

The Economic Impact of the Fed's Corporate Bond Programs in Mitigating the Covid-19 Pandemic

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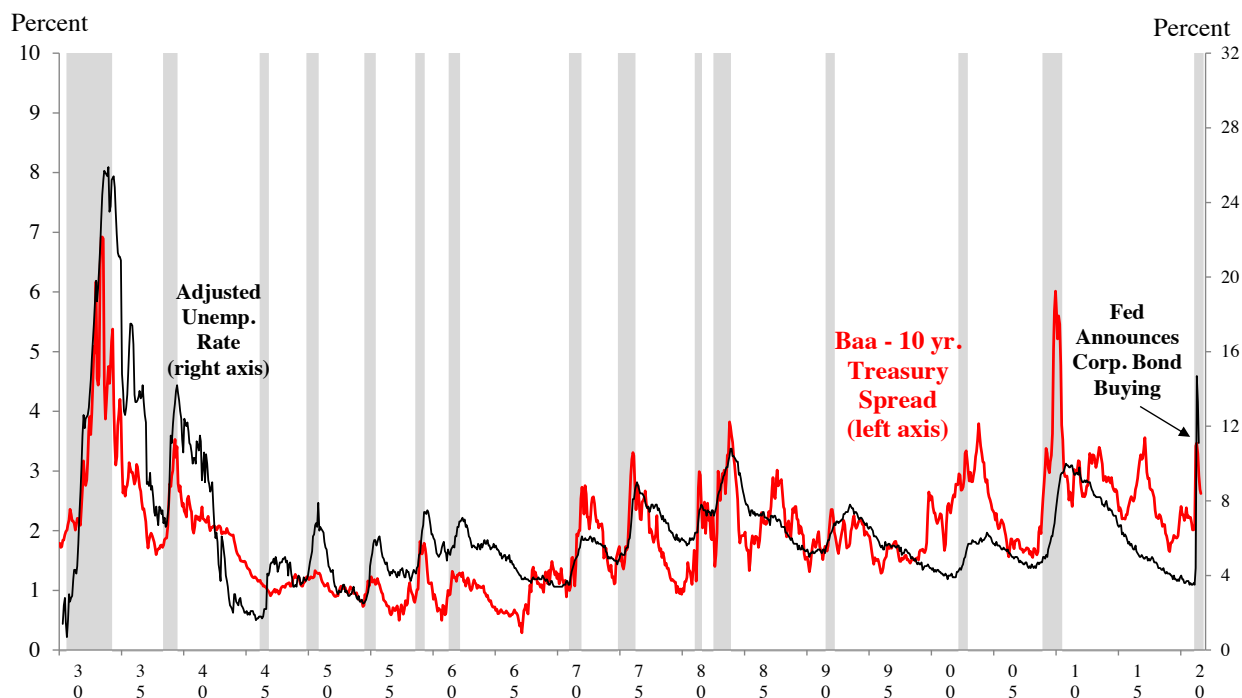
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Introduction

The recent Covid-19 Pandemic induced financial crisis and current recession have created some unprecedented challenges for the Fed. The pandemic-induced declines in consumption, investment and labor hours were magnified by government mandated lockdowns in the second quarter of 2020. A key component of the amplification mechanism of negative shocks in an earlier dramatic crisis and depression, 1929-1933, was the financial accelerator which followed the financial collapse associated with for serious banking panics. The consequent decline in net worth and collateral by households and firms led to defaults, bankruptcies and a collapse in credit. A similar dynamic occurred in the Global Financial Crisis (GFC) in 2007-2008. In the Covid -19 downturn a similar phenomenon occurred as the corporate sector was hit by a collapse in sales, orders, and a disrupted supply chain. This stress can be seen in the spread between corporate Baa and 10-year Treasury bond yields, a well-known measure of credit risk made famous by Bernanke (1983) which was earlier used by Friedman and Schwartz (1963) (see Figure 1).

