A Financial and Economic Interpretation of Coronavirus

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This document provides a summary of my thoughts on the economic and financial effects of the current pandemic. The goal is to provide an interpretation for friends and family of how economic policy makers are responding to the pandemic. Many of the thoughts come from blog posts of prominent of economists, so I provide relevant links when possible. The view points remain my own, though, and I don't speak for anyone else. The write up is split into the two sections: fiscal policy and monetary policy. This has been a work in progress the past few days, so aspects of the discussion are already outdated. I figured my thoughts on those topics might help people interpret current events though, so I left them in the write up.

1 Fiscal Policy

Keynesian economics suggests that in times of low economic activity, the fiscal authority should increase spending to stimulate aggregate demand and push the economy out of a recession. This is the logic behind standard stimulus packages, like what we saw after the financial crisis. I am skeptical that this policy is the solution to the current problem. No matter what the fiscal authority does, aggregate demand will be low in the next quarter or two. Additionally, we probably should not be pursuing any policies that encourage people to go out and spend money given the nature of this crisis.

In addition to the issue of low demand, there is also going to be a fundamental problem with the supply side of the economy: only certain types of jobs can be moved from the office to home. Since labor is a key input to production, that means there is going to be binding constraint on production that the government can't relax in the short run. There is nothing the Federal Reserve or the fiscal authorities can do to ease this constraint at this point. We just have to start thinking about how we are going to be able to turn the economy back on, so to speak, after this passes. Most economists seem to be arguing that we should be pursuing policies that work through intertemporal substitution channels[1].

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[1]See: Ricardo Reis' twitter for the thoughts of one of the world's leading macroeconomists.

Intertemporal substitution is the idea of forgoing something now for something else in the future. Think of saving part of your salary; you forego current consumption, so you can consume more later. Borrowing is the opposite of that; you consume more today at the cost of making payments later. We need policies that help firms and individuals shift consumption and production decisions in a manner that helps them avoid bankruptcy in the coming months. This mostly means that companies need access to credit, and individuals need to receive cash.

For individuals with savings and the ability to work from home, this is easy: stay home and do everyone in the country and world a favor by just sitting on a couch and watching Netflix. By implementing a small change in your life now for a couple of weeks, you are buying dozens and maybe hundreds of people extra years on their lives. This decision should be an easy one to make. Give up a little bit now, and everyone is better off in the future. The question is how to do this for individuals without savings and feel like they have to go into work so they don't go bankrupt or lose their jobs. What can fiscal policy do to help those people?

An easy way to do this is for the government to delay tax payments. By letting people pay at a later date, people will have access to more money in the short run. For firms, we could lift some regulations on banks that limit their ability to make loans to risky individuals and companies. By reducing frictions in credit markets, we would make it easier for people to intertemporally substitute from future wealth to current wealth. That is, they can access future cash now to help their current situation.

There has been a surge in research on the structure of mortgage design since the financial crisis. One of my favorites is by John Campbell, Nuno Clara, and Joao Cocco. Here's a quick simplification of that paper: an adjustable rate mortgage with an option to only pay interest (stopping principal payments) on loans during recessions and extend the maturity of the contract helps stabilize the macroeconomy. This contract allows households to delay payments during a recession and make payments during good times instead. It's too late to implement these kind of contracts for the current situation, but we can still borrow some of their logic and apply it to all loans: fiscal authorities and banks should be thinking of ways to extend the maturity of loans and to reduce short term payments. This will reduce defaults in the next few quarters, at the cost of potentially increasing them in the future. Think of this as "flattening the curve", but for financial markets. Instead of having a wave of defaults now, we just spread them out over the next year or eliminate them. This would be costly to banks, since they will be losing payments in the short run. But that is something that either Congress or the Fed could help with.

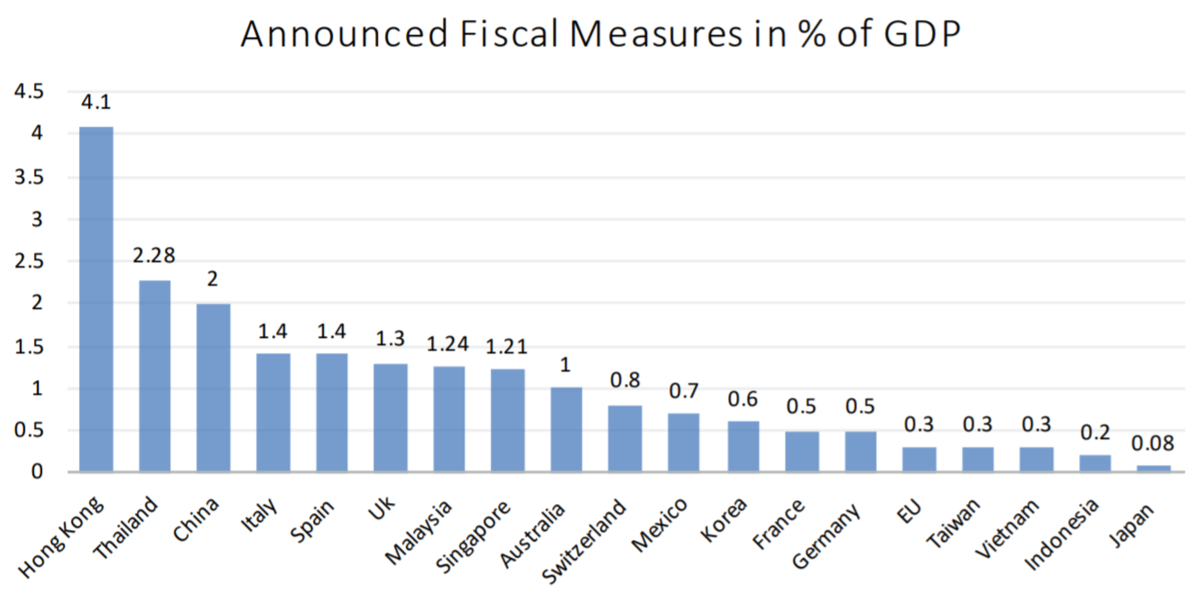
A major social insurance policy being proposed is giving everyone $\$1,000$ now[2]. This is an efficient response in the sense that it eliminates the externalities of people leaving their house to

