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# The Rationale of Private Bank Note Issuance in an Emerging Market: Evidence from nineteenth century Sweden

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# Swedish nineteenth century monetary and banking system

1834 (1830) – 1873 Silver standard, 1874 – 1914 Gold standard

- The Riksbank (1668) Bank of Parliament, Formally responsible for issuing legal tender and maintaining specie standard, Central bank? (Lender of last resort, clearing, bank of the state, bank of the banks) The Riksbank issued base money (outside money) that was kept as reserves by all commercial banks, including the note issuing so called Enskilda banks.
- Enskilda banks (1831 – 1906) Private, unlimited liability, right to issue notes (inside money that was based on, and redeemed for Riksbank notes), Individual charters (10 years) granted by the Government (HM) (formality after 1864)
- Filial banks (1851 – 1864) Private, unlimited liability, operating with Riksbank credit and equity capital (no right to issue notes). Individual charters (10 years) granted by the Government (HM).
- Joint Stock banks (1864 – today) Limited liability banks. Operating with equity capital and deposits (no right to issue notes).

# Previous Research – View on the Enskilda banks

## 1) Traditional view

Primitive relics, outdated with the arrival of the “modern” Limited Liability banks of *Credit Mobilier* type in 1864.

- Divides into the “modern” and the “early” period in banking (usually set in 1856 (SEB – Deposits) or 1864 (Limited Liability, Usury law).
- Repeated arguments for Swedish financial backwardness before the 1870s are the absence of Limited Liability banking, deposits as source of funds and liquid capital markets

## 2) Free banking view

- Focuses on the note issuance *per se*.

## Previous Research on Banking and Growth in Sweden – International debate

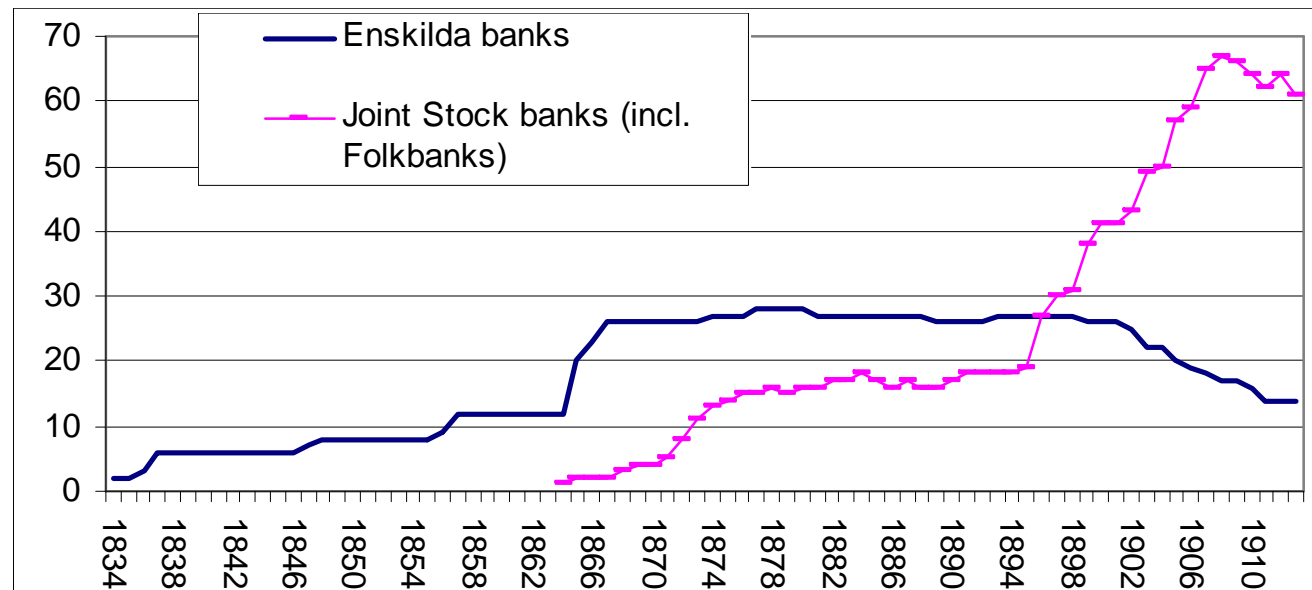
- Sandberg (1978, 1979, 1982) Banking system important for economic growth – after 1864 (Divided early and Modern Period)
- Kindleberger (1982) Banking system little less more than the National Bank before 1900. No importance and not sophisticated (based on Heckscher).
- Fisher and Thurman (1989) Showed an increasing “sophistication” after the 1870s. Supported Sandberg.

# Questions

- Did Limited Liability banks make Enskilda banks obsolete?
- Why did the Enskilda banks still prevail given that they meant a larger risk for their owners?
- How efficient were the Enskilda banks in promoting the development of the financial system and the economy as a whole?
- How important was the (Enskilda) Banking Act of 1864?

# Did Limited Liability banks make Enskilda banks obsolete? Bank Establishment

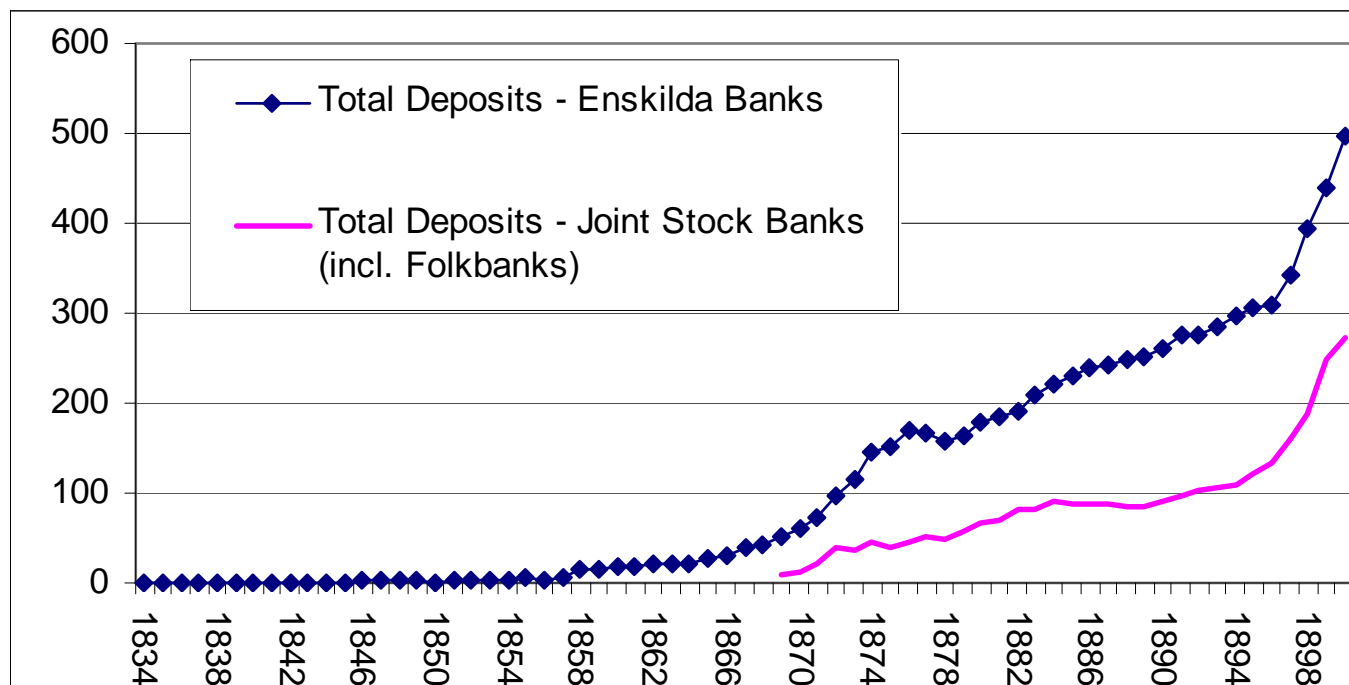
Figure 1: No of Enskilda and Limited Liability Banks (including folkbanks), 1834-1913.



