

The Chicago Plan Revisited

Jaromir Benes, International Monetary Fund

Michael Kumhof, International Monetary Fund

April 17, 2013

Disclaimer

The views expressed herein are those of the authors and should not be attributed to the IMF, its Executive Board, or its management.

Plan of the Talk

1. Introduction
2. Understanding Banks: Key Insights
3. The Six Advantages of the Chicago Plan
4. Answers to Common Questions
5. Application: Central Bank Purchase of NPL
6. Summary
7. Discussion

1 Introduction

- The **Great Recession** revealed serious weaknesses in the financial system and triggered significant reform.
- The **Great Depression** is a useful reference point: It provoked a very deep intellectual debate about how to make the financial system safer, culminating not only in the 1933/35 Banking Acts but also in the Chicago Plan.
- The Chicago Plan was supported by Frederick Soddy, Irving Fisher, Henry Simons, Frank Knight, Milton Friedman, many others.
- In a nutshell, the Chicago Plan proposed:
 - Separation of the monetary and credit functions of banking.
 - Deposits/money must be backed 100% by public reserves.
 - Credit cannot be financed by creation, ex nihilo, of bank deposits.
- Comparing key characteristics of the Chicago Plan and of today's financial system can provide very useful insights for policy.

2 Understanding Banks: Key Insights

2.1 Key Function: Money Creation, not Intermediation

- The key functions of banks:
 - Creation (and destruction) of money, ex nihilo.
 - Check clearing services whereby that money can be transferred.
- Are they also “intermediaries” ?
 - Common definition of intermediation: Accepting non-banks’ deposits of savings, and then lending those savings out.
 - Under this definition banks are not intermediaries.
 - Because loans come before deposits, not vice versa.
- The intermediation story misses the monetary nature of financing.
- I will now explain this in more detail.

Money and Banks A: “Intermediation”

- Scenario: A wants to buy goods/assets, B wants to sell goods/assets.
- B dumps the goods at the bank, and a deposit is recorded.
- The bank gives the goods to A, and a loan is recorded.
- You have to argue as above if you argue that banks intermediate funds, because that implies that deposits come before loans.
- You have to ignore checks for the macro story, because checks only move funds between existing accounts at different banks - a micro phenomenon.
- Not even cash deposits (which in any event are tiny) are intermediated, because banks do not “lend out” that cash.
- The intermediation story is therefore completely impossible.

Money and Banks B: Money Creation

- Scenario: A wants to buy goods/assets, B wants to sell goods/assets.
- A goes to the bank to get financing, B stays at home.
- A gets a new loan of \$1m, and a new deposit of \$1m.
- The bank has created its own funds, deposits, in the act of lending.
- This is an extraordinary privilege not enjoyed by any other type of business.
- A then uses the new deposit to pay B.
- Ex-post it looks like intermediation has happened.
- But at that point the bank does nothing active. It just provides check clearing services. Its original activity was the creation of new money.
- This story happens every single time banks make a loan.

Bank Money Creation - Implications

- Key: New loans involve no intermediation whatsoever.
- No funds are being withdrawn from previous uses as saving.
- **Banks can therefore easily start a lending boom:**
 - They simply grow their balance sheets by expanding the money supply.
 - They do not have to attract deposits of existing money.
- For the aggregate banking system it makes no difference if the new deposit is subsequently transferred to another bank: So long as the loan remains outstanding at some bank, so does the deposit, at some other bank.
- Reserves or cash balances impose no limits on this process (see below).
- The only constraints are solvency and profitability: The key is banks' potentially very volatile sentiment concerning their borrowers' creditworthiness.

Bank Money Creation Exhibit A: Schumpeter (1954)

But this ... makes it highly inadvisable to construe bank credit on the model of existing funds' being withdrawn from previous uses by an entirely imaginary act of saving and then lent out by their owners. It is much more realistic to say that the banks ... create deposits in their act of lending, than to say that they lend the deposits that have been entrusted to them. ... The theory to which economists clung so tenaciously makes [depositors] out to be savers when they neither save nor intend to do so; it attributes to them an influence on the 'supply of credit' which they do not have.

