Webinar: COVID-19, debt monetization and lessons from war financing

WITH HAROLD JAMES
PRINCETON UNIVERSITY

Friday, April 24, 12:30 PM ET
Pre-Registration Required

Intro: MARKUS BRUNNERMEIER
Twitter: @MarkusEconomist

Website: bcf.Princeton.edu
Markus’ intro

- Previous webinars
  - Hyun Shin: international finance & Capital Flows
  - Harold James: debt monetization and war financing
  - Joseph Stiglitz:

- Speakers
War vs. pandemic financing

- War vs. COVID: Commonalities and Differences
  - Enemy vs. common enemy
  - National thinking vs. group-feeling (?)
    - Suicide rate decline during wars (Deaton’s webinar)
  - Young vs. elderly
  - Government control (incl. price controls)
  - Large relative price shifts
  - Involuntary savings
  - Government expenditure hike + tax revenue collapse
  - Issue bonds in hope of reparation payments vs. no hope
  - Monetary financing (?)
UK: Budget, interest, inflation

[Graph showing historical data on UK budget surplus, nominal interest rate, and inflation rate from 1680 to 2020, with notable events such as the Spanish Succession War, the American Revolution, the Napoleonic Wars, and World Wars marked.

Source: Brunnermeier, Merkel, Payne & Sannikov (2020)]
UK: Budget, interest, inflation

High inflation volatility due to crop failures + flexible wages/prices

1709 food crisis

Return to gold standard

Return to gold standard

Spanish succession, Austrian succession, 7 year war, French Rev., Napoleonic wars, Crimean war, Boar war, WWII

UK Budget Surplus (% of GDP)
Nominal Interest Rate (ST)
Inflation Rate

Brunnermeier, Merkel, Payne & Sannikov (2020)
UK: spending, interest, inflation

WWI

1905 1910 1915 1920 1925

Tot Spending (% of GDP)
Nominal Interest Rate (ST)
Inflation Rate

Brunnermeier, Merkel, Payne & Sannikov (2020)
US: Budget, interest, inflation

- Budget Surplus (% of GDP)
- Nominal Interest Rate (CP)
- Inflation Rate

4/24/2020
Brunnermeier, Merkel, Payne & Sannikov (2020)
Lockdown = stop clock

- **Stop clock** = total standstill of all debt/rent/wages/...

- **Not possible**
  - Essential sector: food, ...
  - Less essential sector

- **Shut down part of economy**
  - Supported by other part – with debt monetization?
Inflation/Deflation pressures

- Output loss, productivity loss (permanent)
- Issuance of money + government bonds
- Involuntary (dis)savings (temporary)
- More idiosyncratic risk
  - Esp. if crisis drags on
- Wealth inequality
- Physical capital misallocation
- Future government policy

“The I theory of money”

- Banks’ reduce risk bearing capacity
  - Can’t diversify idiosyncratic risk away ⇒ money demand ↑

Inflation

\[ \text{Depends on relative speed of adjustment} \]
Inflation expectations

- TIPS: 10 year break-even rate
Poll 01

1. Inflation expectations in US (average over next 5 years)
   a.  < -1%
   b.  -1% to 0 %
   c.  0% to 1%
   d.  1% to 2%
   e.  2% to 3%
   f.  3% to 5%
   g.  5% to 10%
   h.  >10%

2. Your location
   a.  US/Mexico
   b.  Latin America
   c.  Europe
   d.  Asia
   e.  Africa
   f.  Australia
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Wartime and after ..... 

Harold James 
Bendheim Center Webinar, April 24, 2020, Princeton
Learning from past disasters

- Pandemics:
  - Black Death 1347-53: 75 m. dead
  - 17th century recurrences;
  - “Spanish” influenza 1918-1920 50 m. dead worldwide.