In response to the crisis, the Fed extended many of its facilities developed in the GFC 2007-2008 to restore the plumbing of the financial system and to bolster the banking system. In the recent crisis the Fed added new facilities to shore up the corporate and small to medium business sectors, as well as state and local governments. It was able to do this because of explicit Treasury guarantees against credit losses, which were not made in the policy response to the GFC. A key component to the recent effort was the creation of the primary and secondary corporate credit facilities that were intended to support the issuance of, and trading in, corporate

Figure 1: U.S. Corporate Bond Risk Premiums Trended with Unemployment Since the Great Depression Until Fed Announced Corporate Bond Program



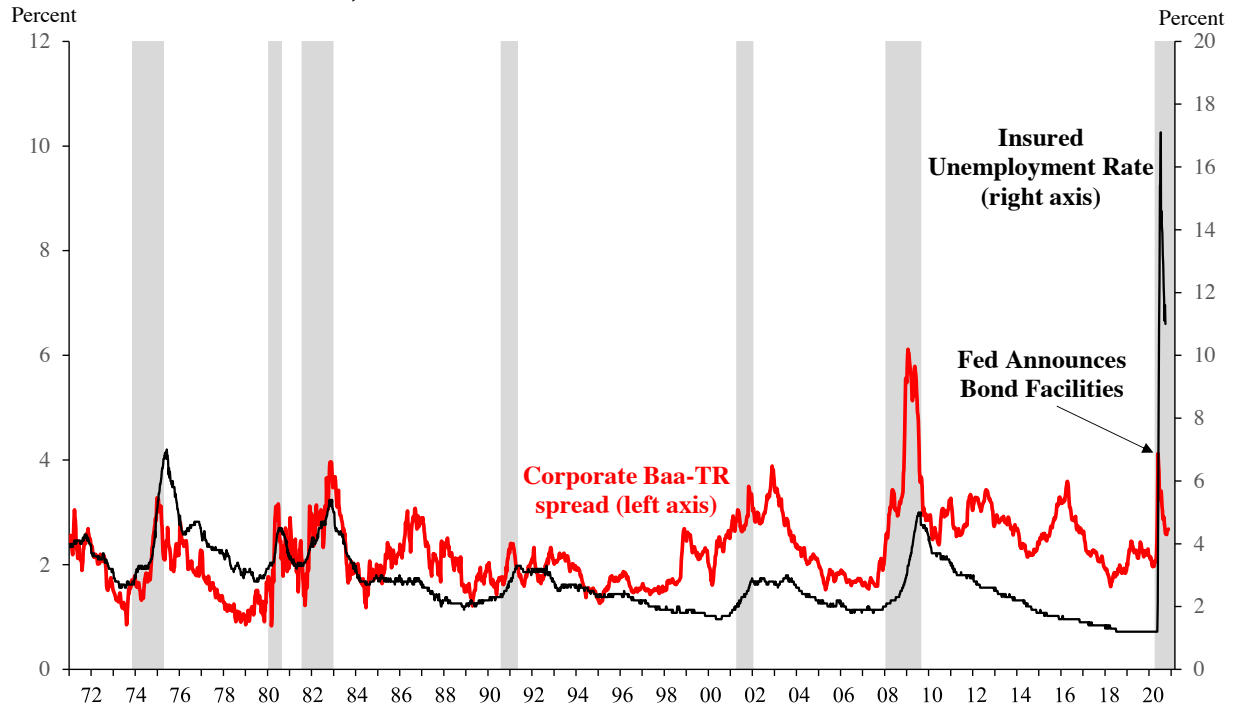
Sources: Moodys, NBER Macro-History database, and Bordo and Duca (in progress).

bonds, respectively, and at non-crisis spreads over Treasury yields. The announcement of these facilities was associated with halting a rapid rise in the Baa-Treasury bond spread that was in-train in March 2020 at the height of the crisis. As a result, rather than continuing to surge, the Baa- and other investment grade spreads peaked at levels seen in more normal recessions, and have subsequently ebbed (see Figure 2).