Sources: Post & Inrikes Tidning 1835-1871, Sammandrag af Bankernas Uppgifter, 1871-1911, Sveriges Riksbank (1931) pp.172-185

# Did Limited Liability banks make Enskilda banks obsolete? Bank Deposits

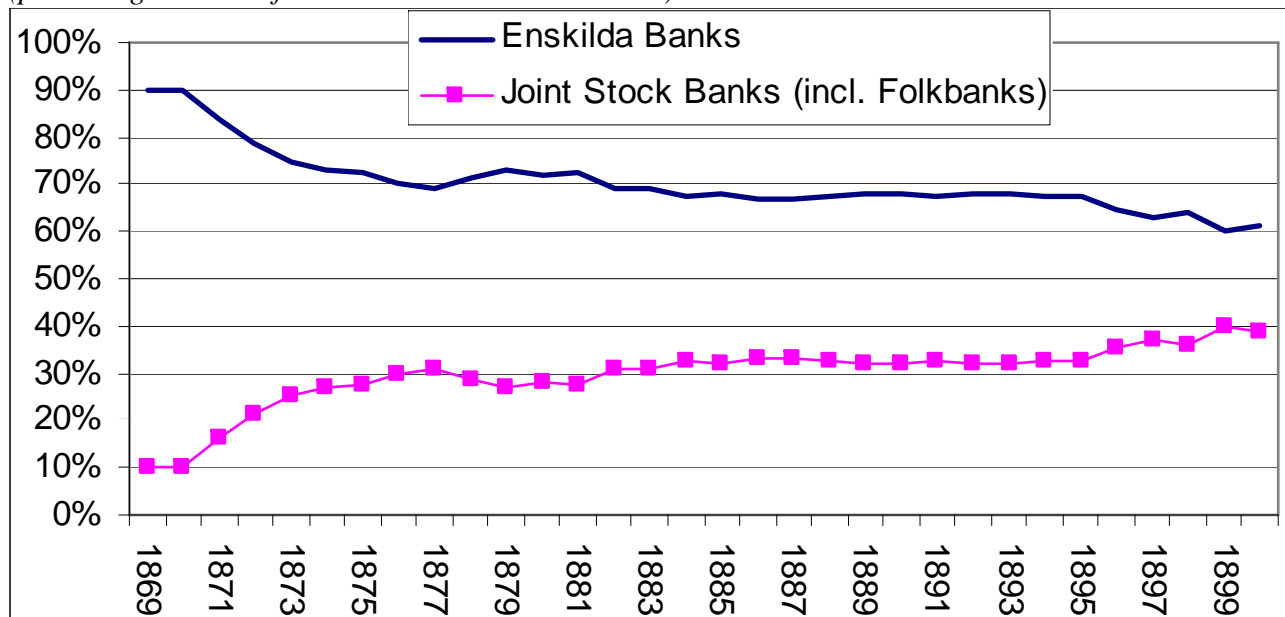
Figure 3: Total Deposits in Enskilda and Limited Liability Banks, 1834 – 1900 (1,000,000's SEK)



Sources: Post & Inrikes Tidning 1835-1871, Sammandrag af Bankernas Uppgifter, 1871-1900, Sveriges Riksbank (1931) pp. 172-185

# Did Limited Liability banks make Enskilda banks obsolete? Bank Size

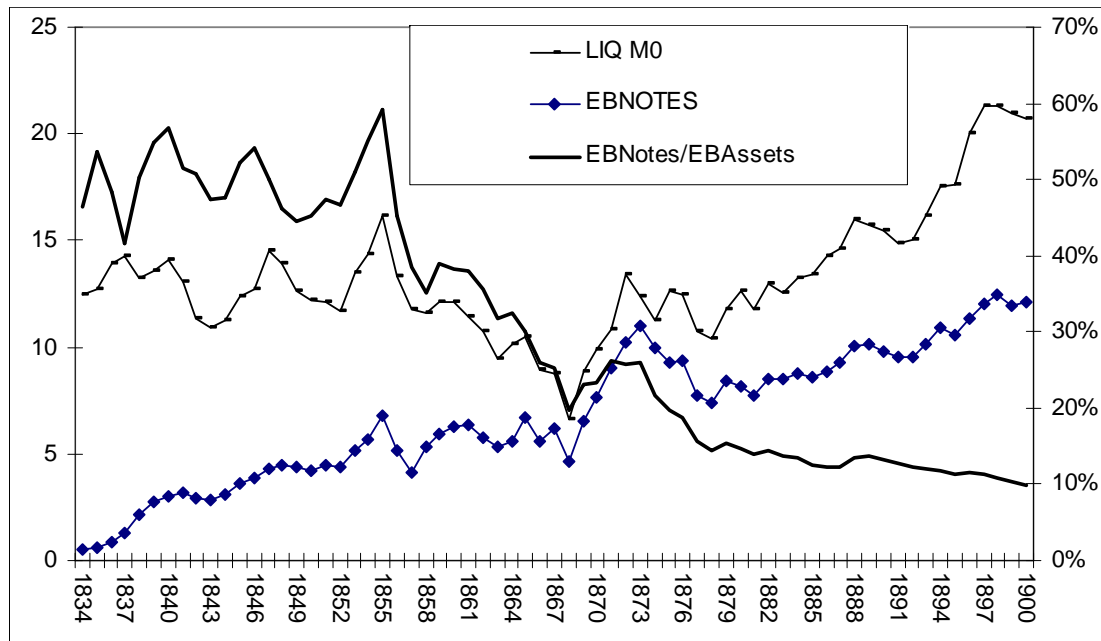
Figure 2: Enskilda and Limited Liability Banks Assets, 1869 – 1900  
(percentage shares of total commercial bank assets).



