Efficient Programs to Support Businesses during Crises

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Covid Recession

• Large and Unexpected Shocks to Supply and Demand

• First Response similar to 2008-9
  – Cut rates and buy MBS
  – Global dollar swap lines and FIMA Repo Facility
  – The alphabet soup strikes back: CPFF, MLF, PDCF, PMCCF & SMCCF, TALF
  – Same with ECB

• Lessons from 2008 used to react quickly

• Good… But this is not 2008
Phase 1: Panic and Lockdown

- Firm profits
  \[ \pi = pf(n) - wn - k \]

- Shutdown
  - \( f(n) \) down in 80% of sectors, 0 in some

- Deal with wages
  - EU: keep \( n \), but Govt covers part of \( wn \)
  - US: let \( n \) file for \( u \), Govt pays \( u\)-benefits

- Deal with \( k \) and leftover wages
  - Loans \( L = k + \) some of \( wn \)
  - Either direct lending by govt, or loan guarantees
<table>
<thead>
<tr>
<th></th>
<th>US</th>
<th>UK</th>
<th>Germany</th>
<th>France</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name</strong></td>
<td>Paycheck Protection Program</td>
<td>Coronavirus Job Retention Scheme</td>
<td>Kurzarbeitgeld</td>
<td>Chômage partiel / activité partielle</td>
</tr>
<tr>
<td><strong>Principle</strong></td>
<td>Loans convertible into grants if retain workers</td>
<td>Govt refunds 80% of gross wage of furloughed workers</td>
<td>Govt refunds 60% of net w of furl. workers</td>
<td>Govt refunds 84% of net wage of furl. workers</td>
</tr>
<tr>
<td><strong>Social insurance contributions</strong></td>
<td>Refunded</td>
<td>Refunded</td>
<td>Exempted</td>
<td>Exempted for w&lt; 3 min. w</td>
</tr>
<tr>
<td><strong>Eligibility</strong></td>
<td>SMEs (less than 500 employees)</td>
<td>All firms</td>
<td>All firms if h down 10% for 10% of n</td>
<td>All firms</td>
</tr>
<tr>
<td><strong>Maximum wage</strong></td>
<td>No requirement</td>
<td>£2500 per month</td>
<td>€4687 per month</td>
<td>€5485 per month</td>
</tr>
<tr>
<td><strong>Conditions</strong></td>
<td>Guaranteed loans by banks</td>
<td>Agreement with the employee</td>
<td>Collective agreement</td>
<td>Authorization by govt agency</td>
</tr>
<tr>
<td><strong>Work requirements</strong></td>
<td>No requirement</td>
<td>No work during hours covered, no other work</td>
<td>No work during hours covered, no other work</td>
<td>No work during hours covered, no other work</td>
</tr>
</tbody>
</table>
## Credit Programs

### US
- Corporate credit facilities for large firms
- Main street facilities for firms <15,000 employees
- SBA PPP

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<tr>
<td><strong>Name</strong></td>
<td>Coronavirus Business Interruption Loan Scheme</td>
<td>Wirtschaftsstabilisierungsfond + KfW Special Program</td>
<td>Prêt garanti par l’État</td>
</tr>
<tr>
<td><strong>Principle</strong></td>
<td>Guarantees</td>
<td>Guarantees on bank loans + subsidized KfW credits</td>
<td>Guarantees on bank loans</td>
</tr>
<tr>
<td><strong>Coverage of</strong></td>
<td>100% up to GPB 250K, 80% above</td>
<td>90% for small firms; 70% for large ones</td>
<td>90% for small firms; 80% for larger ones</td>
</tr>
<tr>
<td><strong>guarantee</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Rate</strong></td>
<td>No interest for 12 months, then terms set by lender</td>
<td>Several sub-schemes with different rates</td>
<td>No interest for 6 months, then low rate</td>
</tr>
<tr>
<td><strong>Maturity</strong></td>
<td>Up to 6 years</td>
<td>Up to 5 years</td>
<td>1 year, extendable to 5 years</td>
</tr>
<tr>
<td><strong>Eligibility</strong></td>
<td>SMEs</td>
<td>All firms</td>
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Theory: Guarantees

- Why loan guarantees?
- State has not much information and not much time
- If credit market freezes then debt guarantee is optimal
  - Philippon & Skreta, AER 2012
  - Interesting mechanism design issue: endogenous stigma
  - Minimizes expected cost to government for any level of credit
- But this is not 2008. Main issue is insolvency.
Theory: Debt Overhang

