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**ECONOMICS 303Y1**

**The Economic History of Modern Europe to 1914**

**Prof. John Munro**

**Lecture Topic No. 29:**

## VII. PROBLEMS AND GROWTH IN THE BRITISH ECONOMY, 1870 - 1914

### A. ECONOMIC TRENDS, 1870 - 1914: The DEBATES ON: 'INDUSTRIAL RETARDATION' and 'THE GREAT DEPRESSION'

#### 1. The Current Debate about the British Economy, 1870 - 1914

There are really four inter-linked debates (and thus four different potential essay topics) on these issues, about the British economy from 1870 to 1914:

##### a) **The Debate about Industrial Retardation:**

i) **Did the British economy fail to cope adequately with the emergence of foreign industrial competition after 1870,**

- and consequently did it suffer some form of economic decline?

- if so, was that economic decline absolute or relative?

ii) **Was such an economic decline, even if only relative, experienced in the form of a depression, or economic stagnation, or in what is called 'industrial retardation'?:** i.e., a *slowing down of the rate of economic growth* (as opposed to the absence of actual growth, or actual decline)?

iii) **Did such 'industrial retardation' -- if it occurred -- govern the entire era 1870 to 1914,** or just part of this era?

iv) **Did it indeed continue on after World War I,** i.e., into the inter-war period, up to WWII?

##### b) **The Debate about British Entrepreneurship:**

i) **Can British businessmen, entrepreneurs, be held responsible for the supposed faults of the British economy in this era?**

ii) **Can they be held accountable for failing to respond properly to foreign challenges?**

iii) **Was there a 'Buddenbrooks' syndrome?**

(1) The renowned German author Thomas Mann (1875-1955) produced his earliest masterpiece *Buddenbrooks* in 1901: situated in the German Baltic town of Lübeck

- a novel tracing the rise, decline, and fall of a Lübeck business family, over four generations,

- the last of which ruin the family fortunes established by the first and built up by the second.

(2) This theme of 'rags to riches and back to rags' can be seen historically, for example,

- in the 15<sup>th</sup>-century Florentine family of the Medici (over three generations)

- here in Toronto, in the Thomas Eaton family (do any of you now remember Eaton's?)

(3) But of course, if British business families rose, expanded, and then declined, they would not have done so together, in the same periods: i.e., so that as one family's fortunes declined another might be rising in the

same period.

iii) **Or were the perceived faults those of industrial and financial structure that had evolved from earlier in the nineteenth century?** -- i.e., from the 1820s, without much relevance to foreign competition.

iv) **We have in fact already examined most of this issue**, earlier: in the lectures on German industrialization, especially in lecture no. 24 (late February-early March)

c) **The Problem of Capital Exports and post-1870 Capitalist Imperialism:**

i) **Did the British invest too heavily abroad at the expense of domestic investment?** and

ii) **Did the British thus rely too much on overseas investment incomes?**

iii) **Closely related to this topic is the still ongoing debate about Capitalist Imperialism**, or the ‘New Imperialism’ of the post 1870 era.

iv) **the Marxist-Leninist theory of Imperialism:** a summary

(1) that imperialism is *ipso facto* the export of capital abroad,

(2) but in particular to those areas offering higher investment returns than in the domestic economy,

(3) and thus British business necessarily had to export capital in order to avoid the fatal consequences of the inevitable fall in the rate of interests and profits and rents at home, in the domestic economy:

(4) For this negative prediction was an axiom in 19<sup>th</sup>-century Classical economic theory, as well as a basic principle of Marxism, that

- investment yields – in terms of profits, interest, and rent – have an inevitable historical tendency to fall

- i.e., with increasing competition and growth of capital stock, etc.

(5) The Marxist belief was that, in response to this fall in investment yields, capitalists would necessarily seek or strive to exploit their workers (in the Marxist view, the sole source of ‘surplus value’, and hence of profits for the capitalists) far more intensively

(6) That increased exploitation, it was expected, would lead to industrial strife, strikes, and then revolution.

(7) Certainly the history of prices, interest rates (nominal), rents, and profit margins in the period of 1873-1896 seemed to confirm this orthodox view: the Marxist theory of the ‘falling rate of profit’

- but not wages: and if nominal wage rates remained steady, real wages rose with deflation

- more on that later.

d) **The issue of the ‘Great Depression’ of 1873 - 1896:** with several sub-issues

i) **Did the international, European, or British economies suffer a ‘Great Depression’ after 1873:** specifically from 1873 to 1896?

ii) **If not, why was there such a sharp and steep deflation in this period?**

- iii) **What caused that deflation:** real or monetary factors, or some combination of the two?
- iv) **Did the British and European economies then recover to experience a powerful pre-war economic boom,** from 1896 to 1914?
- v) **This was also a period of pronounced inflation:** is the inflation itself evidence for an economic boom?
- vi) **What were the causes of this inflation:** again, monetary or real, or some combination of the two?

## 2. The Debate about the ‘Great Depression’ of 1873-96?

### a) Was there such a ‘Great Depression’?

- i) **No, not for the entire period;** and few if any historians, would now consider this entire era to have been one of a ‘Great Depression’.
- ii) **Many, however, would contend that several commercial-industrial depressions or recessions did occur during this era,** along with alternating periods of boom or expansion; but that does not justify using the term for the entire quarter-century.

### b) Why then is the term ‘Great Depression’ so commonly used?

#### i) First, public perceptions:

- (1) because British businessmen and government officials themselves in this era -- the 1870s and 1880s
  - thought that they were experiencing depressions,
  - ushered in by the international financial crisis of 1873.
- (2) Indeed they believed so much in a depression that in 1884 the British government established a Royal Commission to seek solutions for it.
- (3) To some extent, these perceptions are maintained to this day: for, Paul Krugman, the noted Nobel Prize winner in Economics, Princeton Professor, and NY Times columnist is now comparing our current economic plight with the late-19th century ‘Great Depression’, rather than with the more extreme example of the true Great Depression, in the 1930s.

#### ii) Second, monetary deflation and ‘money illusion’:

- (1) because, as just noted, prices fell so sharply from 1873 to 1896 [see the graph]
- (2) and along with prices also fell nominal interest rates and profits
- (3) but not nominal or money wages, which generally continued to rise, if slowly: so that real wages rose considerably.

iii) **But third: were there any major economic costs arising from deflation?** Yes, those that arose from the *stickiness* of the factor costs of production.

- (1) wages: as noted, money wages did not fall, while some in fact rose: historically, money wages have

always experienced or demonstrated downward stickiness (for reasons that I have sought to explain in several journal articles – which few will read).<sup>1</sup>

(2) interest rates (price of borrowing capital):

- most loan contracts specified a fixed rate of interest for the duration of the contract
- thus for long-term contracts, the annual interest payments would rise in real terms
- and the real cost of repaying the loan, with deflation (including presumably a fall in the price of the product being manufactured and sold), would rise.

(3) land rents: the same logic applies – and most rental contracts were long-term

(4) Did such a rise in the real factor costs of labour, capital, and land have any injurious effects on the British economy during this period of deflation, from 1873 to 1896?

- so far no one has provided any such evidence
- but it may exist and be revealed by future research.