Nevertheless, it proved extraordinarily difficult for economists to recognize that bank loans and bank investments do create deposits. In fact, throughout the period under review they refused with practical unanimity to do so. And even in 1930, when a large majority had been converted and accepted that doctrine as a matter of course, Keynes rightly felt it to be necessary to re-expound and to defend the doctrine at length ...

Bank Money Creation Exhibit B: Central Banks

- Keister and McAndrews (2009), Federal Reserve Bank of New York: “Suppose that Bank A gives a new loan of \$20 to Firm X ... Bank A does this by crediting Firm X’s account by \$20. The bank now has a new asset (the loan to **Firm X**) and an offsetting liability (... **Firm X**’s deposit at the bank).”
- Graham Towers (1939), former Governor of the central bank of Canada: “Each and every time a bank makes a loan, new bank credit is created – new deposits – brand new money.”
- Berry et al. (2007), Bank of England: “When banks make loans, they create additional deposits for those that have borrowed the money.”
- Bundesbank (2009): “In the Eurosystem, money is primarily created through the extension of bank credit ... The commercial banks can create money themselves ... ”

2.2 Saving Does Not Need to Come Before Investment

- Bank-financed investment does not require prior saving.
- Before saving or investment come a new loan and a new deposit.
- The new deposit is obviously not (yet) saving.
- But by providing new purchasing power, it allows investment to go ahead.
- When investors pay for goods, the seller of the goods acquires the deposit.
- This is saving.
- It is a consequence of lending, creation of money, and investment.
- This is a fundamental insight for economic development:
 - Saving is not a precondition for investment.
 - Rather it can be a by-product of (efficient) investment financing.

2.3 The “Deposit Multiplier” is a Myth

- Deposit Multiplier:
 - Central bank fixes narrow money aggregates first.
 - Broad money aggregates are the endogenous result.
- Kydland and Prescott (1990) referred to this as a myth. Why?
 - It turns the actual monetary transmission mechanism on its head.
 - Monetarist Era:
 - * Broad money aggregates lead the cycle: M2-M1 by 3 quarters.
 - * Narrow money aggregates lag the cycle: M1 by 1 quarter.
 - Inflation Targeting Era:
 - * If you control a price (the interest rate), ...
 - * then you have to let quantities (reserves) adjust.
- The evidence for this, both institutional and empirical, is overwhelming.

Deposit Multiplier Myth - Central Bank Statements

- Alan Holmes, Vice President of the New York Federal Reserve, 1969:

In the real world, **banks extend credit, creating deposits in the process, and look for the reserves later.**

- Carpenter and Demiralp, Federal Reserve Board Working Paper, 2010:

The relationships implied by the money multiplier do not exist in the data. The textbook treatment of money in the transmission mechanism can be rejected.

- ECB Monthly Bulletin, May 2012:

The Eurosystem, however, ... always provides the banking system with the liquidity required to meet the aggregate reserve requirement.

The Deposit Multiplier: Conclusions

- When banks ask for reserves, the central bank obliges.
- Transmission starts with loan creation = deposit creation, and ends with reserve creation.
- Banks are therefore almost fully in control of the money creation process.
- The only tool the Fed has for affecting the money supply is very blunt:
The policy rate works by making potential borrowers not creditworthy.

3 The Six Advantages of the Chicago Plan

The Four Advantages Identified by Fisher (1936)

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

The Two Additional Advantages Identified in This Paper

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

Six Advantages of the Chicago Plan: Detail

1. **Dramatic reduction of the (net) public debt**
2. **Dramatic reduction of private debts**

Current Banking System Balance Sheet

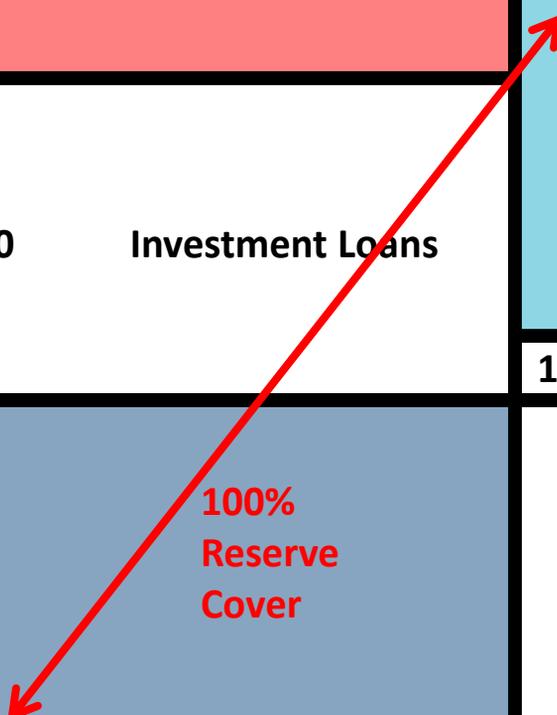
Assets		Liabilities	
20	Government Bonds		
100	Short-Term and Mortgage Loans	184	Deposits
80	Investment Loans		
		16	Bank Equity

