Verðtryggð Lán

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"There are bankers under my bed."

Mortgage Lending Rates in 2012

- Iceland 9%+
  - 4% + Inflation rate on principal, 25-40 years
  - Structured as negative amortization loans
- United States ~4.5%
  - Fixed rate / 25-30 years
- United Kingdom 4-5%
  - Variable rates based on Bank of England base rate
- Germany ~2.5%
  - Fixed rate interest for 5-10 years

Negative Amortization

Normally a loan's principal is repaid over the course of the loan, starting with the first payment

e.g. Arion Banki Loan with 0% annual inflation rate

LOKA

Greiðsluáætlun

Afb. nr.	Gjalddagi	Eftirstöðvar	Afborgun	Vextir	Kostnaður*	Samtals greitt
1	11.04.2012	20.000.000 kr.	15.691 kr.	71.667 kr.	120 kr.	87.478 kr.
2	11.05.2012	19.984.309 kr.	15.747 kr.	71.610 kr.	120 kr.	87.478 kr.
3	11.06.2012	19.968.562 kr.	15.804 kr.	71.554 kr.	120 kr.	87.478 kr.
4	11.07.2012	19.952.758 kr.	15.860 kr.	71.497 kr.	120 kr.	87.478 kr.
5	11.08.2012	19.936.898 kr.	15.917 kr.	71.441 kr.	120 kr.	87.478 kr.
6	11.09.2012	19.920.981 kr.	15.974 kr.	71.384 kr.	120 kr.	87.478 kr.
7	11.10.2012	19.905.007 kr.	16.031 kr.	71.326 kr.	120 kr.	87.478 kr.
8	11.11.2012	19.888.975 kr.	16.089 kr.	71.269 kr.	120 kr.	87.478 kr.
9	11.12.2012	19.872.887 kr.	16.146 kr.	71.211 kr.	120 kr.	87.478 kr.
10	11.01.2013	19.856.740 kr.	16.204 kr.	71.153 kr.	120 kr.	87.478 kr.
11	11.02.2013	19.840.536 kr.	16.262 kr.	71.095 kr.	120 kr.	87.478 kr.
12	11.03.2013	19.824.274 kr.	16.321 kr.	71.037 kr.	120 kr.	87.478 kr.

Síða 1 af 40 << Fyrsta síða Fyrri síða Næsta síða Síðasta síða >>

Athugið að um áætlun er að ræða. Útreikningur sem hér er birtur miðast við gefnar forsendur. Endanlegur útreikningur láns er samkvæmt vaxta- og verðskrá bankans á hverjum tíma.

*Kostnaður við skuldfærslu og rafrænan greiðsluseðil

Negative Amortization

Indexed linked loans are structured as negative amortization loans.

Initial repayments do not repay principal

e.g. Arion Banki Loan with 5% annual inflation rate

With a constant 5% inflation rate, a 40 year negative amortization loan will cost the borrower double the amount of a similar term repayment mortgage

Recommended only for "Sophisticated" investors.

