Interest Rate Moves – Causes and Consequences for Investors

Prof. Richard A. Werner, D.Phil. (Oxon)
Professor of International Banking
Director, Centre for Banking, Finance and Sustainable Development
University of Southampton Business School
Director, Providence Asset Management Ltd.

Fixed Income Retreat
Citywire

Four Seasons, Dogmersfield Park, Chalky Lane, Hook RG27 8TD

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29Jan18: German 5-year Bund yield positive for first time since 2015
Rising Interest Rates – Implications for Investors

Is it inevitable that rates will continue to rise?
If so, is this bad news for investment, growth and equity markets?

What actually is the relationship between interest rates & economic growth?
So you think you know how interest rates and growth are related?
Official Story: High interest rates lead to low growth; Low interest rates lead to high growth

Thus ‘monetary policy‘ is considered identical with interest rate policy
Economists of various schools don’t agree. Except on 1 thing: The relationship of interest rates and economic activity:

1. Classical (e.g. Ricardo, 1817)
2. Neo-classical (e.g. Marshall, 1890)
3. Keynesian (Keynes, 1936; Hicks, 1937; Tobin, 1969)
4. Monetarist (Brunner and Meltzer, 1971; Friedman, 1970)
5. New classical (Lucas, 1975)
6. ‘Neo-Wicksellian’ (e.g. Woodford, 2003)
7. Post-Keynesian (e.g. Lavoie, 1995)
8. Austrian (e.g. Garrison, 1989)
9. Ecological economists (e.g. Horowitz, 1996; Baum, 2009)

“Lower rates lead to higher growth, higher rates slow growth.”
Checchetti (2000):

“What is it that monetary policy-makers do and how do they do it?

The simple answer is that a central banker moves interest rates…”
Could so many economists – essentially all of them – be wrong?
Since the 1980s, interest rates have been stylized as the key macro variable
This is built on the belief that **lower rates stimulate economic growth and higher rates slow it**

This may be called **“the law and the prophets of equilibrium economics”**.

For this claim is based on **equilibrium economics**: In market equilibrium **prices** (including the price of money) are key, delivering equilibrium.

This claim has been uttered so often in the past 40 years that one would expect there to be **hundreds of studies** about the relationship between nominal interest rates and economic activity.

How many **systematic** studies of correlation and causation between rates and growth are there, which come to this conclusion?
There aren't any.
Instead, there is much doubt: E.g. the ‘Japan Puzzle’: Why have over a dozen interest rate reductions not delivered?

Economists of all stripes expected the many, radical interest rate reductions since 1991 to end the Japanese recession. It didn’t happen.

10 Year Government Bond Yield and Call Rate (uncol.o/n)

Latest: December 2000
Monetarists: due to insufficient increases in HPM, M2+CD (Meltzer, Iwata)

But:
- ‘M’ measures of the money supply have not been in a stable relationship with nominal GDP (“velocity decline”, “breakdown of the money demand function”, “mystery of the missing money”)
- Increases in high powered money (bank reserves) have no direct positive impact on the economy
- ‘M’ aggregates measure money ‘out of circulation’ (savings), not money actually spent
At tempted Explanations

➢ **Liquidity Trap when rates can’t fall further** (Krugman, 1998; Ito, 2000)

Horizontal LM (money demand infinitely interest-elastic) at lowest interest

→ rates won’t fall further → no room for further monetary (interest) policy, but economy still below $Y_f$. → ineffective monetary policy, and fiscal pol. effective

**But:**

- fiscal policy not as effective as this explanation claims
- cause of trap unexplained (exogenous expectations, flat LM)
- lowest rates reached in Japan only in 2014! Thus analysis doesn’t apply to the entire decades of the 1990s & 2000s, as rates fell
- does not answer the key question: why were interest rate reductions not helpful for decades.
The relationship between interest rates and economic activity/growth has not been systematically evaluated

High time to do it:

In Lee and Werner, *Ecological Economics*, 2018, we present half a century of evidence on the correlation & statistical causation between interest rates and economic activity in the US, Japan, Germany and the UK (quarterly data).