The Fed's New Corporate Facilities

The Fed's new corporate bond interventions take the form of buying either newly issued investment grade bonds with maturities up to four years by its Primary Market Corporate Credit Facility (PMCCF) or exchange traded funds (ETFs) invested in seasoned investment-grade bonds with remaining maturities under five years by its Secondary Market Corporate Credit Facility

Fig. 2: Baa Corporate - 10 yr. Treasury Spread Jumps in Crises and Recessions, Recedes on Announced Fed Bond Facilities



Shaded areas denote recessions. Sources: Federal Reserve Board, Moodys, and Bordo and Duca (in progress).

(SMCCF). Eligible debt is limited to that of U.S. firms with at least 95 per cent of proceeds used to support U.S. operations, and is limited to nonbanks and firms not receiving other federal aid under the CARES Act of 2020.

To shield the Fed from investment losses both facilities are structured as special purpose vehicles, with each funded by Treasury equity stakes of up to \$50 billion for PMCCF and \$25 billion for SMCCF. Debt by the Fed funds the remainder using up to 10:1 leverage for buying investment grade bonds or syndicated loans that are investment grade at time of purchase. Portfolio exposure to any one company is limited to 10% of an issuers maximum historical outstanding bonds and to 1.5 per cent of combined PMCCF and SMCCF assets. There is a combined size limit of \$750 billion on the PMCCF and SMCCF, with both initially expiring on

September 30, 2020, but later extended to expire at year end 2020. The PMCFF can buy newly issued eligible bonds at spreads over comparable maturity Treasuries in a range (minimum and maximum) based on credit rating and prevailing spreads over comparably rated bonds at the time of PMCFF purchase plus one percentage point for a facility fee. While the pricing guidelines for the SMCFF are less explicit, that facility has bought investment grade ETFs when the corporate Baa-Treasury spread has exceeded 300 basis points. This is about 100 basis points above the average from 1970 up until the global financial crisis of 2007-2009.

Quite notably the Baa-Treasury spreads stopped rising on March 23, 2020 when the Fed announced that it would set up the PMCFF and SMCFF. This was well in advance of the start of purchases by the SMCFF (May 12, 2020) and by the PMCFF (June 16, 2020). Furthermore, the subsequent purchases by the Fed were under \$50 billion by the end of June 2020—far below the limits on the size of the facilities – with the vast bulk being purchases of ETFs by the SMCFF. Instead of reflecting a balance sheet effect (as with QE), as we show below, this pattern reflects a strong “backstop” effect from announcing the facility by a central bank having a great ability to expand its balance sheet.

