

The Chicago Plan Revisited

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December 6, 2012

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1 Introduction

- The Great Depression led to profound debates about monetary reform.
- The intellectual depth of the 1930s debate was far greater than anything seen today.
- A large number of leading U.S. macroeconomists (Fisher, Simons, later Friedman) supported the so-called Chicago Plan:
 - This reform separates the monetary and credit functions of banking.
 - Deposits/Money: 100% backing by public money becomes mandatory.
 - Credit: Cannot be financed by creation, ex nihilo, of bank deposits.

The Six Advantages of the Chicago Plan

The Four Advantages Identified by Fisher (1936)

1. Much better control of bank-lending-driven business cycles.
2. Complete elimination of bank runs.
3. Dramatic reduction of the (net) public debt.
4. Dramatic reduction of private debts.

The Two Additional Advantages Identified in This Paper

5. Large output gains approaching 10%.
6. No liquidity trap problems, zero long-run inflation attainable.

Six Advantages of the Chicago Plan: Detail

1. Much better control of bank-lending-driven business cycles:

- The key characteristic of today's banks is money creation/destruction.
- "Intermediation" is incidental/secondary.
- Banks can create/destroy deposits ex nihilo to start/crash a lending boom.
- This has proved very costly throughout history:
Reinhart and Rogoff (2009) + this paper's literature review.
- Creation of one's own funds is an extraordinary privilege enjoyed by no other business!
- Under the Chicago Plan bank money creation becomes impossible:
 - Money & credit are no longer tied together by balance sheets.
 - Money (and to a lesser extent credit) can now be tightly controlled.
- Lending banks now become true intermediaries:
Have to obtain government money before lending it.

2. Complete elimination of bank runs requires two conditions:

i. Monetary liabilities must be fully backed by reserves of public money:

This is of course at the core of the Chicago Plan requirements.

ii. Credit assets must be funded by non-monetary liabilities - 3 options:

1. Loans from the treasury: In this paper.

2. Bank equity:

* 100% equity or at least strict capital adequacy regulations.

* 100% equity = only permissible funding for short-term lending.

3. Private savings/time deposits:

* They could become near-monies with financial engineering.

* Straightforward regulation is required to rule this out.

3. Dramatic reduction of the (net) public debt:

- To meet 100% reserve backing, banks have to borrow $\approx 185\%$ of GDP.
- The public debt is only around 80% of GDP.
- Government becomes a large net creditor.
- Government can share gains through a citizens' dividend that must be used for the repayment of private debts.
- Model simulation: Net public debt goes from 80% to -30% of GDP.
- Public money is not a debt, but equity! (FASAB (2012)).

4. Dramatic reduction of private debts:

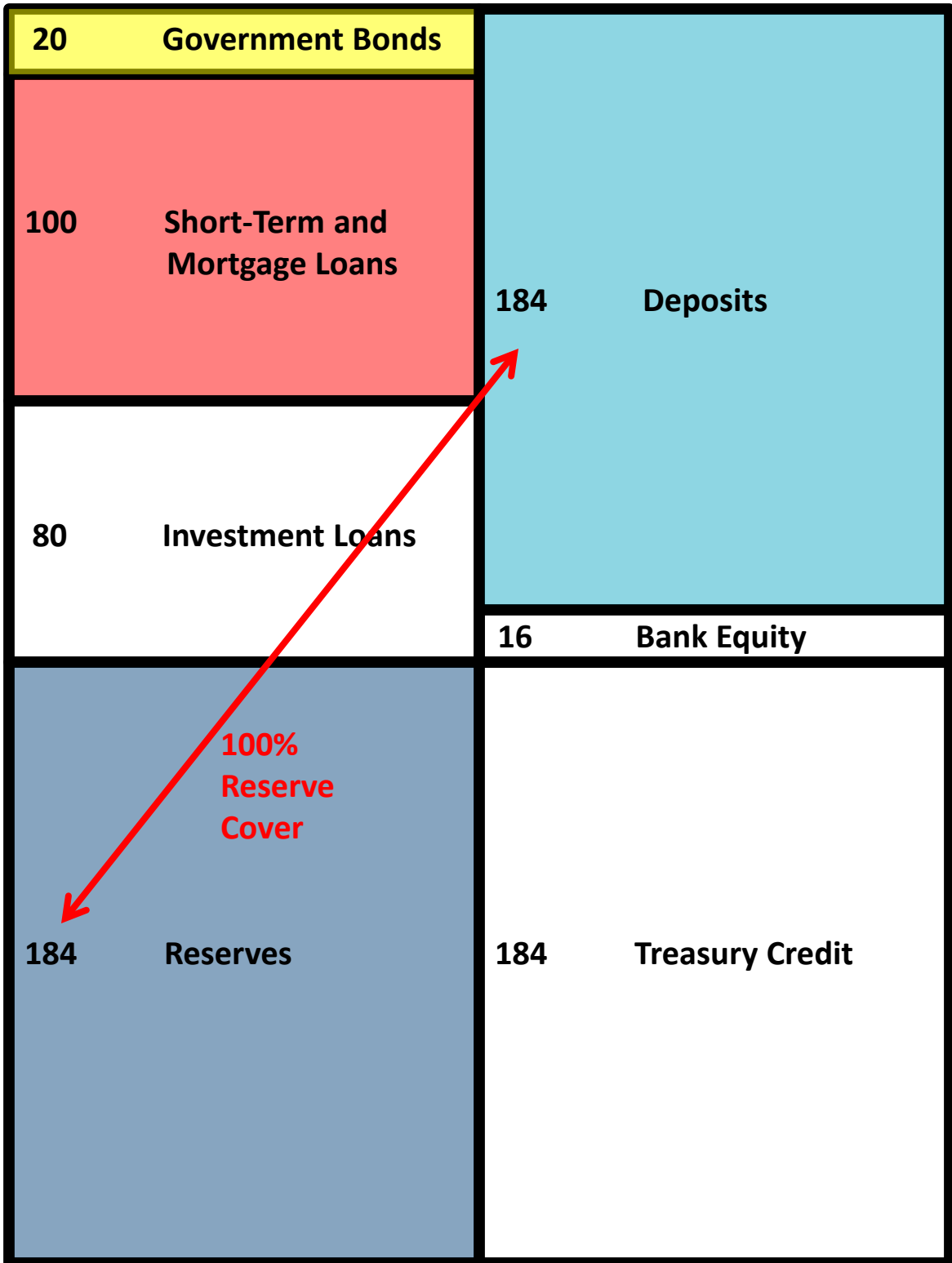
- Government transfers part of treasury credit balances to borrowers as citizens' dividend.
- Mandatory first use of dividends is repayment of private debts.
- Model simulation: Private debts go from 180% to 90% of GDP.
- Very beneficial because high debt levels are important crisis predictor:
 - * Schularick and Taylor (2012): Empirical support.
 - * Kumhof and Rancière (2010): Theoretical mechanism.