In Lee & Werner (2018b) we present broader cross-country evidence from 19 countries and considering 3 different types of interest rates, using higher-frequency monthly data.
1. Empirical analysis of the relationship between interest rates and economic growth in the UK, US, Germany & Japan over half a century

Lee and Werner (2018): Using diverse tests and estimation methods (including DCC-GARCH* models and Granger causality test), we implemented a comprehensive analysis of correlation and statistical causality in order to describe the empirical relationships between the nominal GDP growth rate and interest rates.

50 years of data on four of the top economies, of different ‘variety’.

We used quarterly data on nominal GDP growth, 3-month interest rates and 10-year government bond rates. The sample covers 52 years from 1957Q1 to 2008Q4 for the UK, the US and Japan (except for the Japanese 10-year government bond rates which begin in 1966Q4, when the first government bonds were issued) and 47 years from 1961Q4 to 2008Q4 for Germany. The sample period was closed in 2008, as monetary policy arguably shifted away from interest rates.

* Dynamic Conditional Correlation – Generalised AutoRegressive Conditional Heteroskedasticity

Figure 1. Nominal GDP yoy growth rate vs. 10-year government bond rate
(a) Correlation

**Jarque-Bera tests reject the normality** of the distribution of all series. **Tse tests reject** the assumption of a **constant correlation** between economic growth and interest rates for all countries examined without exception.

Thus standard constant correlation analysis is inappropriate. Instead, DCC-GARCH (dynamic conditional correlation) series were tested.
(a) Correlation Results

**Short-term interest rates** and economic growth in the UK, US, Germany and Japan (~1958-2008): **consistently positive**

**Figure 4. Estimated DCC between nominal GDP yoy growth rate and 3-month interest rate**

Notes: These figures show the series of dynamic conditional correlation between nominal GDP yoy growth rate and 3-month interest rate resulting from the estimation of the best three-variate DCC-GARCH (1,1) model specification selected for each country examined using the criteria of convergence, estimates performance and the principle of parsimony. The table below reports descriptive statistics of these DCC series. J. B. statistics confirm the non-normality of the estimated DCC series for all countries considered, which confirms ex post the validity of this conditional, time-varying approach for describing the joint behaviour of correlation between economic growth and short-term interest rate.
Long-term interest rates and economic growth in the UK, US, Germany and Japan: overwhelmingly positive

Figure 2. Estimated DCC between nominal GDP yoy growth rate and 10-year government bond rate

Notes: These figures show the series of dynamic conditional correlation between nominal GDP yoy growth rate and 10-year government bond rate resulting from the estimation of the best three-variate DCC-GARCH (1,1) model specification selected for each country examined using the criteria of convergence, estimates performance and the principle of parsimony. The table below reports descriptive statistics of these DCC series. The statistics confirm the non-normality of the estimated DCC series for all countries considered, which confirms ex post the validity of this conditional, time-varying approach for describing the joint behaviour of correlation between economic growth and long-term interest rate.
Conclusion: Concerning correlation, we found that despite allowing for 2 years of leads and lags, the hypothesis that interest rates are inversely correlated with economic growth is rejected in 8 out of 8 cases.

Instead, we found that interest rates are positively correlated with economic growth in 8 of 8 cases.

Negative correlation clearly rejected in all cases.

Positive correlation supported in all cases.
(b) Statistical Causation

Statistical causation (Granger causality) between short-term and long-term interest rates on the one hand, and economic growth in the UK, US, Germany and Japan on the other:

Conclusion:

Causality from rates to growth rejected in 6 out of 8 cases.

The alternative hypothesis that growth determines interest rates is supported in 8 out of 8 cases.
2. Empirical analysis of the relationship between interest rates and economic growth in 19 countries

Using diverse tests and estimation methods (especially DCC-GARCH models and Granger causality tests), we implemented a comprehensive analysis of correlation and statistical causation to describe the empirical relationships between industrial production & interest rates. Monthly data.