Sources: Post & Inrikes Tidning 1870-1871, Sammandrag af Bankernas Uppgifter, 1871-1900, Sveriges Riksbank (1931) pp. 172-185

# Why did the Enskilda banks still prevail given that they meant a larger risk for their owners? The importance of note issuance

Figure 4: Per Capita Total Liquidity (LIQ M0) (amount of Enskilda bank and National Bank notes Held by the Public), Enskilda Bank notes (EBNOTES) in Stable Prices (Left Y axis = SEK). Enskilda Bank notes in percentage of Total Enskilda Bank Assets (EBnotes/EBAssets)(Right Y axis), 1834 – 1900.

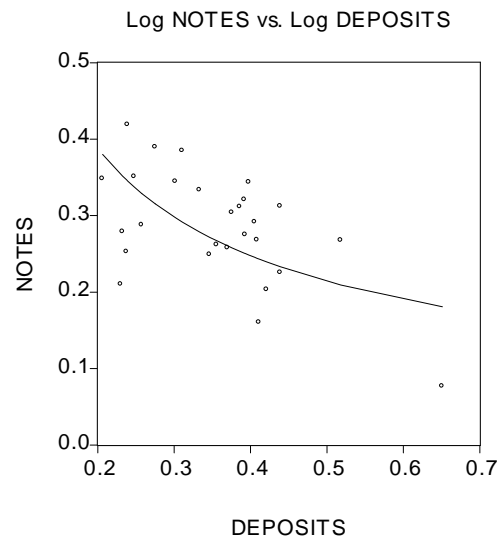


Sources: Post & Inrikes Tidning 1835-1871, Sammandrag af Bankernas Uppgifter, 1871-1900

# The importance of note issuance

## Regional differences in liquidity

Figure 5: A Cross Sectional study of the relationship between Deposits and Notes (in percent of total liabilities) for all Enskilda banks in 1871 (Logarithmic values).

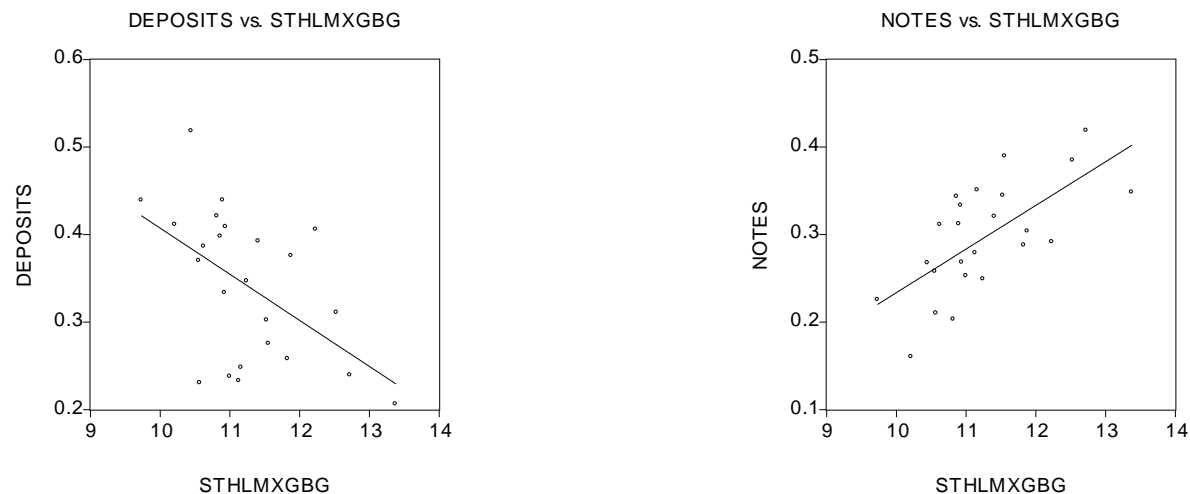


Source: Sammandrag af Bankernas Uppgifter 1871

# The importance of note issuance

## Regional differences in liquidity

Figure 6: Cross Sectional studies of the relationship between Deposits and Distance to Stockholm times Gothenburg (left) and between Notes and Distance to Stockholm times Gothenburg (in percent of total liabilities) for all Enskilda banks in 1871 (Logarithmic values).



Sources: Sammandrag af Bankernas Uppgifter 1871, Motormännens Riksförbund (1999)

# Regional differences in liquidity – not the only explanation

Table 1: Issued Notes, Deposits and Bond Holdings, as Percentages of Total Assets in 1871 and 1881 for Enskilda Banks Established Between 1865 and 1871, Arranged by Note Issuance in 1871.

Bank	Notes-1871	Notes-1881	Deposits-1871	Deposits-1881	Bonds-1871	Bonds-1881	Region
HernösandsEB	42%	24%	24%	44%	1%	5%	North
SundsvEB	38%	18%	31%	51%	0%	3%	North
WesterbEB	35%	20%	21%	46%	0%	4%	North
GefleLEB	32%	17%	39%	57%	3%	5%	North
SkarabLEB	31%	13%	44%	56%	0%	3%	West
ChristianstEB	30%	19%	38%	48%	2%	7%	West
CalmarEB	29%	13%	26%	50%	5%	13%	South
Ebi Christineh	28%	15%	23%	37%	0%	5%	West
UplandsEB	27%	13%	52%	63%	18%	21%	East
EB i Wernersb	26%	16%	37%	41%	3%	4%	West
GotIEB	25%	13%	24%	49%	0%	4%	South
SödermanIEB	23%	17%	44%	55%	8%	10%	East
BohusLEB	21%	16%	23%	47%	0%	5%	West
BoråsEB	16%	10%	41%	57%	1%	4%	West
All Enskilda banks	27%	16%	39%	53%	7%	9%	

