Have Central Banks run out of ammunition? A monetarist view

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The diagnosis: Policy rates are at virtually zero levels, if not negative ...

Therefore, there is not much more monetary policy can do to fight the next recession

The usual cure: Expansionary fiscal policy
Main message:

The ability of central banks to create money is, either we like it or not, unlimited
They can create as much money as they want!

**Argentina**

% annual growth rate:

<table>
<thead>
<tr>
<th>Period</th>
<th>M3</th>
<th>Nominal GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1961-2018</td>
<td>152.97%</td>
<td>164.47%</td>
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<tr>
<td>1961-1970</td>
<td>27.47%</td>
<td>27.18%</td>
</tr>
<tr>
<td>1971-1980</td>
<td>141.69%</td>
<td>150.28%</td>
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<tr>
<td><strong>1981-1990</strong></td>
<td><strong>638.90%</strong></td>
<td><strong>712.92%</strong></td>
</tr>
<tr>
<td>1991-2000</td>
<td>33.74%</td>
<td>21.16%</td>
</tr>
<tr>
<td>2001-2010</td>
<td>18.89%</td>
<td>18.82%</td>
</tr>
<tr>
<td>Eight years to 2018</td>
<td>33.18%</td>
<td>29.45%</td>
</tr>
</tbody>
</table>

*Sources: M3 from OECD database and nominal GDP from IMF database, as at May 2019*
The creation of money in modern economies
How is money created?
The case of a metallic standard

Under the classical gold standard years (1870s – 1914), convertibility of notes into gold served well as a rule to keep the amount of money in circulation in check.

http://www.bankofengland.co.uk/archive/Documents/history/cartoonscaricatures.pdf
The policy rule under the gold standard

**Overriding ‘goal’: To maintain convertibility** of all notes issues by the Central Bank into gold coins at any time

- Convertibility at a ratio defined by law
- No macroeconomic objectives as we have now

### Gold and Foreign Exchange reserves kept by the Central Bank

Typically, above 30% reserves ratio

### Total amount of currency issued

Typically, above 30% reserves ratio
And under purely fiat monetary systems?

- Nowadays central banks are no longer constrained by the convertibility rule
  
  - Money created ‘out of thin air’
    - Measured by the monetary base or M0
  
  - Purely fiat currency, based on trust
    - Theoretically, no limit to money creation
    - Adoption of inflation targeting rules to avoid excessive money creation
Monetary policy rules matter to maintain price stability

Adoption of inflation targeting rules 1990s

History of UK inflation (ONS & House of Commons Research Paper 02/44, July 11, 2002)
Banks create money

• The bulk of the money we use is created by commercial banks: every time they extend a new loan or buy an asset from a non-bank, a new deposit will be credited for the same amount
  – *Bank money* (i.e. deposits): 80-90% total money supply in modern economies
    • Measured by M3 in Eurozone or M4x in UK
• *Bank money* created ‘out of thin air’ but constrained by two main factors:
  – Capital requirements
  – Liquidity requirements
The standard message of macroeconomic textbooks:

‘the central bank is running out of ammunition’
The standard message of the Keynesian macro texts

- An increase in the quantity of money reduces ‘the rate of interest’ (i.e., the long bond yield), which should stimulate the economy via a boost in spending (investment & consumption)

- But when the rate of interest is too low already, the demand to hold money is infinitely elastic (i.e., ‘the liquidity trap’): so that ‘monetary policy becomes ineffective’ …
The standard message of the Keynesian macro texts

**Implicit assumption:** the whole approach assumes that ‘portfolio choice’ or ‘portfolio adjustments’ are just between money and bonds.

Therefore, it is only by the effects of monetary policies on bond rates that the central bank can affect the economy ...
A critique of the standard message

If their theory is correct, what have central banks been doing since the outbreak of the financial crisis? Once policy rates were set at nearly zero levels, didn’t they do anything else?

The standard theory is too narrow to explain what has happened since the crisis.
A critique of the standard message

Bonds are far less important in wealth portfolios than corporate equity and real estate, and change much less in value.

And changes in the value of bonds are often in a different direction from changes in the value of corporate equity and real estate.
A critique of the standard message

Assets under consideration

- Real estate
- Unquoted business equity
- Bonds
- Life insurance & pension assets
- Equities (inc. mutual fund shares)
- Money held by households
- Consumer durables
- Other assets

Bonds vs. variable-income assets

- Assets fall into two main groups, those with fixed income (bonds and interest-bearing deposits), and those with variable income related to income streams, profits and rents.