Current Banking System Balance Sheet

20	Government Bonds	184	Deposits
100	Short-Term and Mortgage Loans		
80	Investment Loans		
		16	Bank Equity

Transition to Chicago Plan Step 1

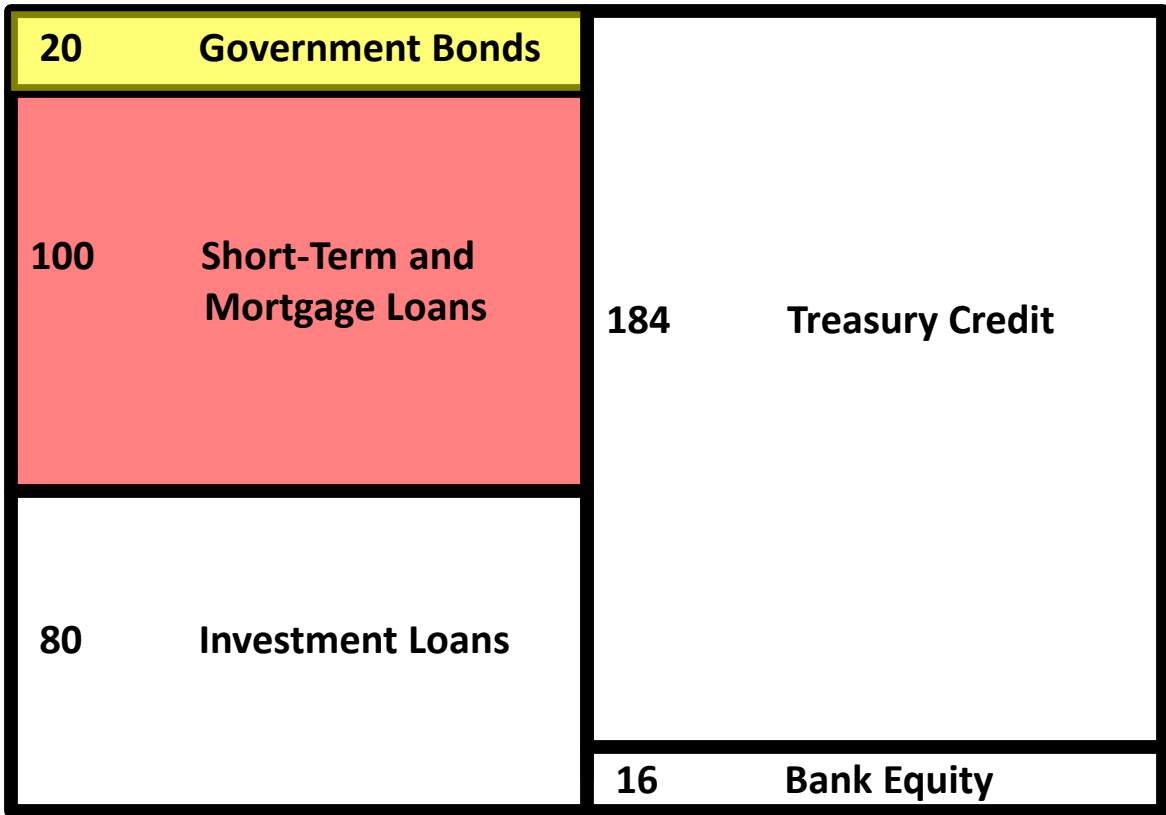
Banks purchase 100% reserve cover against treasury credit IOU