All numbers are in percent of U.S. GDP

Transition to Chicago Plan Step 1

Banks purchase 100% reserve cover against treasury credit IOU

Assets		Liabilities	
20	Government Bonds		
100	Short-Term and Mortgage Loans	184	Deposits
80	Investment Loans		
		16	Bank Equity
184	Reserves	184	Treasury Credit



100% Reserve Cover

Transition to Chicago Plan Step 2

Banks are split into money banks and credit investment trusts

Assets	Credit Investment Trusts	Liabilities
20 Government Bonds		
100 Short-Term and Mortgage Loans	184 Treasury Credit	
80 Investment Loans		
	16 Bank Equity	

Assets	Money Banks	Liabilities
184 Reserves	184 Deposits	

Transition to Chicago Plan Step 3

Bank-held government bonds are cancelled against treasury credit

Assets	Credit Investment Trusts	Liabilities
20 Government Bonds	20	20
100 Short-Term and Mortgage Loans		184 Treasury Credit
80 Investment Loans		
		16 Bank Equity

Assets	Money Banks	Liabilities
184 Reserves		184 Deposits

Transition to Chicago Plan Step 3 - completed

Bank-held government bonds are cancelled against treasury credit

Credit Investment Trusts	
Assets	Liabilities
100 Short-Term and Mortgage Loans	164 Treasury Credit
80 Investment Loans	
	16 Bank Equity

Money Banks	
Assets	Liabilities
184 Reserves	184 Deposits

Transition to Chicago Plan Step 4

Part of treasury credit is distributed as a citizens' dividend

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

Assets		Money Banks		Liabilities	
184	Reserves	184	Deposits		

Transition to Chicago Plan Step 5

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

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

Money Banks	
Assets	Liabilities
184 Reserves	184 Deposits

Transition to Chicago Plan Step 5 - completed

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

Assets		Credit Investment Trusts		Liabilities	
80	Investment Loans	64	Treasury Credit		
		16	Bank Equity		

Assets		Money Banks		Liabilities	
184	Reserves	184	Deposits		

Transition to Chicago Plan Step 6

Bank equity distribution due to reduced balance sheet size

Equity replaced by additional treasury credit

Assets		Credit Investment Trusts		Liabilities	
80	Investment Loans	71	Treasury Credit		
		9	Bank Equity		

Assets		Money Banks		Liabilities	
184	Reserves	184	Deposits		

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

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

Assets		Money Banks		Liabilities	
184	Reserves	184	Deposits		

Changes in Government Balance Sheet in Transition Period

Prior to Chicago Plan

80	Other Net Assets	80	Gov. Bonds (Debt)
----	------------------	----	-------------------

Chicago Plan: 100% Reserve Backing

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

Chicago Plan: Final Balance Sheet

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.

3. Complete elimination of bank runs

- Monetary liabilities must be fully backed by reserves of public money:
This is of course true under the Chicago Plan.
- Credit assets must be funded by non-monetary liabilities - 3 options:
 - (a) **Treasury Credit:** Loans from the treasury.
 - (b) **Bank Equity:** As in Simons' (1948) "financial good society" or Kotlikoff's (2012) "limited purpose banking".
 - (c) **Private Debt:** With provisions that prevent money substitutes:
 - No acceptance for any payments to the government, incl. taxes.
 - No coverage by any kind of deposit insurance.
 - Elimination of tax advantages for debt.
 - Strict limits on maturity mismatches.
 - Possibly even penalties for use as a means of payment.

4. Large output gains approaching 10% - three reasons:

(a) Lower interest rates:

- Government and private debt levels are much lower.
- This leads to lower risk premia.

