

» State banks and public infrastructure investment «

State-Level Banking and Public Sector Finance Options

Prof. Richard A. Werner, M.A., D.Phil. (Oxon)

Professor of Banking and Economics

Corvinus University, Budapest

University of Winchester, England

Modul University, Vienna

**Workshop at the
MSU Extension Center for Local Government Finance & Policy
Department of Agricultural, Food and Resource Economics
Michigan State University
East Lansing
Michigan, USA**

29 October 2025

Agenda today

1. Learning from winners: How did China achieve its phenomenal success?
2. Public infrastructure investment and its finance plus finance of small firms
3. Why it's important to have many small banks – a historic US strength
4. Small banks are under threat – how to strengthen them: A state bank
5. Other win-win options: Finance of infrastructure investment from state-chartered banks and a new State Bank.
6. Outlook

Chinese Infrastructure Investment

Public infrastructure investment as % of GDP in the past quarter-century

(incl. all levels of government and state-owned enterprises; fed., state, local)

Germany: 1-2%

USA: 2-3%

Japan: ca. 3%

China: 8-9%

- While the US has been spending about 2-3 cents of every dollar of its economy on public infrastructure, China has been spending over 8 cents of every dollar.
- For decades, China has been out-investing the US, relative to the size of its economy, **by a factor of three to four times.**

Examples: High Speed Rail (HSR)

- In 2008, China had **zero kilometres of high-speed rail – just like the USA today.**
- **Today, in 2025, it has more than 42,000 kilometres (26,000 miles) of dedicated HSR lines – more than two thirds of the world's total high speed rail network**
- USA: The entire Amtrak Acela service (the closest thing the US has to HSR) on the Northeast Corridor covers about 735 km (457 mi), and it's not true high-speed by global standards. China has built the equivalent of 57 Northeast Corridors in 15 years.
- In China, one can now travel from Beijing to Shanghai (819 miles, similar to NYC to Chicago) in about 4.5 hours. In the USA, this presently takes ca. 22 hours.

Chinese Infrastructure Investment

Examples: Urban Metro Systems

- In 2000, only 4 Chinese cities had urban metro systems.
- Today, in 2025, more than 45 Chinese cities have metro systems.
- Shanghai has the **world's largest urban metro system** by route length (500 miles), followed by Beijing, the world's second largest.
- Speed of construction: China has built more metro tunnel length in the last 10 years than the rest of the world combined.
- Bridges and Highways: In 1990, there were no expressways. Now there are ca. **100,000 miles of express highways** in length, rivalling the US Interstate Highway System, but built mostly in the last 25 years only.
- **The Danyang-Kunshan Grand Bridge** is the longest bridge in the world, a 102 mile-long viaduct on the Beijing-Shanghai highspeed railway. That's longer than the entire drive from Boston to Providence.
- The Hong Kong- Zhuhai-Macau Bridge: the longest sea-crossing bridge and tunnel system in the world, stretching 34 miles, for which artificial islands and submerged tunnels were built, across the Pearl River Delta.

Chinese Infrastructure Investment

How was this financed? (1)

- Problem: Local governments are restricted from taking on much debt, but needed funds for projects.
- Solution: Creation of **Local Government Financing Vehicles (LGFVs)**, corporate entities owned by local governments.
- The LGFV would receive land usage rights of land that initially was designated as agricultural use.
- The land use would be upgraded to industry/business or residential/urban use.
- The LGFV would take out significant loans from banks with this land as collateral.
- With the funds obtained from the banks, the LGFV would build roads, bridges, parks and other valuable public infrastructure.
- Land could then be sold to various bidders at far higher prices (post usage change and post-infrastructure investment), to repay the loans.
- This formed the backbone of municipal infrastructure financing.

Chinese Infrastructure Investment

How was this financed? (1)

- A positive feedback loop was utilised for rapid urbanisation & development:
 1. An LGFV uses land as collateral for a loan to build infrastructure
 2. The new infrastructure (e.g. new subway line) makes the area more desirable
 3. The local government sells the land leases to real estate developers at massively higher prices.
 4. The profit from the land sale is used to fund the local government's budget and service the LGFV's debt.
- Two price/value uplift mechanisms:
 1. Upgrading from agricultural use to commercial or residential use – must be done while under state or local government ownership! (Value increase ca. 5000-8000%)
 2. Public infrastructure investment significantly boosts the value of land/properties – again, upgrade should happen while under public ownership so the public receives much of the uplift (several 100%)

Chinese Infrastructure Investment

How was this financed? (2)

- State-owned banks and funding from domestic banks
- No need for separate funding bills for each project. **State banks** were simply instructed to provide loans to the construction companies, like China Railway Group and to **local governments**.
- In 2008, the Chinese government implemented a \$600 billion stimulus package, which was **routed through state-owned banks**, so that banks could then provide a **multiple of this sum in loans, unleashing trillions of dollars in investment**.

The Warren Buffet Method

Finance Structure to Leverage Impact

- This is similar to the method used by **Warren Buffet** at the beginning of his investment career to decisively move ahead of the competition in terms of his investment performance.
- Instead of managing e.g. \$100 million entrusted to him by directly buying stocks, he used the **\$100 million as capital for a new bank** that he established.
- Then the bank could invest in ca. **\$ 2 billion worth of investments** – while the original investors providing the \$100 million earn returns on all the \$ 2 billion via their ownership of the bank.
- In other words, the impact of the investment was multiplied by a factor of **20x**

The Leverage of Bank Finance

Banks dramatically increase investment impact

- If the **State of Michigan creates a special purpose bank** with, say, **\$100 million in capital**, this is a **one-off** investment that does not have to be funded from the annual budget, but is **capital expenditure** and can be funded from **reserves** and/or funds, such as state pension funds, etc.
- The bank can then collect deposits from savers at modestly attractive interest rates, and then can lend funds for state projects amounting to **\$3 billion**, while still having a very high capital adequacy ratio.

How did China achieve 40 years of double-digit growth?

- China's economic growth averaged 10% in real terms from 1977 to 2017 (40 years)
- This means **national income in real terms is doubled every 7 years.**
- This phenomenal success lifted more people out of poverty than anywhere before in history
- Thanks to such high and sustained growth China moved decisively from developing to developed country status.
- How did China do this?

What was the Methodology of Deng Xiao Ping – the Methodology that created the most successful economy ever?

- Go back over 40 years to the Third Plenum of the 11th Communist Party of China Central Committee in December 1978: The newly appointed Vice-Premier Deng Xiao Ping delivers a speech in which he urges the Party cadres to

“liberate their thinking” (from preconceived, i.e. unscientific ideas) and to “seek truth from facts.”



- In other words, Deng Xiao Ping's Reforms in 1978, which were **to change world history**, began with a **change in methodology**.
- Deng Xiao Ping **dropped evidence-free belief in ideology** and false assumptions and axioms. Instead, he insisted on basing all **state action henceforth on the scientific methodology** in the quest to find that type of “cat that catches the mice”.
- This was a radical step in China.
- But it was – and remains – **revolutionary in Western economics, which still sticks to the ideological adherence to the Washington Consensus equilibrium approach**

Chinese High Economic Growth and Banks

How did China achieve 40 years of double-digit growth?

- When Deng Xiaoping rose to prominence in 1978, he first travelled to Japan
- He asked the Japanese how they achieved 12% growth for two decades.
- He asked them to tell him the “Elixir of High Growth”
- They did.
- They asked him how many banks China had.
- He answered: 1 bank (the central bank)
- They told him he would need many banks – as many as possible.
- He went back to China and created 5000 banks, mostly local banks and provincial banks.

Deng Xiaoping discovered the “Elixir of Economic Growth”

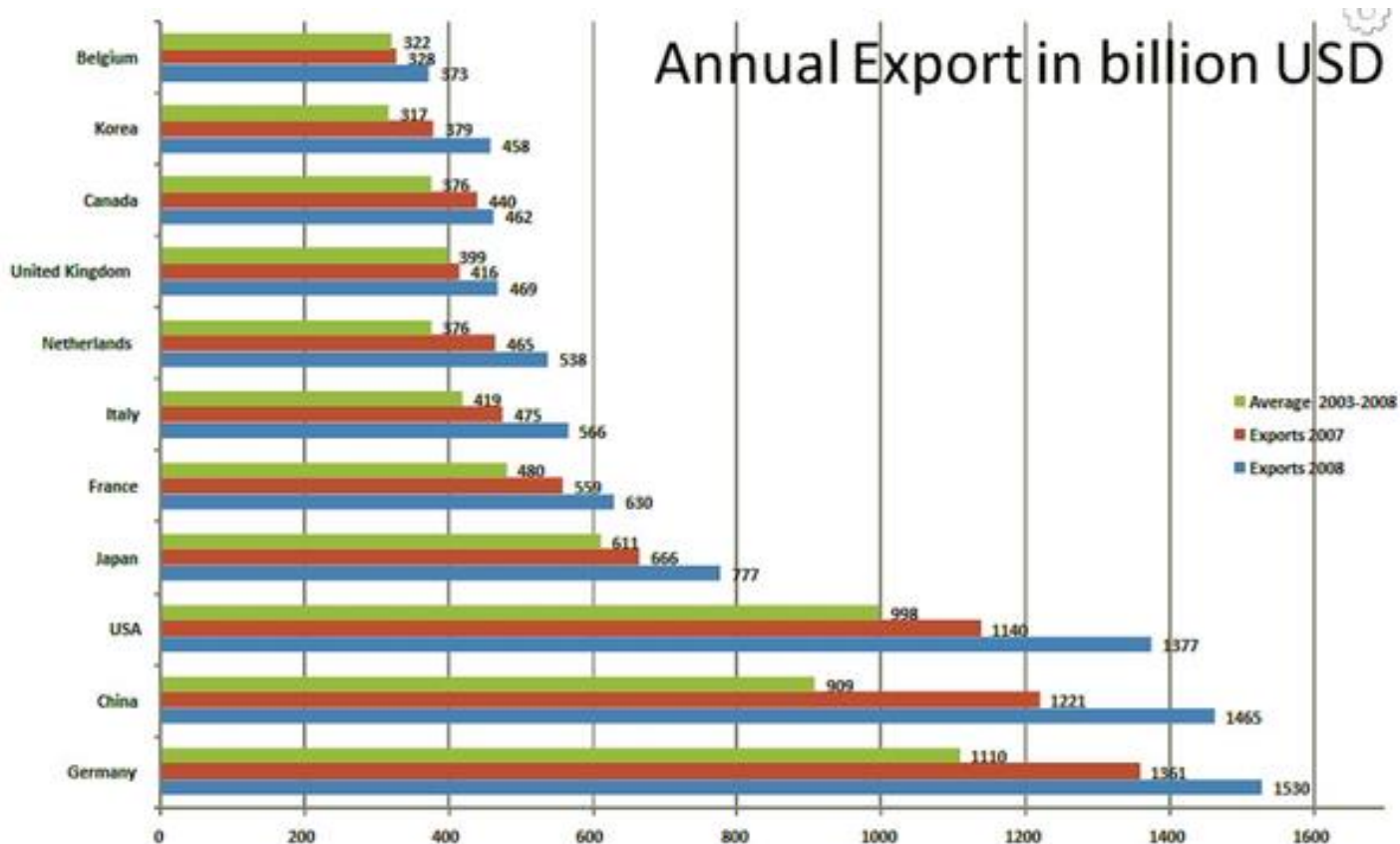
The Philosopher’s Stone: Bank Credit Creation