LOKA

Greiðsluáætlun

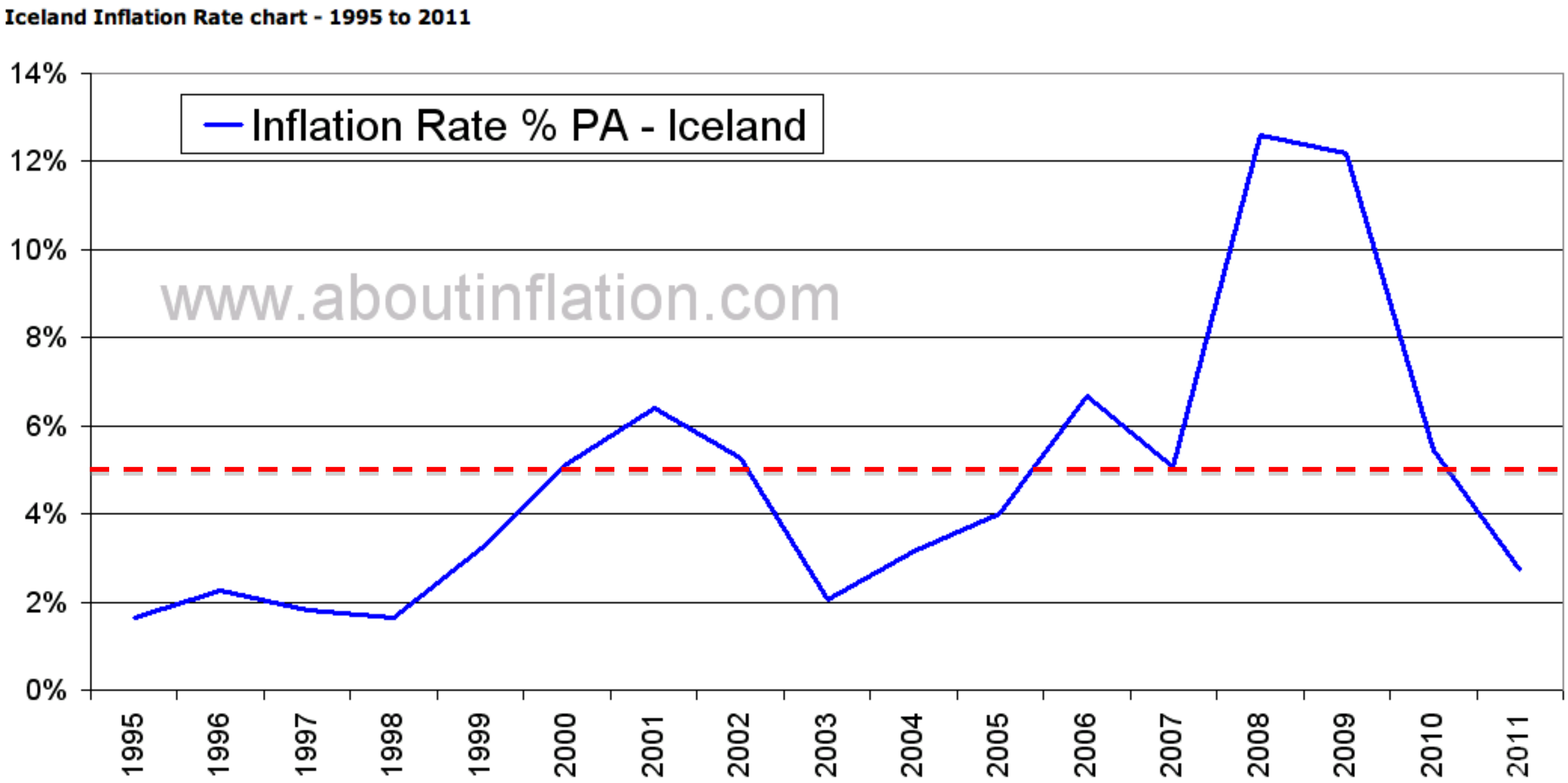
Afb. nr.	Gjalddagi	Eftirstöðvar	Afborgun	Vextir	Kostnaður*	Samtals greitt
1	11.04.2012	20.081.482 kr.	15.755 kr.	71.959 kr.	120 kr.	87.834 kr.
2	11.05.2012	20.147.478 kr.	15.876 kr.	72.195 kr.	120 kr.	88.191 kr.
3	11.06.2012	20.213.621 kr.	15.998 kr.	72.432 kr.	120 kr.	88.550 kr.
4	11.07.2012	20.279.911 kr.	16.120 kr.	72.670 kr.	120 kr.	88.910 kr.
5	11.08.2012	20.346.348 kr.	16.244 kr.	72.908 kr.	120 kr.	89.272 kr.
6	11.09.2012	20.412.931 kr.	16.369 kr.	73.146 kr.	120 kr.	89.635 kr.
7	11.10.2012	20.479.661 kr.	16.494 kr.	73.385 kr.	120 kr.	90.000 kr.
8	11.11.2012	20.546.536 kr.	16.621 kr.	73.625 kr.	120 kr.	90.366 kr.
9	11.12.2012	20.613.557 kr.	16.748 kr.	73.865 kr.	120 kr.	90.733 kr.
10	11.01.2013	20.680.722 kr.	16.877 kr.	74.106 kr.	120 kr.	91.103 kr.
11	11.02.2013	20.748.033 kr.	17.006 kr.	74.347 kr.	120 kr.	91.473 kr.
12	11.03.2013	20.815.487 kr.	17.137 kr.	74.589 kr.	120 kr.	91.846 kr.