- Great Depression or Global Financial Crisis

- Wars of twentieth century:
  - 1914-18: 17 m. dead
  - 1939-45: 70 m. dead
Wartime

- Xi Jinping, February 6, 2020: “people’s war”
- Boris Johnson, March 17, 2019: “We must act like any wartime government and do whatever it takes to support our economy.”
- Rishi Sunak: “We have never faced an economic fight like this one.”
- Donald Trump, March 19, 2020: “our big war”: “We continue our relentless effort to defeat the Chinese virus.”
- Kenneth Rogoff, March 18, 2020: “The whole point of having a sound government balance sheet is to be able to go all out in situations like this, which is tantamount to a war.”
- Peter Navarro, March 28, 2020: “We are engaged in the most significant industrial mobilization since World War Two. We have a wartime President fighting an invisible enemy.”
- Laura Lane (UPS), March 29, 2020, at White House: “the way we’re going to win this war is with great logistics”
War: Short-term effects

- Destruction of conventional jobs
- High level of unemployment / unproductive employment
- BUT: we measure that differently (GDP doesn’t look as if it shrinks during major wars because of the way military expenditure is accounted for)
The Immediate Response: (1) Mobilization

- a colossal and largely unanticipated mobilization of material resources for responding to the immediate situation and ensuring victory, that requires central direction of resources: development of PPE, disinfection material, diagnostic testing (central to eliminating contagion), testing for antibodies, antiviral drugs

- equivalent to industrial mobilization: US discussion and then use of 1950 Defense Production Act: Priorities and Allocations; Expansion of Productive Capacity and Supply; General Provisions (industrial organization)

- Shutting of large parts of civilian economy

- High levels of involuntary saving
Medical export restrictions

Medical exports restricted under the Defense Production Act

- Respirators and surgical masks: US exports 0.5, US imports 3.2
- Air-purifying respirators: US exports 0.4, US imports 2.8
- Hospital gloves: US exports 0.2, US imports 0.2

Total imports: 6.2
Total exports: 1.1

Chad Bown in PIIE Briefing 2020-1: How the G20 Can Hasten Recovery from COVID-19
(2) Morale and supply

- Attention to morale and provisioning: there was an acute awareness in the great 20th conflicts, especially in WW2, that civilian morale was a vital part of the war effort, that inadequate supplies of food (or perceived injustice: the rich having stupendous meals) would be destructive. Rationing was designed not just to alleviate the first problem (inadequate supply) but also the second (perception of injustice)
(3) Mobilization of people

- “the front” of nurses, doctors, other hospital staff, but also those involved in supply chains and in the maintenance of public order
Public Order

Wuhan,
March 28, 2020
(4) Fiscal & monetary consequences

(Announced fiscal measures in G20 economies, % of GDP)

Sources: National authorities; and IMF staff estimates as of April 8, 2020.
Note: G20 = Group of twenty. G20 aggregates are calculated using PPP-adjusted GDP weights.

Source: IMF, 2020
Central bank financing

- Federal Reserve: additional $2tn-$3tn (at end of 2019 $4.2tn)
- ECB: €750 bn Pandemic Emergency Purchase Programme (PEPP); promise to buy €120 bn additional bonds (at end of 2019 €4.5 tr)
ECB balance sheet

Source: ECB
Much higher public debt levels will become a permanent feature of our economies and will be accompanied by private debt cancellation.

During the first world war, in Italy and Germany between 6 and 15 per cent of war spending in real terms was financed from taxes. In Austria-Hungary, Russia and France, none of the continuing costs of the war were paid out of taxes.
Roesler 1967:
- Germany: 13 percent of total expenditure from ordinary budget, financed by taxes and other regular income;

Balderston 1989:
- 16.7 percent (compare UK 26.2 percent)
## Deficits as share of expenditures