- Once we “**seek truth from facts**” and recognise that all markets are always rationed, we also see that government intervention can quite easily improve market outcomes

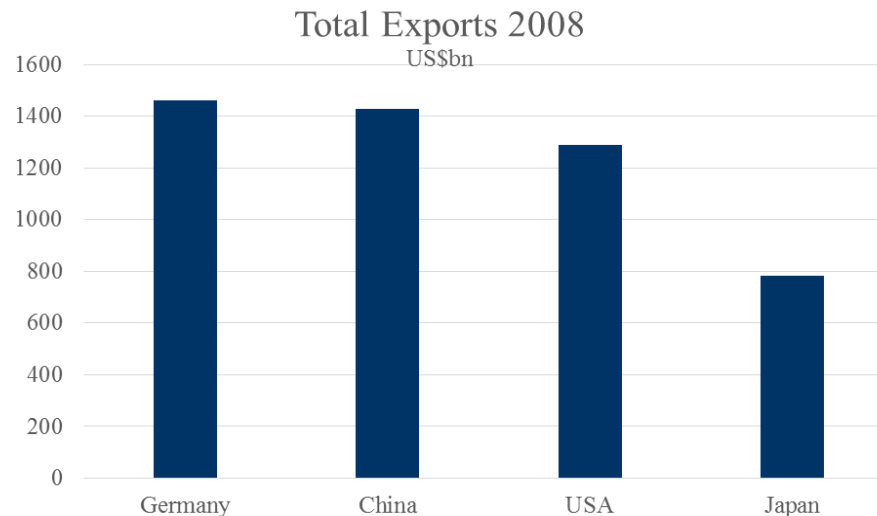
Gauge of a Thriving Economy and High Productivity: Exports

Who has been thriving most?



The secret of 200 years of strong German performance

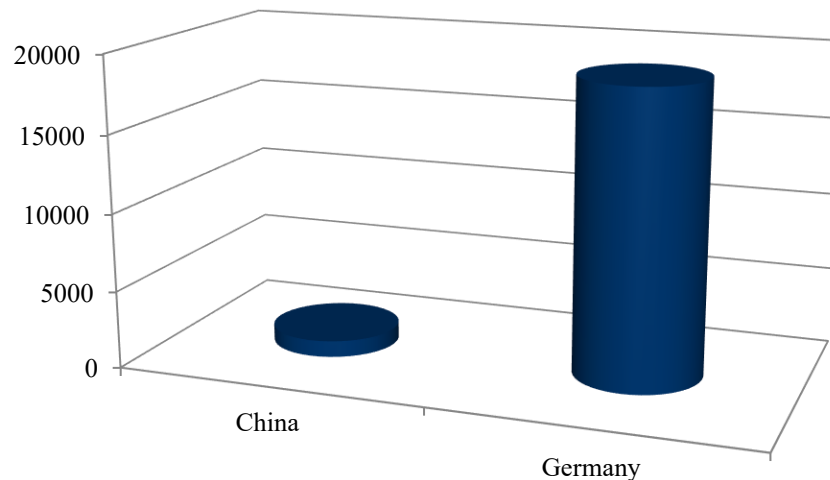
- For the past 200 years the German economy has consistently been one of the strongest in the world.
- German exports have been almost **as large as Chinese exports**, although the German population is a mere **6% of the Chinese**



How could German exports be this successful?

- Germany is the major economy with the highest exports per capita in the world
- While big German brands are well-known, there are thousands of highly successful small German firms – mostly family-owned businesses – that are **world market leaders** in many industries
- They have been contributing significantly to the German export success and have produced a stable, decentralised economy with a lot of job creation and high overall productivity

Exports per capita

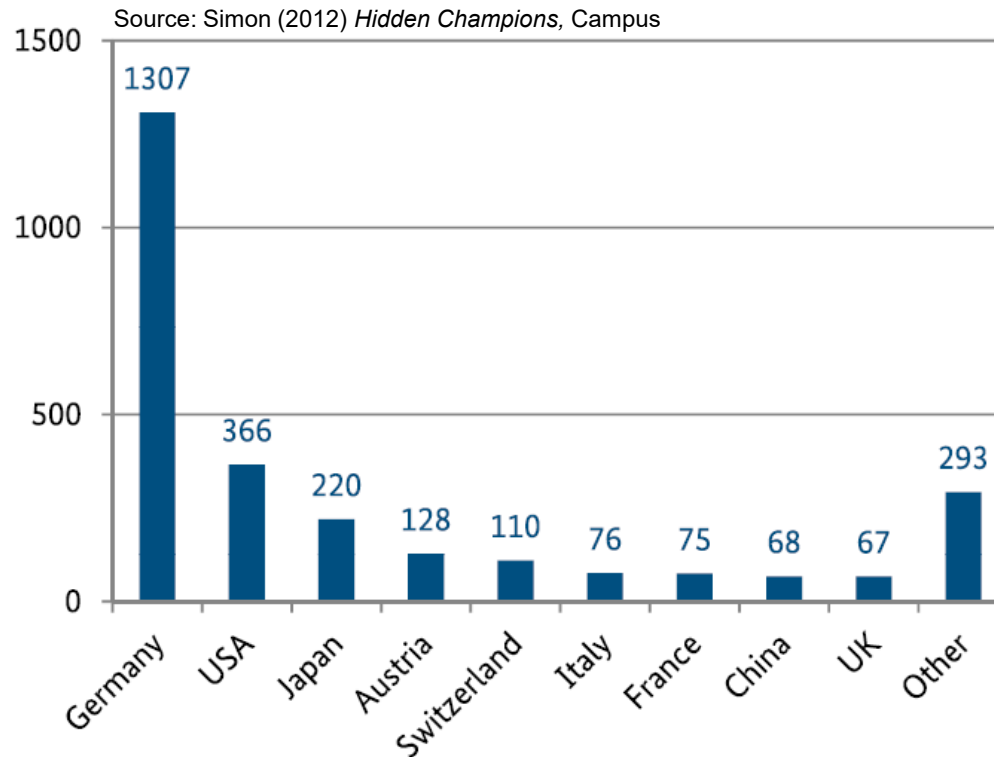


Secret of Success: The Hidden Champions

- Define “**Market Champion**” = a company that has no. 1, 2 or 3 market share in the world in its industry
- Define “**Hidden Champion**” = a small or medium-sized enterprise (SME) that is a market champion
- Why SMEs?
 - **They** account for **two thirds of employment in most economies**. They are **the biggest employer**.
 - Small firms are a **job multiplier**: Money invested in small firms creates **many more jobs** than the same amount invested in a large firm
- **Which country has most Hidden Champions in the world – by far?**

The secret of 200 years of strong German performance

Number of 'Hidden Champions'

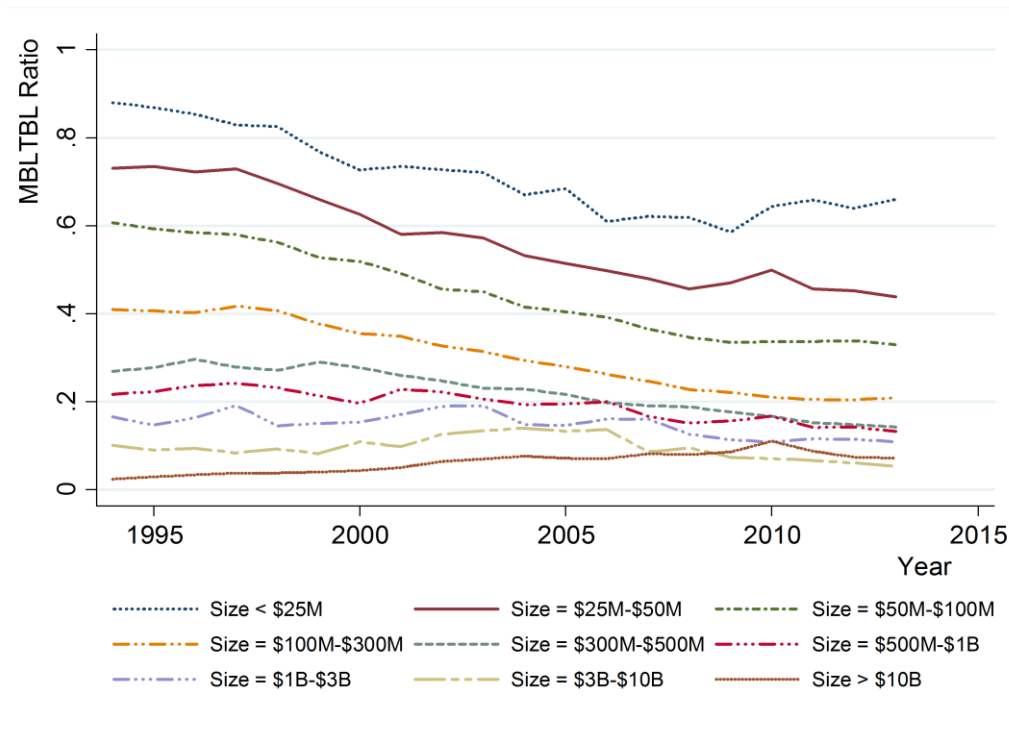


- Independent study by consultants: “No other country in the world has so many “**Hidden Champions**” as Germany: 1,300 small firms are **global market leaders** in their respective markets
- This is unique in the world. **How is this possible?**

What is the relationship between bank size and borrower size?

15,000+ US banks, 20-year time period. Nine bank size categories:

The ratio of micro-business lending to total business lending



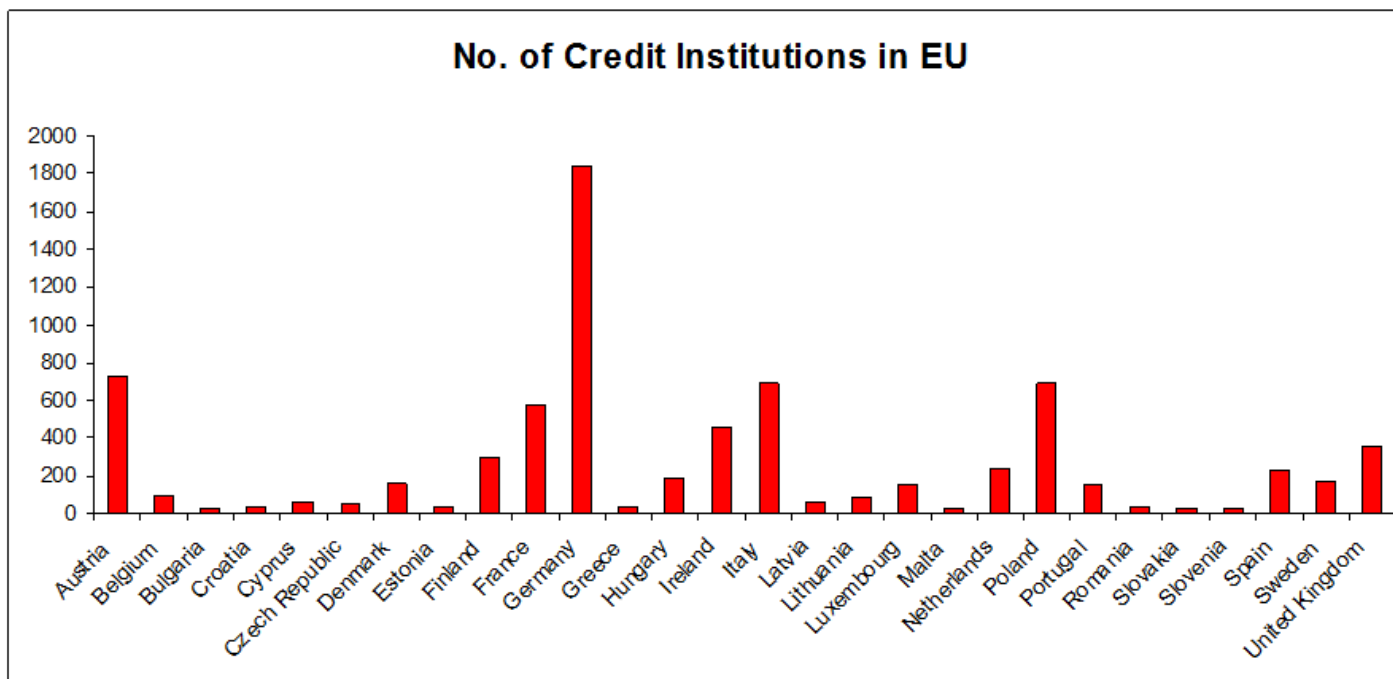
Finding: Large banks prefer to lend to large firms.