Síða 1 af 40 << Fyrsta síða Fyrri síða Næsta síða Síðasta síða >>

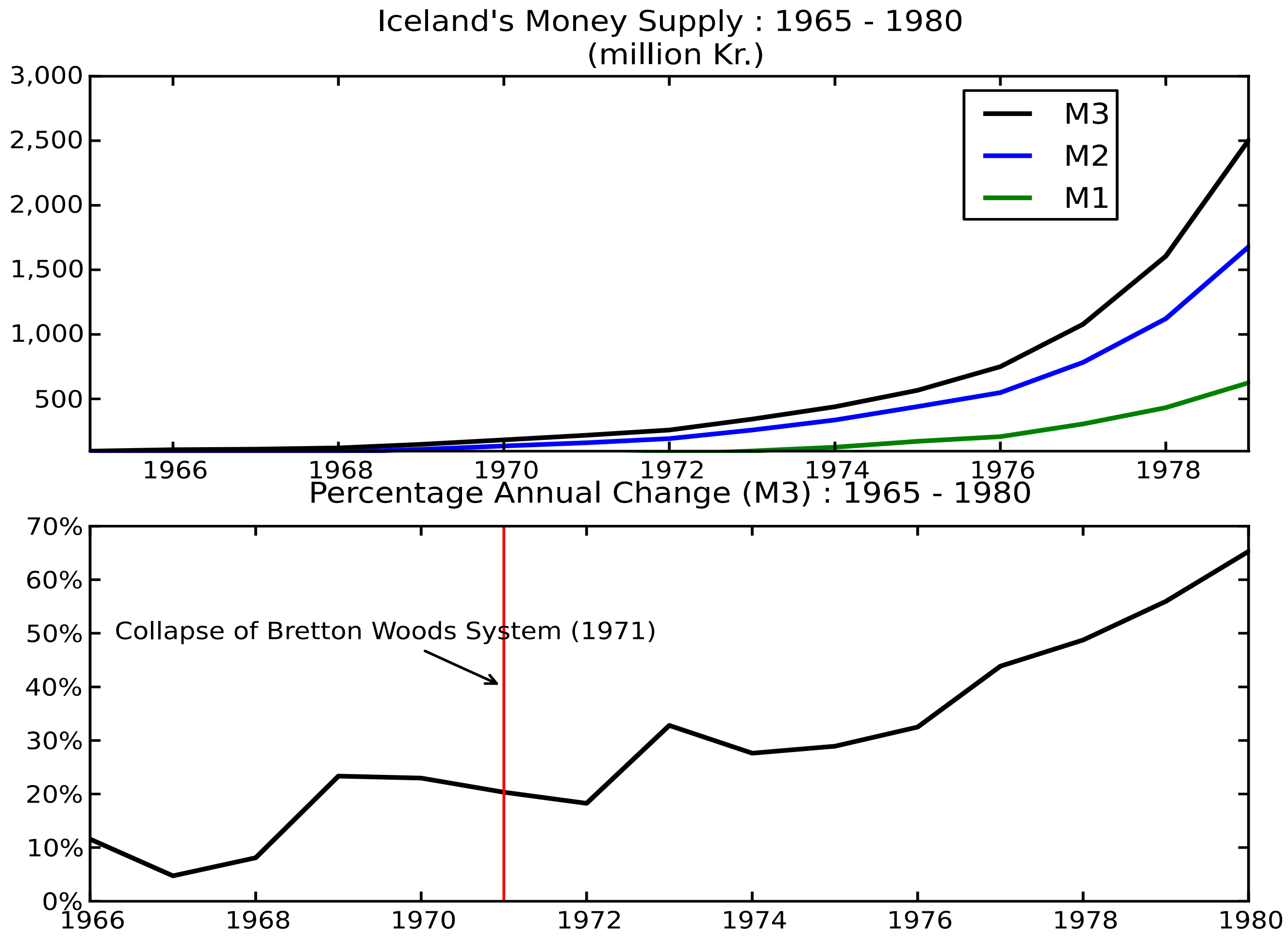
Athugið að um áætlun er að ræða. Útreikningur sem hér er birtur miðast við gefnar forsendur. Endanlegur útreikningur láns er samkvæmt vaxta- og verðskrá bankans á hverjum tíma.

*Kostnaður við skuldfærslu og rafrænan greiðsluseðil

Inflation In Iceland



Why were indexed linked Loans Introduced?



Money is defined as Physical Notes and Coins plus all bank deposits (Icelandic M3).