Countries: Austria, Belgium, Canada, Denmark, France, Germany, Greece, Ireland, Israel, Italy, Japan, Korea, the Netherlands, Slovenia, Spain, Sweden, Switzerland, the UK and the US

The data on US industrial production covers the longest sample period ranging from 1955:01 to 2015:03 with 723 observations (shortest: Slovenia, from 2004:01 to 2015:03 with 135 observations).
(a) Correlation Results

**Conclusion:** Despite allowing for leads and lags, the hypothesis that interest rates are inversely correlated with economic growth is rejected in virtually all countries examined: the correlation is positive in most time periods, while turning negative in some time periods that seem to correspond to crisis episodes.

General finding that the correlation is positive in most time periods and negative in exceptional times (times of crisis).
(b) Statistical Causation

Statistical causation (Granger causality) between short-term and long-term interest rates on the one hand, and economic growth in 19 countries

**Overnight call rate and industrial production:**
Economic growth Granger-causes overnight interest rates in 10 countries

**3-month rates and industrial production:**
Economic growth Granger-causes 3-month interest rates in 12 countries

**10-year rates and industrial production:**
Economic growth Granger-causes long-term interest rates in 8 countries
Conclusion:

Our empirical findings reject the canonical view that interest rates somehow affect economic growth in an inverse manner.

To the contrary, long-term and short-term interest rates follow the trend of the business cycle, as measured by industrial production, in the same direction, in all countries examined.
The correlation and statistical causation of interest & growth

Japan

US

Correlation
Nominal GDP and Call rate

Statistical Causation
Nominal GDP and Call Rate

US Nominal GDP and Long-Term Interest Rates

US Nominal GDP and Long-Term Interest Rates
**Evidence: Rates Follow the Cycle**

**Official Story:**
High interest leads to low growth;  
Low interest leads to high growth

**Empirical Reality:**
High growth leads to high interest;  
Low growth leads to low interest.

- Interest rates are the result of economic growth.  
- So they cannot at the same time be the cause of economic growth.  
- The facts contradict the official story of monetary and banking policy.

**Questions:**  
1. If not rates, what then determines economic growth?  
2. Why do central bankers keep repeating the mantra that they use interest rates as policy tool?
Nominal GDP Growth is Again Outpacing Treasury Yields

US Nominal GDP and Long-Term Interest Rates

Latest: Q3 2017

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3. If the idea that lower rates lead to higher growth is not based on empirical evidence, where did it come from?

Not evidence, but theory.
**Theorists:** “Markets always clear and they are efficient. Hence prices are key.”


- Then: It can be shown that markets clear, as prices adjust to deliver equilibrium.

- Hence prices are key, incl. the price of money (interest)

- Market ‘efficiency’ is a more advanced condition, requiring more assumptions to hold.
Fact: Markets almost never clear

Assume:
1. Perfect information; 2. Complete markets; 3. Perfect competition;
4. Instantaneous price adjustment; 5. Zero transaction costs;
6. No time constraints; 7. Profit maximisation of rational agents;
8. Nobody is influenced in any way by actions of the others.

If each assumption has a probability of 55% of being true, what is the probability of all assumptions being jointly true?

$(55\%)^8 = 0.8\%$

But the individual probability is much lower.

Result: Markets can never be expected to clear.
Capitalism’s Best Kept Secret: The Reality of Rationing

- There is no perfect information
- So markets cannot clear
- The reality is pervasive disequilibrium, i.e. rationing.

- Rationing in one market affects other markets.
- In our world, information, time & money are rationed.
- As a result, practically all other markets are rationed.

- So demand is not equal to supply.
- The shorter quantity of the two determines the outcome.
- Not prices, but quantities are key.
- The short-side principle applies: whichever quantity of demand or supply is smaller determines the outcome.
- The short side has power: to decide with whom to trade, the power to allocate.
Fact: Markets are rationed and determined by quantities.

➢ Anyone who tried to sell a particular non-benchmark bond position quickly, at what look to be “market rates” knows this. A counter-party needs to be found, willing to purchase exactly this bond, from this issue, with this maturity, coupon, covenant, and this amount.

➢ There may not be a market. The bond may not trade.

➢ For key bonds, banks step in to “make the market” – but their intervention is merely the abuse of insider knowledge of the positions of their clients (and the urgency of wanting to trade) in order to rip off the client.