Transition to Chicago Plan Step 2

Banks are split into money banks and credit investment trusts

Credit Investment Trusts



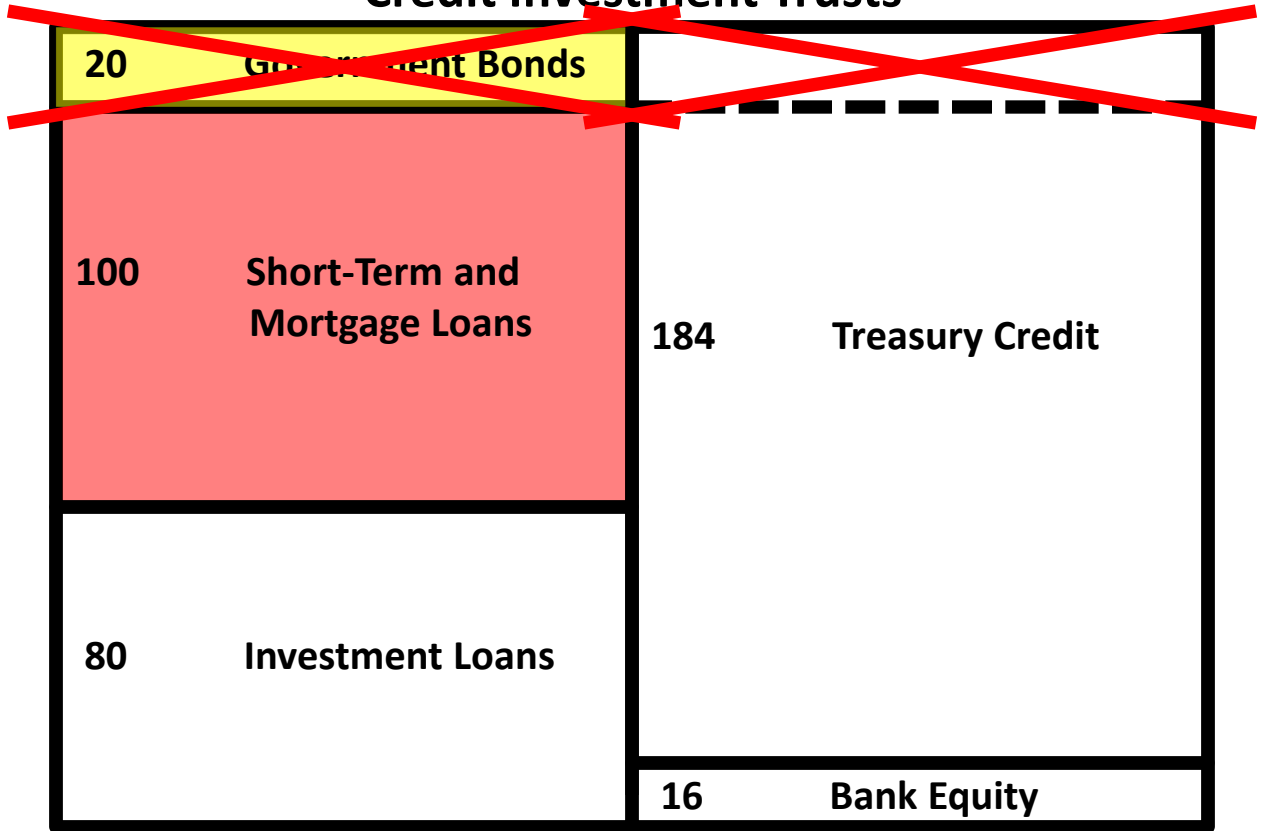
Money Banks



Transition to Chicago Plan Step 3

Bank-held government bonds are cancelled against treasury credit

Credit Investment Trusts



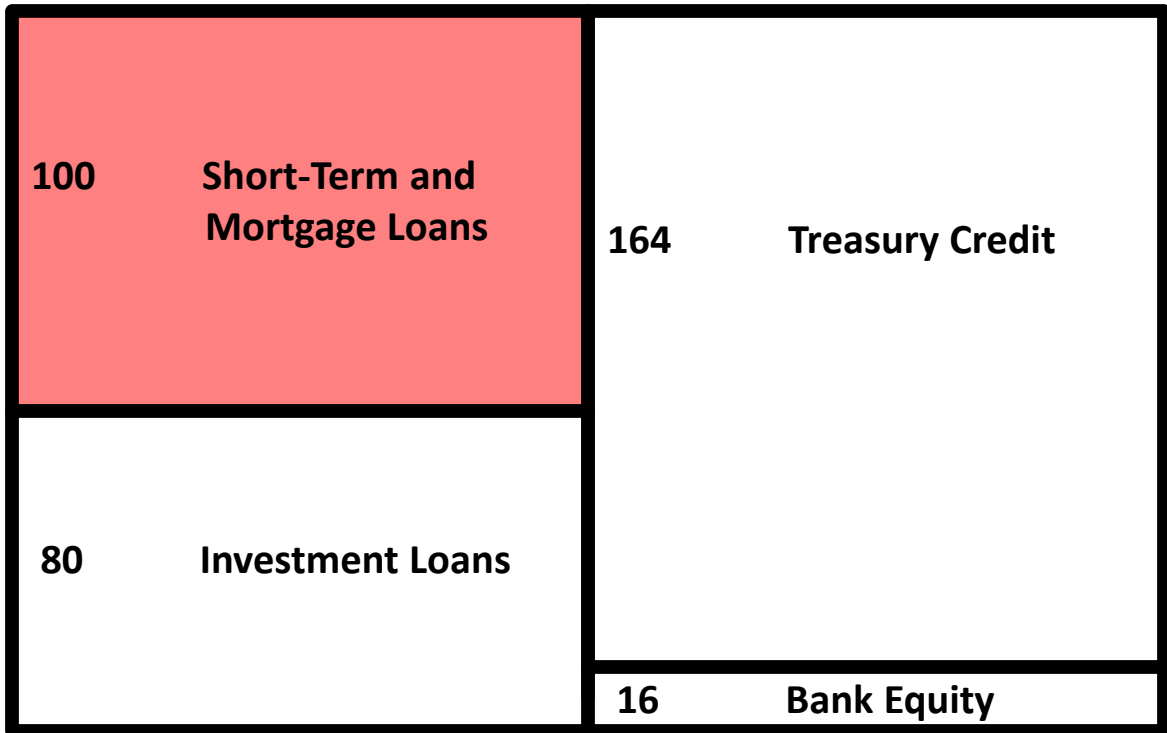
Money Banks



Transition to Chicago Plan Step 3 - completed

Bank-held government bonds are cancelled against treasury credit

Credit Investment Trusts



Money Banks



Transition to Chicago Plan Step 4

Part of treasury credit is distributed as a citizens' dividend

Credit Investment Trusts

100	Short-Term and Mortgage Loans	100	Citizens' Accounts
80	Investment Loans	64	Treasury Credit
		16	Bank Equity

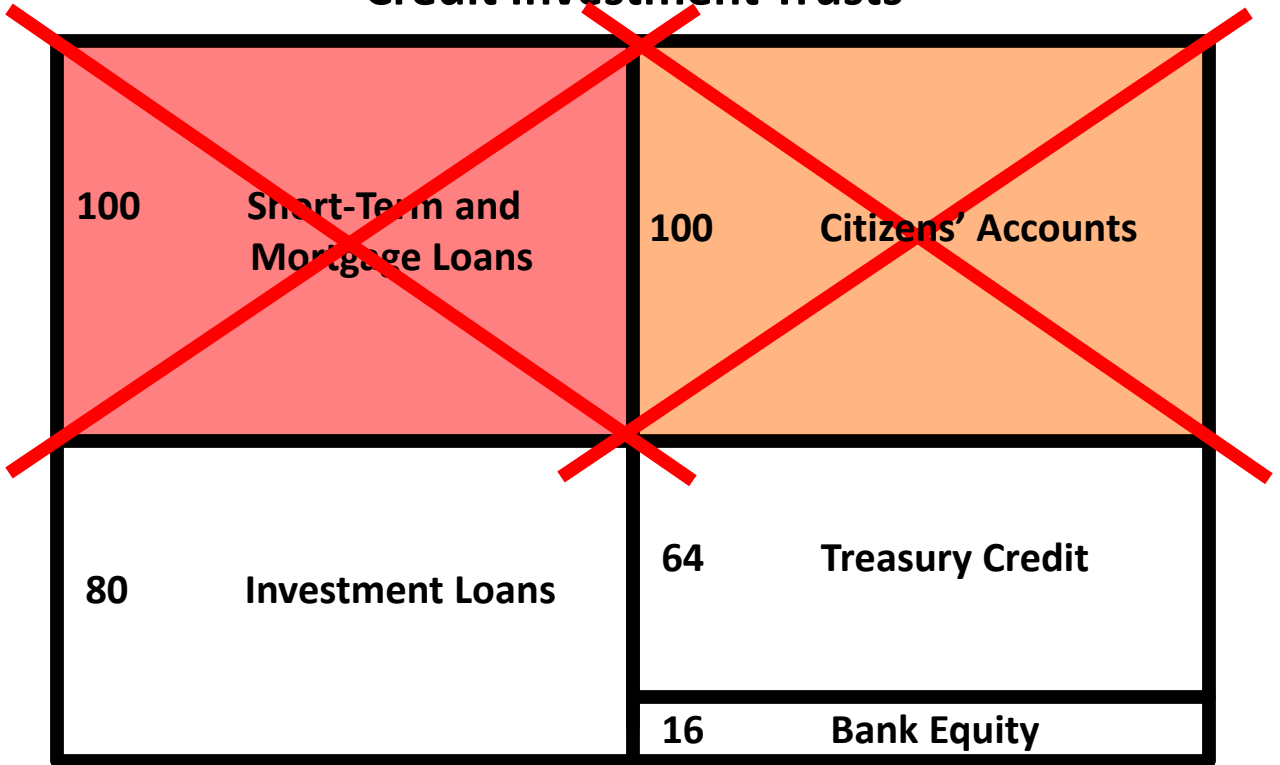
Money Banks

184	Reserves	184	Deposits
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Transition to Chicago Plan Step 5

Mandatory first use of citizens' dividend is repayment of any debts

Credit Investment Trusts



Money Banks



Transition to Chicago Plan Step 5 - completed

Credit Investment Trusts

80	Investment Loans	64	Treasury Credit
		16	Bank Equity

Money Banks

184	Reserves	184	Deposits
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Transition to Chicago Plan Step 6

Bank equity distribution due to reduced balance sheet size

Equity replaced by additional treasury credit

Credit Investment Trusts