Icelandic Monetary History

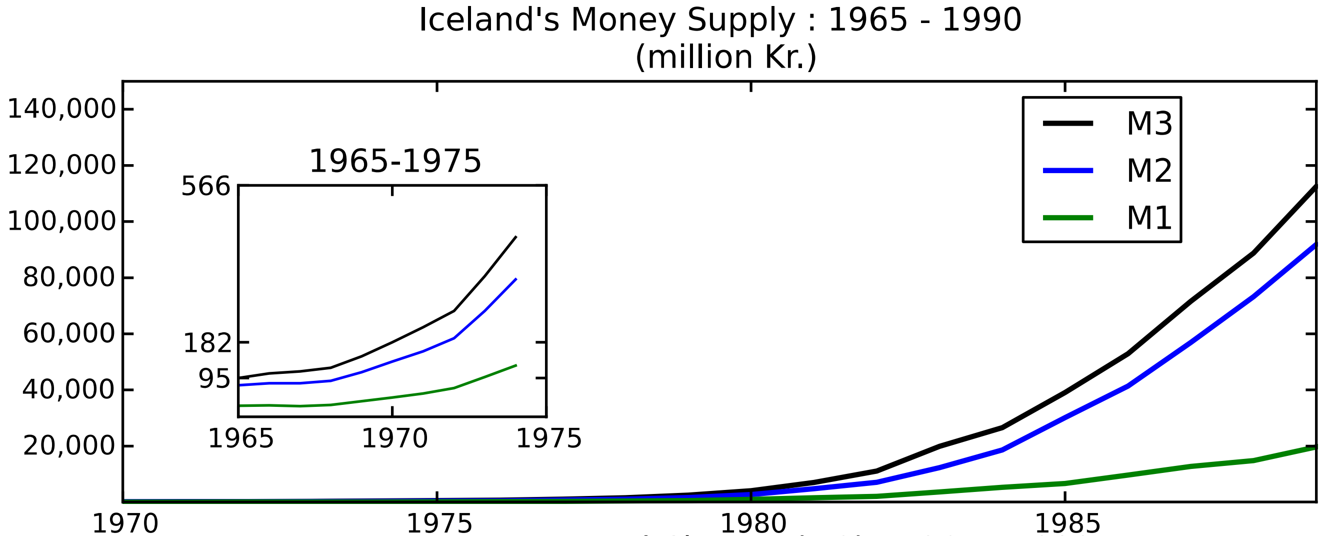
- Before 1973 Iceland is part of Bretton Woods System
  - Introduced in 1944
  - Fixed exchange rates of 44 currencies to the US Dollar
  - Fixed the US Dollar to the price of Gold.
  - Also established IMF and International Bank

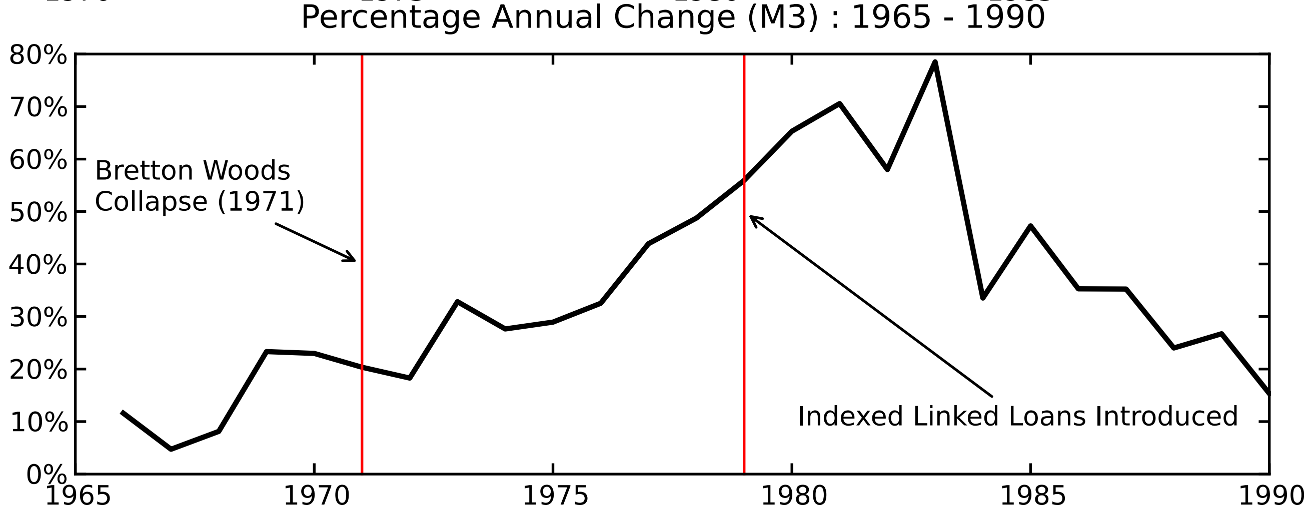
Bretton Woods System had one small problem…

Fixing exchange rates assumes fixed quantities of money

- Sterling: devalued 1949, 1967
- Deutsche Mark: revalued 1949, 1961, 1969
- Danish Krone devalued: 1949, 1967
- French Franc devalued: 1948(twice), 1949(twice), 1957, 1958, 1960, 1969
- Japanese Yen devalued: 1947, 1948, 1949, 1971
- Unilaterally ended by President Nixon in 1971, since it wasn’t practical to devalue the dollar.

