher compared to the period before the crisis.

The fragility of corporate balance sheets is confirmed by other sources. Figure 2b shows that the gross leverage of the

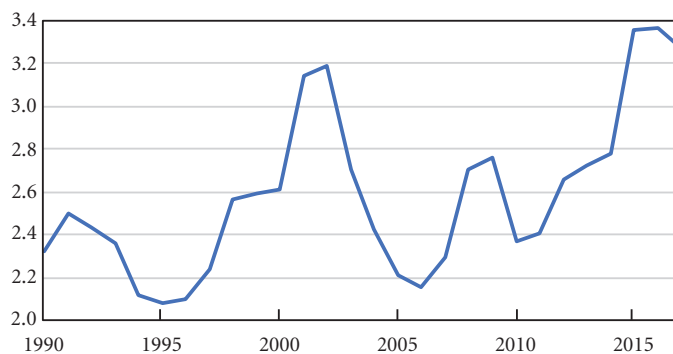
Figure 2 Measures of US Corporate Sector Fragility

(a) Ratio of Nonfinancial Corporate Sector Liabilities to GDP (percent)



Source: Federal Reserve; BEA; author’s calculations

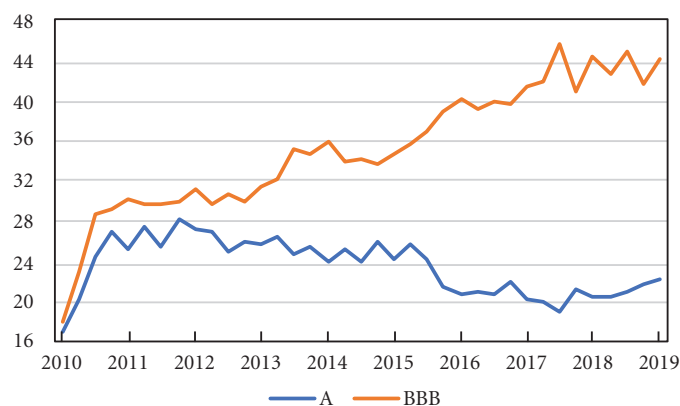
(b) Gross Leverage of US Corporate Sector



Source: BIS (2019)

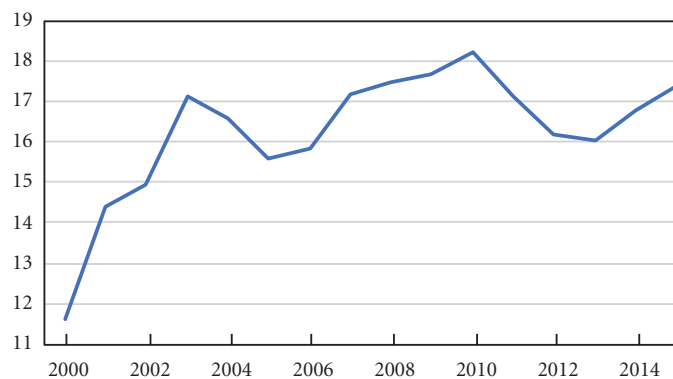
Note: Defined as gross debt of listed firms to EBITDA

(c) Average Percentage of Investment Grade Corporate Bond Mutual Fund Portfolios Invested in Bonds (percent)



Source: BIS (2019)

(d) Share of Zombie Firms (percent)



Source: BIS (2017)

corporate sector—defined as gross debt over earnings before interest, tax, depreciation, and amortization—is higher than its precrisis level and its previous peak at the end of the 1990s.

The recent Annual Economic Report of the Bank for International Settlements (BIS 2019) also mentions that in the United States the share of issuers of corporate debt that have issued BBB bonds has increased from 25 percent in 2000 to 36 percent recently (in Europe the increase is even more dramatic: from 14 percent to 45 percent).

Related to that, Figure 2c shows that the share of BBB bonds in investment-grade corporate bond mutual fund portfolios has increased—and is now at 45 percent, compared to 18 percent in 2010—while the share of bonds with an A rating fell. The *Financial Times* recently published some similar calculations that show the share of the market capitalization with a credit rating above BBB has fallen to 50 percent, below both its late 1990s and precrisis levels (Henderson 2019).

Finally, the number of Ponzi firms (or, as they are called in some recent literature, zombie firms)—firms whose cash flows are not sufficient to cover the interest payments on their debt—has also increased, despite the very low interest rates of the last decade. Banerjee and Hofmann (2018) and McGowan, Andrews, and Millot (2018) define zombie firms as firms with an interest coverage ratio that has been less than one for at least three years in a row. Banerjee and Hofmann (2018) introduce a narrower definition that includes the additional criterion that firms have a ratio of their assets' market value to their replacement cost (Tobin's q) that is below the median within their sector in any given year.

The BIS's Annual Economic Report and previous studies (e.g., BIS 2017, Banerjee and Hofmann 2018) show that, in 2017, the share of zombie firms in a sample of developed countries increased to 6 percent under the narrow definition (compared to close to 1 percent at the end of the 1980s), while it was roughly 12 percent under the broad definition. In the United States, this share is even higher: Figure 2d shows that in 2015 it stood at 17.4 percent, which is above its precrisis level. Given the other trends in corporate balance sheets, this number must be even higher today.