(5) **Deflation as a stimulus to technological changes:**

- Insofar as deflation did prove to be an economic problem, in raising factor costs as suggested, above, then deflation may have been a positive spur to technological innovations to offset those rising factors costs
- certainly there are abundant examples of many interrelated technological changes in British (and other European) industries in this period
- And as noted, those technological innovations in turn are credited, to some extent, as real factors that help to explain the deflation itself.

iv) **Fourth, the problem of British Agriculture:** because British grain farmers so clearly and definitely suffered a very severe economic contraction (which is probably a better term than ‘depression’).

(1) particularly as and when the international transportation revolution finally brought home the bitter fruits of Free Trade for the grain sector in particular, for agriculture in general, from the 1870s

(2) with sharply falling real prices, severe cut-backs in production, and that dramatic contraction in the agricultural sector already demonstrated.

iv) **The Problem of Foreign Trade:** Foreign appears to be the other major sector involved. British and

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<sup>1</sup> John H. Munro, ‘Wage Stickiness, Monetary Changes, and Real Incomes in Late-Medieval England and the Low Countries, 1300 - 1500: Did Money Matter?’ *Research in Economic History*, 21 (2003), 185 - 297; John Munro, ‘The Late-Medieval Decline of English Demesne Agriculture: Demographic, Monetary, and Political-Fiscal Factors’, in Mark Bailey and Stephen Rigby, eds., *Town and Countryside in the Age of the Black Death: Essays in Honour of John Hatcher*, The Medieval Countryside, vol. 12 (Turnhout: Brepols, 2012), pp. 299-348.

international trade statistics do indicate two fairly important export slumps:

Consider the following table, comparing British and German exports.<sup>2</sup>

**Foreign Trade, 1870 - 1914**

**Current Values and Indices of the Domestic Exports of the United Kingdom and Germany: in quinquennial means, 1860-4 to 1910-13**

Mean of 1870 - 4 = 100

Period	United Kingdom	U.K.	Germany	Germany
	Domestic Ex-ports in Millions of £ st.	Index 1870-4 = 100	Exports in Millions of Marks	Index 1870-4 = 100
1860-4	138.4	58.9		
1865-9	181.1	77.1		
1870-4	234.8	100.0	2,328.4	100.0
1875-9	201.5	85.8	2,696.1	115.8
1880-4	234.3	99.8	3,125.0	134.2
1885-9	226.2	96.3	3,067.4	131.7
1890-4	234.4	99.8	3,102.0	133.2
1895-9	239.7	102.1	3,688.4	158.4
1900-4	289.2	123.2	4,791.6	205.8
1905-9	377.3	160.7	6,386.0	274.3
1910-3	474.2	202.0	8,658.8	371.9

**Source:** B.R. Mitchell, 'Statistical Appendix,' in Carlo Cipolla, ed., *Fontana Economic History of Europe*, Vol. IV:2, *Emergence of Industrial Societies* (1973), pp. 798-800.

(1) a very severe slump in the mid and late 1870s

(2) a milder trade slump in the later 1880s

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<sup>2</sup> See also the tables in the Appendix to this lecture, below. Table 1, in the Appendix, also includes France, which, for space reasons, cannot be included in this table in the text.

v) **The overall value of exports in the early 1890s:**

(1) was no higher than it had been in the early 1870s;

(2) and the level of the early 1870s was not in fact exceeded until the end of the century (though that partly reflects changes in the price levels).

c) **British trade, as Arthur Lewis (the 1979 Nobel prize-winning economist) pointed out, faced four related problems:**<sup>3</sup>

i) **the loss of some markets** in those countries that were industrializing: i.e., as those countries developed, in effect, import-substitution industries to produce goods formerly imported from Britain

ii) **the loss of some markets in other or third countries** that were being invaded by Britain's new industrial rivals.

iii) **the loss of relative access to many foreign markets:** with the Return to Protectionism,

- i.e., with the restoration and rise of protective tariffs from the later 1870s.
- consider again the significance of Russia's Mendeleyev Tariff of 1891: to block entry of foreign goods and thus to force foreign producers to establish branch plants within Russia

iv) **the loss of some of Britain's own domestic or home market:**

(1) Since Great Britain continued to practise complete Free Trade, with the Gold Standard, that market was, and so was invaded by Britain's rivals.

(2) we have already seen the example of German steel products so strongly invading British domestic markets.

d) **Levels of capital investments, domestic and foreign:**

i) **from the table on capital investments**, we can see that

(1) total net investment as a percentage of NNP dropped from about 10% in the early 1870s, to very low levels thereafter.

(2) and such investments did not regain that 10% level until early 20th century.

ii) **net domestic capital formation was surprisingly low:** as low as 1.2% of NNP in the later 1880s.

iii) **Note further, in comparing German with British investment figures**, how much lower the British figures are.

**Capital Formation Ratios in the UK and Germany, 1865 - 1904**

in current nominal values and in constant 1913 values

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<sup>3</sup> W. Arthur Lewis, *Growth and Fluctuations, 1870 - 1913* (London, 1978).

Years	UK: NDCF/ NDP current values	UK: NDCF/ NDP constant values	UK: NNCF/N NP current values	UK: NNCF/ NNP constant values	Germ- any NDCF/N DP current	Germ- any NNCF/ NNP current	Germ- any NNCF/ NNP constant
1860- 1870	7.2	8.6	10.0	11.5	8.5	9.7	10.6
1870- 1880	8.2	7.3	11.8	10.9	11.6	13.5	13.0
1880- 1890	6.4	3.4	10.9	8.1	11.2	14.0	14.5
1890- 1900	7.3	3.0	10.1	6.0	13.9	15.4	15.9
1900- 1910*	8.8	4.8	10.5	6.7	15.6	16.5	15.9

\* For the UK: 1895-1904; for Germany: 1901-13

NDCF/NDP: Net Domestic Capital Formation as a Percentage of Net Domestic Product

NNCF/NNP: Net National Capital Formation (Total) as a Percentage of Net National Product

**Source:** Y. Goo Park, 'Depression and Capital Formation: the United Kingdom and Germany, 1873 - 1896', *Journal of European Economic History*, 26:3 (Winter 1997), p.514

iii) **The following table, for Great Britain alone, demonstrates both:**

- (1) a decline in total investments, as a share of NNI = NNP (total net output)
- (2) a relative, and important shift of capital investments from the domestic economic to foreign countries (overseas investments), which may have had an even more negative impact.

**Capital Investments, Domestic and Foreign, in the British Economy,**

**1870-4 to 1910-14**

**Net Domestic Capital Formation and Net Foreign Investments,  
in Millions of Pounds Sterling, Current Values,  
and as Percentages of Net National Product:**

**Quinquennial Means, 1870 - 1914**



Period	Net National Product in Millions	Net Domestic Capital Formation NNP Millions	N.D.C.F. as % of NNP	Net Foreign Invest-NNP Millions	N.F.I. as % of	Total Investment as % of
					NNP	
	£	£		£		
<b>1870-4</b>	1,020.6	26.6	2.6%	78.4	7.7%	10.3%
<b>1875-9</b>	1,036.8	48.6	4.7%	30.4	2.9%	7.6%
<b>1880-4</b>	1,080.8	32.4	3.0%	54.6	5.1%	8.0%
<b>1885-9</b>	1,153.4	14.2	1.2%	80.4	7.0%	8.2%
<b>1890-4</b>	1,307.4	29.0	2.2%	69.8	5.3%	7.5%
<b>1895-9</b>	1,503.8	66.8	4.4%	44.4	3.0%	7.4%
<b>1900-4</b>	1,671.6	109.2	6.5%	34.4	2.1%	8.6%
<b>1905-9</b>	1,833.0	57.4	3.1%	132.6	7.2%	10.4%
<b>1910-4</b>	2,107.4	36.0	1.7%	190.0	9.0%	10.7%

