# Sharing the economic pain of the coronavirus[1]

Robin GREENWOOD[2] and David THESMAR[3]

*Two approaches to preserve the supply side of the American economy*

Many American businesses will struggle to survive the current lockdown and the slow recovery that will inevitably follow. What, if anything, must be done in order to have the supply side of the American economy snap back to normal operations when the time comes?

Several proposals have been put forth, falling into three broad types. The first is that the government maintain all payments to the business, essentially paying some fraction (potentially even 100%) of the revenues, in order that the business can keep maintain payments to its business creditors in a broad sense: employees, lenders, landlords (Saez and Zucman, 2020; Hanson, Stein, Sunderam, Zwick 2020). The benefit of this approach is that it most cleanly preserves business continuity. The main cost of this approach is that it puts all the losses on the government, and thus is quite expensive to implement. Another issue is implementation: Getting money to businesses can be challenging if the banking system is already overwhelmed (Weissman, 2020). Another more minor disadvantage is that it may lead to some inefficiencies—nonviable businesses that would have failed anyway being supported by the government. This second misallocation problem is more minor as nonviable business will eventually be forced out one the economy returns to normal.

A second type of argument is that businesses will primarily be facing a liquidity crisis, and that the government should provide short-term financing so that these businesses can stay afloat. Brunnermeier and Krishnamurthy (2020), for example, have suggested that the government lend using super senior debt. These programs are surely cheaper to implement than revenue replacement, and could be paired with revenue replacement by, for example, forgiving some of the loan if the lockdown goes on for many months. However, absent full forgiveness, these programs may end up replacing a liquidity concern with a solvency concern. This issue is likely to be especially acute in highly competitive segments (such as restaurants) populated by small retail establishments.

A third line of argument is that that capital providers should bear the pain coming from the coronavirus shutdown, and that the US bankruptcy system will efficiently recapitalize firms so that they maintain their operations.[4] We believe this third line of argument is not valid for small businesses. First, even if not technically in default, firms saddled with too much debt underinvest, fail to hire, ultimately slowing down the recovery. This is what economists call "debt overhang". Second, the chapter 11 process is widely recognized to be more effective for larger companies. Bankruptcy is not a smooth process, it is riddled with frictions and errors, especially for small businesses that will be most impacted by the lockdown. Even if capital providers are willing to take a haircut, there will be much pointless and expensive haggling to come up with the terms, which will vary business-by-business. Also, bankruptcy specialists are concerned

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[2] Harvard and NBER.
[3] MIT
[4] Proponents of this argument often point to the airlines as an example of businesses in which airplanes can continue to run, even if the corporation is going through a reorganization in which equity holders are wiped out.

that the courts will lack capacity to deal with the swell in cases: This would lead to liquidations of otherwise viable businesses.

*A hybrid solution*

Below we sketch a hybrid solution that attempts to nudge capital providers to take a haircut on their claims, while still retaining a small (but meaningful) role for the government. The essence of the argument is that the government can (a) provide a master agreement that will reduce expensive haggling, (b) provide a floor on the repayment, and thus provide a carrot for the capital provider, (c) take advantage of the government's unique position as a shareholder in all American corporations (via corporate taxes) to fund the policy.

*The economic intuition behind our proposal*

Let us first start with an example. In this example, the fixed payment is a rent, but our reasoning applies to any form of obligation (leases, interest payments, utility bills). Consider a small business owner (SBO) with monthly rent expense of $5000 (one of many expenses). Assume a mandated lockdown period shuts down the business entirely for 3 months, leaving the business with zero revenues during that period. The business could continue to pay rent, but may eventually go into financial distress, reducing its going concern value. Financial distress may lead to bankruptcy, but even off bankruptcy, the accumulation of debt obligation will prevent the firm from hiring and investing. Financial distress hurts firms, even without bankruptcy and slows the recovery.

In this example, it would be efficient that the landlord and SBO agree on a rent reduction, that reduces financial distress, in exchange for equity in the business. The business emerges out of the lockdown with less debt, more likely to survive and in a better position to expand quickly. Both parties would benefit from the debt-equity swap. Unfortunately, such restructuring typically does not happen in practice. One reason is that minority shares in small businesses are difficult to value. Another reason is that asymmetric information gets in the way of effective renegotiation. Fortunately, the government, who is an implicit shareholder in all American businesses (it earns 21% of pre-tax profits and more on interest income), can step in and bridge the gap.

*The proposal*

Until 2 months after the official end of the lockdown period (the "grace period"), the Federal government offers the following simple **master agreement** for modifying rental contracts:

1. Landlords forgive 100% of the rent (based on rental contracts signed before March 1 2020) and agree not to seek a backend payment on the lease once the grace period is over.
2. Once the agreement is signed by both parties it is part of the rental contract.
3. At the end of the fiscal year, the landlord can claim a tax credit equal to 30% of the forgiven rent.
4. Optional additional step: Rents received during the grace period are subject to a surtax.