(b) Lower tax rates:

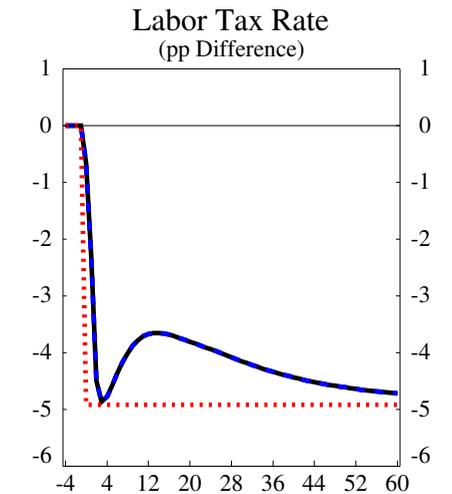
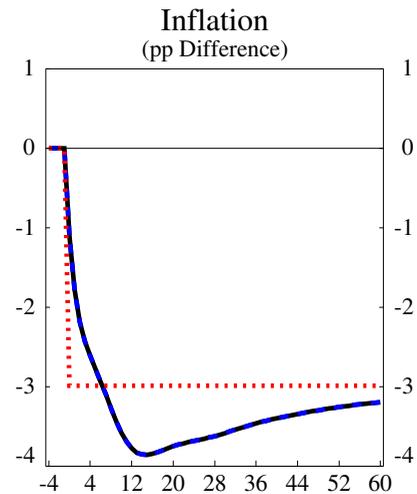
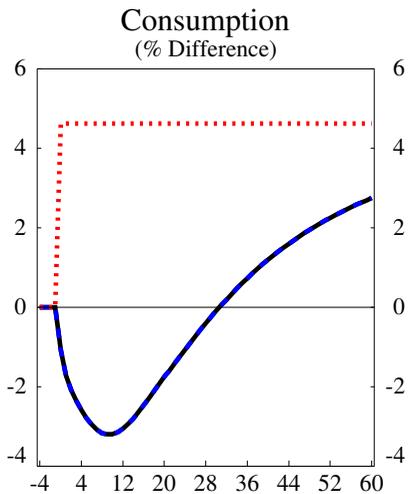
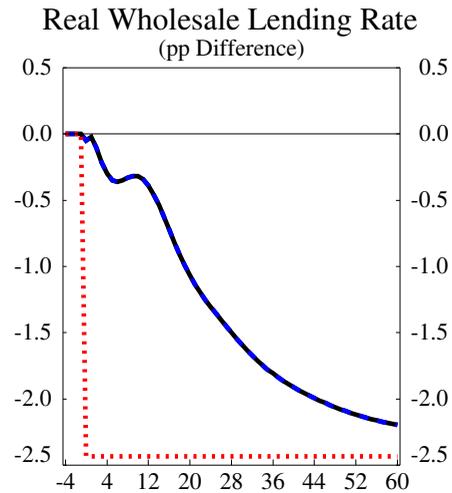
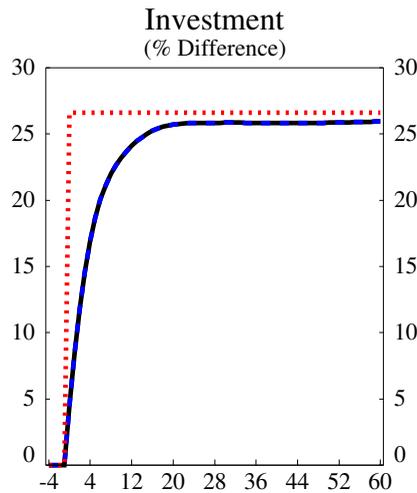
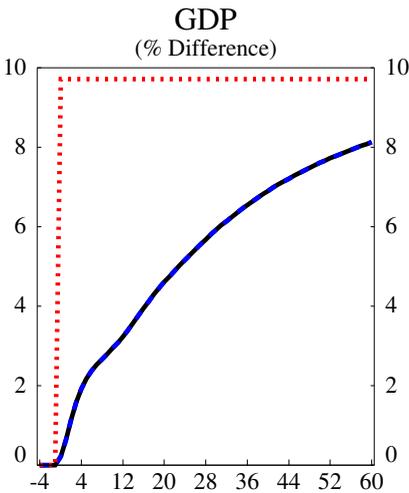
- Seigniorage revenue accrues to government instead of private banks.
- This revenue can be used to lower taxes.