The Economic Implications of the Pandemic

These issues are central if we want to understand the implications of the coronavirus shock. This shock did not arrive in the context of an otherwise healthy economy. On the one hand, it has coincided with the apogee of a secular trend of increasing divergence between the evolution of goods and equity prices, and thus an increasing inability of output prices to validate equity prices. Hence, the demand or supply shocks have simply aggravated an inevitable adjustment process.

On the other hand, the rising fragility in corporate balance sheets had made the economy particularly vulnerable even to short falls in sales and declining equity prices. Thus, not only were corporate equity prices incapable of validation, the debt issued by corporations was also incapable of validation even before demand and supply shocks emerged in response to the coronavirus measures.

In previous reports (Nikiforos and Zezza 2017, 2018), we have calculated that, under relatively optimistic assumptions, a stock market correction and a deleveraging of the private sector can have very severe consequences on economic activity. In such a scenario, the cumulative impact would be a real GDP growth rate roughly 10 percent below its baseline performance over a three-year period (2.8 percent, 4 percent, and 3.3 percent, respectively), and a loss of real GDP of around 12 percent.

Assuming a baseline growth rate for the US economy of around 1.5 percent to 2 percent, which is what most economists expected (see Papadimitriou, Nikiforos, and Zezza 2020), these simulations imply a negative growth rate that would fall below -2 percent.

Given the magnitude of the coronavirus shock, these estimates should be understood as an optimistic scenario, representing a “ceiling” for potential outcomes. For example, even if we set aside the stock market and balance sheet implications, if we assume that GDP falls by 15 percent in just one quarter of 2020—which is on the lower side of the preliminary Chinese figures mentioned above—and does not grow for the rest of the year, this implies, all other things equal, a drop in GDP of close to 4 percent. However, because of the situation in the stock market and the preexisting balance sheet fragility, the impact is likely to be deeper and more severe compared to the recent 2007–9 crisis.

Two final observations are in order. First, if we approach the situation using this Minskyan framework, it is easy to understand why the current economic weakness can be perpetuated

through feedback effects between flows of demand and supply and their balance sheet impacts. On the supply side, a supplier that has contracts to pay labor and buy inputs but cannot sell its product because of the interruption of integrated supply chains, will have no revenues and will thus have to borrow to meet its commitments. This is true all along the supply chain.

On the demand side, the seller has existing stocks which it hopes to sell to meet its cost of goods. If demand falls off, accumulated inventory has to be financed. Thus, both supply side and demand side require financing of stock commitments, which normally would be met by integrated production and sales. The demand for short-term finance thus more than doubles, just as the creditworthiness of both the producers and sellers declines, leading to a reduction in the willingness to fund unsold stocks on both the supply and demand side. However, this short-term liquidity problem might quickly lead to insolvency, as firms cannot repay debt with unsold goods. In fact, the deeper and more prolonged the original shock, the more likely it is this transition from liquidity preference leads to Ponzi finance. In turn, this transition has a secondary impact on aggregate demand and employment, which exerts further pressures on liquidity and destabilizes balance sheets.

Second, in the current context, an important aspect of the problem is the global dimension of the crisis. As things stand right now, it seems that not a single major economy—developed or developing—will remain unaffected.

What Needs to Be Done

At this point, a strong public intervention is needed. Monetary policy is important in order to avoid a collapse of the banks and the financial system, which would make things worse. However, monetary policy is not enough. Low interest rates will not boost spending—it did not happen before the crisis, and it will certainly not happen now. Reducing interest rates in itself will also have no impact on the liquidity problem faced by many firms, as private banks will be less willing to provide the necessary liquidity as credit risk rises (toward that end, a more direct intervention is necessary—the recently announced commercial paper funding facility moves in that direction).

At the same time, a boost in demand can only be achieved through fiscal policy—especially an increase in public spending. At this point, a large share of this increase in spending can be directed toward providing access to healthcare for all those in

need, and guaranteeing that all those who need to get paid sick leave can do so (the recent bill that was signed by the President guarantees sick leave to a fraction of employees, as very big and small employers are excluded). Support for employment, household income, and firms that face the risk of extinction would also be helpful. At the moment of writing this note, there are reports of a fiscal stimulus plan of \$1 trillion. Although the details of the plan are still unknown—and the devil always hides in the details—such a stimulus is necessary.

In the medium run, when we have (hopefully) left the pandemic behind us, a more serious discussion needs to begin on how to pursue structural reforms of the US economy that will deal with the underlying causes of the current fragility, as well as the inability of the US healthcare system to effectively handle a pandemic like this. For reasons we have explained in past reports—and others that are now becoming painfully obvious—policies to address income inequality, reform the financial sector, and provide health insurance to everyone should be part of these reforms. In the meantime, it is necessary that, unlike the response to the 2007–9 crisis, the assistance provided to large corporations come with strings attached—so that they do not return to the same old (destabilizing) practices once the emergency has passed.

Notes

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