The problem with printing money

November 28, 2019 by Tejvan Pettinger

Readers Comment. Why doesn't the Bank of England just print the money instead of borrowing the money?

Printing more money doesn't increase economic output – it only increases the amount of cash circulating in the economy. If more money is printed, consumers are able to demand more goods, but if firms have still the same amount of goods, they will respond by putting up prices. In a simplified model, printing money will just cause inflation.
How printing money can cause inflation

Government prints $10 million – the money supply doubles

Now there is more money, but the same number of goods – so prices increase

Inflation = 100%

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- Suppose an economy produces $10 million worth of goods; e.g. 1 million books at $10 each. At this time the money supply will be $10 million.
- If the government doubled the money supply, we would still have 1 million books, but people have more money. Demand for books would rise, and in response to higher demand, firms would push up prices.
- The most likely scenario is that if the money supply were doubled, we would have 1 million books sold at $20. The economy is now worth $20 million rather than $10 million. But, the number of goods is exactly the same.
- We can say that the increase in GDP is a money illusion. – True you have more money, but if everything is more expensive, you are not any better off.
- In this simple model, printing more money has made goods more expensive, but hasn't changed the quantity of goods.

<table>
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<tr>
<th>Year</th>
<th>number of widgets</th>
<th>Money supply</th>
<th>average price</th>
<th>inflation rate</th>
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<tbody>
<tr>
<td>2000</td>
<td>1,000,000</td>
<td>10 million</td>
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<tr>
<td>2001</td>
<td>1,000,000</td>
<td>20 million</td>
<td>20</td>
<td>100%</td>
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<tr>
<td>2002</td>
<td>1,000,000</td>
<td>40 million</td>
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<tr>
<td>2003</td>
<td>1,000,000</td>
<td>80 million</td>
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Doubling the money supply, whilst output stays the same, leads to a doubling in price and inflation rate of 100%

<table>
<thead>
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<th>Year</th>
<th>number of widgets</th>
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<th>average price</th>
<th>inflation rate</th>
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<tbody>
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<td>10,000</td>
<td>0.5</td>
<td>0%</td>
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</tr>
<tr>
<td>2002</td>
<td>28,000</td>
<td>14,000</td>
<td>0.5</td>
<td>0%</td>
</tr>
<tr>
<td>2003</td>
<td>32,000</td>
<td>20,000</td>
<td>0.625</td>
<td>25%</td>
</tr>
<tr>
<td>2004</td>
<td>36,000</td>
<td>30,000</td>
<td>0.833</td>
<td>33%</td>
</tr>
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- From year 2000 to 2001, the money supply increases without inflation.
- In 2001, the money supply increases 20%, and the number of widgets increases 20%. Therefore, prices stay the same – the extra money is matched by an equivalent rise in the money supply.
- It is only in 2003 when the money supply increases from 14,000 to 20,000 that the money supply increases at a faster rate than output and we start to get rising prices.

**Problems of inflation**

Why is inflation such a problem?

1. **Fall in value of savings.** If people have cash savings, then inflation will erode the value of your savings. £1 million marks in 1921 was a lot. But, due to inflation, two years later, your savings would have become worthless. High inflation can also reduce the incentive to save.

2. **Menu costs.** If inflation is very high, then it becomes harder to make transactions. Prices frequently change. Firms have to spend more on changing price lists. In the hyperinflation of Germany, prices rose so rapidly; people used to get paid twice a day. If you didn’t buy bread straight away, it would become too expensive, and this is destabilising for the economy.

3. **Uncertainty and confusion.** High inflation creates uncertainty. Periods of high inflation discourage firms from investing and can lead to lower economic growth.

More on [problems of inflation](https://www.economicshelp.org/blog/634/economics/the-problem-with-printing-money/)
**Printing money and national debt**

Governments borrow by selling government bonds/gilts to the private sector. Bonds are a form of saving. People buy government because they assume a government bond is a safe investment. However, this assumes that inflation will remain low.