Source: Sammandrag af Bankernas Uppgifter 1871, 1881

# The importance of note issuance

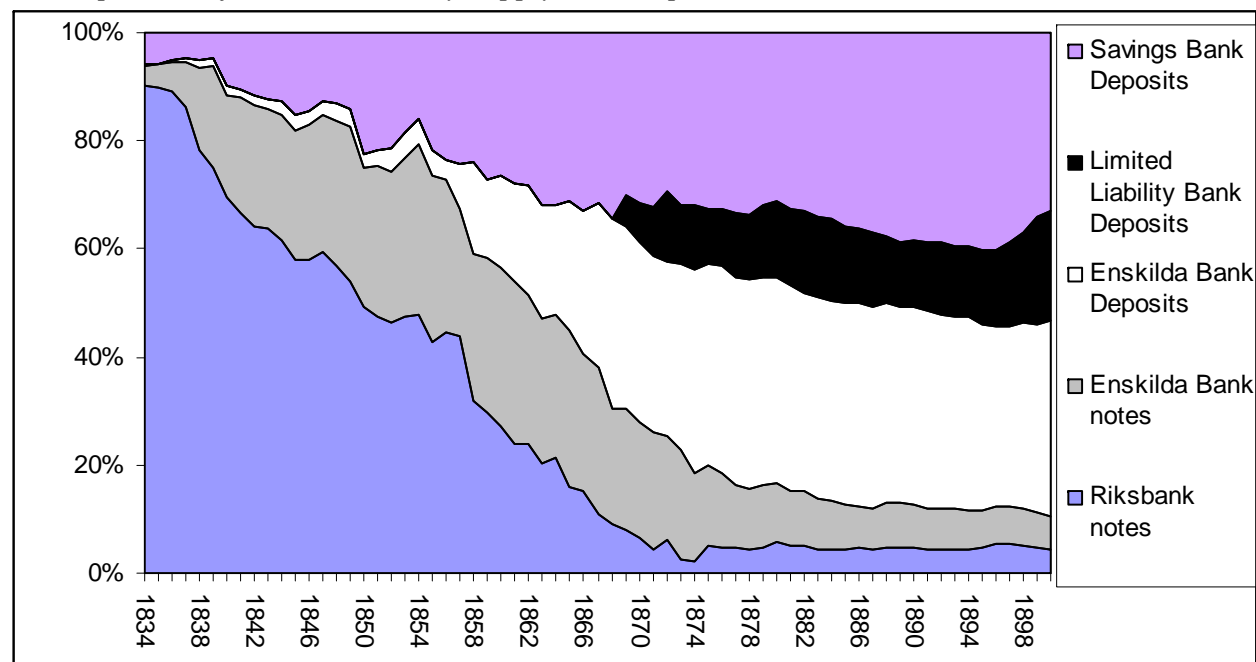
## Seasonal differences in liquidity

Figure 5: OLS-Regression on the Seasonal Determinants of Enskilda Bank Note Issuance, 1878 – 1900, Monthly Data (276 observations)

Dependent Variable: DLOG(NOTES)					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	
C	-0.01	0.00	-2.12	0.03	
DLOG(LIQRES)	0.05	0.02	2.39	0.02	
JANUARY	-0.05	0.01	-7.00	0.00	
FEBRUARY	0.04	0.01	5.37	0.00	
MARCH	0.07	0.01	9.86	0.00	
APRIL	-0.02	0.01	-2.61	0.01	
MAY	-0.02	0.01	-2.95	0.00	
JUNE	0.04	0.01	5.00	0.00	
JULY	-0.06	0.01	-8.04	0.00	
AUGUST	0.03	0.01	4.77	0.00	
SEPTEMBER	0.13	0.01	17.44	0.00	
NOVEMBER	-0.03	0.01	-3.84	0.00	
R-squared	0.78	Adjusted R-squared	0.77		

# Enskilda Banks and Financial Development The Banking Act of 1864

Figure 7: Components of the Broad Money Supply (M2) in percentile distribution, 1834 – 1900.

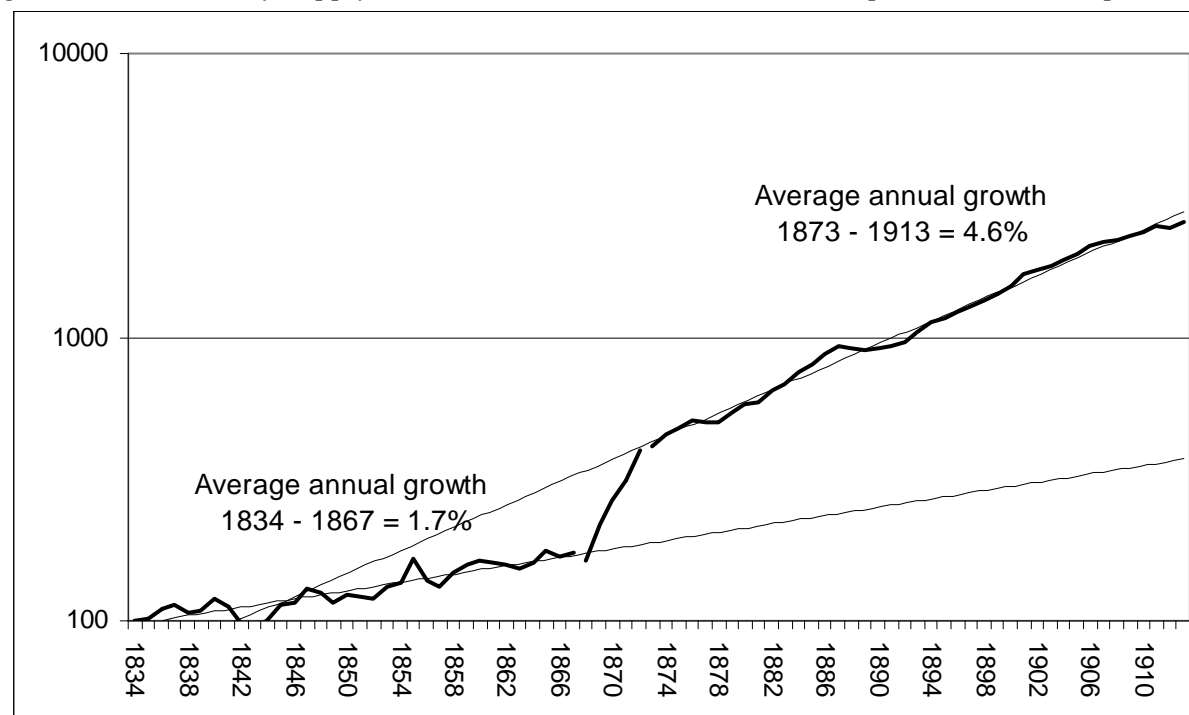


Sources: Post & Inrikes Tidning 1849 – 1871, Sammandrag af Bankernas Uppgifter, 1871-1900, SCB (1960) pp. 99, 102-103, Sveriges Riksbank (1931) pp. 172-185

# Enskilda Banks and Financial Development

## The Banking Act of 1864

Figure 8: Broad Money Supply in Sweden (M2), 1834 – 1913 (Per Capita and in Stable prices).