**Source:** Charles H. Feinstein, *Statistical Tables of National Income, Expenditure and Output of the U.K., 1855-1965* (Cambridge, 1976), pp. T-4, 5, T-37, 38; T-106, 107.

e) **Levels of Unemployment** also do not provide any significant indications of a real depression:<sup>4</sup>

i) **Unemployment levels** were, overall, somewhat higher in the period 1873 - 1896 than either before or after; but still modest by 20<sup>th</sup> century standards

**Index Numbers of Industrial Employment and  
Trade Union Unemployment Rates in Great Britain  
1851 - 1938, in five year means**

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<sup>4</sup> Statistics on unemployment can be found in: A. C. Pigou, *Industrial Fluctuations*, 2nd edn. (London, 1929: Appendix; and William Beveridge, *Full Employment in a Free Society*, 2nd edn (London, 1960), Appendix A: 'Trade Union Unemployment Rate,' pp. 312-13.

Date	Construction	Textiles	Other Industries	All Industries	Beveridge Unemployment Rate	Pigou Unemployment Rate
1851-55						3.98
1856-60	98.06	106.08	102.08	101.56	3.86	5.66
1861-65	105.20	79.16	100.84	97.06	3.64	4.88
1866-70	96.28	95.44	102.90	98.12	5.08	5.84
1871-75	107.70	109.00	107.02	107.84	1.51	1.56
1876-80	96.74	99.58	104.18	100.14	6.00	6.42
1881-85	105.76	101.00	104.06	103.74	4.84	5.16
1886-90	96.16	102.28	98.04	98.62	5.00	5.38
1891-95	93.80	100.88	94.10	95.30	6.10	6.00
1896-00	104.70	101.36	97.20	101.16	2.85	2.78
1901-05	101.20	94.00	96.24	97.34	4.84	4.60
1906-10	96.54	99.16	100.90	98.80	6.02	5.50
1911-15	103.73	105.73	101.80	103.70	2.51	2.52
1916-20					1.36	
1921-25	102.20	101.94	100.70	100.24	13.08	

**Source:** William Beveridge, *Full Employment in a Free Society*, 2nd edn (London, 1960), Appendix A: 'Trade Union Unemployment Rate,' pp. 312-13; Arthur Pigou, *Industrial Fluctuations* (London, 1927), pp. 353-54.

**ii) Not until the later 1870s did unemployment rise above 5%:**

(1) for 1876-80, the mean was 6.00% (or 6.42%, according to Pigou's earlier figures).

(2) the highest annual level was 10.70% in 1879

(3) The only other year of very high unemployment was 1886, with 9.55%

**iii) In general, in the 1880s, unemployment averaged:** 4.84% and 5.00% in each quinquennium

**iv) Unemployment did not again reach the 6% level:** until the end of this era, in 1891-95

v) **and then fell sharply** to just 2.85% in 1896-1900 (but rose to 6.02% in 1906-10).

vi) **From 1911, and through that war-time decade:** unemployment dropped sharply

vii) **But rose sharply after World War I:** with an astoundingly high mean of 13.08% in 1921-25.

**f) Levels of National Income: refute the concept of a ‘Great Depression’**

i) **If the definition of a recession is a sustained fall in the Net National Product,** and thus in Net National Income, in real terms, over two successive quarters, then a depression – for which no agreed-upon definition exists – may be considered as a prolonged, extended, and deep recession.

ii) **the prime test would be:** to ask whether or not British National Income sustained any such declines for the period 1873 - 1896.

iii) **But the previously presented table on capital formation in the British economy,** which also included the quinquennial (5 year) means of national show no such declines:

iv) **therefore we may well argue that there is no statistical evidence for a ‘Great Depression’ if there was no decline in NNP and NNI (of any duration):**

(1) to support a contention that the British economy sustained any such depression, at any time, from 1873 to 1896.

(2) despite the negative evidence, in this table, on capital formation.

**Levels of National Income (Net National Product) and of Capital Formation  
in the British economy, 1870 - 1914**

Period	Net National Product in Millions	Net Domestic Capital Formation NNP Millions	N.D.C.F. as % of NNP	Net Foreign Invest- NNP Millions	N.F.I. as % of	Total Investment as % of
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**Source:** Charles H. Feinstein, *Statistical Tables of National Income, Expenditure and Output of the U.K., 1855-1965* (Cambridge, 1976), pp. T-4, 5, T-37, 38; T-106, 107.

### 3. The Course of Prices I: from 1873 to 1896:

#### a) The Period of the 'Great Depression', 1873 - 1896:

i) **Deflation:** This period, if not one of true depression, was nevertheless, as just noted, one of very severe deflation, perhaps the severest deflation ever recorded (since the late 14<sup>th</sup> century), at least before that of the 1930s..

ii) **The Psychological Impact:** as just emphasized, the steady fall in retail prices, interest rates, rents, and in nominal profits, etc. was a major reason why contemporary businessmen thought that they were then experiencing a depression.

#### iii) **The real economic impact:**

(1) If nominal money wages and nominal interest rates did not fall or adjust easily, to the overall decline in the price level, then to repeat what was noted previously:

- the rise in the real costs of the major factors of production
- i.e., increases in real wages, real interest rates, and real rent burdens

(2) that provides obviously problems for many industrial and commercial entrepreneurs,

(3) or certainly those for whom wage and interest costs constitute a significant portion of their total costs, for:

- interest rates on contracts obviously cannot be altered once a contract is issued
- historic problem of downward 'wage-stickiness': resistance of workers to wage cuts.

b) **What was the cause of this deflation:** monetary or real?

For this period (as indeed for many others, such as the 16th-century Price Revolution), there is an ongoing debate in the journal literature between these two schools: monetary and real.

i) **The ‘Real’ School:** i.e., focusing on technological change, investments, populations, etc.: is led by Rostow, Lewis, Landes;

ii) **The monetary school:** focusing on monetary factors (stocks and flows): is headed by Friedman, Schwartz, and Bordo.

c) **The Monetary School's arguments for deflation:**

i) **That almost all countries were now on the gold standard (Russia the last in 1894-97),**

(1) with currency stocks determined by gold reserves;

(2) that the gold standard had the effect of isolating gold stocks and impeding world gold movements.

ii) **That world gold supplies for monetary purposes were further dwindling,**

(1) because there had been no new gold mining booms since those of the 1850s (California and Australia); and,

(2) furthermore, because more gold was being consumed for industrial purposes.

(3) As you can see from the graph on the screen, and from Table 16:

- there was indeed a decline in world gold mining outputs from the late 1860s,
- and a sharp decline in the early 1870s,
- followed by a general but more gentle decline to the early 1890s

(4) note that the graph and table are expressed in decennial means, with the mid-decade point plotted on the graph.

iii) **That in general world money supplies failed to keep pace with the increasing volume of world industrial production and trade:**

iv) **that in general, the monetary role is a passive one in deflation, as in the equation:**<sup>5</sup>

$M.V \equiv P.y$  [where  $y$  = NNI net national income = NNP net national product];

or  $M = k.P.y$  [in which  $k$  equals that proportion of  $NNI = P.y$  that the public chooses to hold in cash balances, i.e., in high powered money that earns no investment income.