80	Investment Loans	71	Treasury Credit
		9	Bank Equity

Money Banks

184	Reserves	184	Deposits
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Transition to Chicago Plan Step 7 - Optional

Treasury credit used to repay all remaining government debt held outside the financial system

- This is shown to illustrate that there is no need for government to have a dominant role in credit provision
- But the drawback is that this completely removes an important financial market benchmark and saving instrument

Credit Investment Trusts

80	Investment Loans	60	Long-Term Non-Monetary Private Deposits
		11	Treasury Credit
		9	Bank Equity

Money Banks

184	Reserves	184	Deposits
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The Chicago Plan Is Completely Non-Inflationary

Prior to Chicago Plan

20	Gov. Bonds	184	Deposits
100	Short-Term and Mortgage Loans		
80	Investment Loans		
		16	Equity

Chicago Plan 1

20	Gov. Bonds	184	Deposits
100	Short-Term and Mortgage Loans		
80	Investment Loans		
		16	Equity
184	Reserves	184	Treasury Credit

Chicago Plan 2

184	Reserves	184	Deposits
80	Investment Loans		
		71	Treasury Credit
		9	Equity

Deposits in private hands remain completely unchanged throughout. Inflation is determined by the relative supplies of deposits versus goods and services.

What changes is what deposits represent: Indestructible public money rather than volatile, destructible private money.