- The variable-income assets are likely in the long run to achieve income growth similar to that of nominal GDP.
US household wealth at end-2016, % of total

- Real estate: 24.5%
- Unquoted equity: 10.4%
- Bonds: 4.1%
- Life & pension assets: 21.7%
- Equities: 21.2%
- Money: 10.5%
- Consumer durables: 5.0%
- Other assets: 2.6%
A critique of the standard message

Direct holdings of bonds are only 4% of US household wealth

Changes in the value of households’ bond portfolios are trivial relative to changes in the value of their equities and real estate

The other 96% of household wealth is dominated by equity, both quoted and unquoted, and residential real estate

Large changes in residential real estate and stock market values impact on behaviour
An alternative (monetarist) theory
The Quantity Theory of Money

\[ MV = PT, \text{ a truism} \]

The truism becomes a **theory** when an appeal is made to economic behaviour.

We propose that \( V \) is determined by variables other than the quantity of money and **is relatively stable**.

\( V \) being the inverse of the Demand for Money.

Stability of \( V \), particularly in ‘normal’ (no crisis) times.
The ratio of money held by households to their net worth is virtually the same today as it was 70 years ago, despite some fluctuations in the ratio in the intervening period, which may be explicable by the own rate on money balances.
The Quantity Theory of Money

What if $V$ is not just stable, but **constant**?

Then % changes in $M$ will be accompanied by *the same* % changes in $PT$. If $M$ rises by 10%, then $PT$ also rises by 10%.

This is the so-called “proportionality hypothesis”
The Quantity Theory of Money: does it work?

US broad money and nominal income growth

<table>
<thead>
<tr>
<th>Period</th>
<th>% annual growth rate:</th>
<th>M3</th>
<th>Nominal GDP</th>
</tr>
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<tbody>
<tr>
<td>1960 – 2018</td>
<td></td>
<td>7.4</td>
<td>6.5</td>
</tr>
<tr>
<td>1960 – 1970</td>
<td></td>
<td>7.7</td>
<td>6.8</td>
</tr>
<tr>
<td>1971 – 1980</td>
<td></td>
<td>11.4</td>
<td>10.3</td>
</tr>
<tr>
<td>1981 – 1990</td>
<td></td>
<td>7.7</td>
<td>7.7</td>
</tr>
<tr>
<td>1991 - 2000</td>
<td></td>
<td>5.6</td>
<td>5.6</td>
</tr>
<tr>
<td>2001 - 2010</td>
<td></td>
<td>7.1</td>
<td>3.9</td>
</tr>
<tr>
<td>Eight years to 2018</td>
<td></td>
<td>4.0</td>
<td>4.0</td>
</tr>
</tbody>
</table>
The Quantity Theory of Money: does it work?

M3 Data from National Central Banks and Nominal GDP Data from various sources.
If an increase in the amount of money

Portfolio adjustment

Agents will increase their demand of other assets: equity, real estate, bonds, ... thus increasing their price

Direct effect: Stronger firms’ balance sheets: greater investment and employment

Indirect effect: Higher asset prices; agents will increase their demand of goods and services (‘wealth effect’)

The Quantity Theory of Money: does it work?

If we allow for the tendency of financial systems (and bank assets/liabilities) to grow faster than national income as economies become richer, this approach/theory works pretty well.

However, the effect is not immediate: typically (Friedman’s) 2-3 quarters lag for GDP changes and 4-5 quarters lag for changes in CPI prices.

But the lags will vary depending on the stage of the cycle and the output gap.
How can the State (central bank or government) create more money?
Sources of money creation

**By the Central Bank**, purchasing government debt and other assets from banks (an increase in banks’ reserves, ‘narrow money’) *but also from non-banks* (a direct increase in the amount of money via new bank deposits, ‘broad money’)

**By the Treasury**, borrowing money from banks and purchasing goods and services from the non-banking sector: this will increase deposits automatically, and thus the amount of money (‘broad money’)}
Summary and policy recommendations
## Summary

1. Monetary policy can *never* be exhausted

2. The proportionality hypothesis – that the velocity of circulation of money is stable – is a reasonable starting point for analysis

3. The obsession of most economists and policy commentators with the effect of monetary policy on bond yields is misleading and dangerous

4. Better to focus on the amount of money in the economy: QE has been effective in keeping a stable rate of growth of money
Monetary stability resumed after the crisis

Sources: Shadow Government Statistics research service for M3 after 2006 and US Bureau of Economic Analysis for GDP

Recent trends in US money growth
% M3 growth rates, with M3 estimated by Shadow Government Statistics

Monetary stability (2012-2019)
Not such a bad job by CBs!
Policy recommendations

If the State (the government and/or the central bank) takes action to increase the quantity of money by x % in, say, Feb. 2020, it is likely that over the next 2-3 years nominal income will be higher – by a number not far from x % - than it would otherwise have been.

Keeping a stable rate of growth of money (approx. 4-5% p.a.) is key to achieve sustainable economic growth over the long term, and avoid inflation and deflation.