Thus, if  $y$  expands more than does  $M.V$ , then  $P$  must fall:  $\text{If } \Delta y > \Delta (M.V) \Rightarrow P \downarrow$ .

v) **Note that there is no clear evidence of any net contraction in national money stocks;** no monetary contraction as such.

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<sup>5</sup> See my web document on the Quantity Theory of Money from Fisher to Friedman:  
<http://www.economics.utoronto.ca/munro5/QUANTHR2.pdf>

(1) as for the gold question, as seen with Britain, France, and Russia, 19th century money supplies, with the increasing role of bank credit, were no longer dependent upon gold stocks:

(2) there was no linear relationship between gold stocks and effective money supplies, as we just saw last week, in examining Russian money and banking in the late 19<sup>th</sup> century.

v) **Are the monetary arguments refuted by a fall in interest rates?**

(1) Not necessarily, because it is the nominal rate of interest that fell, not real interest rates;

(2) and real interest rates in fact rose slightly with the much more pronounced deflation.

(3) Note that the real rate of interest = nominal rate *minus* the annual rate of inflation, or *plus* the annual rate of deflation.

(4) This is the so-called Gibson Paradox, which was resolved in this fashion by Prof. Knick Harley.<sup>6</sup>

(5) In 1888, the British government converted its 3.0% Consols into 2.75% consols for this reason.<sup>7</sup>

- in that the real return on 2.75% consols was equivalent to the earlier return on 3.0% consols;

- i.e. to the real rate pertaining before 1870.

d) **Arguments on the Real Side:** appear, however, to be more solidly based.

i) **Basic thesis:** that the very sharp cost reductions from an accelerating rate of technological change in all sectors thus reduced prices throughout the economy:

(1) in industry, certainly; in transportation; in agriculture;

(2) and with sharp reductions in transaction costs from greater efficiencies in the commercial and financial sectors.

ii) **We have already seen many impressive examples:**

(1) the tremendous growth in world agricultural production, with many new low cost areas servicing world food markets, with cheap transport;

(2) and thus: the fruition of the transportation revolution in railroads and steam shipping, world wide, leading to a dramatic fall in shipping rates;

(3) the revolution in steel, for which we recently noted that steel costs and prices fell over 80% from the 1860s to the 1890s.

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<sup>6</sup> C. K. Harley, 'Goschen's Conversion of the National Debt and the Yield on Consols', *Economic History Review*, 2nd ser. 29 (1976), 101-06.

<sup>7</sup> Known as Goschen's Conversion (after the Chancellor of the Exchequer), the act had another provision: that this rate of 2.75% would continue unchanged until 1902, then the rate would drop to 2.5%; and Consols still trade on the London Stock exchange today, at this same coupon of 2.5%, as noted last Fall in the lecture on the 18<sup>th</sup>-century 'Financial Revolution'.

(4) the Second Industrial Revolution in mechanical power: with the new electrical, chemical industries, and internal combustion (automotive) industries;

(5) plus quite dramatic changes in the consumer goods industries to be seen shortly and in the distribution trades, which all reduced consumer prices considerably.

iii) **Note that dozens or hundreds of interrelated minor technical changes had collectively a far greater impact than isolated dramatic changes.**

iv) **Added to this is the tremendous expansion in the world production and trade of a tremendous range of agricultural and industrial commodities,** as both continental Europe and the Americas began industrializing.

v) **Nevertheless this real side does not negate the validity of the previously mentioned monetary side:** we still come to the same conclusion that, in terms of modern income version of the quantity theory,  $y$  expanded much more than  $M.V$  combined, so that prices had to fall.

e) **Johnson's 'Monetary Approach to the Balance of Payments':**

i) **It is also possible to argue that world gold stocks did determine world price levels;** but obviously also in relation to the world production and distribution of goods and services.

ii) **In turn world prices are transmitted to each country via international commodity and capital flows,** especially with fixed exchange rates under the international gold standard.

iii) **Those prices at the national level then help determine the quantity of money,** via the banking system, required for all economic transactions.<sup>8</sup>

f) **For Great Britain in particular:** keep in mind two very important economic factors that meant an almost automatic transmission of changes in foreign or world prices to the British economy (more so than for other European countries):

i) **Free Trade:** with no barriers to entry of foreign goods.

ii) **The Gold Standard:** which meant fixed exchange rates, with each country's currency pegged to fixed units of gold and freely convertible into gold and into each other.

iii) **Both meant:** the free flow of capital as well as of goods.

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<sup>8</sup> **See:** Harry Johnson, 'Towards a General Theory of the Balance of Payments,' in his *International Trade and Economic Growth* (London, 1958), pp. 153-68; Harry Johnson, 'The Monetary Approach to Balance of Payments Theory,' in his *Further Essays in Monetary Theory* (London, 1972); and Jacob Frenkel and Harry Johnson, 'The Monetary Approach to the Balance of Payments: Essential Concepts and Historical Origins,' in J.A. Frenkel and H.G. Johnson, *The Monetary Approach to the Balance of Payments* (Toronto, 1976), pp. 21-45.

#### 4. The Course of Prices II: 1896 - 1914:

**How then do we explain the reversal of price trends**, and the obviously inflationary upsurge in prices world wide after 1896, up to and including World War I?

a) **The basic Real Theory does not seem to fit so well here:**

i) **Can we say that technological changes were less fruitful or less cost-cutting after 1890s than before?**

(1) On the face of it, that seems most unlikely and unreasonable when we remember in particular

- the great productivity gains achieved in German industry from the 1890s,
- especially in the steel, chemical, and electrical industries.
- and in world-wide transportation costs (though most achieved by the 1890s).

(2) Certainly in the first two, the greatest gains came after 1890.

ii) **But this issue does depend on the country**

(1) and for Great Britain we shall shortly see some considerable evidence (from Feinstein's recent publications) that industrial growth rates were indeed falling from the 1890s:

(2) growth rates were much lower from 1895 to 1914 than they had been before then.

iii) **For world agricultural production**, and possibly the production of raw materials in general, W.A. Lewis does argue some such theory on falling productivity: rising marginal costs of grain production and in world distribution:<sup>9</sup>

We have seen that US wheat exports were declining absolutely. To make up the deficit, the world had to turn to expansion of wheat production in Canada, Argentina, Australia, Russia, and Central Europe. Costs were higher in those countries because they were less mechanized; moreover transportation costs to Europe were higher from Argentina or Australia than from the USA. So even if volume sold had been the same, the price would have been higher. In sum, we find as follows: First the original cause of the Kondratiev swing lies in changes in the rate of flow of agricultural output. Secondly, these changes had cumulative effects on the price level...

[But unfortunately Lewis fails to show precisely and mathematically how 'these changes had cumulative effects on the price level...']

b) **A Keynesian variant:** following in particular W.W. Rostow, we could attribute the price recovery and subsequent inflation to the very expansionary effects of three related factors: in terms of the formula for national income determination (and the inflationary gap):

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<sup>9</sup> W. A. Lewis, *Growth and Fluctuations, 1870-1913* (London, 1978).



$$Y = C + I + G + (X - M)$$

i) **substantially higher levels of capital investments, in particular foreign investments, with much longer gestation periods:** i.e., to reach fruition in producing consumer goods to sop up consumer demand.

ii) **A new export boom,** partly financed by those foreign investments, doubling exports between 1895 and 1914.

iii) **thirdly, unproductive and therefore clearly inflationary investments in military production:** from the Boer War of the 1890s to World War I.

c) **The Monetary Explanations:** also bear some weight here.

i) **The major and most dramatic event was in the expansion of gold mining:**

(1) the two gold mining booms of the mid 1890s in South Africa and the Yukon.