Citizens' Dividend When Debts Are Unequal – Part 1

Equal per capita dividends but unequal debt levels

Credit Investment Trusts

36	Short-Term and Mortgage Loans – Low-Debt Individuals	50	Citizens' Accounts - Low-Debt Individuals
64	Short-Term and Mortgage Loans – High-Debt Individuals	50	Citizens' Accounts - High-Debt Individuals
80	Investment Loans	64	Treasury Credit
		16	Bank Equity

Money Banks

184	Reserves	184	Deposits
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Citizens' Dividend When Debts Are Unequal – Part 2

Application of citizens' dividend to debt repayment

The dark red area is the remaining debt between private individuals

Credit Investment Trusts

36	Short-Term and Mortgage Loans – Low-Debt Individuals	50	Citizens' Accounts – Low-Debt Individuals
24	Short-Term and Mortgage Loans – High-Debt Individuals	50	Citizens' Accounts – High-Debt Individuals
80	Investment Loans	64	Treasury Credit
		16	Bank Equity

Money Banks

184	Reserves	184	Deposits
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Citizens' Dividend When Debts Are Unequal – Part 3

Intermediation of purely private credit continues through investment trusts

Residual
Non-Investment
Loans

Long-Term
Non-Monetary
Private Deposits

Credit Investment Trusts

14	14
80 Investment Loans	64 Treasury Credit
	16 Bank Equity

Money Banks

184 Reserves	184 Deposits
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Changes in Government Balance Sheet in Transition Period

Prior to Chicago Plan

80	Other Net Assets	80	Gov. Bonds (Debt)
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Chicago Plan 1

80	Other Net Assets	80	Gov. Bonds (Debt)
184	Treasury Credit (Financial Asset)	184	Reserves (Equity)

Chicago Plan 2

80	Other Net Assets	91	Reserves minus Loan Buy-Backs (Equity)
11	Net Treas. Credit		

Net government debt becomes negative.

Reserves are equity in the commonwealth, not debt.

5. Large output gains are due to:

- a. Lower interest rates due to lower risk premia at lower debt levels.
- b. Lower tax rates as seigniorage revenue is switched
from private banks to government.
- c. Lower monitoring costs as money creation no longer requires
debt and thus costly monitoring.

6. No liquidity traps and zero steady state inflation:

- Main tools of monetary policy:
 1. Nominal money growth rule that controls inflation.
 2. Interest rate rule that controls price of treasury credit to banks.
- With these rules there can be no liquidity trap:
 - Money is directly controlled by government, rather than by banks.
 - Interest rate on treasury credit can become negative
 - ⇒ no zero interest rate floor (ZIF).

- Implications for steady state inflation $\bar{\pi}$:
 - Under the current regime policy rate needs to stay above the ZIF.
 - Higher $\bar{\pi}$ needed to permit safe distance between policy rate and ZIF.
 - This is no longer an issue under the Chicago Plan.
 - Therefore $\bar{\pi} = 0$ is perfectly feasible.
- In other words, Chicago Plan is less, not more, inflationary than the current system!

Any Disadvantages of the Chicago Plan?

1. Reasonable Concern: Transition Could be Difficult:

- Important economists did not think so: Fisher (1935), Friedman (1960).
- Many today agree that major reform is needed anyway.
- If we need to bite the bullet of a difficult transition, we might as well have a reform that maximizes the long-run benefits.

2. Unnecessary Concern: Banking System Could Become Uncompetitive

- Banking system remains private.
- Deposit banks: State-of-the-art payments system without loan worries.
- Lending banks: Efficient capital allocation without risk of bank runs.
 - Lending banks operate as in today's textbooks:
 - * First attract deposits of reserves, then lend them out.
 - * Supplemented by a highly flexible treasury credit line.
 - Very effective mobilization of *long-term* savings:
 - * Under CP this only requires creation of credit, not money.
 - Consumption smoothing can continue as it does today:
 - * Under CP many households can use debt-free cash to smooth.
- Only change: No more credit proliferation to create the money supply.

2 Chicago Plan in History of Monetary Thought

- A long line of distinguished **thinkers** has advocated government money issuance under the rule of law.
- Historical **experience** is very strongly in favor of it:
 - Periods of private money issuance: Constant financial crises.
 - Periods of government money issuance: Stability, very few crises.
- Are the many financial crises of the last 100 years a counter-argument?
 - This would be a very serious logical error.
 - Over the last 100 years governments have only ever been in charge of narrow money, and private banks in charge of overall money.
 - If anything, recent financial crises must thus have been caused by banks.

3 The Model under the Current Monetary System

3.1 Banks' Central Bank Reserves Are Omitted

- Quantitatively: Reserves negligible at most times (not now).
- Conceptually: Reserves negligible at all times, for money creation.
- Why? The “deposit multiplier” is a fairy tale:
 - Turns actual monetary transmission mechanism on its head.
 - Kydland and Prescott (1990) for the monetarist era.
 - Carpenter and Demiralp (2010) for the current era.
 - If you control interest rates, you have to let reserves adjust freely.
- Bottom line: When banks ask for reserves, the central bank obliges.
- Transmission starts with deposit creation, and ends with reserve creation.
- Banks are therefore almost fully in control of the money creation process.

3.2 Banks Funded By Money Created Ex Nihilo, Not Savings

1. Agents who simultaneously borrow and hold deposits: Deposits \neq savings.
2. Land that can be sold, against a deposit created through a loan, from financially unconstrained households to financially constrained households: Deposits \neq savings.
3. Saving responds to investment, not the other way around. The steps are:
 - New loan: Investor now has a loan liability and a deposit asset.
 - Physical investment purchase:
 - Investment happens first.
 - Investor now hands his deposit to the seller.
 - The seller's deposit is new saving, a **consequence** of investment.
 - Critical step is initial creation of new money, ex nihilo, by the bank.

3.3 Banks

- Borrowers:
 1. Financially constrained households:
 - (a) Mortgages on land.
 - (b) Consumer loans.
 2. Manufacturing firms: Working capital loans.
 3. Entrepreneurs: Investment loans.
 4. Government: Holdings of government bonds.
- Depositors:
 1. Financially unconstrained households (includes shadow banking).
 2. Financially constrained households.
 3. Manufacturing firms.
- Equity buffer to avoid penalties under Basel regulations.

3.4 Government

3.4.1 Monetary Policy

- Inflation forecast-based interest rate rule as currently used by the Fed.
- This rate only affects money and credit very indirectly and weakly.

3.4.2 Prudential Policy

- Passive Basel rule with fixed minimum capital adequacy ratio as currently mandated under Basel rules.