(c) Lower monitoring costs:

- Money creation no longer requires debt and thus monitoring.
- This saves a lot of resources that can be used elsewhere.

Main Macroeconomic Variables

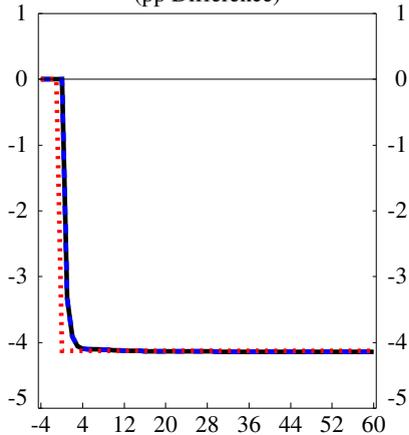
— = Transition to Chicago Plan, = Final Values after Transition



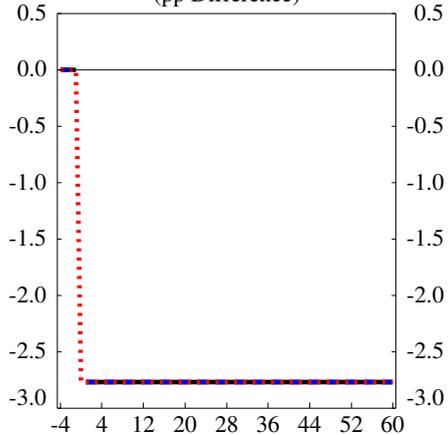
Fiscal Variables

— = Transition to Chicago Plan, = Final Values after Transition

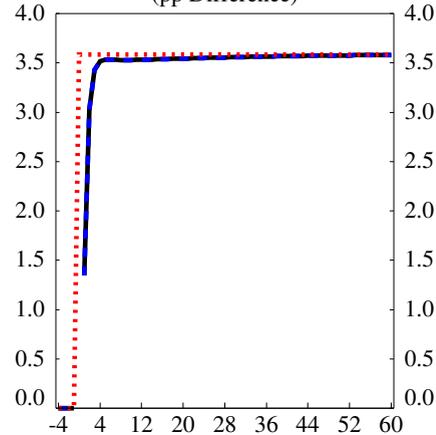
Gross Debt Service/GDP (pp Difference)



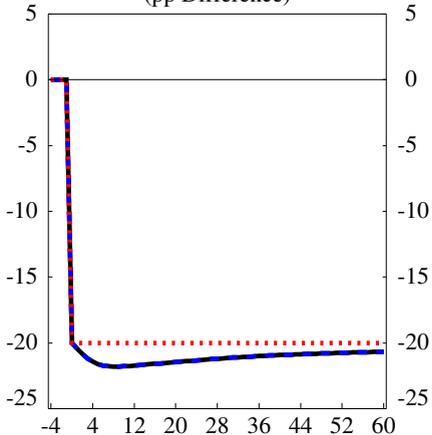
Government Deficit/GDP (pp Difference)



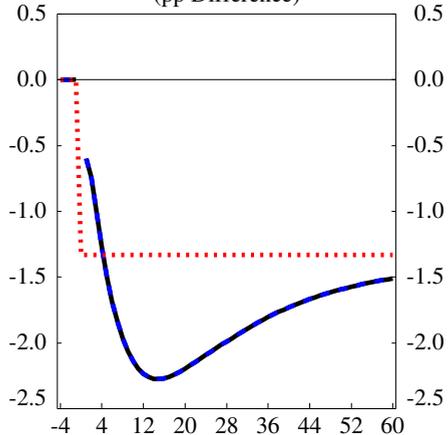
Seigniorage/GDP (pp Difference)



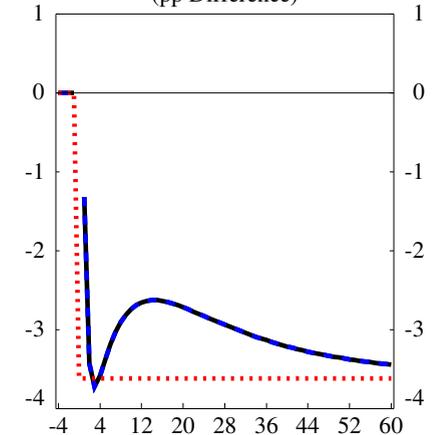
Government Debt/GDP (pp Difference)