(2) As the graph (and table on which it is based) clearly demonstrate: there is a truly dramatic increase in world gold-mining outputs, veritabily an explosive increase

(3) In decennial means, total outputs rise from an annual mean of 135.0 metric tonnes in the 1880s:

- to one of 255.6 metric tonnes in the 1890s,

- then more than doubling to a mean of 513.9 metric tonnes in the early 20<sup>th</sup> century (up to WWI).

ii) **Great expansion in world gold movements and bank gold reserves:**

(1) this vast increase in world gold production evidently led to a considerable expansion in currencies and bank lending, probably exceeding the growth in world production and trade.

(2) It must be stressed once more, however, that there is no linear relationship between growth in gold stocks and in the expansion of the money supply, whether reckoned as M1 or M2.

iii) **Note that Rostow considers gold mining to be inflationary itself:** the capital investment produces employment and investment incomes, but without any new consumer goods to match.

## 5. Industrial Trends and the 'Retardation' Question

a) **The price trends can be misleading:**

i) **The prolonged deflation of 1873-1896 does not mean an overall depression:** or even stagnation for this period;

ii) **nor does the prolonged inflation of 1896-1914 mean an overall economic boom with stronger growth for that period;** to the contrary.

iii) **As the national income tables on the screen show:**

(1) there is general economic growth over the entire period, from the 1870s to 1914 (WWI),

(2) though incontestably there were years of economic slump or slowdown.

b) **But what about rates of economic and particularly industrial growth?**

i) **do they show any slackening or slowing down, i.e., retardation?**

ii) **How do British growth rates in this period 1870 - 1914 compare with prior and succeeding periods;**

iii) **How do they compare with those for other nations?**

6. **The Statistical Evidence:**

On this question, as tables show, the statistical evidence is mixed:

a) **Charles Feinstein's statistics (1972; revised 1976): 1913 prices**

**Average Annual Rates of Real Growth  
in the United Kingdom, 1855 - 1913**

<b>Period</b>	<b>Years (No.)</b>	<b>Total Real Industrial Output (at constant price)</b>	<b>Gross Domestic Product at Constant Factor Prices (from output data)</b>
<b>1855-1913</b>	59	2.29%	1.87%
<b>1870-1913</b>	44	2.09%	1.82%
.....			
<b>1855-69</b>	15	2.08%	1.63%
<b>1870-84</b>	15	2.04%	1.71%
<b>1885-99</b>	15	2.91%	2.14%
<b>1900-13</b>	14	1.60%	1.64%

**Source:** Charles Feinstein, *Statistical Tables of National Income, Expenditure, and Output of*

*the United Kingdom, 1855 - 1965* (Cambridge, 1976).

**Notes:**

i) **These growth rate statistics do show that the overall rate of economic growth for the entire period 1870 - 1914 was slightly less than for the longer comparison period 1855 - 1913**, and thus for the prior period of 1855 - 70.

ii) **But of the sub-periods given, note that the period 1885-99 showed a significant increase in both industrial output and in GNP:** and note further that two-thirds of this period are supposedly years of the 'Great Depression' (1873-96).

b) **W. Arthur Lewis's Statistics:**

i) **A somewhat different picture, however, is provided by W. Arthur Lewis's statistics of 1978:** from his *Growth and Fluctuations, 1870 - 1913* (London, 1978):<sup>10</sup>

**Average Annual Growth Rates in  
the United Kingdom, 1853 - 1913**

<b>Period of Growth Rates</b>	<b>Number of Years</b>	<b>Manufacturing and Mining</b>	<b>Gross Domestic Product at 1907 Prices</b>
<b>1853-1873</b>	20	2.7%	1.95%
<b>1873-1883</b>	10	2.2%	1.90%
<b>1883-1899</b>	16	2.1%	1.85%
<b>1899-1913</b>	14	2.0%	1.70%

ii) **Notes:**

(1) Lewis uses slightly different time periods from those of Feinstein, with different estimates of GDP (at 1907 prices), and a different index of manufacturing production, excluding construction (housing, buildings).

(2) His figures (with higher rates generally) show a consistent and overall pattern of decline in growth rates from 1873 to 1914, in both Manufacturing and Mining and also in Gross Domestic Product.

c) **Feinstein, subsequently (in August 1990), retaliated with a new set of statistics:**

i) **This time the measurement is Real Gross Domestic Product per Worker:** measured three different

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<sup>10</sup> Reminder that Sir W. Arthur Lewis (1915-1991: West Indian economist, born in St. Lucia; finally affiliated with Princeton University) was the Nobel Prize winner in Economics for 1979 (jointly with Theodore Schultz). See: <http://nobelprizes.com/nobel/economics/>

ways:

ii) **measurements:** by income data, by expenditure data, and by output data (none of them agreeing with each other, though showing somewhat similar overall trends):

**Real Gross Domestic Product per Worker, 1856 - 1913**  
**Average Annual Percentage Rates of Growth**

Period	Income	Expenditure	Output
1856 - 73	1.32	1.38	1.12
1873 - 82	0.90	1.03	1.20
1882 - 99	1.49	1.27	0.85
1899 - 1913	0.09	0.33	0.72
.....			
1856 - 1882	1.18	1.26	1.15
1882 - 1913	0.86	0.84	0.79
1856 - 1913	1.01	1.03	0.95

**Source:** Charles Feinstein, 'What Really Happened to Real Wages: Trends in Wages, Prices, and Productivity in the United Kingdom, 1880 - 1913,' *Economic History Review*, 2nd ser. 43 (August 1990).

d) **Both the Feinstein and Lewis figures, however, do agree on one striking feature of the performance of the British industrial economy:**

i) **namely, that the relatively worst period of growth**, the one with the lowest growth rates in both manufacturing and Gross Domestic Product, is the final and immediate pre-war period, 1899/1900-13: the period of strong inflation, with sharply expanding exports and of capital investments;

ii) **this is the period in which the British economy was supposed to be enjoying strong recovery**, and rapid expansion (as is supposedly true elsewhere also).

e) **Perhaps one way of relating these growth figures to inflation is to suggest that inflation did reflect after all declining productivity in the industrial economy:**

i) **i.e., that retarded or declining rates of growth in productivity:** did not permit net national product –

NNP or  $y$  – to expand as rapidly as did the money circulation.

ii) **But inflation was a world-wide phenomenon:** not confined to Great Britain

iii) **In any event, one may conclude with Deirdre [formerly Donald] McCloskey:** a defender of the Victorian economy, that it was not the later Victorian era (ending in 1901), but rather the following Edwardian era that is the true period of relative retardation.

iv) **Lewis, however, would still insist, however, that the period overall from 1870 to 1914 was one of continuing decline in economic growth rates;**

v) **But I will leave it do you to decide** amongst the Lewis and Feinstein statistical data.

f) **Comparisons of British Industrial Growth with the French, German, and American from 1860 to 1914:**

i) **Finally, we cannot escape the undeniable fact that Britain's industrial growth rates in this period overall are considerably less than those for the United States and Germany:**

(1) less than half Germany's and only third of the American growth rates.