The key point of this master agreement is that it is a simple take-it-or-leave-it offer. It avoids endless haggling and bargaining over the specifics of the situation, which vary from business to business. It is a simple value proposition from which both business partners can benefit. Note that both parties may want to start a complicated negotiation and deviate from the master agreement. But if this results in a different agreement than the master agreement, the landlord is not eligible to the tax credit.

The cost to the government is equal to 30% of forgiven rents during the grace period. 70% is borne out by the landlord. The landlord accepts the deal if she believes the benefits of the modification (including the 30% tax credit), are worth at least the post-tax (including potential surtax) value of rents until the end of the grace period. For instance, assuming a 40% tax rate on rents, and a 10% surtax on rental income, the landlord would happily sign the agreement if the benefit of the modification (maintaining the relationship intact, and the tenant firm alive throughout the recovery) is larger than 20% of the rent.[5]

*Back of the envelope calculation*

The government pays out a subsidy to the landlord, but receives, instead, tax payments on the additional business income generated by avoiding debt overhang. **It bridges the bargaining gap and effectively acts as an intermediary to transform the fixed obligation into equity in the business.** The government's ability to perceive taxes forever (like dividends) make it a natural long-term equity investor in all businesses, and therefore an automatic residual claimholder in case of business recovery.

In the long run, the government receives, in exchange, some additional corporate income taxes from income that would not have been realized if businesses had been shut down. Put differently, these additional taxes come from the reduction in costs of financial distress. These additional tax receipts are potentially large. Corporate finance studies estimate costs of financial distress to be as high as 20% of enterprise value, when the firm is in distress.[6] With a capital share of value added of about 30% and an average capital income tax rate of 20%, the additional income for the government could be as high as 1.2% of value added of targeted industries. Of course, this implicitly assumes 100% of the firms are in distress (firms not in distress would not be able to convince their landlord to sign the master agreement).

The cost is of the same order of magnitude. With commercial leases being about 3% of GDP[7], the intervention could cost as much as 0.9% of GDP if the take up is 100% and the grace period if 1 year long. Of course, we have in mind a shorter-lived policy, and one targeted on smaller businesses, so the real cost should be a fraction of that.

*Concerns and limitations*

One possible concern is interactions with multiple creditors. Chapter 11 filings of large bankruptcies are well known for leading to inefficient bargaining among different creditors with varying degrees of seniority, as well as shareholders. With several creditors, the discussion, even with our master agreement, would be deadlocked. We believe that this problem is less likely to be of first order importance for small

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[5] Assume a rent of $100. If the landlord does not sign, she obtains pays 40%+10% taxes and earns $50 net of tax. If she signs the agreement, she receives no rent, but a tax credit of $30 at the end of the year. She only loses $20, which might just be the cost of preserving the relationship until the end of the crisis.

[6] This number is extracted from Andrade and Kaplan (2020). They study large publicly listed firms in the US who underwent an aggressive LBO in the early 1990s. 20% corresponds to the upper bound of their range of findings, more likely to apply to small businesses.

[7] https://fred.stlouisfed.org/series/REV53TAXABL144QNSA, annual figure scaled by GDP

business, who typically have much simpler capital structure than large, publicly listed firms with many categories of bond holders.

Yet, small businesses may still each have two creditors, say, a landlord and a bank. In this case, each creditor may want to free-ride on the other one's modification, hoping to be made whole while the other one takes the haircut. A simple modification of our proposal can be made. We propose in this case that our master agreement offers the tax credit to all creditors, but *only if* it is signed by all of them (or let's say the two largest ones). This is a way of avoiding the free-rider problem. The negotiation is not more complicated, as the master agreement defines the term of the modifications.

Another possibility is that our master agreement may be useless. If the landlord was willing to renegotiate with the SBO anyways, the government may just be handing in free money. We believe this is not the case because, in order to be eligible to the tax credit, the landlord has to forgive the entirety of the legacy debt. So if the landlord expects to save more on his claim that this, she can always offer a smaller haircut, but then, in this case, she will not receive the tax credit.

**References**


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**Appendix: conceptual underpinnings**

Below we present a simple example in which the proposal, as described above, prevents debt overhang from limiting new value-enhancing investment in a business. The model is presented on a spreadsheet in Figure 1 and described below. The bottom line is that the government gets a fraction of the value created and benefits from moving $ from debt claims to equity claims. This allows subsidy to the debtholder in order to induce her to give up her claim on the business owner.

**Business as usual case:** Consider a restaurant with pre-tax revenue of 80, rent expense of 40 and thus pre-tax profit of 40. At a marginal tax rate of 36%, the owner makes an after-tax profit of 25.6 (Column 1). Suppose the owner has access to a positive NPV project which requires incremental investment expense of 15, as well as expansion of premises necessitating an additional 15 of rent, that yields incremental revenue of 35, thus having a net present value of 5 on a pre-tax basis. Implementing the investment would increase pre-tax profit to 45 and after-tax profit to 28.8. The restaurant owner implements the investment, and the landlord is also better off because of higher rent (Column 2).