Source: Post & Inrikes Tidning 1849 – 1871, Sammandrag af Bankernas Uppgifter, 1871-1900, SCB (1960) pp. 99, 102-103, Sveriges Riksbank (1931) pp. 172-185

# Enskilda Banks and Financial Development

## The Liquidity Spiral

Theory:

- The two-pronged crown of banking vulnerability and efficiency in promoting financial development and economic growth (Diamond (1997) Diamond & Dybvig (1983), Diamond & Rajan (2001)).

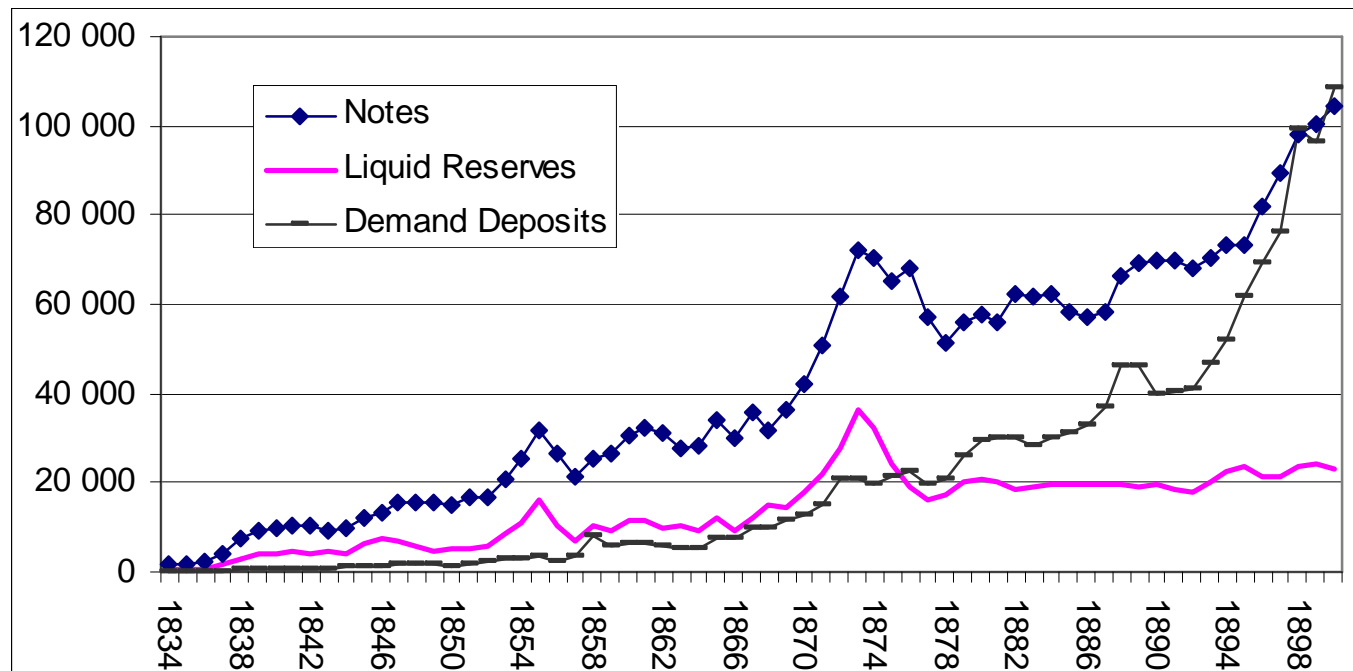
For the financial development:

- Banks play an active role in creating liquid secondary markets. As capital markets become increasingly liquid, banks can reduce their holdings of fully mature assets. That is, liquid capital markets allow banks to reduce their holdings of liquid assets, thus, in turn, further increasing capital market liquidity (Diamond (1997)).

# Enskilda Banks and Financial Development

## The Liquidity Spiral

Figure 6: Note Issuance, Demand Deposits and Liquid Reserves of the Enskilda banks, 1834 – 1900 (1,000's SEK).