(2) And indeed no better than France's growth rate, in a period when France was accused of suffering economic stagnation.

ii) **As for Germany and the U.S.:** we have already seen how they overtook Great Britain rapidly in many key industrial sectors: in steel-making (in aggregate terms, but not in all types of steel-making), in the new chemical and electrical industries especially.

iii) **If we can believe the statistics of Paul Bairoch on the screen:** from *The Journal of European Economic History*, 1982: by 1913, the United States was accounting for more than twice as much industrial production as the British (32% of world output vs. 14%); and Germany for slightly more (15%).

**Aggregate and Per Capita Indices of Industrial Production (United Kingdom in 1900 = 100)**

**and percentage shares of world industrial production, for various countries: in 1860 and 1913**

Country	Total Industrial Output		Per Capita Industrial Output		Percentage Shares of World Industrial Production	
	1860 Index	1913 Index	1860 Index	1913 Index	1860 %	1913 %
<b>United</b>						

<b>Kingdom*</b>	45	127	64	115	20%	14%
<b>Germany</b>	11	138	15	85	5%	15%
<b>France</b>	18	57	20	59	8%	6%
<b>Russia</b>	16	77	8	20	7%	8%
<b>ALL EUROPE</b>	<b>120</b>	<b>528</b>	<b>17</b>	<b>45</b>	<b>53%</b>	<b>57%</b>
<b>United States</b>	16	298	21	126	7%	32%
<b>Canada</b>	1	9	7	46	--	1%

**Source:** Paul Bairoch, 'International Industrialization Levels from 1760 to 1980,' *Journal of European Economic History*, 11 (Fall 1982), 269-333, tables 4 - 13.

\* The United Kingdom of Great Britain and Ireland: the values for its aggregate and per capita industrial outputs for 1900 are taken as the base 100 for all the indices in columns 1 to 4. Note that columns 5 and 6 are percentages of total world industrial output.

iv) **Between 1860 and 1913**, Britain's share of world industrial production had fallen from 20% to 14%, while Germany's had tripled from 5% to 15%; and the U.S., more than quadrupled, from 7% to 32%.

v) **Note however, that the period in which that lead really widened was after 1895;** and it would be absurd to think that the Germans and Americans were seriously challenging British industrial supremacy as early as the 1870s.

## **B. British Banking: the Response to Continental Investment Banking**

### **1. Features and Faults of the British Banking System, 1870 - 1914**

**a) If inadequate domestic investments, i.e., capital formation, are deemed to be a fault of the post-1870 British economy, did the fault lie with the British banking system?**

**i) Was it an institutional fault?**

(1) i.e., the failure to adopt investment banking according to the continental model really established by the French bank *Crédit Mobilier* in 1853?

(2) The standard view, of course, is:

- that the British did not engage in such investment banking,
- if only because it was not really required, with Britain's more highly developed capital markets and alternative financial institutions to raise and invest such capitals.

**ii) Consider Gerschenkron's following comment on European banking:<sup>11</sup>**

The difference between the banks of the *crédit-mobilier* type and commercial banks in the advanced country of the time (England) was absolute. Between the English bank essentially designed to serve as a source of short-term capital and a bank designed to finance the long-run investment needs of the economy there was a complete gulf. The German banks, which may be taken as a paragon of the type of the universal bank, successfully combined the basic idea of the *crédit mobilier* with the short-term activities of commercial banks [and thus are now commonly known as Universal Banks]

**b) But was there no positive response from this older British banking system, such as the one found in France?**

**i) In discussing the conflict between the New and Old Banks,** between *Crédit Mobilier* and the Rothschilds (the Paris Branch), Gerschenkron also comments, as follows:

...what is so seldom realized is that in the course of this conflict the 'new wealth' succeeded in forcing the old wealth to adopt the policies of its

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<sup>11</sup>Alexander Gerschenkron, *Economic Backwardness in Historical Experience: A Book of Essays* (New York, 1962; reissued in paperback in 1965): in particular 'Social Attitudes, Entrepreneurship, and Economic Development,' pp. 52-71.

opponents. The limitation of old wealth in banking policies to flotations of government loans and foreign exchange transactions could not be maintained in the face of the new competition. When the Rothschilds prevented the Pereires [Brothers] from establishing the Austrian Credit-Anstalt [bank], they succeeded only because they became willing to establish the bank themselves and to conduct it not as an old-fashioned banking enterprise but as a *crédit mobilier*, that is, as a bank devoted to railroadization and industrialization of the economy.

ii) **So was there any such similar response in Britain from the 1850s?**

## 2. **British Forays into Investment Banking, 1860 - 1914**

a) **Baring Bros of London (a family-owned merchant bank, of Dutch origin) and Glyn, Mills & Co. (joint-stock bank) worked together in new forms of investment banking, to engage in:**<sup>12</sup>

i) **railway financing**, at home and abroad, especially in North America; and

ii) **in the financing of some foreign banks:** especially

- the Ottoman Bank (1856)
- the Bank of London and South America (1863), and
- the Anglo-Austrian Bank (1864).

iii) **and also in overseas lending:** especially in foreign state loans.

iv) **Amongst joint-stock banks:**

(1) two such banks – Glyn, Mills and Co. and the Union Bank of London – seem to have been the very few exceptions to engage in such forms of direct investment banking

(2) especially in North American railway financing.

b) **Such financing was in the form of both long-term loans and in equity:** i.e., in underwriting stock issues, as the table on the screen indicates (with Baring Bros. as the leader).

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<sup>12</sup> Answers.com: Baring Brothers was a British merchant bank, of Dutch origin, that was started in 1762, and for centuries it was considered the largest and most stable bank in the world. In 1995, Barings - then the oldest bank in Britain - collapsed after it was unable to meet its cash requirements following unauthorized speculative trading in derivatives at its Singapore office by then-trader Nick Leeson. Leeson, acting as a rogue trader, accumulated well over \$1 billion in losses, which eventually led to the bank's collapse. Barings Bank was purchased by ING for £1.00 shortly after it was determined that the bank did not have enough capital on hand to cover its debts.



c) **Investment and commercial roles of London merchant banks:**

i) **London merchant banks were just that:** commercial businesses whose primary role was in international trade, and whose banking activities were related to financing that trade

ii) **Baring Brothers were very actively engaged in overseas trade**, certainly until the 1870s, when they shifted more and more to finance.

iii) **In the 1880s**, Barings, Hambros, Gibbs and some other merchant banking houses

(1) did undertake and underwrite share issues in brewery houses,

(2) which 'are sometimes cited as an exception to the inhibitions of the system';

(3) but in any event this new interest evaporated quickly in 1890 [with the Baring crisis over Argentinian loans].'

iv) **Consider Stanley Chapman's quote on general bank avoidance of stock underwriting:** 'Most of the merchant bankers, like the Rothschilds, "just took a bite or two at the cherry and retired, finding the morsel not so tasty as they expected".'<sup>13</sup>

v) **Basic Problems: industrial scale and the costs of underwriting:**

- Chapman points out that the fixed costs involved -- in terms of bank commission (up to 5%), underwriting commission, brokerage fees, advertising, legal fees -- made underwriting too expensive for most merchant banks, because of their small size (especially compared to the *German Gross Banken*), so that:

- 'even as late as the 1930s, any issue below £200,000 or £250,000 was reckoned to be uneconomic'.