Who lends more to small firms? Small banks.

Mkhaiber and Werner (2021), *Journal of International Money and Finance*

- ***Basic rule in banking:***
Large banks lend large amounts to large borrowers.
They are not interested in small firms.
- In the UK they are so large, they mainly lend to asset buyers (mortgages, hedge funds, PE funds)
- **Who lends to small and medium-sized enterprises?**
Small banks. The UK doesn't have many. What about Germany?

Which European economy has the largest number of banks?



Source: ECB, Monetary and Financial Statistics, Lists of Financial Institutions, May 2014

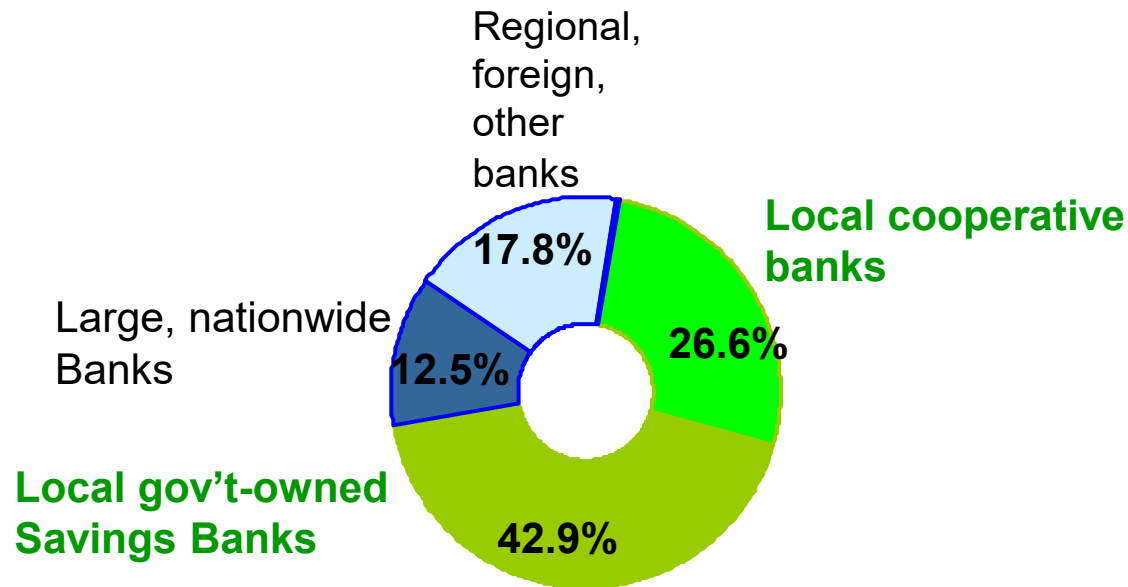
Germany has more than ten times as many banks engaged in SME lending than the UK.

A: Germany is world champion in community banking

- Germany has the largest number of **small, local community banks** in the world (1,500)
- 70% of bank deposits are with community banks, 80% of all banks are not-for-profit local community banks, and over 90% of SME lending is from such local banks
- German community banks were **not affected by the 2008 crisis**
- Community banks **increased SME lending when the 2008 crisis hit** – so there was **no recession and no increase in unemployment**
- **Japan, Korea, Taiwan have many banks**
- **China switched from Soviet monobanking to thousands of banks before growth took off**

The German banking sector

70% of bank deposits are with 1,500 community banks



The Evidence on Centralised Decision-Making (1): UK

- The **UK** banking system is one of the most **concentrated ones** in the world.
- **About 90% of all deposits are with just 5 banks**
- **Decision-making is centralised in the London headquarters**

One of many official government reports/commissions on banking

Colwyn Report, 1918 (*Report of the Treasury Committee on Bank Amalgamations* of 11 March 1918)

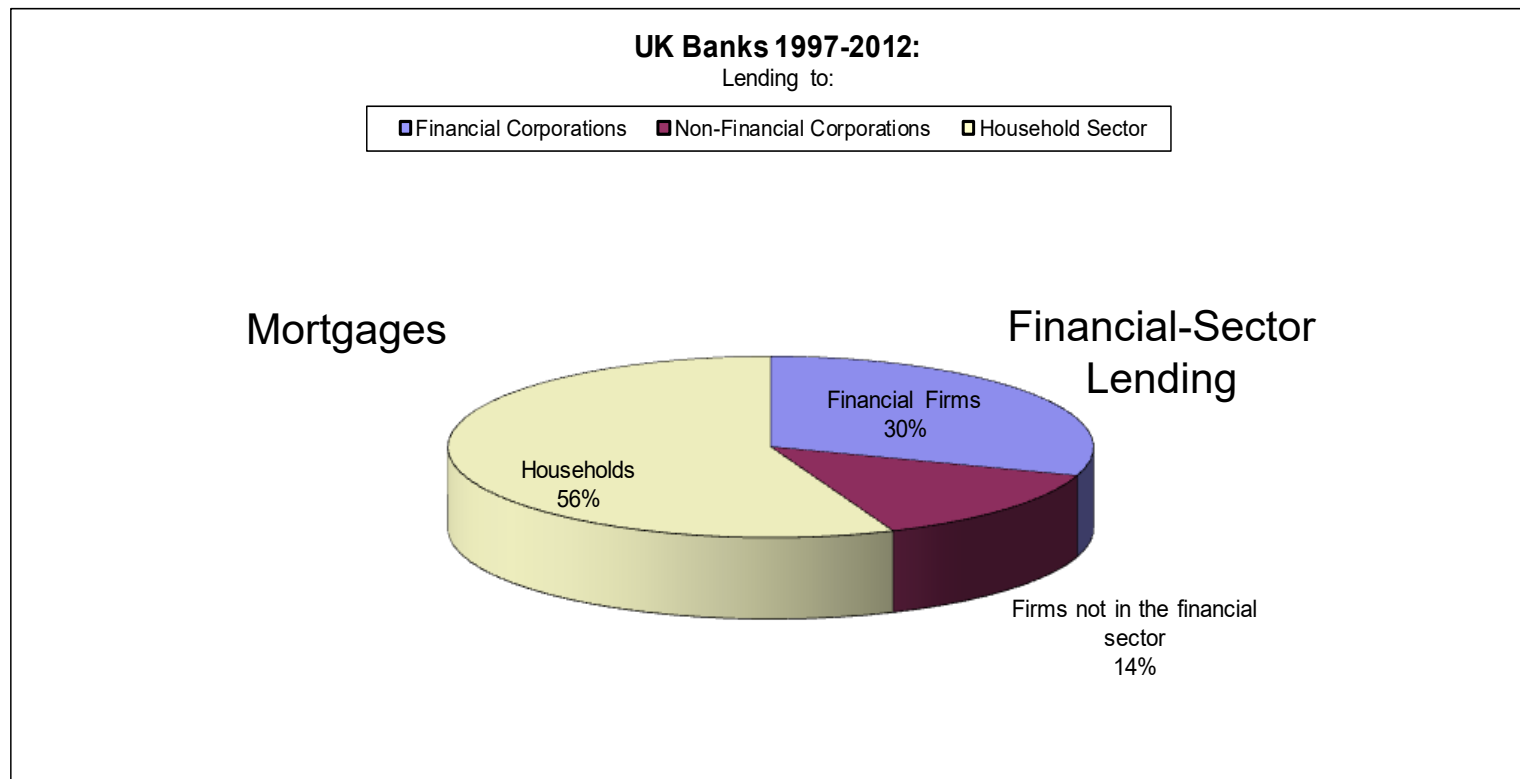
- There is a **“lack of competition”** in the UK banking industry.
- **UK banking dominated** by the **“Big Five” clearing banks** based in London
- The Big Five fail to provide long-term investment loans; mainly up to 1 year
- **Small firms** find it hard to obtain funding from banks.

*“The British banking system emerged from World War I with a **degree of centralization unprecedented among major industrial nations**. Five major clearing banks formed a collusive oligopoly that constituted one of the most powerful and enduring monopoly positions in any major British industry” (p. 881).
Scott and Newton (2007)*

- **The UK has suffered from low overall productivity for a century**
- **Productivity is high when exports are high**
- **What explains low UK and high German productivity?**

In the UK, banks hardly lend to productive firms, let alone SMEs

86% is Asset-Credit (1997-2012)



Why are Banks so Important?

How does the economy work?

Secrets of the Banking Trade

The Rules of the Money Game

- Q: What matters in the economy?
- A (ordinary people): “Money; Banks”
- A (economists): “Money & banks don’t matter. The key is the rate of interest”

The Three Theories of Banking and the Evidence

Theories of Banking and the Economy

1. The Financial Intermediation Theory: Banks are like non-banks.
2. The Fractional Reserve Theory: Each bank is an intermediary
3. The Credit Creation Theory: Each bank creates new money

Theory of Banking	Period of dominance	Source of loan money	Banks create money individually	Banks create money collectively	Corresponding approach to bank regulation
Financial Intermediation Theory	since 1960s	Deposits			Capital adequacy (Basel I, II, III)
Fractional Reserve Theory	about 1920s to 1960s	Reserves			Reserve requirements
Credit Creation Theory of Banking	until about the 1920s	----- (<i>ex nihilo</i>)			Credit growth quotas ('credit guidance')

The Three Theories of Banking and the Evidence

Three Theories of Banking and the Economy

1. The Financial Intermediation Theory: Banks don't matter, ignore them
2. The Fractional Reserve Theory: Each bank is an intermediary
3. The Credit Creation Theory: Each bank creates new money

Which one is correct?