Icelandic Monetary History 1970 - 1990





A Moment of Science

- Scientifically grounding a claim requires
  - Detailed and falsifiable explanation of cause and effect
  - Empirical Evidence
- Not enough to claim that Indexed linked loans stopped the hyperinflation
  - Must also explain <u>how exactly</u> this occurred.
  - i.e how did indexation act on the causes of inflation?

What Causes Inflation?

- Inflation is measured as the average price of a set of goods and services
- Prices in a market based economy depend on:
  - supply and demand for goods
  - Quantity of money being used for purchases.

  Where M = quantity of Money

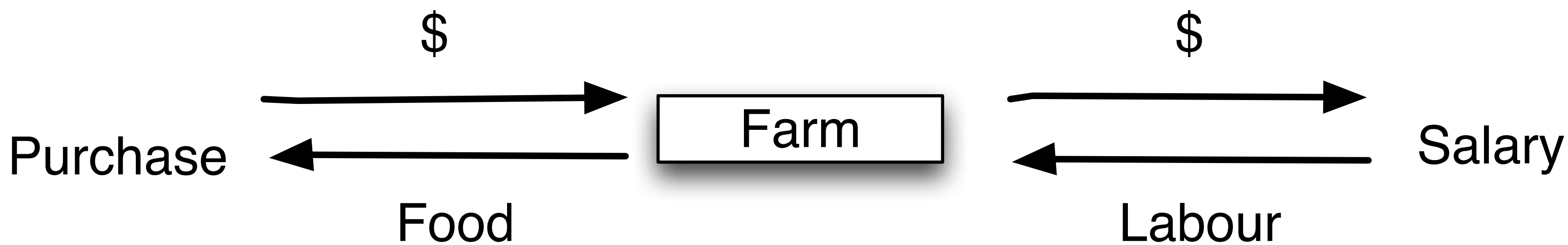
  Q = production

  P = Price

If total supply of goods increases, on average prices fall

If total supply of money increases, on average prices rise.

Monetary System



Prices ≈ Money

Goods & Services

Increase Production – Decrease Prices :: Increase Money Supply – Increase Prices

What determines the supply of money?

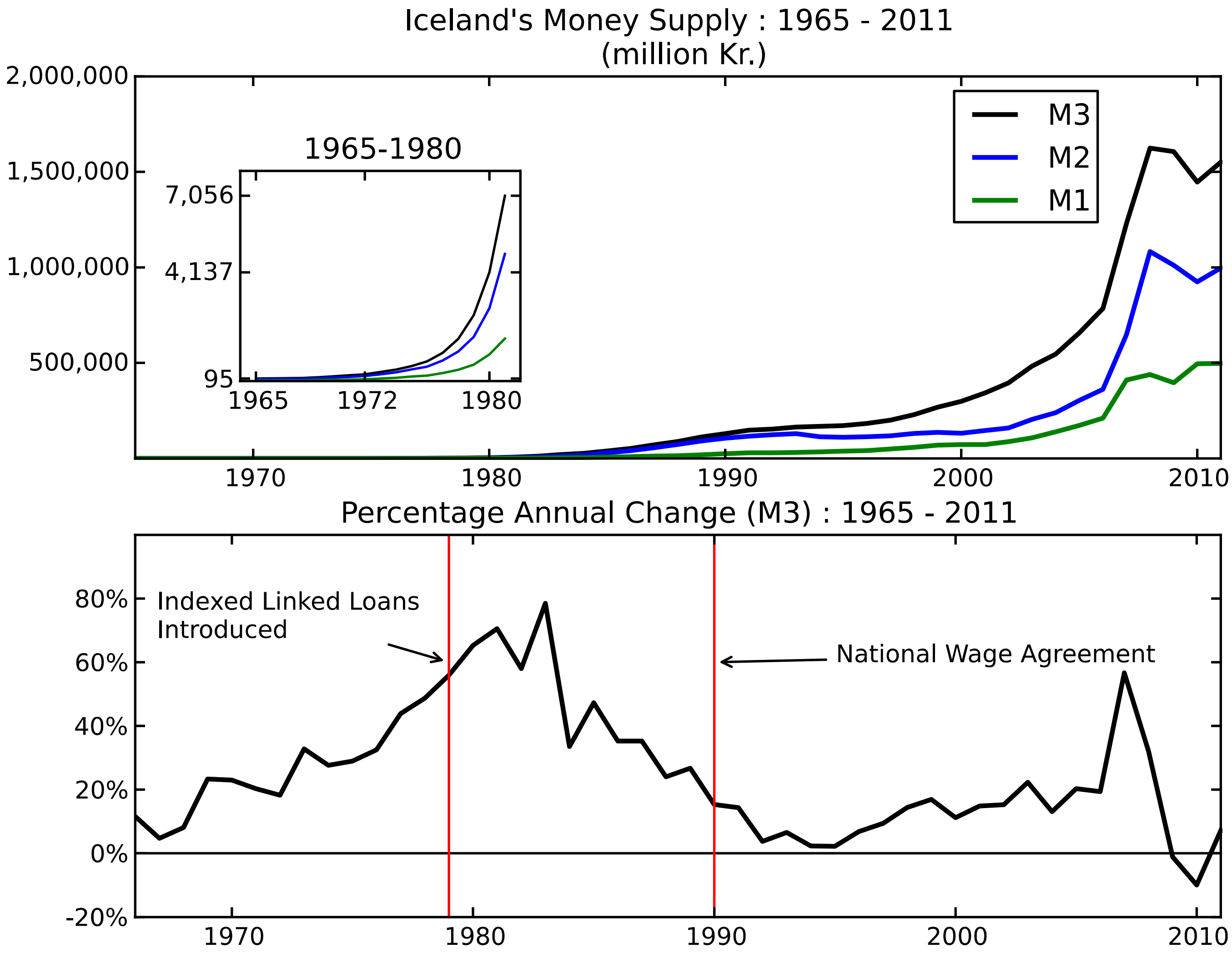
- Central Bank - “Quantitative Easing”
  - Printing money
- Failure to regulate the Banking System properly
  - Banks create money when they make loans
  - They remove money when loan principal is repaid or when loans default.
- Loan creation > loan repayment + defaults
  - the money supply will increase.
- Loan creation < loan repayment + defaults
  - the money supply will contract.