Treasury Credit/GDP (pp Difference)



Tax Revenue/GDP (pp Difference)



5. Much better control of bank-lending-driven business cycles

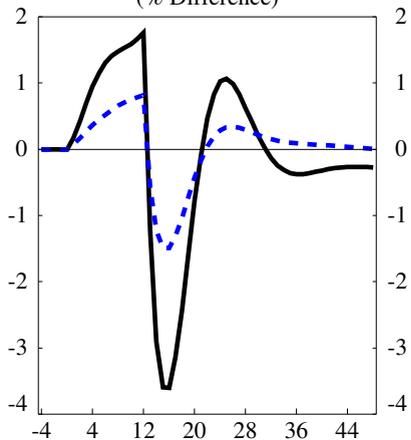
- Under the Chicago Plan bank money creation becomes impossible.
- Banks now become true intermediaries rather than money creators.
- This makes it much easier to prevent credit cycles.
- Quantitative lending guidance, e.g. through countercyclical capital buffers (Basel III), is a key complementary policy.
- Capital adequacy regulation is far less effective under the current system compared to the Chicago Plan, because bank credit/money created in an optimistic boom environment can and will also be used for the purchase of bank equity shares.

Bank-Driven Business Cycles

___ = Pre-Transition, - - - = Post-Transition, with Quantitative Lending Guidance

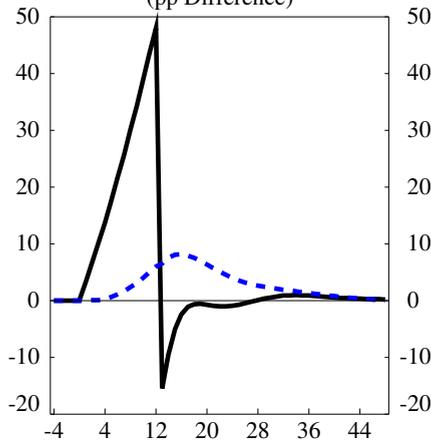
GDP

(% Difference)



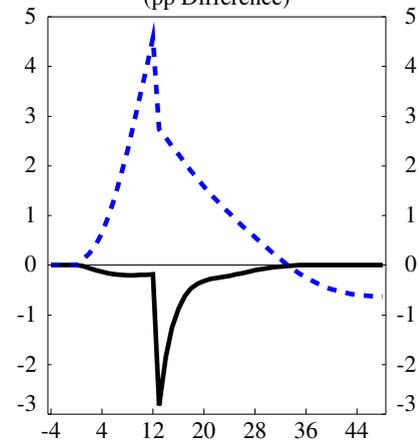
Bank Loans/GDP

(pp Difference)



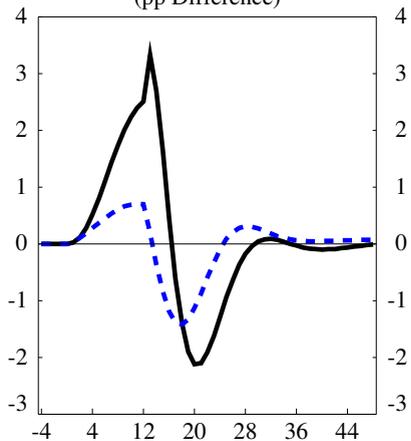
Bank Basel Ratio

(pp Difference)



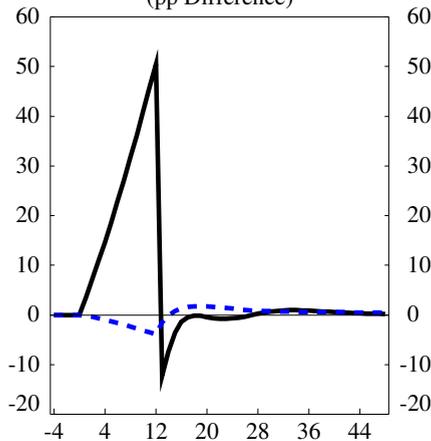
Inflation

(pp Difference)