- **For a century economists propagated theories without any scientific basis**
- **Finally, scientific evidence instead of assertions:**

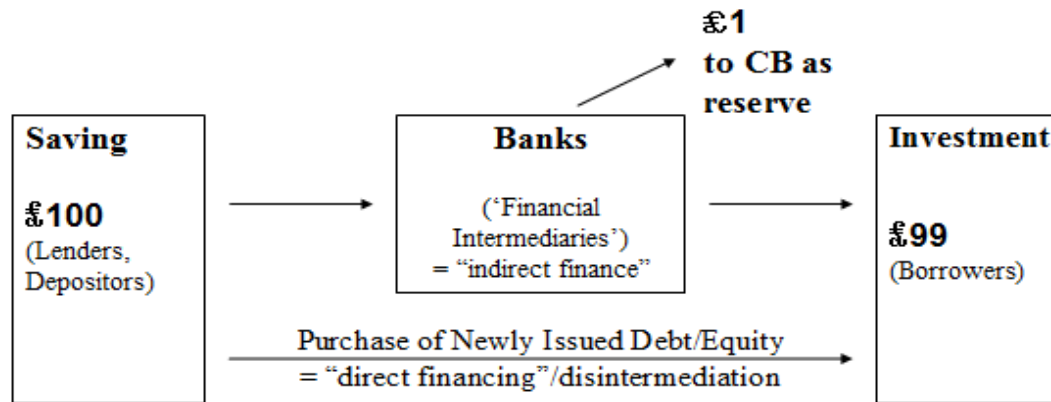
Werner (2014): Can banks individually create money out of nothing?

Werner (2016): Lost century in economics

Are banks special? If so, why?

Official Story: Banks are mere financial intermediaries, like other non-bank financial institutions.

Textbook Representation of Banks as Mere Intermediaries



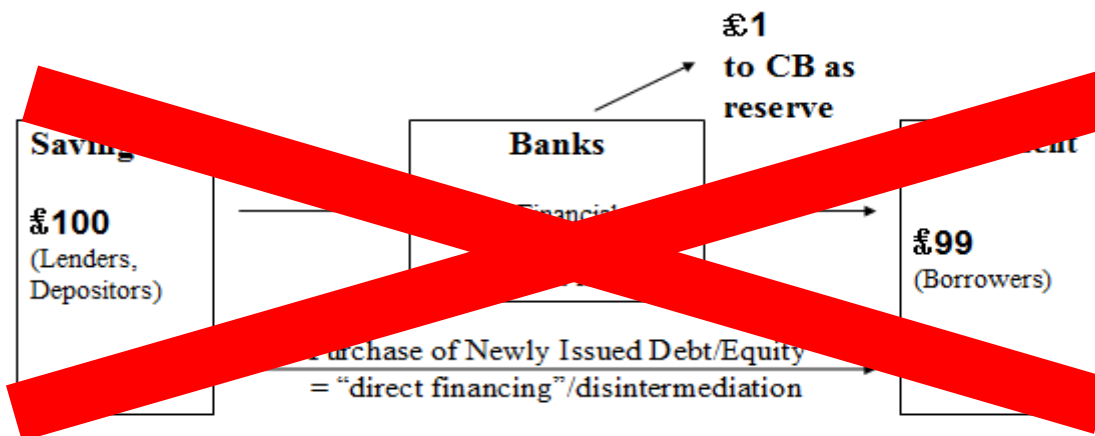
- “Banks gather deposits (savings) first and then hand out this money to borrowers”
“Banks act as mere intermediary agents.” (*Financial Intermediation Theory*)
- “Banks put a reserve aside with the central bank. New loans are extended out of new reserves.” (*Fractional Reserve Theory*)

Werner (2014)*: Can banks individually create money out of nothing?

Werner (2016): Lost century in economics

- **First empirical tests** on the 3 theories of banking, published in a peer-reviewed journal
- **Result:** Banks are not financial intermediaries. Even the fractional reserve theory of banking is not true, as it claims each bank is an intermediary that can't create money.
- **Finding:** Only the credit creation theory of banking is correct (Macleod, 1854; Schumpeter, 1912; Werner, 1992).
- Each bank individually creates new money via credit creation when a loan is granted
- **97% of our money supply is created by banks (which aren't financial intermediaries)**

Textbook Representation of Banks as Mere Intermediaries



*most downloaded article in all of Elsevier's thousands of scientific journals 32

Economists: “Banks are deposit-taking firms that lend money“

Legal reality: Banks don't take deposits & don't lend money

Banks do not take deposits: They borrow: At law, ‘deposits’ are loans to the bank.

- When a ‘deposit’ is made with a bank, the money is not ‘on deposit’ (i.e. held in custody by the bank). It is owned & controlled by the bank, not the ‘depositor’.
- This is because the ‘depositor’ **lends** money to the bank, and becomes a **general creditor** of the bank. Deposits are records of the bank's debts.

Banks don't ‘lend’ money: (unlike firms, insurance companies, others).

- They **purchase securities** – the ‘loan contract’ is a **promissory note** (like BoE notes, but without legal tender status) that the bank acquires.
- **The bank does not pay out the money** referred to in the loan contract. Instead, just as with a ‘deposit’, it records a ‘credit’ on behalf of the customer in its records of **its own debts to the public**. We use this as ‘money’ (Werner, 2014b).

Trade Secret: What makes banks unique

The case of a €100,000 loan

Step 1 The bank ‘purchases’ the loan contract from the borrower and records this as an asset.

Balance Sheet of Bank A

Assets	Liabilities
€ 100,000	

Step 2 The bank now owes the borrower €100,000, a liability. It records this however as a **fictitious customer deposit**: the bank pretends the borrower has deposited the money, and nobody can tell the difference.

Assets	Liabilities
€ 100,000	€ 100,000

NB: No money is transferred from elsewhere

So the creditor (the bank) doesn’t give up anything when a loan is ‘paid out’

Banks are special. They create the money supply

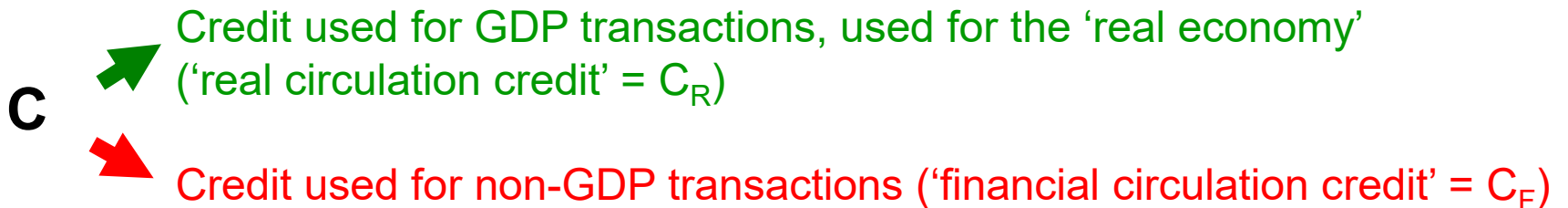
- Unlike non-bank financial institutions, **banks create money**.
- They do this by what is called 'bank lending': **credit creation**.
- The money for a bank loan is newly created by the bank.
- **Banks decide who gets newly created money and for what purpose.**
- **Banks reshape the economic landscape through their loan decisions.**
- Now we know why **central banks** often conduct their true monetary policy by **'guiding' bank credit**.

What causes the recurring boom-bust cycles and crises?

The Quantity Theory of Credit (Werner, 1992, 1997):

Credit creation must be divided into 2 streams:

- credit used for the real economy, causing GDP growth, and
- credit used for or financial transactions, determining asset prices



Quantity Theory of Credit (Werner, 1992, 1997):

Rule: The allocation of bank credit creation determines what will happen to the economy – good or bad...



financial (non-GDP) credit C_F

= unproductive credit
creation

real economy (GDP) credit C_R

Case 2: Consumption credit

Result: Inflation without growth

Case 1: Financial credit
(= credit for transactions that do not
contribute to and are not part of GDP):

Result: Asset inflation, bubbles
and banking crises

Case 3: Investment credit
(= credit for the creation of new
goods and services or productivity
gains that generate income)

Result: Growth without inflation,
even at full employment

= productive credit creation

What has often gone wrong with this process?

Quantity Theory of Disaggregated Credit (Werner, 1992, 1997):
Rule: The allocation of **bank credit creation** determines what will happen to the economy – good or bad...

Bank credit creation

financial (non-GDP) credit C_F

= unproductive credit
creation

Case 1: Financial credit
(= credit for transactions that do not contribute to and are not part of GDP):

Result: Asset inflation, bubbles
and banking crises

Unsustainable

real economy (GDP) credit C_R

Case 2: Consumption credit

Result: Inflation without growth

Case 3: Investment credit
(= business credit for the creation of new goods and services or technology implementation/ productivity gains that generate income)

Result: Growth without inflation,
even at full employment

= productive credit creation

Sustainable

Recognition of Bank Credit Creation is a Game Changer for...

- Government policy (monetary policy, fiscal policy, regulatory policy)
- Recognition of the banks' true role is the precondition for solving many of the world's problems, including
 - the problem of the recurring banking crises,
 - unemployment,
 - business cycles
 - underdevelopment and the
 - depletion of finite resources.
- Abundance and prosperity are possible, if we deploy bank credit creation for the people.

What has often gone wrong with this process?

The Quantity Theory of Disaggregated Credit (Werner, 1992, 1997)

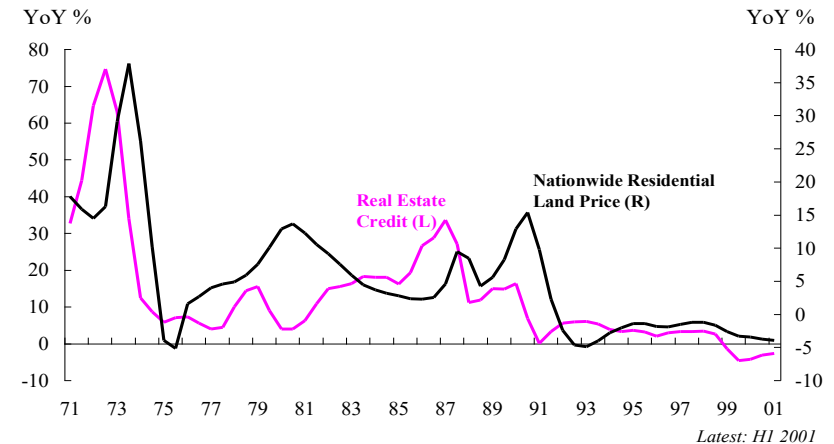
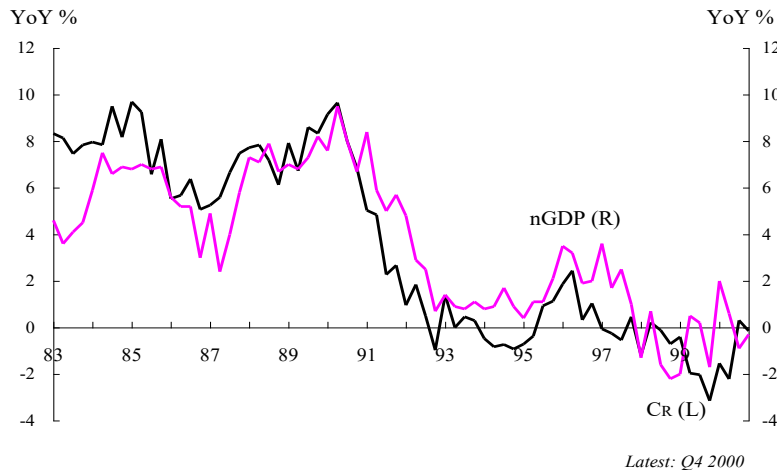
$$C = C_R + C_F$$

$$\Delta(P_R Y) = V_R \Delta C_R$$

nominal GDP 'real economy credit creation'

$$\Delta(P_F Q_F) = V_F \Delta C_F$$

asset markets financial credit creation



Empirical result of GETS methodology:
'Real economy credit' determines nominal
GDP growth