Regulation of Bank Lending

Combination of:

- Reserve Requirements
  - Bank’s must maintain a regulated reserve of their deposits
- Capital Requirements
  - Banks must maintain a separate Capital reserve as a proportion of their loans.
- “Liquidity”
  - The bank’s own money on deposit with the Central and other Banks.
  - Used when money is transferred between banks.
  - Effectively sets a ceiling on day to day activity.

Icelandic Monetary History



Indexed Linked Loans

Central Bank

Assets	Liabilities
	200
400	
	200
400	400

Bank A

	Assets	Liabilities	
Loans	9960	4960	Deposit A.C1
		5000	Deposit A.C2
Reserves	200		
Cash & Eq	800	1000	Capital
Total	10960	10960	

Bank B

Loans	10000	5000	Deposit B.C3
		5000	Deposit B.C4
Reserves	200		
Cash & Eq	800	1000	Capital
Total	11000	11000	

Principal repayment decreases Loans, Deposits and allows Banks to make new Loans

Indexed Linked Loans

Central Bank

Assets	Liabilities
	200
400	
	200
400	400

Bank A

	Assets	Liabilities	
Loans	9960	4900	Deposit A.C1
		5000	Deposit A.C2
Reserves	200	60	Interest Income
Cash & Eq	800	1000	Capital
Total	10960	10960	

Bank B

Loans	10000	5000	Deposit B.C3
		5000	Deposit B.C4
Reserves	200		
Cash & Eq	800	1000	Capital
Total	11000	11000	

Interest repayments are money supply neutral – increase bank's income.

How are Indexed Linked Loans Accounted?

- Normally Interest on loans is accounted as Income received
- Money supply neutral – money is moved from customer deposit account
- If principal is increased – would create balance sheet issues
- No mechanism to influence inflation except by reducing loan demand.
- Over sufficient time, will reduce capital built up by homeowners.