3.4.3 Fiscal Policy

- Structural deficit rule that responds to output gap. This represents automatic stabilizers currently in effect.
- Labor, capital and consumption tax rates adjust to satisfy the rule.

4 The Model under the Chicago Plan

- Basic structure of economy unchanged.
- Only describe decision problems that exhibit some changes.

4.1 Banks

- Money: 100% reserve backing of deposits by reserves.
- Credit: Investment loans financed by bank equity and treasury credit.
- All loans not fully repaid through citizens' dividend are spun off into non-bank investment trusts.

Preventing the Emergence of Near-Monies

1. All or most investment lending financed by treasury credit.
2. All short-term lending funded by 100% equity.
3. All longer-term lending funded by maturity-matched debt liabilities.
4. No tax advantages for borrowing, or even tax advantages for equity.
5. No FDIC coverage for private liabilities of investment trusts.
6. Use of non-reserve liabilities illegal in payment or as collateral.

4.2 Government

4.2.1 Money

- Money growth rule: Growth of money = growth of output.

4.2.2 Credit I - Price of Credit

- Very gradual reduction of treasury credit rate to avoid investment boom.
- Eventual use of treasury credit rate to stabilize the business cycle.
- This rate is a restricted-access borrowing rate, not a general investment rate
⇒ no zero lower bound.

4.2.3 Credit II - Quantity of Credit

- Quantitative lending guidance (Richard Werner).
- How? Government penalties through countercyclical Basel minimum capital adequacy requirement (MCAR).
 - MCAR raised when investment is high.
 - Results in reduced lending at higher cost.

5 Transition to the Chicago Plan

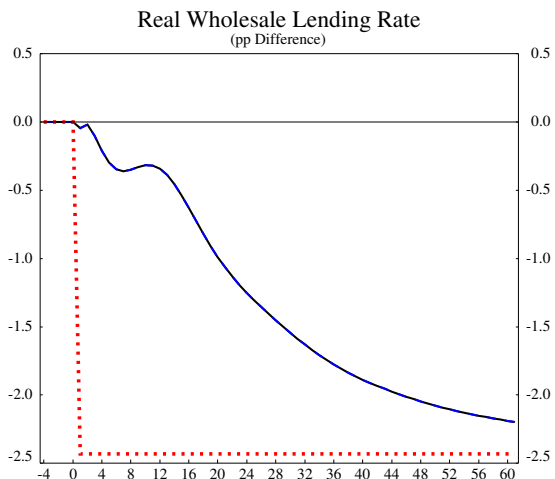
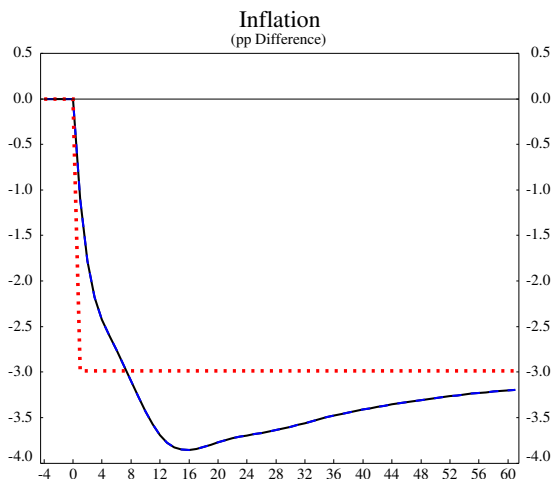
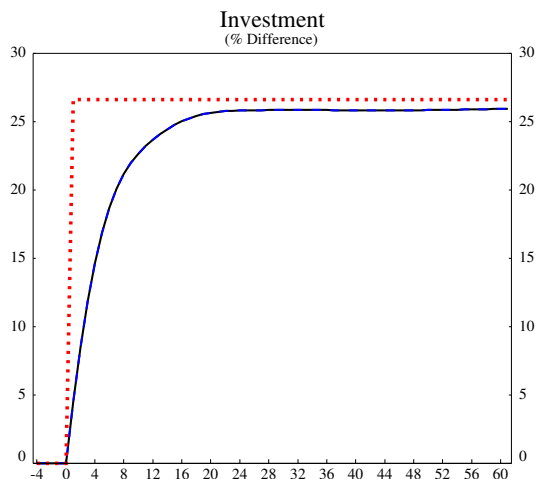
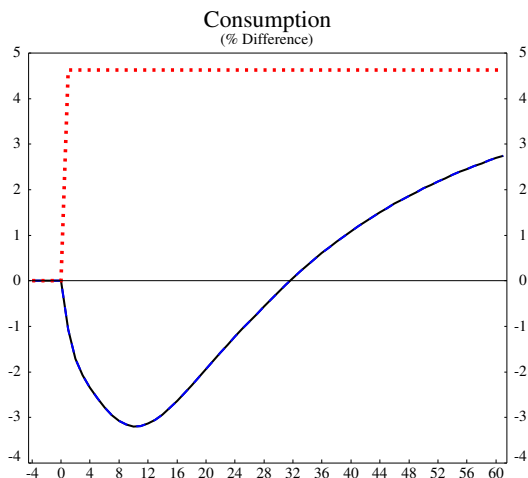
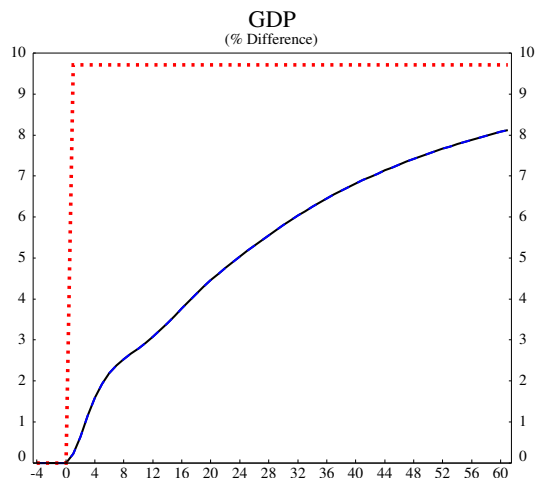
Three of Fisher's (1936) Claims Are Validated

1. Bank runs are completely eliminated.
2. Net public debt goes from 80% to -30% of GDP.
3. Private debts go from 180% to 90% of GDP.

