Monetary Policy in a Stable-Price Economy

1 Introduction

We assume a stable-price economy. For background, see [1], which outlines foundational concepts on stable-price economies. Our discussion builds on the quantity theory of money:

$$MV = PQ,$$

where:

- M is the money supply,
- V is the velocity (the number of times per year the average dollar is spent),
- P is the price of goods and services,
- Q is the quantity of goods and services.

(Reference: [2])

We treat V as relatively constant and identify PQ with GO (Gross Output). Thus, the required money supply is:

$$M = \frac{\text{GO}}{V} \;=\; k \times \text{GO},$$

where k is the average time it takes to spend one unit of money. For simplicity, we set $k = 1$ in the examples below.

When the economy is "evenly rotating"—with neither structural nor output changes—no new money is required; thus, no special monetary policy intervention is necessary. Below, however, we examine *three main special cases* that demand tailored approaches to loan creation and monetary management.

2 Three Main Economic Special Cases

2.1 1. Extra Purchase in an Evenly Rotating Economy

When someone wants to buy an additional good (e.g., a house or tractor) in an otherwise unchanged-output environment, there are two main ways to finance the purchase:

2.1.1 1.1 Thin Air Loan

A bank issues a loan *not* backed by existing savings (i.e., "from thin air"), thereby increasing M without a corresponding rise in real output and creating inflationary pressure.

Example: Assume five people each earn \$1000, totaling \$5000 in GDP (ignoring intermediate sales contributing to GO). Initially, each individual's share is

$$\frac{1000}{5000} = 0.20 \quad (20\%).$$

Now introduce a \$100 thin-air loan. The money supply rises to \$5100, while real GDP remains \$5000:

- The four unchanged participants each still hold \$1000, but their share falls to

$$\frac{1000}{5100} \approx 0.1961,$$

- The borrower holds \$1100, about 0.2157 of total purchasing power.

All other participants experience lower real purchasing power, while the borrower gains slightly. Essentially, *everyone's* share of real GDP falls below the original expectation.

2.1.2 1.2 Loan Based on Existing Savings

If the loan draws on existing savings, no additional money enters circulation.

Example:

- Three non-involved participants remain at \$1000 each (20% share each).
- The lender drops to \$900 (0.18), a planned reduction.
- The borrower moves to \$1100 (0.22), exceeding the 0.2157 share in the thin-air scenario.

Hence, in an unchanged-output economy, *extra* purchases or investments should be financed from existing savings to avoid inflationary distortions.

2.2 2. Increased Production (More Labor or Higher Productivity)

Now consider an economy that grows either by adding workers or by increasing output per worker.

2.2.1 2.1 More Labor

Suppose a sixth person joins the existing five-person economy, which totals \$5000. Without additional money, each share drops to

$$\frac{5000}{6} \approx \$833.33,$$

which is unfair if the new individual genuinely contributes new output.

Under a gold standard, mining would expand the supply of gold; under a fiat standard, new money must be introduced *from thin air but not as a loan* (e.g., tax reductions or back payments). If government spending increases, it should not rely on thin-air loans; rather, government bonds should be issued against real savings. In practice, however, a large portion of today's money stock grows via federal debt (Treasuries) and mortgages.

2.2.2 2.2 Higher Productivity

If someone raises annual output from \$1000 to \$1100 (e.g., by investing in capital), total GDP moves from \$5000 to \$5100. An extra \$100 of newly created money (again, *not* in the form of debt) is needed to keep prices stable and reflect the higher real output.

2.3 3. Structural Change in the Economy

Finally, changes in production structure can introduce *new transactions*. A **Business Output (BO)** indicator helps track business-to-business (B2B) loan expansions:

$$\mathrm{BO} = \mathrm{GO} - \mathrm{GDP},$$

where GO (Gross Output) captures intermediate transactions.

Example: Five individuals each earn \$1000. Two collaborate to produce bread, one milling flour and the other baking. If they split into separate operations, a new \$1000 B2B transaction (the flour sale) emerges.