- A lot of debt + A lot of uncertainty => Debt Overhang
  - Demand & Productivity shocks: permanent vs. transitory?
  - Survey data from FR

<table>
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<tr>
<th>Sectors</th>
<th>% where output fell</th>
<th>% who think shock will be persistent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electric Equip &amp; Machines</td>
<td>88%</td>
<td>28%</td>
</tr>
<tr>
<td>Transport Equipment</td>
<td>99.4%</td>
<td>41.8%</td>
</tr>
<tr>
<td>Construction</td>
<td>96.6%</td>
<td>8.3%</td>
</tr>
<tr>
<td>Hotels &amp; Restaurants</td>
<td>99%</td>
<td>28.3%</td>
</tr>
</tbody>
</table>
Theory: Debt Overhang

• Private debt D, Government loans L
• Firm value $V = E[V']$
  – If there is a state where $V' < D + L$, then debt overhang
  – If $V > D + L$, then firm is insolvent at current market value

• What should government do?

• Answer: it depends on what the constraints are.
2009 Debt Overhang & Systemic Risk

• If D cannot be renegotiated (runnable claims, systemic risk)

• Then optimal intervention is Cash injection in exchange for Preferred Stock and Warrants
  – Philippon & Schnabl (JF, 2013)
  – Cash to lower risk
  – Preferred to avoid adding debt overhang
  – Warrants to screen out opportunistic participation
  – See also Hanson, Stein, Sunderam, and Zwick (2020)
But Why Bail out D in 2020?

• Today the issues are:
  – Large number of SMEs in distress. In the US (FB survey):
    • 31% of SME currently not operating; 52% of personal businesses; 1/3 say biggest challenge is cash flows over next few months
  – Liquidation likely with small firms, even more when macro uncertainty is high, and courts are overwhelmed
• Default itself would not create a disaster…
• .. but excessive liquidation from a social perspective
Optimal Triage (Blanchard, Philippon, Pisani)

- **V, D, L**
  - normalized by pre-crisis book assets. D, L pari-passu

- Three key parameters
  - **R**: recovery value of assets under liquidation
    - Low and uncertain
  - **S**: social value of business
    - Labor market (shadow value of labor < w), supplier/customer networks
  - **E**: non-pledgeable inside equity
    - Standard leverage constraint at time of refinancing
Triage under Full Information

Suppose Govt knows V, R and can estimate E and S

- **V+S>R**: business should continue
  - **V>D+L**: nothing to do
  - **V<D+L**: reduce $D$ and $L$ to $(D',L')$ so that $D'+L' = V-E$
    - Thus $D' = D * \frac{V-E}{D+L}$

- **V+S<R**: liquidate
  - $L' = \frac{R*L}{D+L}$
Triage under Full Information

• If Govt knows V, R it can implement most efficient triage
  – Only restructure viable firms that are insolvent
  – Only close non-viable firms; Bear minimal haircuts

• But there are way too many SME loans
  – FR: 385,000 loans for total of 100 billion euros
Triage under Limited Information

• Information
  – Bank knows V and R
  – Govt can estimate E and S

• Problem
  – Offer a menu L’(D’,E,S) upon continuation such that
    – If V+S>R : business should continue
    – If V+S<R : business should close

• Can it obtain efficient outcome?
Private Liquidation

• Suppose government lets banks decide and only claim its pari-passu rank

• Bank will liquidate if and only if

\[ R \cdot D/(D+L) > (V-E) \cdot D/(D+L) \]

• We simply get the efficient liquidation rule for the bank

\[ R > V-E \]

• When \( R-S < V < R+E \), liquidation is socially inefficient
Continuation Premium

• Now suppose the Govt offers something else than \( L'/L = D'/D \)

• What could that be?

Consider the marginal firm \( V = R - S \)

You want bank to be indifferent to liquidate/continue

\[
\frac{RD}{D+L} = D'
\]

Since \( L' + D' = V - E \) that is \( L' = R - \frac{RD}{D+L} - S - E \), or

\[
\frac{L'}{L} = \frac{R}{D+L} - \frac{S+E}{L}
\]
Proposition: Continuation Premium

Efficient triage under limited information can be achieved by the following scheme:

• If private creditors decide to liquidate, government will claim its rights as a creditor

• If private creditors decide to continue with a reduction $D’/D$, then Government *automatically* agrees to reduce its claim to

$$L’/L = D’/D - (S+E)/L$$
Conclusion

• Efficient triage
• Automatic mecanism
• Extend to equity injection