- If governments print money to pay off the national debt, inflation could rise. This increase in inflation would reduce the value of bonds.
- If inflation increases, people will not want to hold bonds because their value is falling. Therefore, the government will find it difficult to sell bonds to finance the national debt. They will have to pay higher interest rates to attract investors.
- If the government print too much money and inflation get out of hand, investors will not trust the government and it will be hard for the government to borrow anything at all.
- Therefore, printing money could create more problems than it solves.
- See also: Printing money and national debt

**Hyperinflation in Germany during the 1920s**

![Hyperinflation in Germany during the 1920s](image)

Inflation was so bad in Germany that money became worthless. Here a child is using money as a toy. Money was used as wallpaper and to make kites. Towards the end of 1923, so much money was needed, people had to carry it about in wheelbarrows. I hear stories of people stealing the wheelbarrow, but leaving the money.
Printing more money is exactly what Weimar Germany did in 1922. To meet Allied reparations, they printed more money; this caused the hyperinflation of the 1920s. The hyperinflation led to the collapse of the economy.

*Hyperinflation also occurred in Zimbabwe in the 2000s.*

**Printing money and the value of a currency**

If a country prints money and creates inflation, then there will be a decline in the value of the currency.

- Suppose inflation in Germany is 100%, and inflation in the UK is 0%.
- This means German prices are doubling compared to the UK.
- You will need twice as much Germany currency to buy the same quantity of goods.
- The purchasing power of the German currency is declining, therefore the value of mark will fall on exchange rates.
- See also: Printing money and the exchange rate

**Value of one German Mark to US Dollar 1922-23**

![Graph showing the value of one German Mark to US Dollar from 1922 to 1923.](https://www.economicshelp.org/blog/634/economics/the-problem-with-printing-money/)
Hyperinflation in Germany causes a rapid fall in the value of the German mark to the dollar.

In a period of hyperinflation, investors will try and buy a stable foreign currency because that will hold its value much better.

**Printing money doesn’t always cause inflation**

In a recession, with periods of deflation, it is possible to increase the money supply without causing inflation.

This is because the money supply depends not just on the monetary base, but also the velocity of circulation. For example, if there is a sharp fall in transactions (velocity of circulation) then it may be necessary to print money to avoid deflation (see: example of US and increasing money supply)

In the liquidity trap of 2008-2012, the Bank of England pursued quantitative easing (increasing the monetary base) but this only had a minimal impact on underlying inflation. This is because although banks saw an increase in their reserves, they were reluctant to increase bank lending.

However, if a Central Bank pursued quantitative easing (increasing the money supply) during a normal period of economic activity then it would cause inflation.

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National Debt, Printing Money and Inflation
December 1, 2016 by Tejvan Pettinger

Readers Question: If the government has a national debt, why doesn’t it just print more money and pay it off?

The problem is that printing money would cause inflation and effectively reduce the value of money.

If you print more money the number of goods and services will stay the same, you just have more money. Therefore people will be willing to spend more cash for the same limited number of goods. Therefore, the price of goods would simply rise.

An analogy: Gold is valuable because it is limited in value. If the supply of Gold increases, it would simply reduce the value of a certain sized piece of Gold.

There is another problem with printing lots of money. People who bought Government debt – in effect those who lent the government money, would see a fall in the value of their bonds. If there was hyperinflation the value of the bonds would become worthless. Therefore, people would be unwilling to lend money to the government in the future.

This scenario actually happened in Germany in the 1920s.

Faced with reparations from the Allies and a broken economy, the Weimar government started to print more money this led to the rampant inflation of 192...
and 1923. Money in Germany became worthless – people had to get paid twice a day because money decreased in value by the hour.

People needed wheelbarrows to carry sufficient cash to pay for goods. There are apocryphal stories of people leaving the money, but stealing the wheelbarrows.

**Quantitative Easing**

After the recession of 2009, US and UK Central banks decided to pursue a policy of quantitative easing. This involves electronically creating money (you can think of it as printing money). They then bought government bonds. The aim of this was

- To reduce interest rates on bonds to encourage lending and spending
- Increase money supply and encourage banks to lend

In effect, the monetary authorities are paying towards the national debt by printing money. However, they argue this is not their intention. – When the economy recovers, they will reverse the quantitative easing and sell back the bonds.

Also, in a recession, in a liquidity trap, printing money may not be inflationary. The reason is that there is a fall in the velocity of circulation. In other words, there may be more money in the economy, but banks don’t want to lend it. Therefore despite increasing the monetary base, it doesn’t lead to an increase in bank lending and aggregate demand; therefore inflation stays low. But, in normal circumstances printing money does cause inflation.

**UK debt**
UK National debt

www.economicshelp.org | source - Reinhart, AER and OBR - 2016

UK debt since 1910
Inflation 1910 - 2010

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