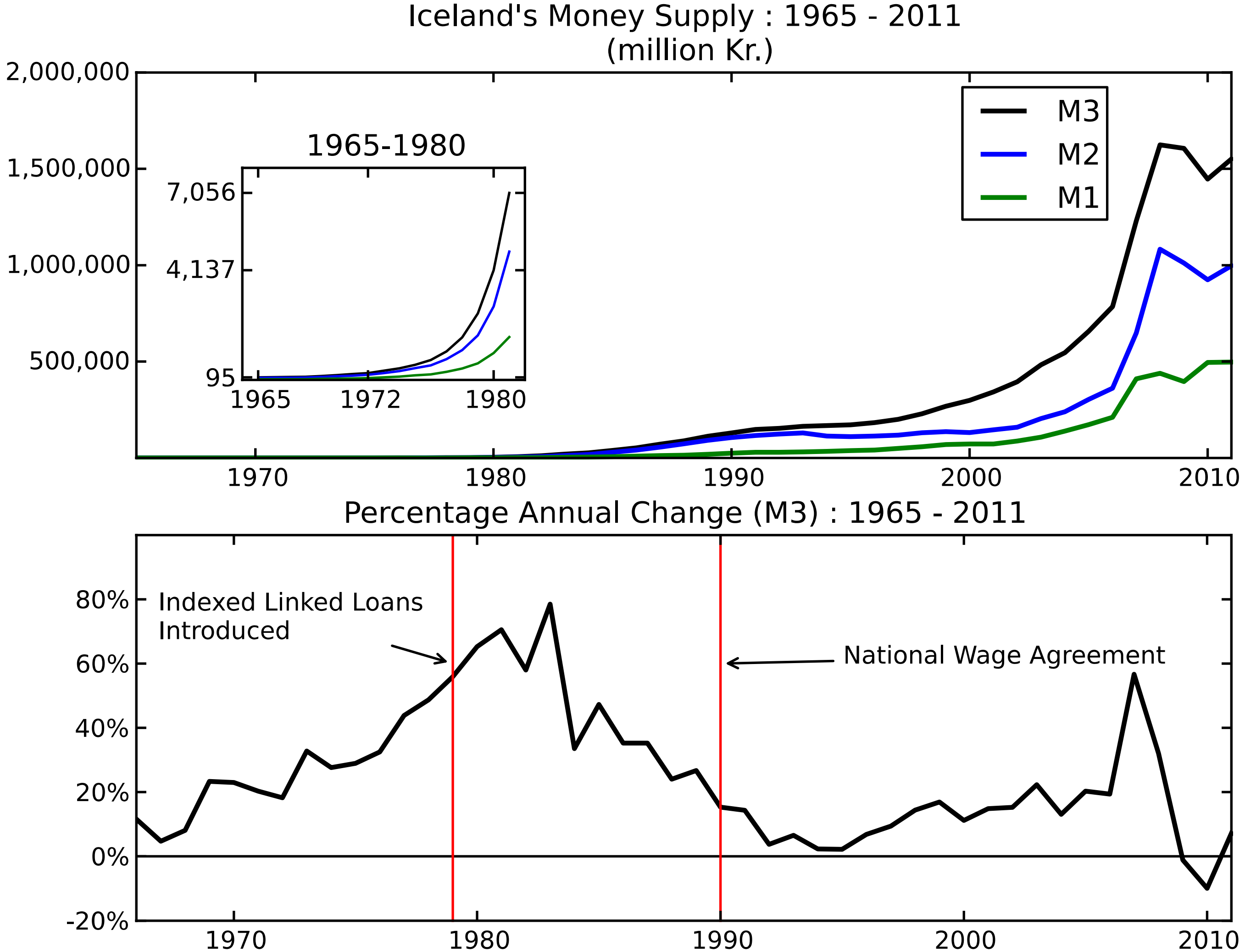
Seðlabanki Íslands Annual Report 1992

"Third, the indexation of financial assets as well as higher and positive interest rates have had the impact that household debt has accumulated instead of being eroded through inflation" (p31)

Seðlabanki Íslands Annual Report 1992

"The decline in inflation is one of the most remarkable achievements of economic policy in recent years. The fight against inflation came to a turning point in 1990 with the national wage accord. Since then inflation has declined steadily except for a temporary period in the middle of 1991."

What caused the 1967 – 1990 Hyperinflation?



Seðlabanki Íslands Reserve Requirements

Table 7 Liquidity and reserve ratios in %[1]

Effective as of:	*Reserve requirement ratio*
1 June 1979	28.0
17 April 1985	18.0
1 March 1987	13.0
1 August 1988	12.0
1 March 1989	11.0
1 May 1990	10.0
1 June 1990	7.0
31 October 1991	6.0
1 January 1992	7.0
1 November 1992	6.0
1 December 1992	5.0
1 November 1993	4.0 (2.5)[2]
21 May 1998	4.0 (1.5)[2]
21 March 2003	3.0 (1.0)[2]
21 December 2003	2.0 (0.0)[3]