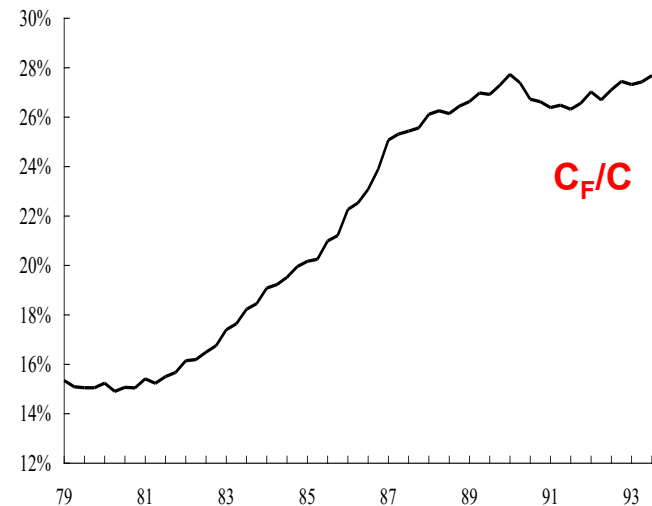
Financial credit determines asset prices –
leads to asset cycles and banking crises

Banking Crises

Rule: Credit for financial transactions explains boom/bust cycles and banking crises

- A significant rise in **credit creation for non-GDP transactions (financial credit C_F)** must lead to:
 - asset bubbles and busts
 - banking and economic crises

- **USA in 1920s:** margin loans rose from 23.8% of all loans in 1919 to over 35%
- **Japan in the 1980s:** C_F/C rose from about 15% at the beginning of the 1980s to almost twice this share
- **Thailand, Indonesia, Korea in 1990s**
- **UK banks 2001-11:** credit for the UK real economy accounted for only **22%** of total assets

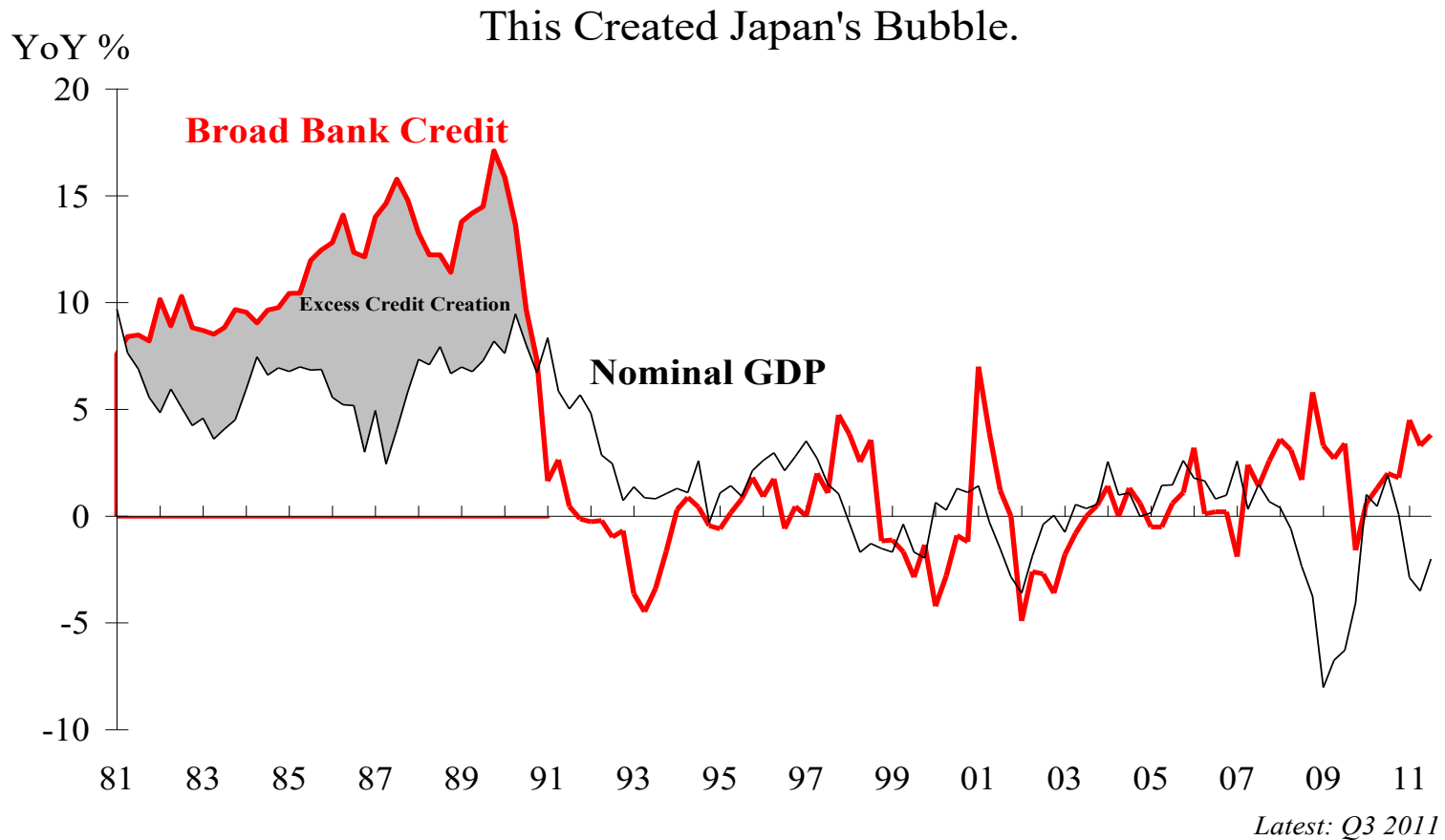


Source: Bank of Japan

C_F/C = Share of loans to the real estate industry, construction companies and non-bank financial institutions

Rule:

Broad Bank Credit Growth > nGDP Growth = banking crisis



Which “Developing Countries” Have Ever Developed?

- In the 20th century, arguably only **five countries** have ever made a convincing transition from “developing country” status to “developed” economy.
- These are all in East Asia.
- **Japan, South Korea, Singapore, Taiwan and China** delivered spectacular, double-digit economic growth, lifting millions out of poverty

How was such high growth achieved?

- At 10% GDP growth, national income is **doubled in 7 years**.
- Most economists in Europe and the US concluded that such high growth was due to deregulation, liberalisation, privatisation and allowing free markets and free trade to prevail – neoclassical economics allows no other explanation.
- In actual fact, the **East Asian High Growth model** adopted policies **contrary to and forbidden by** the Washington Consensus institutions

High Growth if Bank Credit Is Channeled into Investment

Quantity Theory of Disaggregated Credit (Werner, 1992, 1997):
Rule: The allocation of **bank credit creation** determines what will happen to the economy – good or bad...

Bank credit creation

financial (non-GDP) credit C_F

= unproductive credit creation

Case 1: Financial credit
(= credit for transactions that do not contribute to and are not part of GDP):

Result: Asset inflation, bubbles and banking crises

Unsustainable

real economy (GDP) credit C_R

Case 2: Consumption credit

Result: Inflation without growth

Case 3: Investment credit
(= business credit for the creation of new goods and services or technology implementation/ productivity gains that generate income)

Result: Growth without inflation, even at full employment

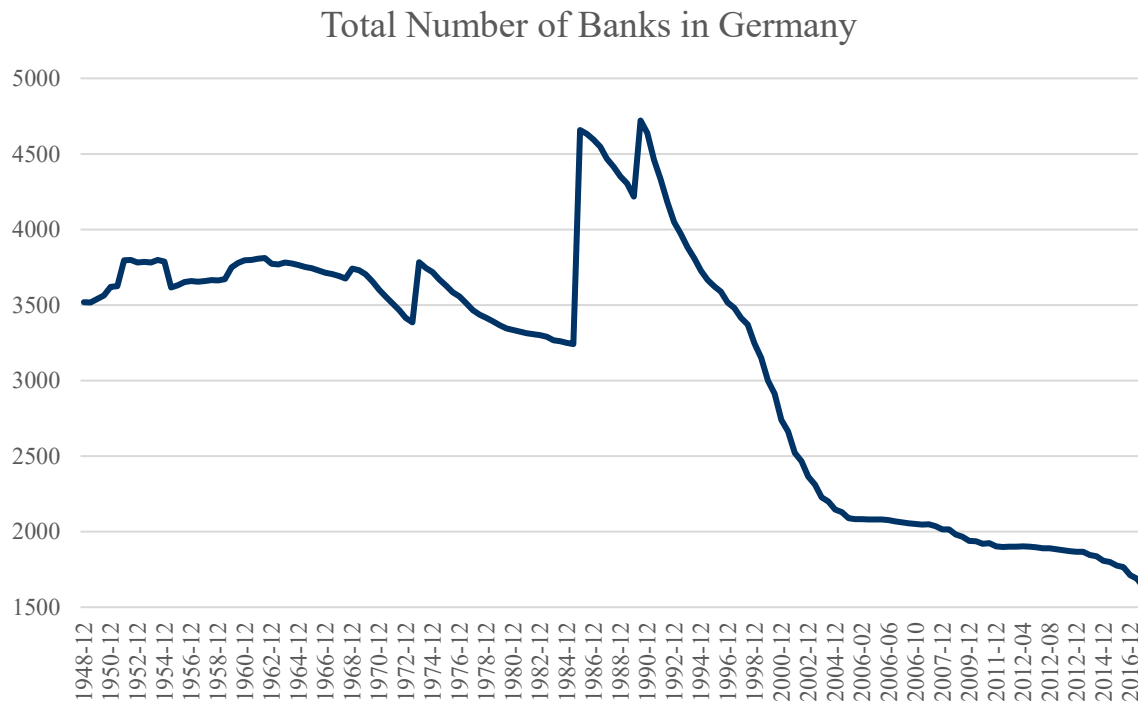
= productive credit creation

Sustainable

German Growth is on the Decline

Central banks have reduced the number of banks

Fewer banks, less economic growth

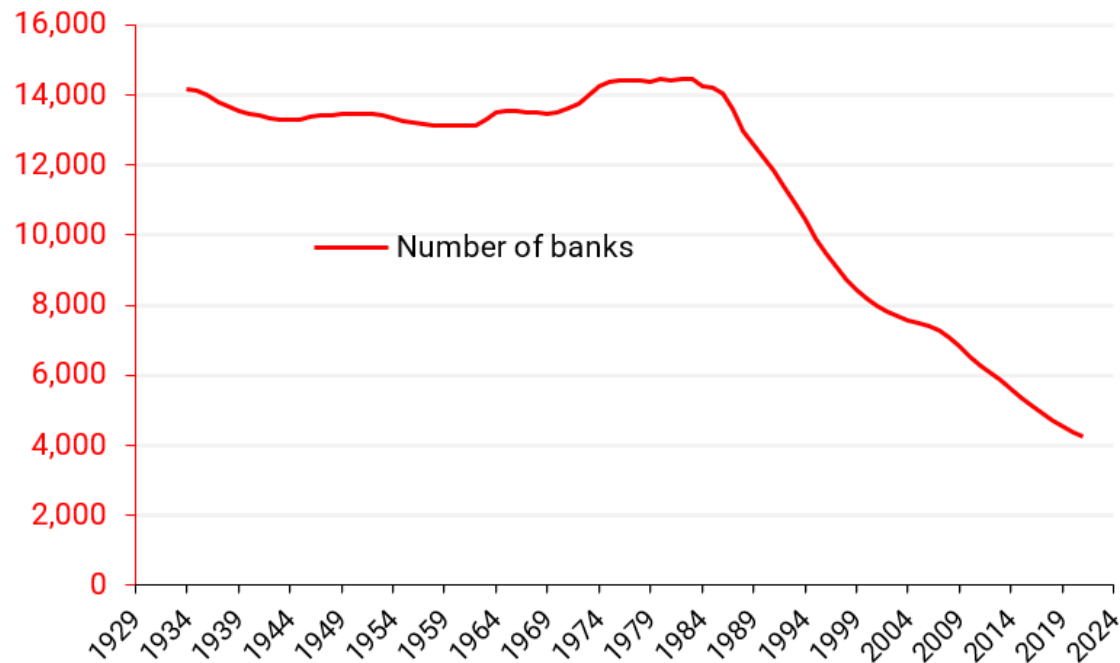


Local/Regional Banks and Local Economies

- Productivity, Job Creation & Rural Job Opportunities, Inequality
- Mechanisms
 - Lending creates new money within the state/locality (money multiplier)
 - New job creation—small banks are more likely to lend to small businesses
 - ▢ Small & medium-sized enterprises account for the majority of employment
 - ▢ 64% of job creation is attributable to small business