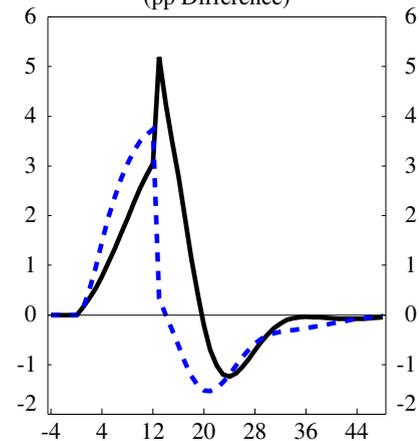
Bank Deposits/GDP

(pp Difference)



Real Wholesale Lending Rate

(pp Difference)



6. No liquidity traps

Main tools of monetary policy under the Chicago Plan:

1. Nominal money growth rule (on very broad money) that controls inflation.
 2. Interest rate rule that controls the price of treasury credit to banks.
- + Countercyclical Basel capital adequacy rule that affects the quantity of bank lending.

With these rules there can be no liquidity trap:

1. Broad money is directly controlled by government, rather than by banks.
2. The interest rate on treasury credit can become negative
⇒ no zero interest rate floor (ZIF).

This has favorable implications for steady state inflation $\bar{\pi}$:

- Under the current regime the 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, the Chicago Plan is less, not more, inflationary
than the current system!

4 Answers to Common Questions

4.1 Will The Transition Be Too Difficult?

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

4.2 Will The Banking System Become Uncompetitive?

- The banking system remains completely private.
- Core banking activities can become much more efficient.
- 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.
- Only change: No more credit proliferation to create the money supply.

4.3 Will We Lose The Benefits Of Maturity Transformation?

- Maturity transformation is not an end in itself.
- Maturity transformation accomplishes two objectives:
 1. Provides desired maturity profiles: Short-term liquid assets for investors, longer-term illiquid liabilities for corporate borrowers.
 2. May reduce borrowing costs (not necessarily if banks have market power).
- The Chicago Plan not only accomplishes both objectives, it does better:
 1. Desired maturity profiles:
 - Are available, without requiring any maturity transformation.
 2. Borrowing costs:
 - Are much lower, due to the large economy-wide debt-to-equity swap.

4.4 Could The Rest Of The World Cause Trouble?

- Can one country “go it alone” with the Chicago Plan?
- Concern 1: Fundamentals-Based Speculative Attacks
 - The usual reason for attack would be weak fiscal fundamentals.
 - But the Chicago Plan makes the fiscal situation extremely strong.
 - It also makes the real economy much stronger.
 - The country’s monetary assets are extremely safe and thus attractive.
- Concern 2: Irrational Speculative Attacks
 - A central bank can crush currency speculators if they do not have access to private banks that create local currency on demand.
 - This condition is satisfied under the Chicago Plan.
 - The actions of Schacht in Germany in 1923 are a prime example.
- If that does not help, one can always consider temporary capital controls.

4.5 Will Government Control Over Credit Be Excessive?

- Government control over credit is not a necessary feature:
 1. Private investment trusts fund a large share of credit in our model.
 2. Treasury credit funding of investment trusts can become very small.
 3. Government control over the price of credit need not imply control over the volume of credit and over its allocation.
- But some government control over credit is in fact desirable:
 1. Quantitative lending guidance simulation: Smoother business cycles.
 2. QLG was at some point, and for decades, practised all over the developed world and many parts of Asia.
 3. Richard Werner shows that this practice was mostly highly successful.
 4. Additional benefit: QLG helps to control fluctuations in money velocity.

4.6 Will Reduced Bank Lending Cause Deflation?

- Under the Chicago Plan bank lending no longer has anything to do with the money supply, but it could affect the velocity of money.
- **The broad money supply:**
 - Is directly controlled by policy.
 - Without depending on banks.
- **Velocity** fluctuations can be controlled through a combination of:
 - The interest rate on treasury credit.
 - Quantitative lending guidance.
 - The interest rate on money.
- Deflation is therefore not a threat.