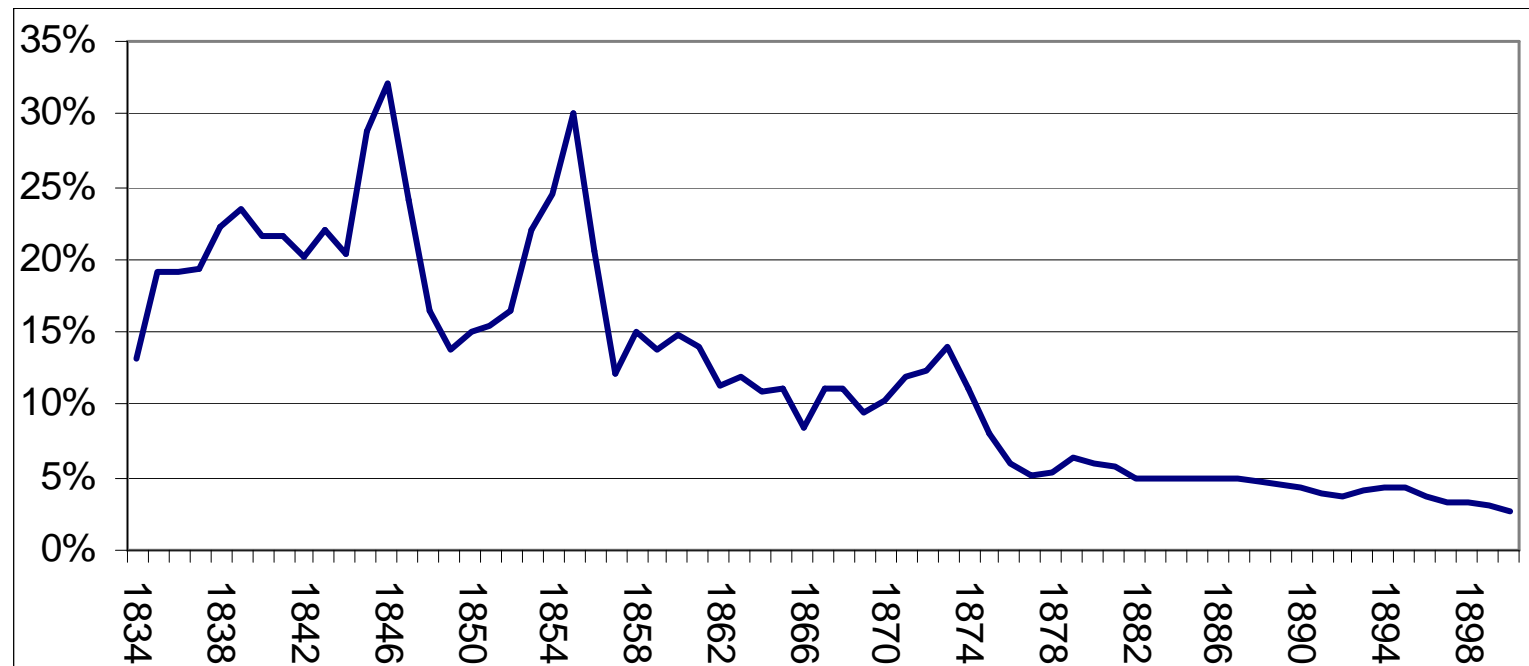


Sources: Post & Inrikes Tidning 1835-1871, Sammandrag af Bankernas Uppgifter 1871-1900

# Enskilda Banks and Financial Development

## The Liquidity Spiral

Figure 7: Liquid Reserves of the Enskilda Banks as a Percentage of Total Assets, 1834 – 1900.



Sources: Post & Inrikes Tidning 1835-1871, Sammandrag af Bankernas Uppgifter 1871-1900

# Enskilda Banks and Financial Development The Liquidity Spiral

Shrinking legal tender reserves: Three hypothesis:

- 1) Increasing confidence in the banking system
- 2) Increasing demand for credit
- 3) Increasing liquidity of the financial market might have made it possible for the banks to substitute interest bearing (e.g. bonds, bills of exchange or shares), for non-interest bearing, financial assets -> Secondary market.

# Enskilda Banks and Financial Development

## The Liquidity Spiral

Figure 8: Bond Holdings as Percent of Total Assets and in Natural Logarithm Form, 1834 – 1900

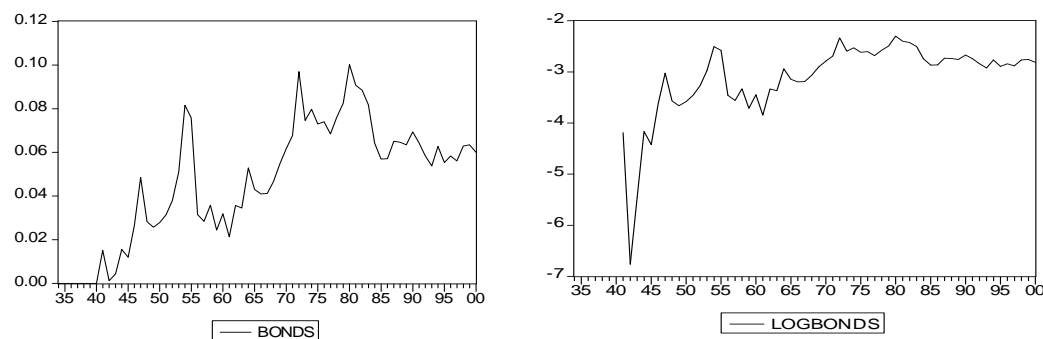
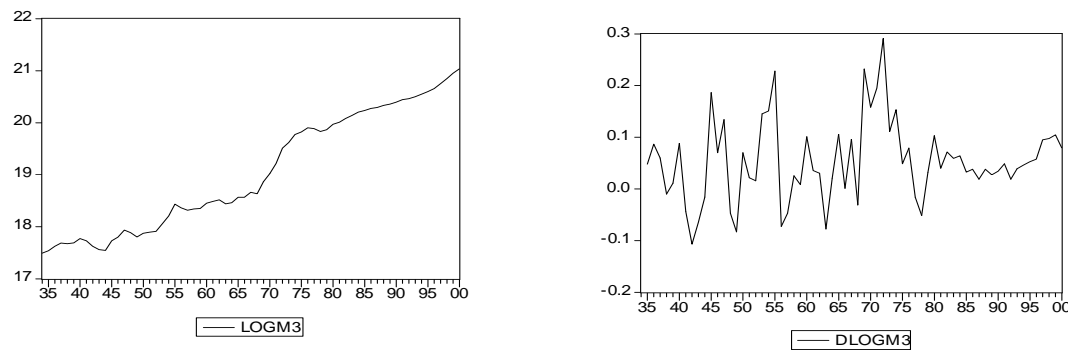


Figure 9: Money Supply M3 as a Natural Logarithm and Annual Changes Therein, 1834 – 1900



# Did the Enskilda banks promote the development of the financial system?

Figure 10: Nominal GDP as a Natural Logarithm and Annual Changes Therein, 1834 – 1900

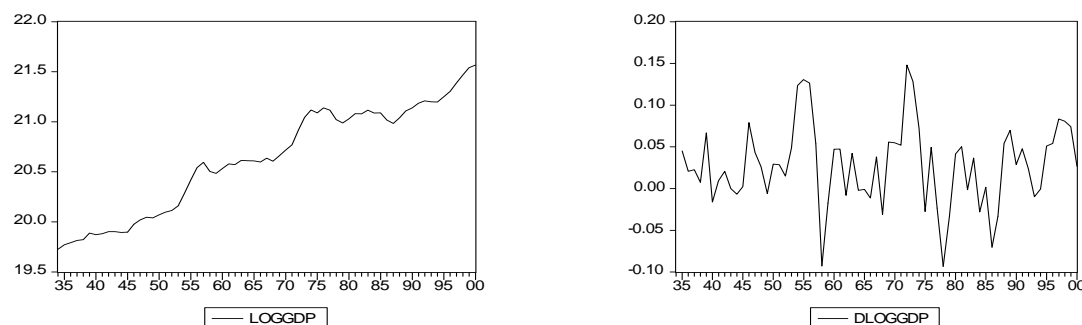
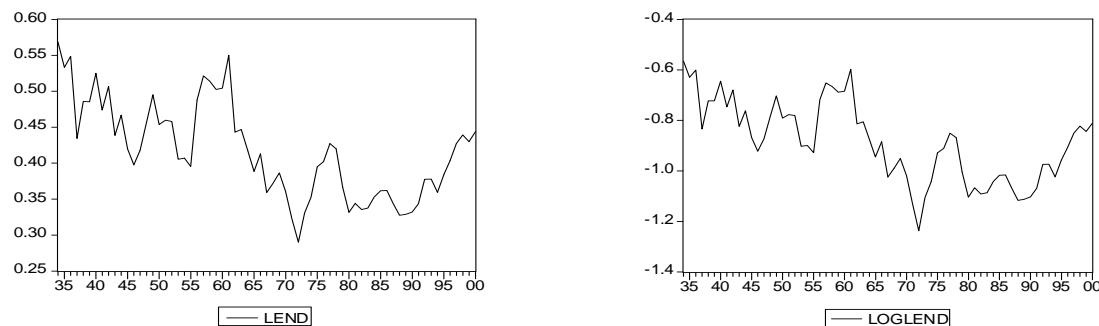