**Uncertain economic environment case:** Now suppose that instead of revenues of 80 being realized with probability 1, the revenues are 80 with probability 0.5 and 20 with probability 20. The landlord can collect at most 100% of the revenue in rent, and thus with a tax rate of 36%, columns (3), (4) and (5) show that the expected value of after-tax profit drops to 12.8.

Consider now the prospect of doing the positive NPV investment, for which the owner must contribute 15 of incremental capital in the form of equity. And suppose that the investment is certain to create an additional 35 in revenue in both good and bad states of the world, and thus is still NPV of 5 on an enterprise value basis. Columns (6), (7), and (8) show that this turns the project into a negative NPV project from the perspective of the landlord, reducing expected after tax profit to 9.6. The reason is that while the project enhances restaurant owner equity value in the good state, in the bad state it simply ends up paying the landlord. This is a simple illustration of debt overhang: existing debt can limit the willingness to commit to investment when the investment returns disproportionately go to debtholders or landlords.

**Uncertain economic environment case, with policy enacted:** Under the policy, rent is set to zero for the restaurant owner, but the landlord receives after-tax rent of 12 in the form of a tax credit (30% times rent of 40). Absent the investment, expected after tax profit for the restaurant owner is 32.

We now evaluate the impact of the investment, which requires 15 incremental equity capital from the restaurant owner. As shown in the last column, the full after tax NPV of the project accrues to the restaurant owner. The landlord is also substantially better off because he is able to collect the incremental rent.

Finally, we consider the analysis from the perspective of the government. Irrespective of the debt overhang, the government will collect more in taxes if the project is undertaken, but more in the case of the policy. Essentially, a large part of the subsidy is recouped in the form of higher taxes.

***Exhibit 1. Example of policy limiting debt overhang***

| | |
|---|---|
| Corporate tax rate | 20% |
| Personal tax rate | 20% |
| Tax credit | 30% |

| | | | | No policy | | | | | | With policy | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | No investment | | | With Investment | | | No investment | | | With investment | | |
| **Effective Tax rates** | **Business** | Pre-covid19 | Pre-covid-19 w/ positive NPV investment | p=0.5 | p=0.5 | Expected value | p=0.5 | p=0.5 | Expected value | p=0.5 | p=0.5 | Expected value | p=0.5 | p=0.5 | Expected value |
| | Revenue | 80 | 115 | 80 | 20 | | 115 | 55 | | 80 | 20 | | 115 | 55 | |
| | Rent | 40 | 55 | 40 | 20 | | 55 | 55 | | 0 | 0 | | 15 | 15 | |
| | Investment expense | 0 | 15 | 0 | 0 | | 15 | 15 | | 0 | 0 | | 15 | 15 | |
| | Pre tax profit | 40 | 45 | 40 | 0 | | 45 | -15 | | 80 | 20 | | 85 | 25 | |
| 36% | Tax Rate | 36% | 36% | 36% | 36% | | 36% | 36% | | 36% | 36% | | 36% | 36% | |
| | Cash Taxes | 14.4 | 16.2 | 14.4 | 0 | | 16.2 | -5.4 | | 28.8 | 7.2 | | 30.6 | 9 | |
| | After tax profit | **25.6** | **28.8** | 25.6 | 0 | **12.8** | 28.8 | -9.6 | **9.6** | 51.2 | 12.8 | **32** | 54.4 | 16 | **35.2** |
| | *Net benefit* | | ***3.2*** | | | | | | ***-3.2*** | | | | | | ***3.2*** |
| | **Landlord** | | | | | | | | | | | | | | |
| | Rent | 40 | 55 | 40 | 20 | | 55 | 55 | | 0 | 0 | | 15 | 15 | |
| 20% | tax rate | 20% | 20% | 20% | 20% | | 20% | 20% | | 20% | 20% | | 20% | 20% | |
| | Cash taxes | 8 | 11 | 8 | 4 | | 11 | 11 | | -12 | -12 | | -9 | -9 | |
| | after tax rent | **32** | **44** | 32 | 16 | **24** | 44 | 44 | **44** | 12 | 12 | **12** | 24 | 24 | **24** |
| | *Net benefit* | | ***12*** | | | | | | ***20*** | | | | | | ***12*** |
| | **Government** | | | | | | | | | | | | | | |
| | Total tax collection | **22.4** | **39.8** | 22.4 | 4 | **13.2** | 27.2 | 5.6 | **16.4** | 16.8 | -4.8 | **6** | 21.6 | 0 | **10.8** |
| | *Net benefit* | | ***17.4*** | | | | | | ***3.2*** | | | | | | ***4.8*** |