- 'Before the First World War, companies of this size [i.e., with that amount of capitalization] were still exceptional.'

vi) **Stockbrokers and the financial press:** greatly influenced investing public and did not direct such investors to merchant banks.

3. **Chapman's Conclusions on British Merchant Banking in the later 19<sup>th</sup> Century:**

a) **role of English merchant-banking in 19<sup>th</sup> century marginal and unimportant:**

i) **Quotation from Chapman:** 'London merchant banks did not become seriously interested in industrial issues until their traditional business fell away to nothing and the average size of companies rose to meet their ceiling. Case studies show that, even then, there were major problems in directing thinking towards new

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<sup>13</sup> Stanley Chapman, *The Rise of Merchant Banking* (London, 1984), pp. 120-22.

opportunities’.

ii) **Thus there was not really a substantial shift towards genuine investment banking** in Britain until after World War II.

b) **most such banks retained an emphasis on acceptance banking over merchant banking:**

‘The evidence of this book serves to emphasise that, with very few exceptions, the merchant banks were much more commonly interested in acceptances [bills of exchange] than [in stock] issues...’

c) **The example of N[athan] M. Rothschilds and Sons (founded in London in 1798)**

i) **despite the engagement of the continental Rothschilds in investment banking**, the London Rothschild bank generally eschewed and avoided any forms of industrial investment banking, contenting themselves to their traditional roles in ‘bonds, bills, and bullion.’

ii) **N. M. Rothschild did, however**, engage in considerable underwriting of foreign state loans and bonds, often in financial syndicates; and had done so since the Napoleonic Wars.

iii) **Many of these state loans, by Rothschilds, Baring Bros**, and other merchant banking houses, were in fact used to finance railways in these countries.

iv) **in the volume of loans, national and international, Rothschilds was always well ahead of Baring Brothers.**

d) **Final Observations of Stanley Chapman on British banking and industrial financing:**

i) **‘Most economic historians have agreed that the London capital market was biased towards overseas investment**, neglecting the opportunities of domestic industry, and Professor Saville and others have seen clear evidence of lack of entrepreneurial spirit in the situation.’

ii) **Chapman's explanation:** is based upon

- (1) the family-nature and family-capital control of most merchant banks,
- (2) their diverse international origins in many cases (seeking freedom of trade and finance in London),
- (3) and their extensive international mercantile connections.

iii) **Such comments:** are thus very close to those so commonly made against French banking!

e) **International Role of British banking:**

i) **Chapman:** ‘In 1914 British accepting houses still dominated the finance of world trade. In 1914 -- indeed until the crisis of 1931 -- international trade was still largely conducted in sterling bills on London.’ (Chapman, p. 124).

ii) **British dominance can be explained not only by the role of British shipping**, commerce, and banking.

iii) **but also by the role of a large number of international banks**, attracted by London's international status, which established branches in London, and which thereby developed close relationships with each

other.

iv) **Thus a conclusion may still remain that the British banking system diverted too much of available investments sources, capital, abroad rather than at home;** but that conclusion still needs to be verified (i.e., in terms of comparisons with potential domestic capital investments, including domestic demand for such investments and the willingness of British firms to depend upon German-style investment banks).

#### 4. Summary of Reasons why British investment banking was so limited in scale: Some Recent Views

a) **traditional British banks, both family firms and joint-stock company banks,** continued the established tradition of focusing mainly on commercial deposit banking with discounting and short-term lending.

i) **Recently several articles have appeared that reinforce,** with both statistics and complicated econometric analyses, these same conclusions:

ii) **Two of these are the by the British team:** of Mae Baker and Michael Collins.<sup>14</sup>

b) **Baker and Collins on British Investment Banking:**

i) **They contend that British bank conservatism, and an orientation to short term lending, became even more, all the more pronounced after two major banking crises from the 1870s:**

(1) 1878: the collapse of the City of Glasgow Bank, a joint-stock bank with 133 branches,

- which, however, despite the 1862 legislation, had not offered its shareholders limited liability,
- believing that creditors would have more faith in the bank if they believed that shareholders would be fully responsible for all deposits, loans, and other legal obligations.

(2) 1890: the Baring Crisis, in which the collapse of this very major merchant-investment bank was avoided only because the Bank of England did step in to act as a Lender of Last Resort, while organizing a financial consortium to guarantee the loans made by Baring Brothers.

ii) **Both crises were due to unwise lending with insufficient liquid assets:**

(1) City of Glasgow Bank (1878):

- far too much of its loans were concentrated with too few, and unreliable borrowers,
- a problem complicated by management fraud, and obviously not resolved by imposing unlimited liability upon the shareholders.

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<sup>14</sup> Mae Baker and Michael Collins, 'English Industrial Distress Before 1914 and the Response of English Banks', *European Review of Economic History*, 3:1 (April 1999), 1-24; Mae Baker and Michael Collins, 'Financial Crises and Structural Change in English Commercial Bank Assets, 1860 - 1913', *Explorations in Economic History*, 26:4 (October 1999), 428-44.

(2) Baring Crisis of 1890:

- 75% of Baring's assets were in loans to the governments of Argentina and Uruguay, for whose economies boom turned to bust in 1890,
- preventing Argentina in particular from paying interest on its outstanding loans.
- History sometimes repeats itself: consider Argentina's recent financial disasters, in and after 2002

iii) **They argue that these, by far the two worst financial crises of the 19<sup>th</sup> century**, caused almost all British banks to become far more conservative in their lending and to increase their liquidity

iv) **Two-fold response:** which is born out by their econometric analyses:

(1) to readjust the structure of their finances and bank assets in particular: to shift their assets away from industrial private-sector credits into proportionately larger cash reserves and more liquid assets in the form of short-term government bonds, etc.

(2) Thus in general a shift from whatever longer-term industrial finance they had engaged in to much more short-term, fully collateralized lending.

(3) And from proportionately fewer investments or loans in the private industrial sector to thus proportionately more in the public sector, i.e., municipal and state bonds.

#### English Commercial Banking Asset Ratios (percentages)

Years	Private Sector Loans	Advances	Bills	Investments	Cash
1860	69.4	46.7	30.7	16.2	13.1
1870	75.9	49.0	33.6	13.3	13.8
1880	65.1	47.6	20.0	17.7	19.2
1890	62.6	50.1	15.7	18.5	17.8
1900	57.0	50.6	11.1	22.8	18.7
1910	54.0	48.0	10.2	22.0	22.2
1913	55.6	46.8	12.0	17.9	24.6

**Source:** Mae Baker and Michael Collins, 'Financial Crises and Structural Change in English Commercial Bank Assets, 1860 - 1913', *Explorations in Economic History*, 26:4 (October 1999), 428-44.

c) **Banking Concentration and lower rates of efficiency: the views of Richard Grossman:**<sup>15</sup>

i) **on banking amalgamation and concentration:** he notes that the numbers of joint stock and private banks in England were, for the following dates:

(1) 1880: 120 joint-stock banks and 200 private banks

(2) 1918: just 16 joint-stock banks and only 6 private banks

(3) 1920s: the five leading banks controlled over 80% of total bank assets

ii) **As the graph shows, his analyses reveal that overall returns to bank stocks fell from 1870 to 1913,** i.e., with a distinct downward trend: reflecting a shift of advantages to other financial institutions.

iii) **Banking amalgamation was designed to eliminate competition and increases yields,** which, for the larger banks was a successful strategy

iv) **but from various econometric analyses he concludes that the result was a lower level of competitiveness and of bank efficiency,** probably inferior to that of the U.S., with far more independent banks.

v) **The arguments, therefore, that the U.S. banking system,** with too many small banks, has a higher risk of default has to be weighed against the evidence for lower bank efficiency in Britain, with far larger banks and far more concentration.

d) **The Predominance of Foreign Firms in British Investment Banking:**

i) **the London-based international merchant-banks of foreign origin (Dutch, German, Jewish, American) were thus the chief ones to experiment or briefly engage in investment banking:**

(1) But they were again primarily merchant banks, literally speaking, whose chief role was to engage directly in foreign trade, and thus their banking was related to financing such trade transactions.