[2] See Greg Mankiw's blog, and many others.

make money. I agree with this view point and strongly believe we should be pursuing any policy that gives people an incentive to stay home. Ideally, this could be targeted at people who really need it and not the Bill Gates' of the world. My fear with this policy though is that someone may get the money then want to go out somewhere to spend it. That seems unlikely at this point.

The overall message I have seen coming from economists is that this is not an issue that can be solved by stimulating aggregate demand, but rather one that should be approached through social insurance and easing constraints on intertemporal substitution. I think policy makers understand this (well done Nancy Pelosi and Steve Mnuchin). Hopefully the Senate and Administration are able to grasp these ideas as well.

This is undoubtedly going to be costly from a deficit perspective, but now is not the time to worry about the debt burden. At the tail end of this, when we are coming out from the crisis, we want the economy to be ready to make up lost ground as fast as possible. That means individuals need to still be employed and ready to put in hours and businesses need to be solvent. It is encouraging from an economic perspective that countries are taking this seriously and have already announced large fiscal measures to combat the economic effects of the virus. See the figure below, sourced from VOX's book[3] on economics and COVID-19. These numbers are small relative to what we have seen in wars.



[3]See: VOX for what looks like an excellent book on this topic, but I have not been able to read through yet (it is over 200 pages).

2 Monetary Policy

First off, the stock market is only one part of the financial sector and not what will potentially trigger a financial crisis. There is a wide range of services that financial markets provide, but the stock market gets the most attention because it's the easiest for most people to interpret—it goes up or it goes down. However, it is not a signal of how well the financial system is fundamentally functioning. A well functioning financial sector provides credit and liquidity where it is needed. That has little to do with if the S&P 500 goes up or down on a given day and is what the Federal Reserve is concerned about. If those services start to fail, we need to be concerned about a financial crisis happening along with the health crisis and recession. Most of the Fed's recent actions are meant to prevent that from happening.

When interpreting what the Fed is doing, we should not care too much if the Fed makes an announcement and the stock market moves up or down. We should be concerned about whether or not that policy will keep the financial sector out of a crisis and hence help companies stay solvent. So how do they do this? I briefly discuss some of the tools the Fed has its disposal below.

The Federal Funds Rate: The Federal Reserve recently cut the fed funds rate to a target range of 0 to 25 basis points. This brings us back to the zero lower bound that was first experienced during the Great Recession. That does not mean we are in the midst of an economic event comparable to 2008 (yet). Federal Reserve officials have been signaling that they will cut rates quickly at the first sign of any down turn rather than waiting[4]. They have explicitly stated that they don't want to keep dry powder, so to speak, and would rather move quickly to add more monetary stimulus than one may think is appropriate when we are near the lower bound on interest rates. Hence, it is not entirely surprising that the Fed has moved its standard tool so sharply in the recent days/weeks. They do not want to pursue a "wait and see" approach to the current situation and prefer moving quickly and aggressively. This approach seems entirely valid: the option value of waiting to act seems extremely low at this point. The crisis is bad, and we know it is going to get worse. We don't need to know much more than that to start cutting rates.

What is this supposed to accomplish? This brings us back to idea of intertemporal substitution. Decreasing interest rates basically decreases the cost of credit and the ability to access cash today at the cost of payments in the future. This is what we, and the economy, need in the current environment. The general mechanism through which this works is as follows: banks can now borrow overnight at $0 - 0.25\%$ and part of this decrease will be passed through to the rest of the economy. Firms will be able to borrow at lower rates now, and hopefully be able to maintain operations and keep individuals employed.