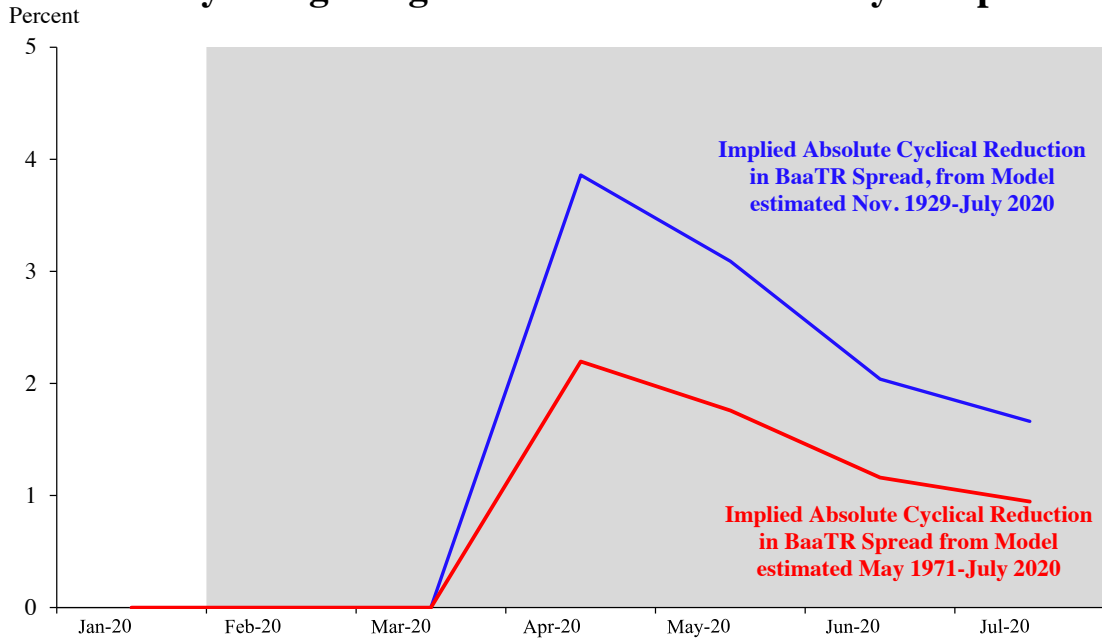
Modelling the Baa-Treasury Spread

Bordo and Duca (2020) model the spread between yields on Baa-rated corporate bonds from Moody’s and the Long-Term (10 year) U.S. government bond using monthly data back to 1929 and weekly data over a shorter sample since 1971, accounting for the major historical credit market shocks that occurred. Movements in the spread are highly correlated with the business cycle, proxied by the square of the unemployment rate (see Figure 1).

In our long-run model, the corporate-Treasury spread depends on cyclical risk as measured by the square of the unemployment rate and several shift variables including: the 1951 Treasury-Fed Accord after which countercyclical monetary policy mitigated the cyclical risk on corporate bonds; the 1970 Penn Central railroad bankruptcy which marked the end of a two decade period of no investment grade defaults and an upward shift in the cyclicity of the Baa-Treasury premium; and the Commodities Future Modernization Act (CFMA) of 2000 which lowered the bankruptcy priority of bonds versus derivatives and increased the riskiness of corporate bonds.

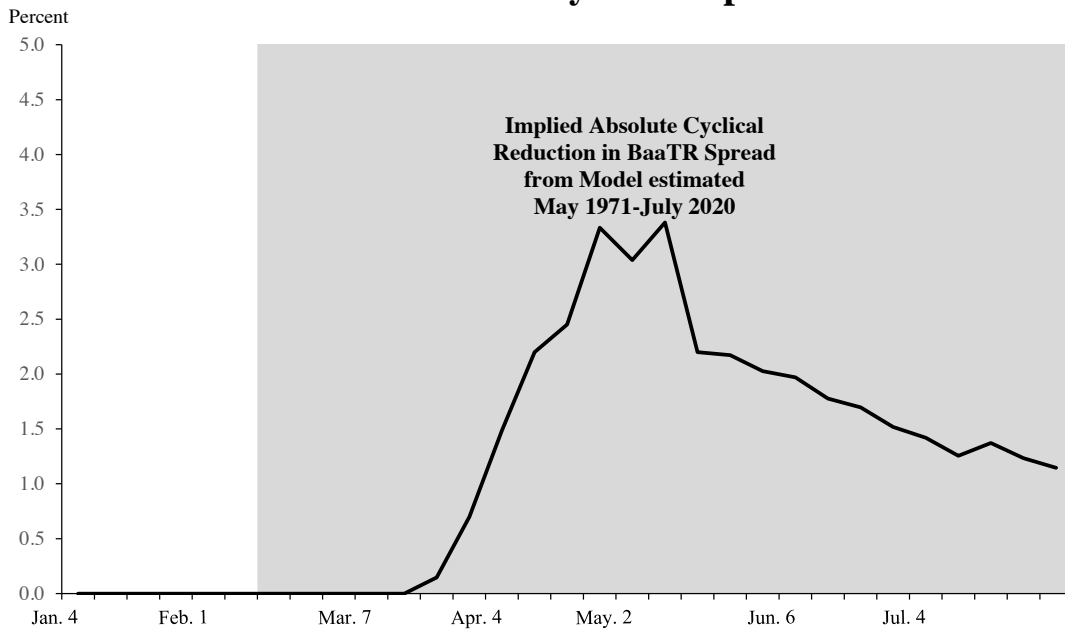
We estimate a cointegration model of these non-stationary variables in the Pre-Covid sample. We also estimate a model using higher frequency weekly data from 1971-2020. We then account for the Fed intervention in the corporate bond market by altering the equilibrium relationship between the unemployment rate and the spread, i.e., artificially suspending the accelerator effect and including Covid impact shock dummy variables. This approach outperforms the alternative of ignoring the impact of Fed corporate bond facilities on the accelerator, which, in contrast, yields worse fits and correlated residuals since when samples include the Covid Pandemic. We find for the longer sample going back to the Great Depression that the announcement of the Fed facility prevented a 3.9 percentage point further rise in the spread. Using a shorter monthly sample since 1971 (which coincides with our weekly sample) implies that the announcement of the Fed's new facility prevented a 2.2 percentage point further rise in the spread (see Figure 3). Estimates from our weekly model imply that the announced intervention prevented a further rise ranging between 3 and 3.4 percentage points from late April to early-May (see Figure 4).