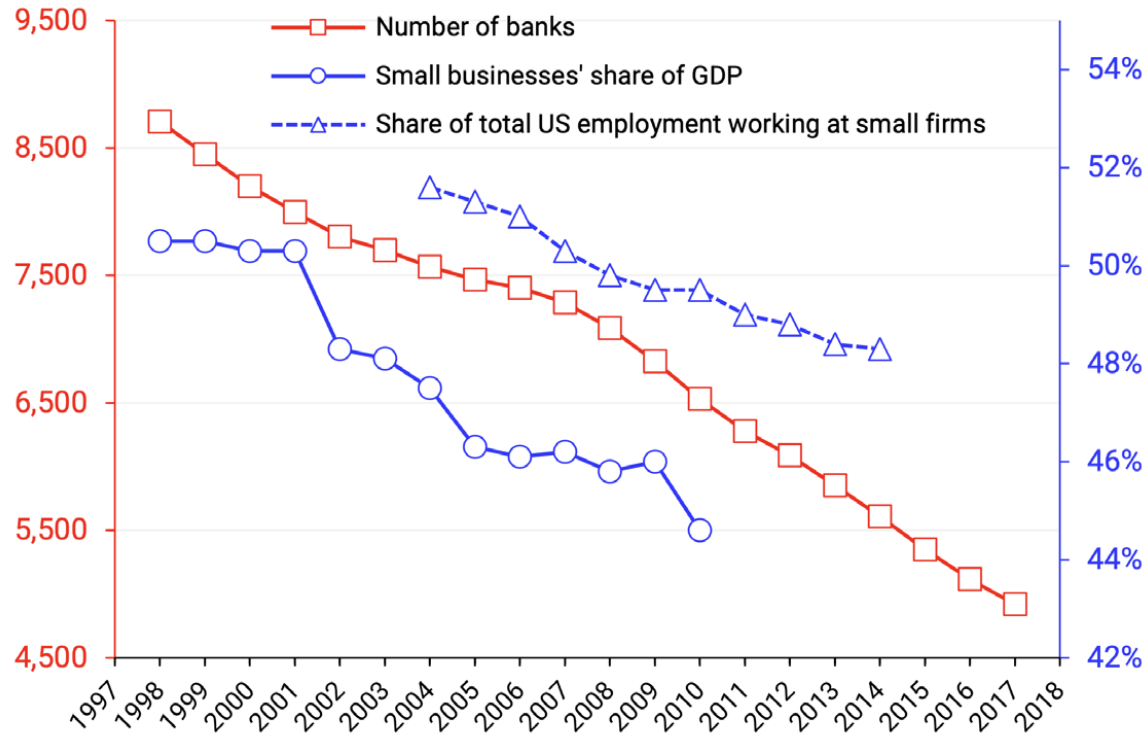
Local/Regional Banks and Local Economies

Bank mergers reduce the number of banks in the US



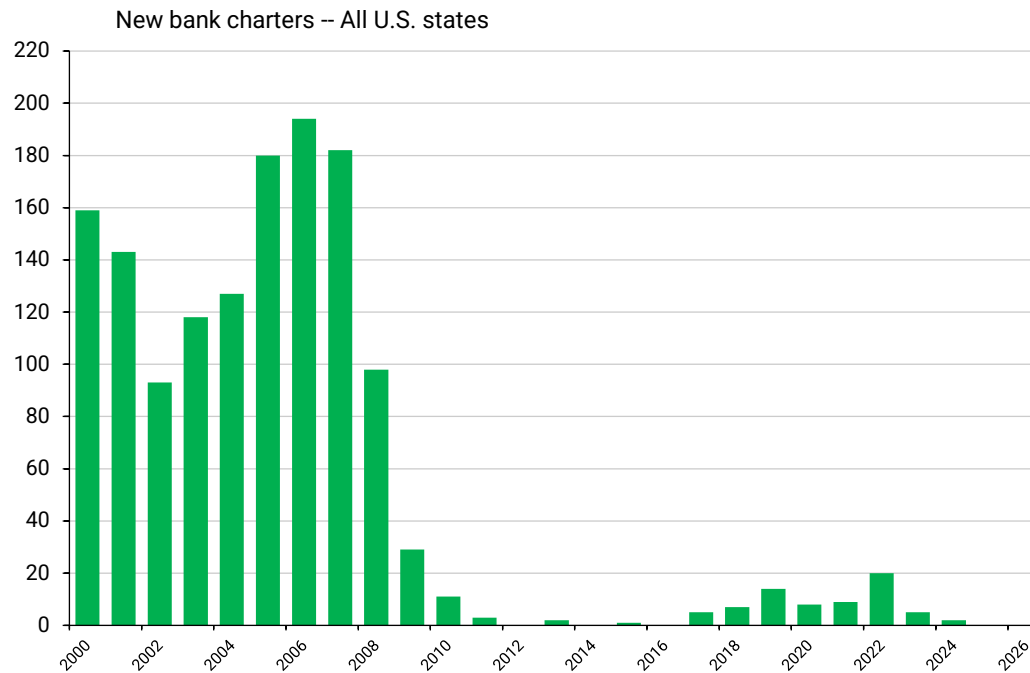
US Data: Number of Banks and Small Firms

Fewer banks – not good for small firms



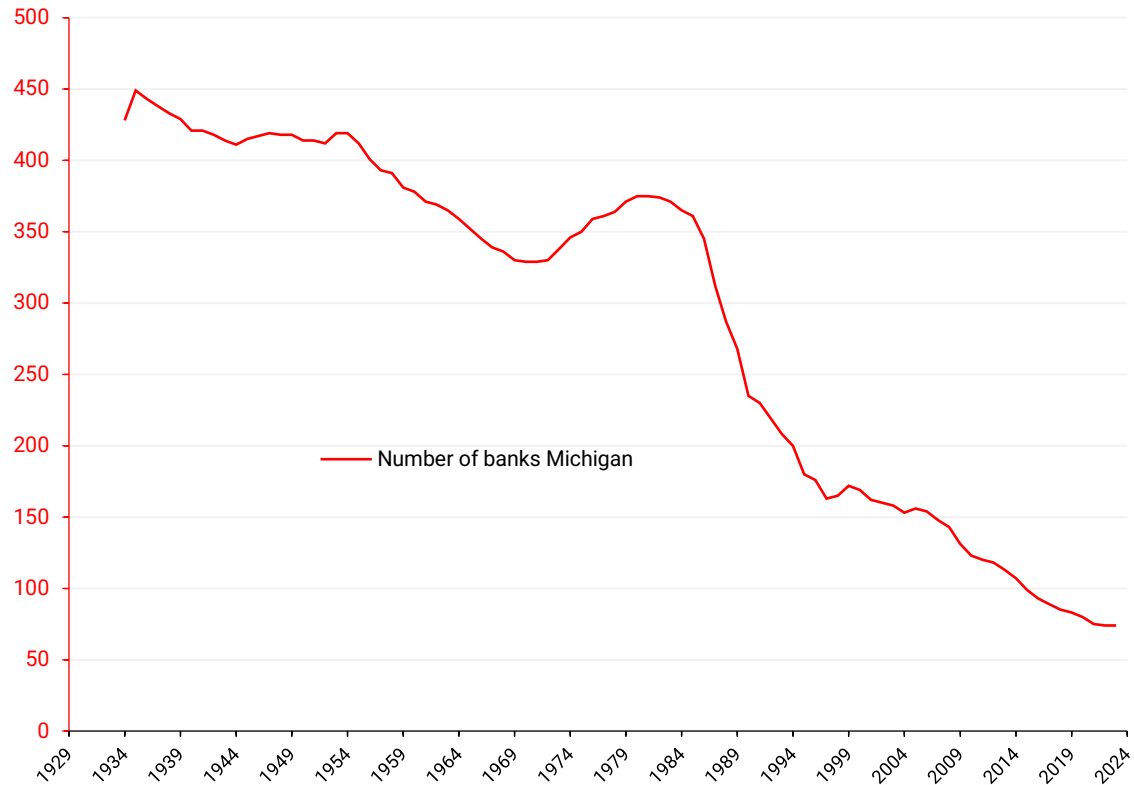
US Data: Not enough banks are being created