[4]See: John Williams' speech

Liquidity Management: By law, banks have to have a certain amount of cash at hand. When they don't have enough cash they can trade cash amongst each other or with the Fed through what is called a repurchase agreement. Here's how this roughly works when they trade with the Fed: the Fed purchases a bond from a bank, so the bank receives cash and the Fed receives the bond. The bank agreed beforehand to buy the bond back at a certain price. It essentially operates as a very short term loan, normally overnight, but sometimes up to three months, with the bond acting as collateral.

The current fear is that companies will be asking to withdraw large amounts of cash from banks, and banks will not be able to meet that demand. In that scenario, both banks and firms will be at risk of defaulting on their debt and going bankrupt. The Fed can address this issue through repurchase agreements. **This is what the $1.5 trillion "bailout" everyone is talking about is meant to do.** It is not meant to stabilize the stock market and it is not a bailout for banks. It is meant to provide liquidity to companies and banks, so they don't go bankrupt as society needs more cash. The Fed also only announced they are ready to commit to $1.5 trillion of these repurchase agreements, but so far there has not been demand for that amount[5].

Quantitative Easing: The Federal Reserve also recently announced that it will be restarting quantitative easing, which is the purchase of long-term bonds. These purchases work through a straightforward demand – supply channel: greater Fed demand for bonds tends to push up bond prices, which pushes down yields. It is thought these purchases can decrease long-term borrowing costs in the economy and is another way to get more cash onto banks' balance sheets. Bond purchases also may provide a signal about how the policy rate will be adjusted in the future—a form of forward guidance. That is, the purchases signal that the Fed will keep interest rates low for a prolonged period of time.

Commercial Paper Facility: This policy allows the Federal Reserve to extend credit to the private sector without picking and choosing specific industries that get help (that's for Congress to decide not the Fed). Here is how it works, to my understanding[6]

1. The Fed creates a special entity, CPFF LLC
2. The Fed lends to CPFF LLC
3. CPFF LLC buys commercial paper, which is short term debt that companies use to finance day to day activities.

The Fed needs to create this special entity because it is not legally allowed to directly purchase non-government securities. The Fed is hoping that by stepping into this market, it will encourage

[5] See:This Wall Street Journal Article
[6] see: Peter Conti Brown and Roberto Perli

other investors to return to this market and help firms avoid bankruptcy in the next couple of quarters. Once again, this policy is designed to help companies (and their employees) get through the next few months and be able to smoothly go back to normal production levels.

Finally, I want to address a common misconception that has been circulating. The Fed cannot use these policies to eliminate student debt, which is something that Bernie Sanders has for some reason been stating. Note that none of these policies actually change the wealth of anyone in the economy, they change the cost of allocating resources across time, or change the composition, **but not the level**, of banks' assets.

When the Fed opens up it's liquidity facility to banks, banks have to give up some of their assets to access the cash that the Fed is offering. When the term of the loan is over, banks get the assets back and lose the cash they got. To apply this to student loans would be like saying, we will take on your debt, but you have to pay us how much it is worth and tomorrow (literally tomorrow for most of the money in these policies) we need to swap back.

To say the Fed shouldn't be pursuing the policies above is equivalent saying we should just let the financial system fail at the same time we are going into a recession and public health crisis. It makes sense to try to avoid having all three of those occur at the same time. It is concerning that a presidential candidate doesn't understand the difference between monetary and fiscal policy, but that is a discussion for a different day.

Overall, I think the Fed has been taking the correct actions, but the tools they have are not meant to specifically address the issues we are facing and is coming close to the limits of what they can do.

3 Conclusion

The Treasury and Federal Reserve are taking drastic actions now rather than waiting to get more information on the situation. These actions will pay large dividends in the next year or two by allowing companies and individuals to survive the coming months. We may have wasted the 4-6 weeks after we saw what happened in China, but I don't think we are wasting the 10 days that separate the US from Italy. The more I think about this from an economic perspective and see what policymakers are doing, the more confident I am that we will be able to recover from the coming recession. Fundamentally, the capital stock and supply of labor are not being destroyed, they are just being put on hold. If we can quickly put them back to work, we should be okay. If we start seeing widespread defaults, because the health crisis lasts longer than expected, we could be in some trouble. Hence, how quickly we can get back on the path to economic recovery will be largely dependent on how the health crisis unfolds in the next month.

A final development that does concern me is the lack of international cooperation in addressing these issues[7]. After the financial crisis, countries came together and came up with a unified approach that helped us get on the path to recovery. As of now, each country seems to be going at it alone in policy responses to COVID-19 and are even announcing policies that cause chaos in other countries (i.e. the US banning travel from the EU without giving the EU a heads up). Uncertainty is playing a large part in the drops in the stock market and the fear people are feeling. I think an international coalition could go a long way in resolving some of that uncertainty.

4 Disclaimer

None of this should be interpreted as investment advice, but rather one graduate student's thoughts and interpretations of current events. I try to include relevant links where possible, so you can read into more detail on specific points. This is not an academic paper, and lacks proper citations for some of the ideas, but I try my best to give credit where credit is due. The goal of this is just to try to provide an interpretation of recent events for friends and family who do not spend their lives thinking about monetary and fiscal policy.

[7] See: Ian Bremmer's podcast.