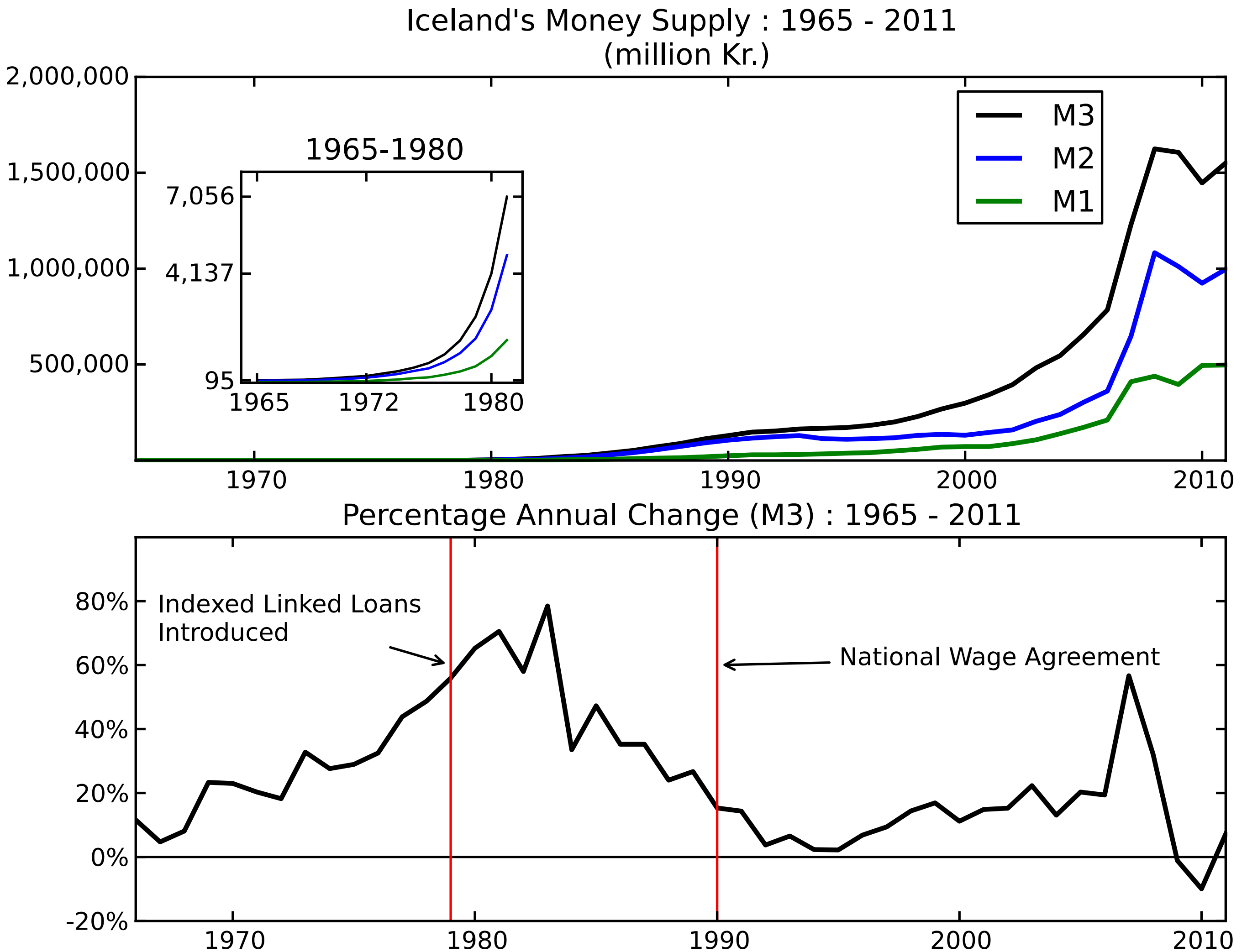
1. Percentage of bank total deposits as of 1 June 1979, of domestic disposable funds as of 1 March 1989, and of all disposable funds as of 21 May 1988. 2. Figure in parentheses refers to the reserve ratio for bond issues and time deposits. 3. Figure in parentheses refers to the reserve ratio for deposits and bond issues with an original maturity of more than two years, and securities eligible as collateral for transactions with the Central Bank.

Most likely explanation is that indexation of wages, loans and savings led to an inflationary spiral.
Bank regulation was ineffective at preventing excess of lending over repayment

What caused the 2000 – 2007 Hyperinflation?

- 2006 – 2007 Money supply doubled.
- Once again – ineffective regulation of bank lending led to inflationary credit - price spiral
- Lowered mortgage deposit requirements.
- Central Bank following economic theory raised interest rates, but this was ineffective.
- Economic Theory is based on controlling demand for loans.
  - Ignores issue of loan demand stimulated by rising prices
- Icelandic Banking problem was that the supply of loans was being manipulated.

Icelandic Monetary History



Banks as Businesses
Simplified Accounting Equation

Loans

Capital

Salaries, Costs,
Loan Defaults

Assets = Liabilities + Common Stock + (Income − Expenses) − Dividends

Customer Deposits

Interest & Fees

Futures

- Exchange rates being held artificially low
- Inflation can be expected to stay at current rates or higher
  - Fixed rate loans now available.
  - May increase lending – further trapping those with indexed linked loans.