Figure 11: Enskilda Bank Lending as Percentage of Total Assets and as a Natural Logarithm, 1834 – 1900



# Enskilda Banks and Financial Development

## The Liquidity Spiral

Figure 12: OLS-Regression Results of the Determinants of Enskilda Bank Bond Holdings

Dependent Variable: LOG(BONDS)					
Sample: 1848 1900					
Included observations: 53					
Variable	Coefficient	Std. Error		t-Statistic	Prob.
C	-2.07		0.43	-4.77	0.00
DLOG(M3)	1.43		0.41	3.51	0.00
DLOG(GDP)	-1.14		0.55	-2.09	0.04
LOG(LEND)	-0.82		0.25	-3.37	0.00
LOG(BONDS(-1))	0.57		0.09	6.67	0.00
R-squared	0.82	Adjusted R-squared			0.81

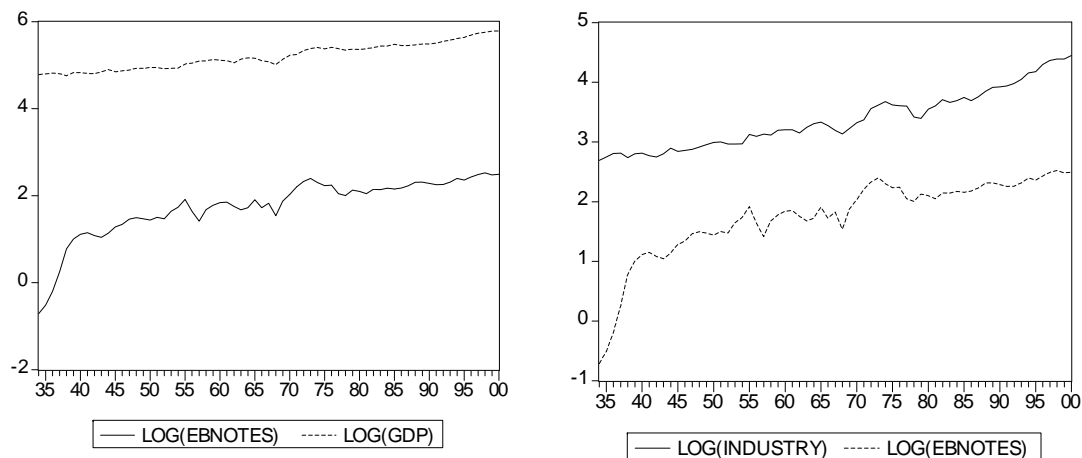
# Enskilda Banks and Economic Growth

## Prior research (Finance and Growth)

- Gårdlund 1947 marginal bank credit among industrial firms
- Hansson & Jonung (1997, 2001) Commercial bank credit -> GDP (1890-1939), after <->
- Ögren (2009) M0(!) and M2 -> GDP & Industry (1834 – 1913) (Commercial bank assets -> Industry)
- Cross country studies (Rouseeau & Wachtel 1998, 2000)

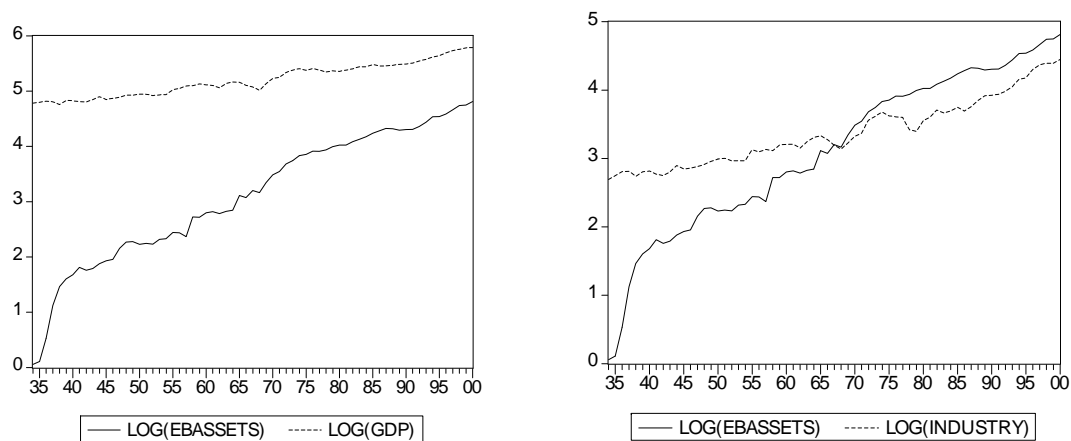
# Enskilda Banks and Economic Growth

Figure 14: Per Capita Enskilda Bank Notes and GDP (to the left) and Per Capita Enskilda Bank Notes and INDUSTRY in stable prices, 1834 – 1900. Logarithmic values.



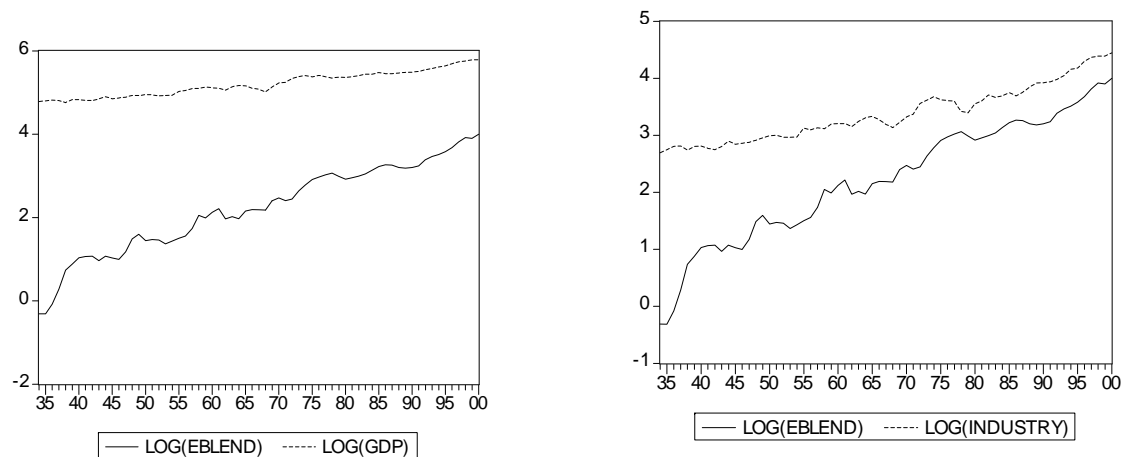
# Enskilda banks and Economic Growth

Figure 15: Per Capita Enskilda Bank Assets and GDP (to the left) and Per Capita Enskilda Bank Assets and INDUSTRY in stable prices, 1834 – 1900. Logarithmic values.