Additional Important Results from the Simulations

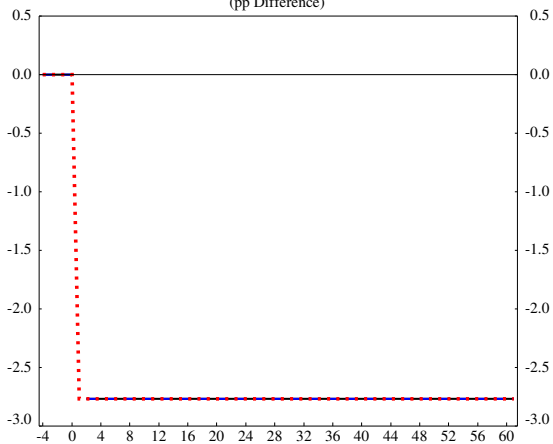
1. Output gains approach 10%.
2. Inflation can fall to zero without the risk of liquidity traps or ZIFs.

Chicago Plan - Main Macro Variables

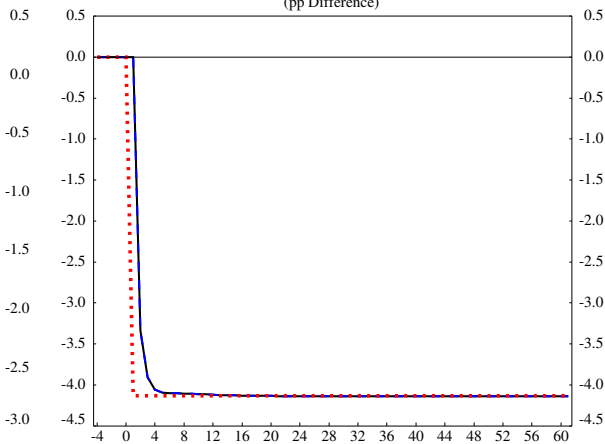


Chicago Plan - Fiscal Variables

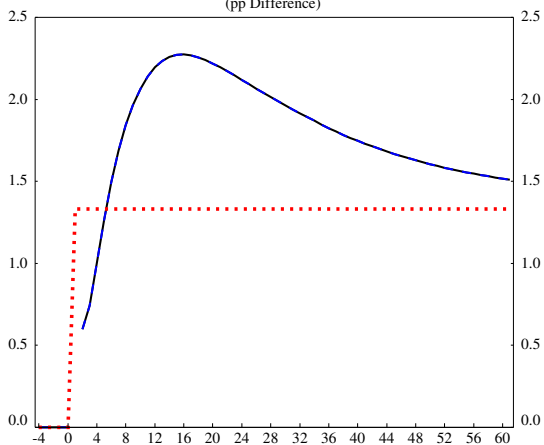
Government Deficit/GDP
(pp Difference)



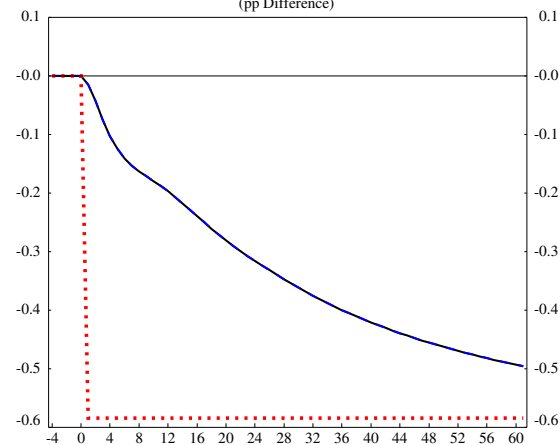
Gross Debt Service/GDP
(pp Difference)



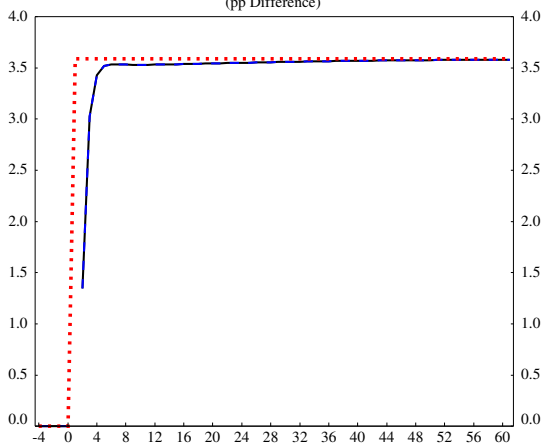
Net New Treasury Credit/GDP
(pp Difference)



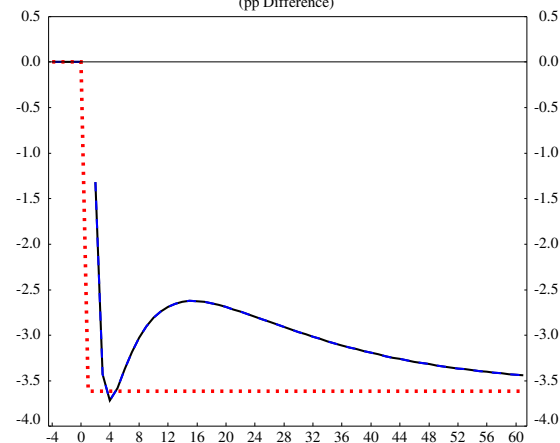
Transfers/GDP
(pp Difference)