Figure 3: Larger Implied Effect of Announced Fed Corporate Facility Using Longer Versus Shorter Monthly Sample



Sources: Moodys, Federal Reserve Board, and Bordo and Duca (in progress).

Figure 4: Implied Effect of Announced Fed Corporate Facility On Baa-Treasury Bond Spread



Shaded areas denote recessions. Sources: Federal Reserve Board, Moodys, and Bordo and Duca (in progress).

The Effects on GDP

Finally, we gauge the effects of the Fed's mitigation of the corporate Treasury spread on the real economy. First, based on the estimated effects of the bond spread on the equity premium in the FRBUS model, we find that real GDP would be 0.4 to 0.73 per cent higher after four quarters. In FRBUS, the equity premium primarily affects GDP via a stock wealth effect on consumption. However, *our* use of this approach does not account for the impact of the Baa-Treasury spread on business investment via altering the user cost of capital and omits other, more indirect effects. Second, we estimate the impact of the announcement of the Fed corporate bond programs on the excess bond premium series of Gilchrist and Zakrosjek (2012), and then use this estimate in conjunction with their estimates of the effect of a given increase in the excess bond premium on GDP. We find that the Fed's corporate debt intervention prevented an even larger decline in real GDP of 2.25 per cent after four quarters. The larger effect using the second approach reflects that Gilchrist and Zakrasjek's estimates of the impact of the excess bond premium on GDP implicitly allows for several channels of effects (wealth, user cost, and credit availability), rather than *our* first approach which only explores the narrow equity premium effect on stock wealth and its primary impact on consumption.¹ Thus, the corporate bond facility seems to have been highly successful in mitigating the financial accelerator channel that was so damaging in the GFC and the Great Depression.

¹ We have not yet included a user cost of capital effect on business fixed investment using the FRBUS model.

Discussion

The Fed's corporate debt interventions have supplemented the Fed's other liquidity support policies and its expansionary monetary policy actions. However, this new facility—along with the new municipal bond and business loan programs—marks a major departure from earlier Fed practice which only provided support in crises to the banking system and, since 2007, other financial institutions and markets. In an older parlance the Fed has crossed a “red Line” by directly supporting the non-financial sector beyond intervening in the money market (e.g., in commercial paper). Moreover, the Treasury guarantee that allowed the Fed to make this major change could pose risks to the Fed's independence and the program could induce the non-financial sector to depend on Fed support in future crises or downturns. In other words, despite providing upfront benefits, together the new corporate facilities are not exactly a free lunch and their true costs and hence net benefits will depend on how they are eventually unwound and the extent of the moral hazard effects that they induce.

In this regard, an important question to be considered is—had these new policies not been implemented would the Fed's other more orthodox monetary and LOLR policies have done as good a job? This may help answer the question whether the benefits of this new corporate debt support policy exceed the cost?

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