4.7 Will Government Control Over Money Cause Inflation?

No, for three sets of reasons, based on:

1. Monetary Theory.
2. Monetary History.
3. Institutional Arrangements for Money Issuance.

1. Government-Issued Money and Inflation - Theory

- Inflation is determined by the relative quantities of money in private hands and of goods.
- The quantity of money in private hands remains virtually unchanged when transitioning to the Chicago Plan.
- This can therefore not be inflationary.
- What changes is what the existing money represents:
 - “Destructible” private loans under the present system.
 - “Indestructible” public reserves under the Chicago Plan.

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: 100% Reserve Backing

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

Chicago Plan: Final Balance Sheet

184	Reserves	184	Deposits
-----	----------	-----	----------

80	Investment Loans	71	Treasury Credit
		9	Equity

184	Reserves	184	Treasury Credit
-----	----------	-----	-----------------

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.

2. Government-Issued Money and Inflation - History

- 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 to a significant extent by banks.

3. Government-Issued Money and Inflation - Institutional Arrangements

- Proposal: Turn money issuance over to a fourth power of government.
- Constitutional independence similar to that of the Supreme Court.
- This would insulate money issuance from pressures coming from both government and private interests.

5 Application: Central Bank Purchase of NPL

- There are several successful historical examples for this policy:
 - United Kingdom in 1914 (large bank loans to Continental powers).
 - Japan in 1945 (almost all bank loans were non-performing).
- It simultaneously improves the balance sheets of the government, banks and private borrowers.
- Understood correctly, this policy amounts to a small-scale version of the Chicago Plan.
- This is an almost completely painless alternative to policies that resolve bank solvency issues through the destruction of part of the money supply, a policy that would surely have horrified the Chicago School economists .

Application: Central Bank Purchase of Non-Performing Loans (Richard Werner)

1. Initial Balance Sheets

Assets		Central Bank		Liabilities	
20	Other Assets	20	Money		

Assets		Banks		Liabilities	
170	Other Loans	184	Deposits		
30	Non-Perf. Loans	16	Bank Equity		

Application: Central Bank Purchase of Non-Performing Loans (Richard Werner)

2. Purchase of NPL (worth 40%):
Banks are now in perfect shape

Assets		Central Bank		Liabilities	
20	Other Assets	20	Cash		
30	Non-Perf. Loans	30	Reserves (Equity)		

Assets		Banks		Liabilities	
170	Other Loans	184	Deposits		
30	Reserves	16	Bank Equity		

Application: Central Bank Purchase of Non-Performing Loans (Richard Werner)

3. Raise banks' reserve requirement in line with higher reserves

Assets		Central Bank		Liabilities	
20	Other Assets	20	Cash		
30	Non-Perf. Loans	30	Reserves (Equity)		

Assets		Banks		Liabilities	
170	Other Loans	184	Deposits		
30	Reserves	16	Bank Equity		

Application: Central Bank Purchase of Non-Performing Loans (Richard Werner)

4. Write off the NPL against equity

Government net gain = 12

Assets		Central Bank		Liabilities	
20	Other Assets	20	Cash		
12	Recovery on Loans	12	Reserves minus Write-Offs (Equity)		

Assets		Banks		Liabilities	
170	Other Loans	184	Deposits		
30	Reserves	16	Bank Equity		

6 Summary

- Whether the Chicago Plan is desirable comes down to a cost-benefit analysis.
- The Benefits:
 1. Dramatic reduction of the (net) public debt, to around zero.
 2. Dramatic reduction of private debts, to around half.
 3. Much better control of bank-lending-driven business cycles.
 4. Complete elimination of bank runs.
 5. Large output gains approaching 10%.
 6. No liquidity trap problems, zero long-run inflation attainable.
- The Costs:
 1. Transition period may be difficult.
 2. Substitute monies could perhaps become a problem.
 3. All other arguments concerning alleged costs can be refuted.
- Given the large benefits, the difficulties of the transition would have to be enormous to justify not considering the Chicago Plan at all.

7 Discussion

- The Great Recession has shown that too much of an “exciting”, “innovative” financial system can cause significant problems that distract attention from the productive sector.
- But we need a really exciting productive sector more than ever.
- What we need in order to facilitate that is a really boring financial system:
 - A completely safe, crisis-proof payments system.
 - Lending banks that act as conservative intermediaries.
- The Chicago Plan has many elements of such a system.