2.3.1 3.1 Loan Based on Savings

If the baker borrows \$1000 from four savers (\$250 each), those four drop to \$750 each, reducing measured GDP to \$4000 ($4\times750 + 1000$), though true productive capacity remains \$5000. This misalignment disrupts the relationship between purchasing power and output.

2.3.2 3.2 Targeted Thin Air Loan

Alternatively, a *thin-air* loan can be created specifically for the new B2B transaction, preserving each individual's original consumption share at \$1000. The extra \$1000 circulates only between the flour miller and the baker. Such loans generally require collateral and are often considered working capital loans. Historically, misunderstandings between targeted B2B loans and broad thin-air lending led to occasional bank runs. A clear BO metric helps regulators limit misuse or misinterpretation of such credit expansions.

3 Additional Remarks on Monetary Policy

3.1 Expected M2 Increase and Budget Deficit

Key Data Points (1966–2024 Averages):

- Average velocity (V_{avg}) of M2 Money Stock: 1.768 [3]
- Average real GDP growth: 2.7%
- GDP in 2024: \$29,179 billion [4]

From these, one can estimate the expected M2 increase for 2025 as:

$$29{,}179 \times 0.027 \,/\, 1.768 \;\approx\; \$446 \text{ billion}.$$

In reality, from December 2023 to December 2024, M2 grew by \$808.8 billion, demonstrating that actual increases can surpass these averages [5].

3.1.1 Aligning M2 Growth with Deficit Financing

If the 2025 budget deficit is \$1.9 trillion [6] and M2 is projected to rise by \$446 billion, a straightforward policy might be:

1. Use \$446 billion of new money (via M2 growth) to cover part of the deficit,
2. Issue government bonds for the remaining \$1.45 trillion shortfall.

Alternate policies could involve reducing taxes (thus enlarging the deficit) or paying down additional debt. Lower deficits typically dampen M2 growth, whereas higher deficits can push M2 growth further.

Example Scenario: Consider a proposed $2 trillion debt reduction, possibly combining a $1 trillion "DOGE actions recovery" with a $1 trillion budget cut. If the government achieves a $0 deficit, it could use the natural M2 expansion (e.g., $446 billion) to buy back existing bonds or let matured bonds lapse without reissuing. This could be paired with tax cuts, though the combined changes to Treasury sales, tax rates, and deficit management must still align with the target M2 growth.

3.2 Interest Rates and Business Cycles

We do not recommend pegging interest rates via monetary policy. Ideally, rates should emerge from market supply and demand for loanable funds. Governments often intervene because many loans are effectively thin-air loans, reducing the scope for purely market-driven rates.

If investment loans rely mainly on savings, and money creation keeps pace with *actual*, rather than speculative, economic growth, the risk of overheating diminishes. Consequently, central authorities may not need to micromanage employment. Without significant distortions, the system can avoid severe cycles of recession, inflation, deflation, or stagflation.

In the end, *monetary policy should follow transparent, scientific rules* that are not easily changed by short-term political interests. Any modifications to these principles should follow a formal, well-defined process.

4 Why Bitcoin May Not Help

Bitcoin does not necessarily circumvent these issues. Mining it is resource-intensive, and it is unclear how Bitcoin could facilitate structural changes requiring targeted B2B lending. Furthermore, Bitcoin's issuance schedule does not track GDP growth. One could alter Bitcoin's protocol or create a new digital currency that aligns with large-scale economic requirements, but these steps would be considerable.

References

[1] GC MES. *Stable-Price Economies*. `https://gcmes.net/Ver2.pdf`.

[2] Investopedia. "Monetary Theory," https://www.investopedia.com/terms/m/monetary_theory.asp.

[3] Federal Reserve Bank of St. Louis, FRED. "Velocity of M2 Money Stock (M2V)," https://fred.stlouisfed.org/series/M2V.

[4] Bureau of Economic Analysis (BEA). "National Income and Product Accounts (NIPA)," https://www.bea.gov/.

[5] Federal Reserve Bank of St. Louis, FRED. "M2 Money Stock (M2SL)," https://fred.stlouisfed.org/series/M2SL.

[6] Congressional Budget Office (CBO). "The Budget and Economic Outlook," https://www.cbo.gov/.