Number of New Bank Charters



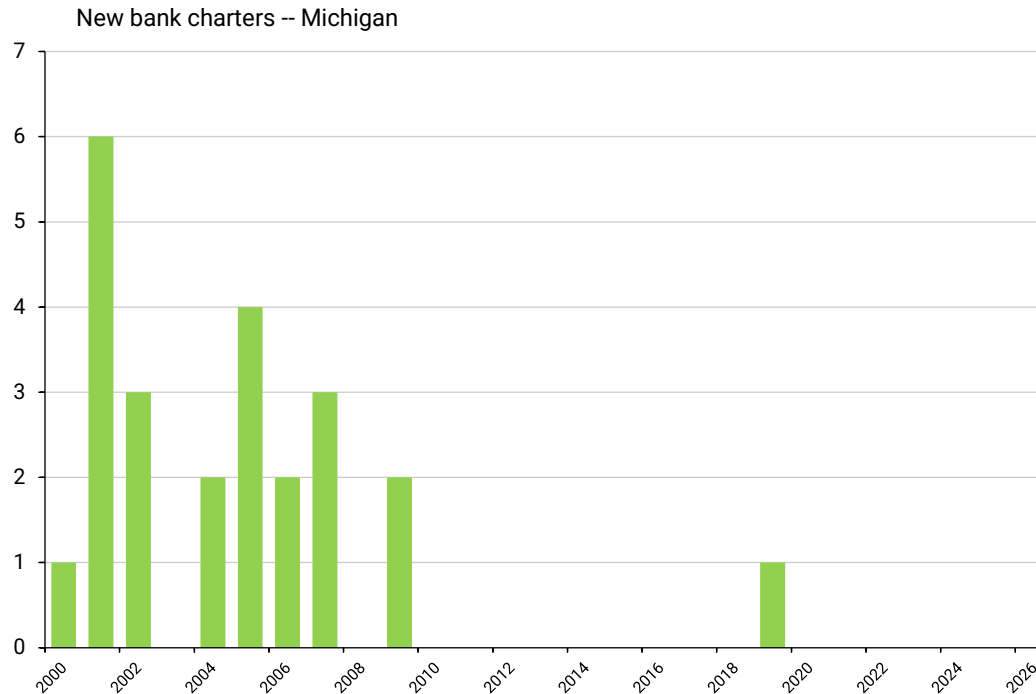
Michigan Data: Also a declining trend

Number of Banks



Michigan Data: Not enough new banks

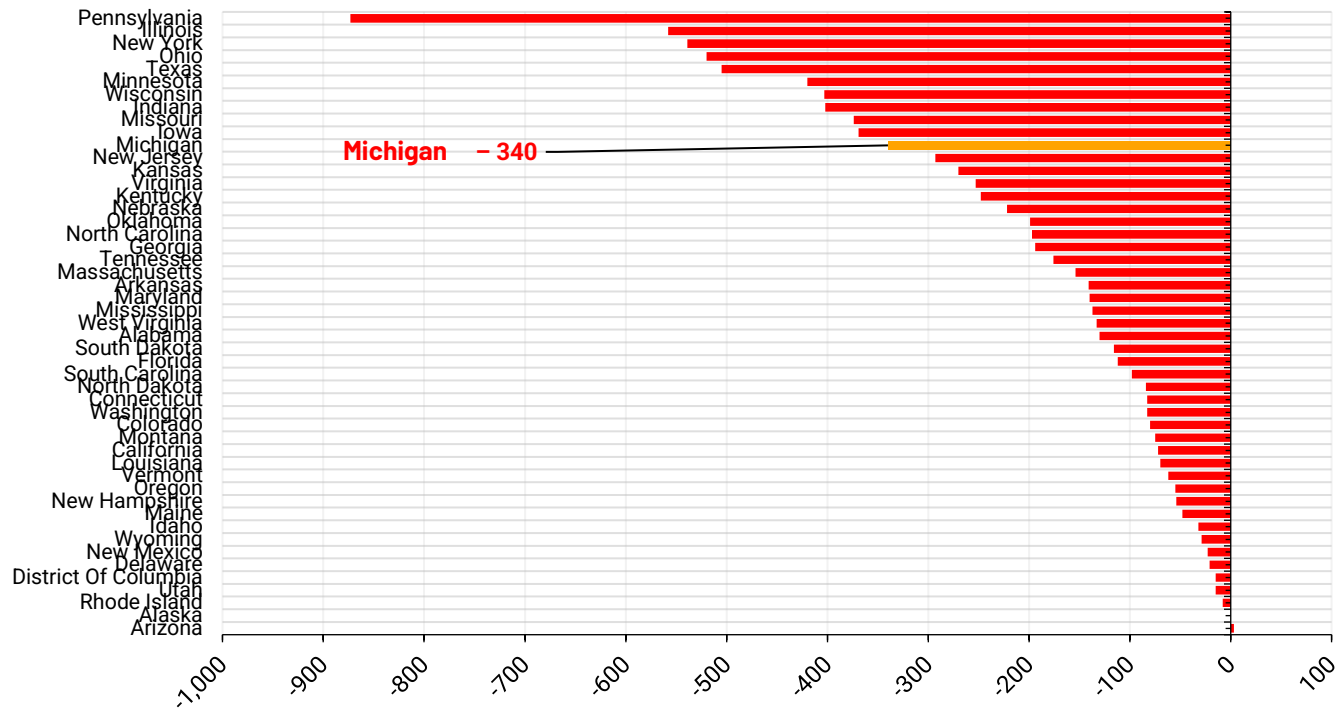
New Bank Charters in Michigan



Michigan Data: Change in Number of Banks

1950-2023

Rapidity of Drop in Bank Numbers only Exceeded by 10 Other States



Infrastructure Revolving Funds

- State of Michigan: Public Act 53: \$4.7 Billion in Infrastructure Funding
 - Michigan Department of Environment, Great Lakes, & Energy
 - Drinking Water Fund Supports \$200 Million Annually, 20% Match Requirement
 - Clean Water Fund Supports \$800 Million Annually
 - Clean Water State Revolving Funds
- Federal Government Infrastructure Investment and Jobs Act (\$1.2 Trillion)
 - \$240 Billion Nationwide for Roads, Bridges, Public Transit, Airports, & Railways
- Funds Available from State and Federal Sources Often Require Matching

Methods of Financing Municipal Infrastructure

Bank Borrowing at the Local/Regional level

- New Money Creation in the Locality/Region, boosting **nominal GDP growth**, turnover, corporate profits, employment and **tax revenues**, improving deficit/GDP & debt/GDP ratios (Werner, 2016: Enhanced Debt Management)
- By borrowing via **non-tradable loan contracts from local banks**, as opposed to bond issuance, municipalities ensure that speculators cannot “short” the bonds, seeking to profit by betting against the municipalities and causing a “debt crisis”, as happened in Europe in 2011 (Werner, 2016: Enhanced Debt Management)
- Builds a Stronger Bank Lending Portfolio for Local/Regional Banks
- Stronger Local/Regional Banks Enable Greater Support for Small Businesses (job growth and economic activity)
- Greater Multiplier Effect for Local/Regional Economies Indirect Generation of New Local Tax Revenues

Methods of Financing Municipal Infrastructure

Bank Borrowing at the Local/Regional level

- Bond issuance
 - Lower Interest Rate, but arrangement & underwriting fees and costs
- Bank Borrowing
 - Greater Multiplier Effect (new money creation)
 - Strengthens Local Banks, Small Business, and Economies
 - Indirect Tax Revenue Effect
 - Insulation from speculative attacks that could push up borrowing rates sharply
 - Timing, size etc. can be tailor-made at short notice
 - Arrangement & underwriting costs zero
- State Bank of Michigan?
 - Would a State Bank of Michigan strengthen the state? Very likely so.
 - It would also support the small local banks

Methods of Financing Municipal Infrastructure

Bank Borrowing at the Local/Regional level

- Utilisation of a State Special Purpose Bank – The State Bank of Michigan

The Case for a State Bank of Michigan CLGFP Report 2025-01 - Center for Local Government Finance & Policy

<https://www.canr.msu.edu/resources/the-case-for-a-state-bank-of-michigan-clgfp-report-2025-01>

Literature

Werner, Richard A. (2014). Can Banks Individually Create Money Out of Nothing? – The Theories and the Empirical Evidence, *International Review of Financial Analysis*, 36, 1-19, <http://www.sciencedirect.com/science/article/pii/S1057521914001070>

Werner, Richard A. (2014). How do banks create money, and why can other firms not do the same? An explanation for the coexistence of lending and deposit-taking, *International Review of Financial Analysis*, 36, 71-77
<http://www.sciencedirect.com/science/article/pii/S1057521914001434>

Werner, Richard A. (2016). A lost century in Economics: Three theories of banking and the conclusive evidence, *International Review of Financial Analysis*, 46, July, 361–379 <http://www.sciencedirect.com/science/article/pii/S1057521915001477>

Werner-proposal of 1995: A monetary policy called

'Quantitative Easing' = Expansion of credit creation for the real economy

Richard A. Werner, 'Create a Recovery Through Quantitative Easing',

2 September 1995, Nihon Keizai Shinbun (Nikkei)

日本経済新聞 1995年(平成7年)9月2日(土曜日) (26)

実体経済の 購買力不足

一九九〇年以降、日本が初めて経験する最悪の景況。大企業は倒産、中小企業は経営危機、失業率は過去最高に達している。この状況は、購買力不足によるものである。購買力不足とは、モノとサービスの供給が需要を上回る状態を指す。この状態は、景気の回復を妨げる要因となる。

景気回復、量的金融緩和から

景気回復のためには、量的金融緩和が有効である。量的金融緩和とは、中央銀行が市場に大量の資金を供給することである。これにより、市場の流動性が向上し、企業の投資意欲が高まり、景気が回復する。量的金融緩和は、購買力不足を解消するための有効な手段である。

総購買力を増やせ 4%程度の成長は可能

総購買力を増やすことは、景気回復の鍵となる。総購買力を増やすためには、消費を増やす必要がある。消費を増やすためには、消費者の購買力を高める必要がある。購買力を高めるためには、収入を増やす必要がある。収入を増やすためには、雇用の創出が必要である。雇用の創出には、企業の投資を増やす必要がある。企業の投資を増やすためには、市場の流動性を高める必要がある。市場の流動性を高めるためには、量的金融緩和が必要である。

不良債権問題 信用破壊招く

不良債権問題は、信用破壊を招く。不良債権とは、返済が困難な債権を指す。不良債権が増えると、銀行の信用が低下し、市場の流動性が悪化する。信用が低下すると、企業の投資意欲が低下し、景気が悪化する。不良債権問題を解決するためには、銀行の信用を回復させる必要がある。信用を回復させるためには、不良債権を処分する必要がある。不良債権を処分するためには、市場の流動性を高める必要がある。市場の流動性を高めるためには、量的金融緩和が必要である。

名目GDPと民間リクイディティー

名目GDPと民間リクイディティーの推移。1975年から1995年までのデータを示す。名目GDPは、1975年から1995年までの間に約10%の増加を示している。民間リクイディティーは、1975年から1995年までの間に約20%の増加を示している。民間リクイディティーは、名目GDPよりも高い成長率を示している。

What I said would *not* work:

- reducing interest rates – even to zero
- fiscal stimulation
- expanding bank reserves/high powered money

A crash course in types of QE

A. The original QE:

- In a situation of declining bank credit, a shrinking economy and deflation, I proposed 2 types of QE:

Types of QE:

- QE1: Central bank purchases of non-performing assets from banks
- QE2: Central bank purchases of performing assets from non-banks

B. The Bank of Japan's 2001–6 QE:

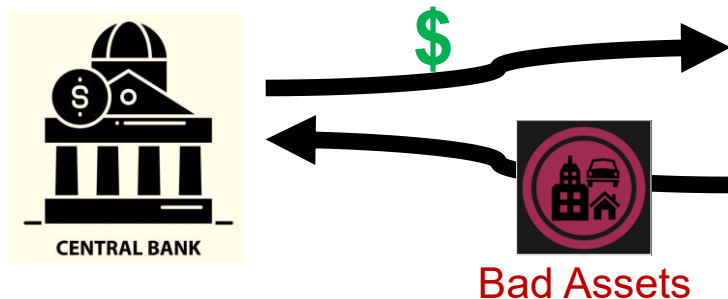
- Sadly, the Bank of Japan claimed it could not do these and instead did:

Types of QE (continued):

- QE3: Central bank purchases of performing assets from banks

A crash course in QE & its results

QE1: Central bank purchases of **non-performing assets** from **banks**



Result:

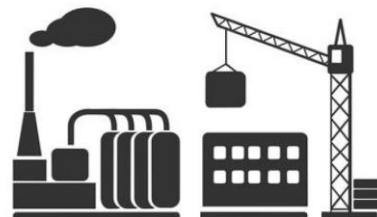
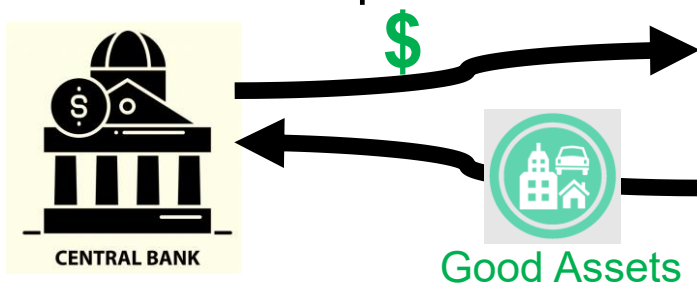
Cleans bank balance sheets at 0 cost, no money creation