➢ This is not the market equilibrium economists talk about.
Rationing: The Hidden Power Dimension Becomes Visible

➢ The short side can abuse its allocation power to extract non-price benefits; e.g. job market (newsreaders; Hollywood selection of actresses & actors)

➢ Why ‘Equilibrium Fictional Economics’ is so Appealing: One can always blame ‘the Market’; there is no power in the hands of the allocators…

➢ Market for money: Demand is always larger than supply. The supply is the short side that has allocation power.

➢ Bankers decide who to lend to. Central banks have power over the banks, hence over the economy and business cycle.

➢ Bankers and central bankers are not accountable for their true policy decisions, concerning the quantity and allocation of credit creation.
Who Supplies Money?
There are Three Theories of Banking

1. The Financial Intermediation Theory
2. The Fractional Reserve Theory
3. The Credit Creation Theory

Which one is correct? No empirical test until 2014!


Result:

- Financial Intermediation Theory: other deposits. rejected
- Fractional Reserve Theory: reserves rejected
- Credit Creation Theory: created ex nihilo by each bank failed to reject
Banks are Not Financial Intermediaries

➢ Werner, 2014, 2016: Do **banks individually create money** out of nothing? Finding: **Yes, they do.**

➢ This is how 97% of the money supply is created by **banks** when they extend credit (‘lend’).

➢ Banks are thus **not financial intermediaries.**

➢ **Bank of England Q1 2014 Quarterly Bulletin** confirms this

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Textbook Representation of Banks as Mere Intermediaries

- **可以直接融资**/disintermediation

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Banks are special. They create the money supply

➢ Unlike non-bank financial institutions, **banks create money out of nothing**.

➢ They do this by what is called ‘bank lending’: **credit creation**. Bank credit and deposit money are created simultaneously.

➢ **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.
Trade Secret: What makes banks unique
The case of a £1,000 loan

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

Balance Sheet of Bank A

<table>
<thead>
<tr>
<th>Assets</th>
<th>Liabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>£ 1,000</td>
<td></td>
</tr>
</tbody>
</table>

Step 2
The bank now owes the borrower £ 1000, 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.

<table>
<thead>
<tr>
<th>Assets</th>
<th>Liabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>£ 1,000</td>
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</tr>
</tbody>
</table>

NB: No money is transferred from elsewhere

So the creditor (the bank) does not give up anything when a loan is ‘paid out’
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.

➢ It is possible to achieve high, stable and sustainable economic development. How?
Quantity Theory of Credit (Werner, 1992, 1997):

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

- **non-GDP credit**
  - = unproductive credit creation

- **GDP credit**
  - Case 1: *Consumption credit*
    - Result: Inflation without growth
  - Case 2: *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)
    - Result: Growth without inflation, even at full employment
    - = productive credit creation
The Quantity Theory of 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

Real circulation credit determines nominal GDP growth

Financial circulation credit determines asset prices – leads to asset cycles and 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%

- Case Study Japan in the 1980s: $C_F/C$ rose from about 15% at the beginning of the 1980s to almost twice this share

$C_F/C$ = Share of loans to the real estate industry, construction companies and non-bank financial institutions
**Rule:** Broad Bank Credit Growth > nGDP Growth = banking crisis

This Created Japan's Bubble.
Rule: Out-of-control $C_F$ creates bubbles and crises, e.g. in Ireland & Spain

Broad Bank Credit Growth > nGDP Growth
How to Avoid Asset Bubbles & Home-Grown Banking Crises – and ensure ample funding for small firms
Rule: A banking sector dominated by local, not-for-profit banks avoids asset bubbles and banking crises

German banking sector

- Local cooperative banks (credit unions): 26.6%
- Local gov’t-owned Savings Banks: 42.9%
- Regional, foreign, other banks: 17.8%
- Large, nationwide banks: 12.5%

70% of banking sector accounted for by hundreds of locally-controlled, small banks, lending mostly to productive SMEs
The solution to the breakdown of the quantity relationship:

1. Money had been defined wrongly: The money supply (deposits) is created via credit creation, which defines effective purchasing power (Werner, 1992, 1997)

2. The assumption that the entire money supply is used for GDP transactions is wrong. In many countries the majority of credit creation is for non-GDP transactions.