Seigniorage/GDP
(pp Difference)



Tax Revenue/GDP
(pp Difference)

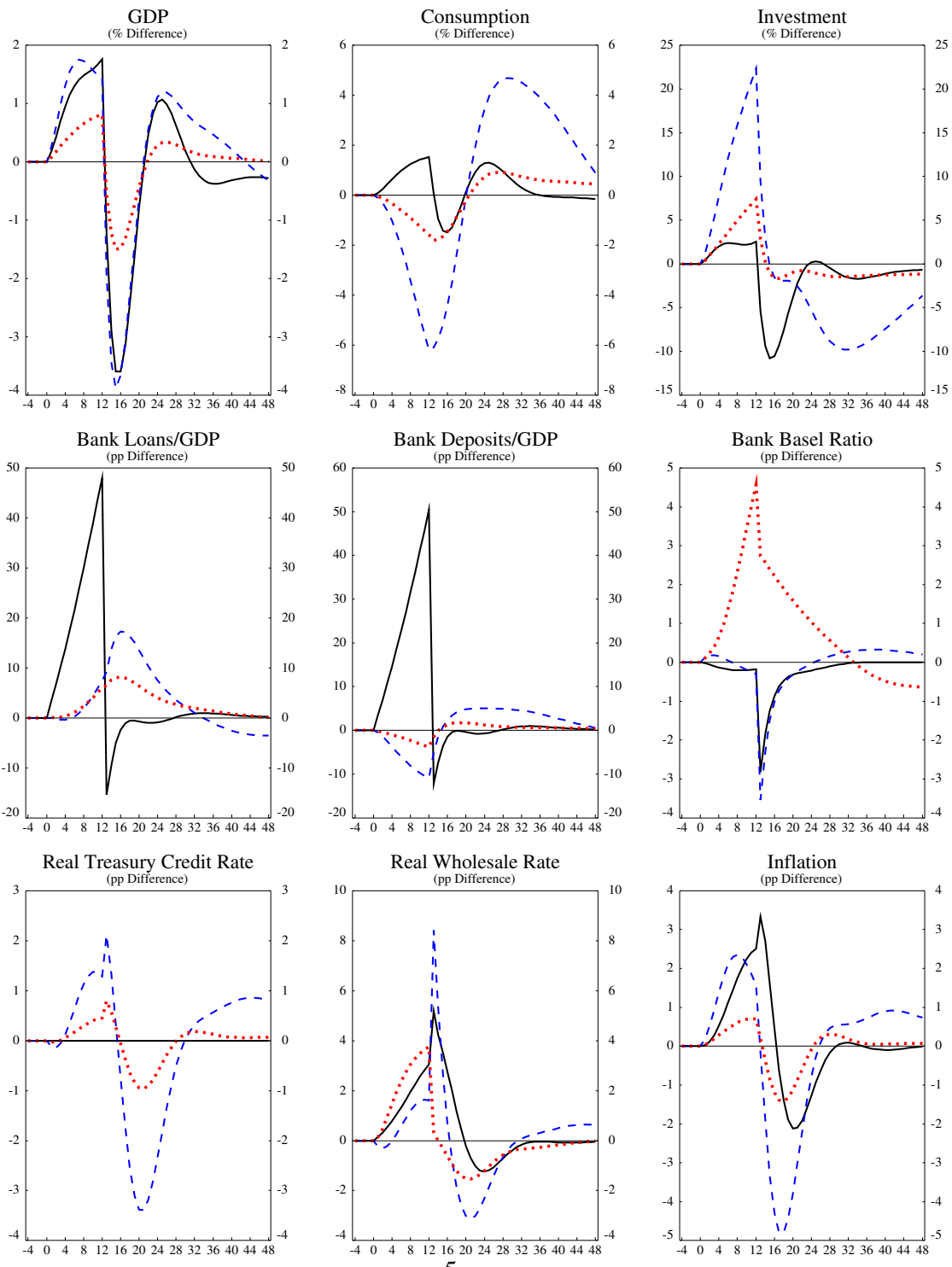


6 Credit Booms and Busts

The Fourth of Fisher's (1936) Claims Is Validated

- Boom-bust cycles caused by banks' sudden shift in optimism about borrower risk can be dramatically reduced.
- But policy needs quantity as well as price instruments to accomplish this.

Chicago Plan - Business Cycles (Risk Shocks)



5

__ = Pre-Transition, - - = Post-Transition, $p_l = 0$, ... = Post-Transition, $p_l = 8$

7 Summary

- **Our Aim:** Re-examine the 1930s Chicago Plan in today's environment.
- **Our Tool:** A modern, microfounded, and carefully calibrated DSGE model.
- **Our Result:** Transition to 100% reserve banking would have dramatic benefits that go even beyond those emphasized by Frederick Soddy, Henry Simons, Frank Knight, Irving Fisher and Milton Friedman.
- Several of these authors also emphasized that the transition to such a system can be technically straightforward.
- Many details of this analysis can and should be debated and refined. But the main result appears very robust.

8 Conclusion - The Big Picture

- I am convinced that the real economy will soon be facing massive challenges:
 - Fossil Fuel Scarcity:
 - * IMF WP “The Future of Oil: Geology versus Technology” .
 - * IMF WP “Oil and the World Economy: Some Possible Futures” .
 - * Disclaimer: This is not an official IMF position.
 - Climate Change: Somewhat more distant than fossil fuel problems.
- In such an environment all of society’s efforts need to be directed towards solving real problems - engineering problems.
- In such an environment we therefore really do not need an “exciting”, “innovative” financial system, because that excitement can become a heavy distraction - see the last 5 years.
- Rather, what I think we need is:
 - A really boring financial system.
 - A really exciting industrial and engineering system.