# Enskilda banks and Economic Growth

Figure 16: Per Capita Enskilda Bank Lending and GDP (to the left) and Per Capita Enskilda Bank Lending and INDUSTRY in stable prices, 1834 – 1900. Logarithmic values.



# Enskilda banks and Economic Growth

*Table 4: Result of Johansen's Cointegration pair wise test of linear deterministic trend in the series of EBNOTES, EBLEND and EBASSETS with growth in the industrial sector (INDUSTRY) and overall economic growth (GDP) in par capita and stable prices, 1834 – 1900 logarithmic values. The table shows number of cointegration vectors and their significance levels.*

	Log(EBNOTES)	Log(EBLEND)	Log(EBASSETS)
Log(GDP)	1**	1**	1**
Log(INDUSTRY)	1**	1**	1**

\* 5% and \*\* 1% significance level

It is however not clear how this link was and/or how the causality was between these measures of the Enskilda banks and the measures of economic growth.

# Enskilda Banks and Economic Growth

## The causality puzzle

A developed financial system can sustain growth in two ways: 1) by promoting growth directly by increased investments, and/or 2) by removing obstacles for economic activities to take place, such as providing liquidity for transactions.

The data on growth is in annual figures this may be of too low frequency to catch the importance of the Enskilda banks' liquidity creation for economic growth and modernization when using lagged variables.

# Enskilda banks and Economic Growth

Table 5: OLS-regressions with GDP as the dependent variable in logarithmic and differenced values

DLOG(GDP)	Eq. 1 (1834 – 1900)	Eq. 2 (1864 – 1900)	Eq. 3 (1864 – 1900)
<b>C</b> Prob.	<b>0.012**</b> 0.042	<b>0.009</b> 0.176	<b>0.013**</b> 0.014
<b>DLOG(EBNOTES)</b> Prob.	<b>0.181***</b> 0.004	<b>0.273***</b> 0.000	<b>0.228***</b> 0.000
<b>DLOG(EBLEND)</b> Prob.	<b>0.097</b> 0.126	<b>0.280***</b> 0.005	
<b>DLOG(EBBONDS)</b> Prob.	<b>0.009</b> 0.338	<b>0.092**</b> 0.016	
<b>DLOG(EBASSETS)</b> Prob.	<b>-0.120</b> 0.290	<b>-0.252*</b> 0.065	
<b>DLOG(EBRES)</b> Prob.	<b>-0.047</b> 0.141	<b>0.013</b> 0.724	
<b>R-squared</b>	0.254	0.596	0.447
<b>Adj. R-squared</b>	0.183	0.531	0.432

\* 10%, \*\*5% and \*\*\* 1% significance level

# Enskilda banks and Economic Growth

Table 6: OLS-regressions with *INDUSTRY* as the dependent variable in logarithmic and differenced values

DLOG(INDUSTRY)	Eq. 1 (1834 – 1900)	Eq. 2 (1864 – 1900)	Eq. 3 (1864 – 1900)
<b>C</b> Prob.	<b>0.026**</b> 0.017	<b>0.024</b> 0.168	<b>0.026**</b> 0.022
<b>DLOG(EBNOTES)</b> Prob.	<b>0.301**</b> 0.010	<b>0.310*</b> 0.055	<b>0.276***</b> 0.008
<b>DLOG(EBLEND)</b> Prob.	<b>0.064</b> 0.585	<b>0.098</b> 0.681	
<b>DLOG(EBBONDS)</b> Prob.	<b>0.018</b> 0.315	<b>0.115</b> 0.226	
<b>DLOG(EBASSETS)</b> Prob.	<b>-0.211</b> 0.314	<b>-0.150</b> 0.661	
<b>DLOG(EBRES)</b> Prob.	<b>-0.079</b> 0.174	<b>-0.064</b> 0.516	
<b>R-squared</b>	0.172	0.245	0.185
<b>Adj. R-squared</b>	0.094	0.123	0.162

\* 10%, \*\*5% and \*\*\* 1% significance level

# Enskilda banks and Economic Growth

Table 6: OLS-regressions with GDP and INDUSTRY as the dependent variables in logarithmic and differenced values

	DLOG(GDP) (1834 – 1900)	DLOG(GDP) (1864 – 1900)	DLOG(INDUSTRY) (1834 - 1913)	DLOG(INDUSTRY) (1864 - 1913)
C	0.01	0.01	0.02**	0.02
Prob.	0.38	0.39	0.09	0.212
DLOG(EBNOTES)	0.21***	0.33***	0.32***	0.33**
Prob.	0.001	0	0.007	0.061
DLOG(EBLEND)	0.11**	0.28***	0.07	0.1
Prob.	0.08	0.002	0.527	0.68
DLOG(EBBONDS)	0.02	0.08**	0.02	0.11
Prob.	0.12	0.03	0.224	0.258
DLOG(EBASSETS)	-0.15	-0.036***	-0.24	-0.19
Prob.	0.17	0.01	0.26	0.61
DLOGEN(EBASSETS(-5))	0.09**	0.17**	0.07	0.06
Prob.	0.037	0.02	0.38	0.75
DLOG(EBRES)	-0.06**	0.03	-0.09	-0.06
Prob.	0.0562	0.434	0.13	0.56
R-squared	0.32	0.66	0.18	0.25
Adj. R-squared	0.23	0.6	0.09	0.1

\* 10%, \*\*5% and \*\*\* 1% significance level

# Conclusions

- EB's the dominant Banking system until note issuing right was revoked in 1903
- EB's note issuance of importance for financial and economic development
- The importance of the Enskilda Banking Act of 1864 for financial and economic development