3. Thus defining money supply as credit creation (C) and disaggregating it into the GDP ('real economy') and non-GDP transaction stream solves the velocity decline puzzle and restores a stable relationship between a monetary aggregate (credit for the real economy) and nominal GDP growth.

4. This underlined the importance of quantities in macroeconomics.

5. What about the other fundamental pillar of macro models: interest?
New Monetary Policy: Recognising the Importance of Credit Creation

➢ In 1991, the Quantity Theory of Credit was presented, disaggregating credit into
   – productive investment credit
   – unproductive consumer credit and
   – unproductive and unsustainable financial credit.

➢ I also argued that the emerging crisis could be ended at any time by the right policies, by expanding credit creation for GDP transactions - which I called ‘quantitative easing’ (Nikkei, 2 September 1995).
Werner-proposal of 1994: A monetary policy called ‘Quantitative Easing’ = Expansion of broad credit creation


What I said would not work:

• reducing interest rates – even to zero
• fiscal stimulation
• expanding bank reserves/high powered money
The Central Banking Narrative Has Collapsed

1. “Banks are just financial intermediaries – central bank macroeconomic models thus don’t need to include them”

2. “We need to save or borrow from abroad in order to have investments and growth”

3. “Interest rates have been the main monetary policy tool”

4. “Markets are usually in equilibrium, thus it’s ok to focus on prices, including the goal of ‘price stability’ “
The Central Banking Narrative Has Collapsed

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How Have Central Banks Reacted to these Revelations?

1. They have pushed interest rates to zero or negative territory.
   - Officially in order to stimulate the economy
   - But lower rates do not stimulate the economy
   - And such low interest rates are actively harmful to economic growth.
   - They lead to higher borrowing rates (Switzerland), as banks are put under pressure
   - And as they result in consolidation in the banking sector, they lead to a contraction of credit for productive purposes, thus causing deflation.
   - So why are central banks doing this?
Mario Draghi, ECB-Chief, on 21 Sept 2016: “There are overcapacities in the banking sector of some countries” – Which country is he talking about?

In Germany there are ten times as many banks (community banks) that lend to small and medium-sized enterprises as in the UK.
How Have Central Banks Reacted to these Revelations?

2. The central banks have proposed the abolition of cash

➢ The official justification is that the ‘needed’ negative interest rates are only possible, if depositors cannot pull their money from banks by moving into cash.

➢ Instead of addressing the problem of such a move (i.e. stop negative interest rates), central banks have argued that cash itself needs to be abolished, so that people have no more choice concerning their money.

➢ At the same time, legislation in many countries, including France and Italy, has legally limited the size of transactions that can be paid in cash.

➢ But is this war on cash really to stimulate the economy? No, it is to support the central banks‘ bid to concentrate all power further in their hands.
How Have Central Banks Reacted to these Revelations?

3. They have supported ‘monetary reform‘ of the kind that would abolish bank credit creation entirely

- Monetary reform group *Positive Money* is well funded and appears at events together with the *Bank of England* and *Soros‘ INET*

- A leading monetary reformer Michael Kumhof (ex-IMF) who argues for the *abolition of bank credit creation*, was hired by the *Bank of England* in 2015.

- Who will be creating all money according to such monetary reformers? A: *The central banks!*

- If central banks are the only creators of the money supply, their powers increase further; they *achieve total control*
How Have Central Banks Reacted to these Revelations?

4. They have proposed the introduction of central bank cybercurrency

➢ “No more cash“

➢ “Bank credit creation abolished“

➢ “All money is digital currency, created & allocated solely by the central bank

➢ With the **abolition of cash and the abolition of bank credit creation** (both supported by central banks, led by the **Bank of England**) central banks would achieve **total control over all economic transactions**

➢ This would constitute the greatest concentration of central banking power in history.
The Central Banks’ Goal

➢ Our civil liberties are under imminent threat: the digital money accounts of dissidents and regime critics could be switched off anytime so that no purchase of even necessities would be possible.

➢ The central banks aim at an Orwellian dystopia of total control over people and the end of any freedoms

➢ What is the next step?