<table>
<thead>
<tr>
<th>Country</th>
<th>1914</th>
<th>1918</th>
</tr>
</thead>
<tbody>
<tr>
<td>United Kingdom</td>
<td>61.3</td>
<td>69.2</td>
</tr>
<tr>
<td>France</td>
<td>54.8</td>
<td>80.0</td>
</tr>
<tr>
<td>Germany</td>
<td>73.5</td>
<td>93.8</td>
</tr>
<tr>
<td>Italy</td>
<td>6.1</td>
<td>70.2</td>
</tr>
<tr>
<td>United States</td>
<td>0.1</td>
<td>71.2</td>
</tr>
</tbody>
</table>

Source: Eichengreen 1992
# Inflation: Wholesale prices

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<th>Country</th>
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</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>195</td>
<td>173</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>246</td>
<td>264</td>
</tr>
<tr>
<td>France</td>
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<td>Germany</td>
<td>260</td>
<td>1440</td>
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<tr>
<td>Italy</td>
<td>296</td>
<td>596</td>
</tr>
<tr>
<td>Sweden</td>
<td>335</td>
<td>267</td>
</tr>
</tbody>
</table>

Source: Moggridge, 1989
Dramatic changes in relative prices

- Deflationary shocks (fall in demand for civilian goods)
- Inflationary shocks (scarcities of food, cigarettes, basic provisions, driven in part by hoarding)

Cost of living calculations highly politicized (discussion of automatic adjustments)
2 contrasting models

- UK/US vs Central Europe
- Wartime finance vs postwar management
- A discussion about how to “exit” an emergency
Enterprises (employees)

Banks

- Commercial bills
- Treasury bills

Central Bank

Banks

Treasury (soldiers)
German Bank Deposits

Explosion

Bank Deposits in Germany

- Axes: Bank Deposits on the y-axis and years on the x-axis.
- Data points show a significant increase around 1920, reaching an peak, followed by a decline in the 1930s.
UK Bank Deposits

UK bank deposits

- 1912: 500,000,000
- 1913: 500,000,000
- 1914: 600,000,000
- 1915: 1,000,000,000
- 1916: 1,500,000,000
- 1917: 2,000,000,000
- 1918: 2,500,000,000
- 1919: 2,000,000,000
- 1920: 1,500,000,000
- 1921: 1,000,000,000
- 1922: 750,000,000
- 1923: 500,000,000
- 1924: 500,000,000
- 1925: 500,000,000
- 1926: 500,000,000
- 1927: 500,000,000
- 1928: 500,000,000
- 1929: 500,000,000
- 1930: 500,000,000
- 1931: 500,000,000
- 1932: 500,000,000
- 1933: 750,000,000

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Postwar monetary & fiscal management

- Centrality of interest rate policy (management of government debt)
- Alternative strategies: high inflation; debt cuts / capital levies
German Inflation 1914-1923

Dollar Mark Rate 1914-1922
Federal Reserve Liability

Source: Thomas Sargent in (ed.) Era Dabla-Norris, Debt and Entanglements Between the Wars, 2019
Taxation (US)

Source: US Internal Revenue Service (1920–40).

Source: Thomas Sargent in (ed.) Era Dabla-Norris, Debt and Entanglements Between the Wars, 2019
Figure 1.29. Real GDP Growth and Inflation Measured by the GDP Deflator


Source: Thomas Sargent in (ed.) Era Dabla-Norris, Debt and Entanglements Between the Wars, 2019
Non-Fin Corporate Debt

Non-Financial Corporate Debt

China, People's Republic of
Germany
United Kingdom
United States
Even longer term perspectives

Government fiscal sustainability and economic growth: numerator and denominator

Technical developments: stimulus of wartime (eg penicillin), changes in working practices etc.
Long term evolution of interest

- Paul Schmelzing:

Long term evolution of interest
Long term evolution of interest

UK Consols 2.5% Yield
Long term evolution of interest

Exceptionality of 1945-1979

- Large-scale debt reductions / cancellations
- Currencies reorganized (Bretton Woods): was that a sort of creation of Glosbies, explaining why nominal/real rates in US/UK break out of historical trend?