A	L
\$	old D

Reserves from central bank

QE2: Central bank purchases of

performing assets from **non-banks**



Result:

Money creation as banks credit sellers' accounts

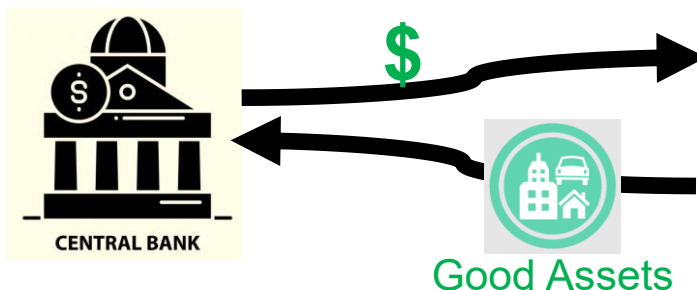
Banks	
A	L
\$	new D

Reserves from central bank

Fake QE:

'QE'3: Central bank purchases of

performing assets from **banks**



Result:

Boosts banks' reserve balances, creates profits for banks, boosts asset markets, but no money creation in the real economy

How to Reflate after a Banking Crisis:

Re-ignite bank credit creation for GDP transactions to avoid credit crunch & deflation

- 1. Central bank purchases all **banks'** non-performing assets at face value, cleaning up bank balance sheets and allowing bank credit creation to rise (QE1)
 - Catch: In return banks are required to submit to 'window guidance' (This has been shown to be able to raise credit growth: Werner, 2005)
- 2. Central bank purchases assets from non-banks as short-term liquidity measure, ensuring stability of the financial system (QE2)
- If bank credit creation remains weak:
 - 3. Government stops the issuance of government bonds, borrows from banks:
Enhanced Debt Management

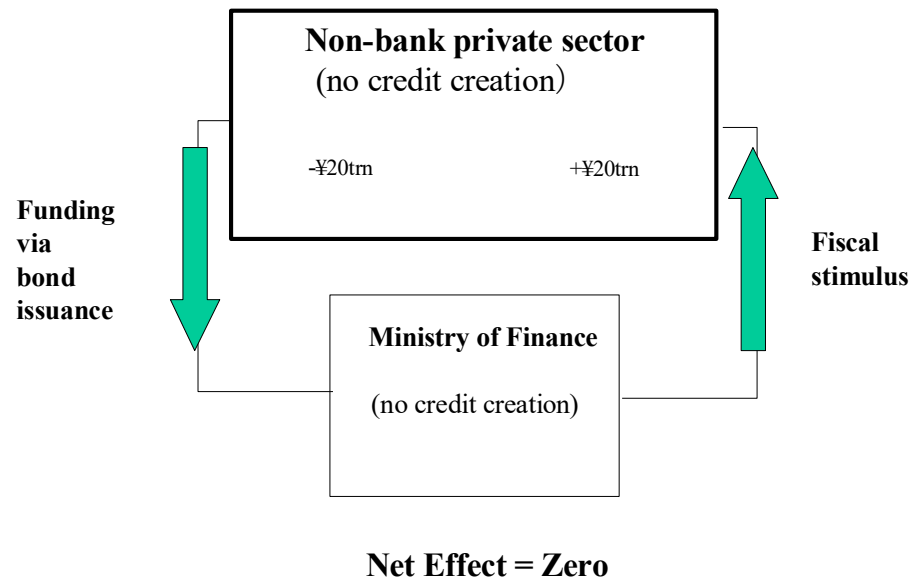
Enhanced Debt Management

- 97% of the money supply is created and allocated by private-sector profit-oriented enterprises, **the commercial banks**.
- **Government should raise the public sector borrowing requirement from the commercial banks** in their country.
- They can enter into 3-year loan contracts at the much lower **prime rate**, while the central bank provides short-term liquidity.
- The prime rate in most eurozone countries is close to the banks' refinancing costs of 1% e.g. 3.5%.

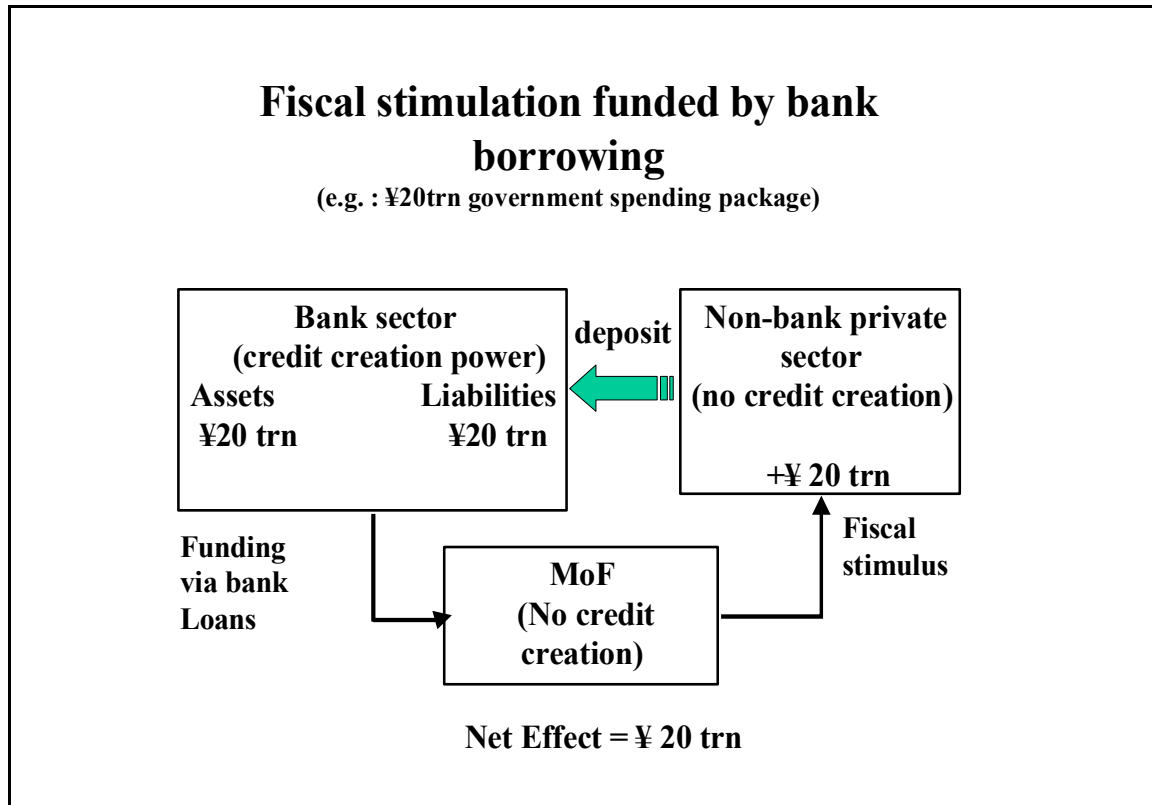
Why fiscal spending programmes alone are ineffective

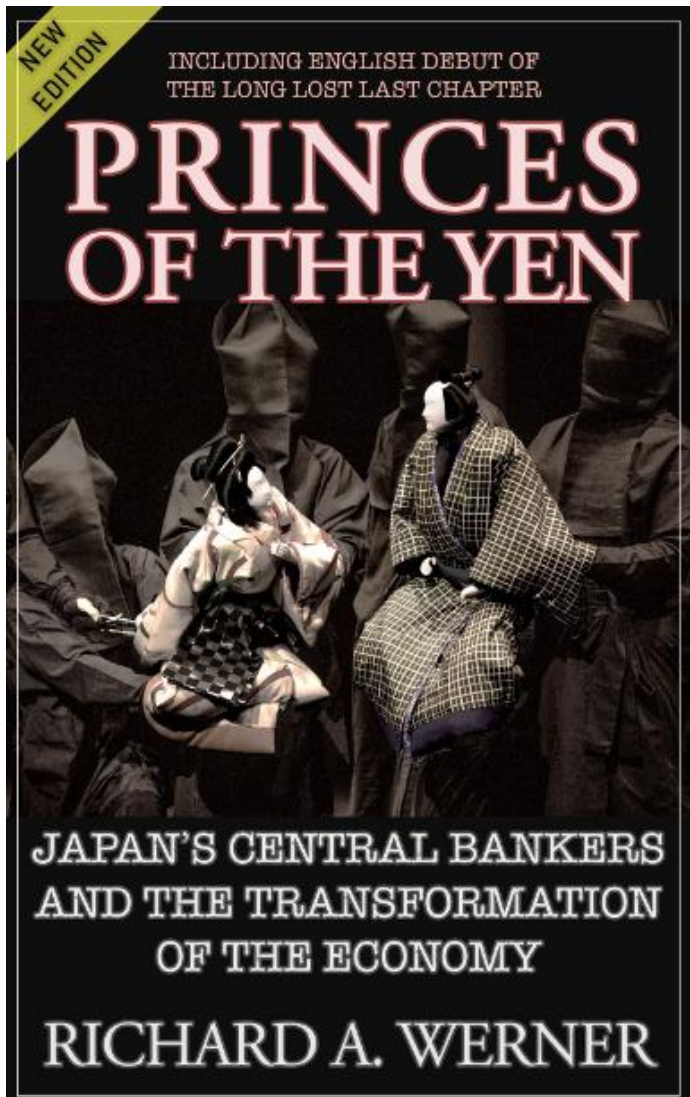
Fiscal stimulation funded by bond issuance

(e.g. : ¥20trn government spending package)



How to Make Fiscal Policy Effective





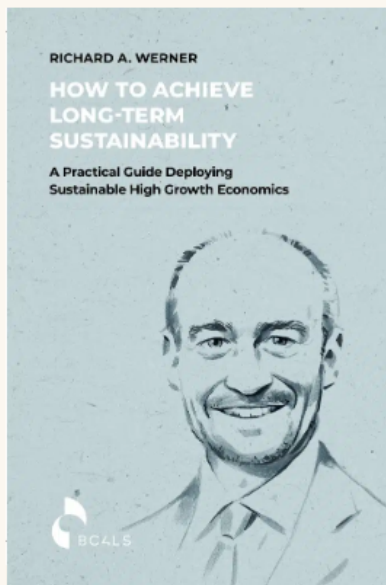
**Princes of the Yen the
Movie is Out**

Youtube:

Princes of the Yen *film*

QuantumPublishers.com, 2018

© Richard A. Werner 2024



HOW TO ACHIEVE LONG-TERM SUSTAINABILITY

A PRACTICAL GUIDE DEPLOYING SUSTAINABLE HIGH GROWTH ECONOMICS

3 999 Ft



KOSÁRBA TESZEM

The Budapest Centre for Long-term Sustainability (BC4LS) welcomes distinguished professors and experts to engage in educational, research, and publishing activities as part of our Research Programme, in collaboration with our partner universities and institutes. We encourage our researchers to explore new frontiers in social sciences, both in terms of disciplines covered and methodologies deployed. This led to the creation of the BC4LS Booklet series, which aims to promote the common interest in sustainable balance and development, strengthen cooperation on sustainability, and utilize the creative potential inherent in international knowledge sharing regarding long-term sustainability issues.

BC4LS aims to achieve excellence in sustainability, focusing on areas such as green economy, finance, sustainable development and innovation, green society, and sustainable natural resources. Interdisciplinary viewpoints are taken into account. Our mission is to contribute to transforming thinking about a sustainable future.



2023