➢ Already, in the UK there is contactless payment by debit cards

➢ The logical next step is the likely proposal to avoid theft of these cards or fraud by embedding the microchip under our skin
The Overarching Trend of the 20th Century: The Concentration of Power in the Hands of the Few

- Central banks have been main beneficiaries of this concentrated **power**
- At the same time, central banks **lack accountability**.
- **Unaccountable**, hence limitless or absolute power has consequences:
  - Since the introduction of central banks, we have experienced hundreds of boom-bust cycles, banking crises and re-distribution of wealth from many to few
  - Lord Acton: “Power tends to corrupt and absolute power corrupts absolutely.”
  - Lord Action: “The issue which has swept down the centuries and which will have to be fought sooner or later is **the people versus the banks**.”
Reasons Why Rates May Well Fall Again: A Brave New World

In Japan, 20 years of artificial, central-bank induced recession and deflation were created in order to implement

- **structural reform** (deregulation, liberalisation, privatisation) to weaken the performance of the Japanese economy
- **consolidation of the banking sector** from 20 major city banks to 3
- **power consolidation** in the hands of fewer people
- historic **monetary reform** by abolishing cash & bank credit creation, and introducing central bank digital currency as sole monetary instrument
- a new forced “low growth” environment with accelerated robotization, mass layoffs and introduction of “universal basic income” via micro-chip implant

This could never happen in Europe….?
Media PR is preparing us for “Zero Growth” as the “New Normal”
What could trigger rate falls?

➢ The bursting of the US equity bubble
What could trigger rate falls?

➢ Continued deflation in the eurozone
Markets have been manipulated

➢ Central banks can engineer sudden turning points of the trend
The Solution: Decentralise and Break up the Concentrated Power

➢ We need **decentralisation** also in our monetary system: The future is in **local**, decentralised public money backed by not-for-profit community banks.

➢ As it turns out, we don’t actually need central banks.

➢ 97% of the money supply is private company credit, **not privileged at law**. So we can create our own true **local currencies without central bank** involvement.

➢ Key principle: Self-determination, self-responsibility, self-administration.

➢ These are the 3 fundamental **principles of the co-operative movement** (Schultze-Delitsch, Raiffeisen, Germany 19th c.), which created **local banks**.

➢ Lord Acton: “It is easier to find people fit to **govern themselves** than people fit to govern others.” “Towns were the nursery of freedom.”
What does a banking system look like that avoids boom-bust cycles & ensures ample funding for the many SMEs?

Banking in Germany is Local Banking:
70% of banking is accounted for by 1,500 community banks

Local cooperative banks (credit unions) 26.6%
Local gov’t-owned Savings Banks 42.9%
Large, nationwide Banks 12.5%
Regional, foreign, other banks 17.8%

70% of German banking is ‘not-for-profit’
Moving towards action: Setting up Community Banks in the UK

➢ Goal: Introduction of public-benefit oriented, not-for-profit local community banks creating credit for productive purposes, mainly to SMEs

➢ Modelled on the German local public savings banks and local co-operative banks (Sparkasse, Volksbank)

➢ **Hampshire Community Bank** launch 2019.

➢ No bonus payments to staff, only ordinary, modest salaries

➢ Credit mainly to SMEs, and for housing construction (buy-to-build mortgages).

➢ Owned by a charity for the benefit of the people in the county of Hampshire

➢ Next: establishment of such community banks across the UK
The promises of economics

➢ Until the 1970s, there has been much optimism in macroeconomics and there have been high expectations that many of the problems of mankind will soon be solved.

➢ Was this a reasonable expectation?
➢ Yes, it was.

➢ “Our problems are man-made, therefore they may be solved by man. And man can be as big as he wants. No problem of human destiny is beyond human beings.”

John F. Kennedy
Speech at The American University, Washington, D.C., June 10, 1963
new paradigm in macroeconomics
solving the riddle of Japanese macroeconomic performance

Basingstoke: Palgrave Macmillan, 2005
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New Economics Foundation, 2012
Princes of the Yen the Movie is Out

Youtube:

Princes of the Yen film
著作紹介