(2) As we have seen now several times in the course, the chief mechanism of financing international trade was through bills of exchange which, from the 17<sup>th</sup> or 18<sup>th</sup> centuries, had become much better known as *acceptances*.

(3) So long as the British remained pre-eminent in acceptance banking and so long as it continued to be immensely profitable there was little incentive to switch into more active investment banking;

(4) and as Chapman notes firms such as the Baring Bros did so only when their international trade and acceptance finances began to decline in the very late 19th century (i.e., in the face of stronger domestic and foreign competition for acceptances).

ii) **since most of these international merchant banks were family firms -- like the Baring Brothers and**

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<sup>15</sup> Richard Grossman, 'Rearranging Deck Chairs on the Titanic: English Banking Concentration and Efficiency, 1870-1914', *European Review of Economic History*, 3:3 (Dec. 1999), 323-50.

**Rothschilds – or partnerships, rather than joint-stock companies**, they were generally far too small in scale and too undercapitalized -- in comparison with the German joint-stock investment banks -- to find German-style investment banking feasible and profitable.

(1) as Chapman notes, with such small scale, the costs of investment banking were too high: in terms of bank commissions, underwriting commissions, brokerage fees, legal and advertising fees

(2) And to repeat his crucial observation here: ‘even as late as the 1930s, any [stock or bond] issue below £200,000 or £250,000 was reckoned to be uneconomic’.

iii) **Finally, we must again note the apparent reluctance of British firms, even joint-stock companies, to resort to investment banks**, evidently for fear of losing control to banks; and the reluctance of stockbrokers and the financial press to recommend or promote investment banking.

iv) **In summary:** Genuine large-scale investment banking, in Britain, on the German model, was really only a post- World War II phenomenon.

v) **Finally, to prove this point, consider the comparison with German Universal (investment) and Russian banking:**

(1) The German and Russian joint-stock investment ‘Universal’ Banks were vastly larger in scale, i.e., with far, far larger capitalizations than any of the largest British joint-stock banks

(2) Furthermore, they generally operated in syndicates, which pre-WWI British banks were reluctant to do

(3) Remember also that the British institutions most interested in this type of banking were the very small - scale London-based merchant-banking firms: chiefly family firms and partnerships

(4) Remember also that the role of the German and Russian banks was:

- to fill a void or vacuum in their capital markets – i.e., the absence of other financial institutions able to fulfill these investment-oriented tasks –
- which had not been the case in Britain, with a well organized capital markets, with a wide variety of financial institutions (mortgage and insurance companies, for example)
- and a well developed stock market, in many British cities

Table 1.

## Foreign Trade

Current Values and Indices of the Domestic Exports of the United Kingdom, France, and Germany:

Mean of 1870 - 4 = 100

Period	United Kingdom	U.K.	France	France	Germany	Germany
	Domestic Ex-ports in Millions	Index 1870-4 = 100	Exports in Millions of Francs	Index 1870-4 = 100	Exports in Millions of Marks	Index 1870-4 = 100
1860-4	138.4	58.9	2402.6	71.0		
1865-9	181.1	77.1	2992.0	88.4		
1870-4	234.8	100.0	3385.0	100.0	2,328.4*	100.0
1875-9	201.5	85.8	3459.2	102.2	2,696.1*	115.8
1880-4	234.3	99.8	3457.4	102.1	3125.0	134.2
1885-9	226.2	96.3	3306.8	97.7	3067.4	131.7
1890-4	234.4	99.8	3419.6	101.0	3102.0	133.2
1895-9	239.7	102.1	3607.4	106.6	3688.4	158.4
1900-4	289.2	123.2	4215.4	124.5	4791.6	205.8
1905-9	377.3	160.7	5191.4	153.4	6386.0	274.3
1910-3	474.2	202.0	6476.0	191.3	8658.8	371.9

<b>Period</b>	<b>United Kingdom</b>	<b>U.K.</b>	<b>France</b>	<b>France</b>	<b>Germany</b>	<b>Germany</b>
	<b>Domestic Ex-ports in Millions</b>	<b>Index 1870-4 = 100</b>	<b>Exports in Millions of Francs</b>	<b>Index 1870-4 = 100</b>	<b>Exports in Millions of Marks</b>	<b>Index 1870-4 = 100</b>

\* estimated

**Source:** B.R. Mitchell, 'Statistical Appendix,' in Carlo Cipolla, ed., *Fontana Economic History of Europe*, Vol. IV:2, *Emergence of Industrial Societies* (1973), pp. 798-800.



Table 2.

## British Foreign Trade Components, 1801/10 - 1901/10

Decennial Means of British Exports, Imports, "Invisible" Earnings, Balances on Current Account, and Accumulated Balances of Overseas Investments, in Millions of Pounds Sterling, in Current Prices

Decade	Export Index	Exports -	Imports =	Balance + on Commodity Account	Services +	Dividends & Interest	Balance on Current Account	Accumulated Balance of Overseas Investments
	Index 1801-10 = 100	in £ sterling	in £ sterling	in £ sterling	in £ sterling	in £ sterling	in £ sterling	in £ sterling
<b>1801-10</b>	100.00	41.05	50.95	-9.90				
<b>1811-20</b>	101.30	41.60	49.80	-8.20				
<b>1821-30</b>	89.20	36.60	47.05	-10.45	12.40	4.40	6.35	104.50
<b>1831-40</b>	110.00	45.15	63.70	-18.55	16.35	6.70	4.50	149.50
<b>1841-50</b>	140.00	57.45	79.35	-21.90	18.70	8.50	5.30	197.00
<b>1851-60</b>	259.60	106.55	137.20	-30.65	33.60	14.10	17.05	314.50
<b>1861-70</b>	404.60	166.10	223.60	-57.50	62.50	26.30	31.30	591.00
<b>1871-80</b>	537.00	220.45	313.85	-93.40	89.90	53.15	49.65	1,127.00
<b>1881-90</b>	570.80	234.30	331.95	-97.65	97.80	74.50	74.65	1,716.00
<b>1891-00</b>	584.00	239.75	385.20	-145.45	94.55	97.10	46.20	2,296.00
<b>1901-10</b>	845.90	347.25	505.55	-158.30	123.55	132.15	97.40	3,006.50

Decade	Export Index	Exports -	Imports =	Balance + on Commodity Account	Services +	Dividends & Interest	Balance on Current Account	Accumulated Balance of Overseas Investments
	Index 1801-10 = 100	in £ sterling	in £ sterling	in £ sterling	in £ sterling	in £ sterling	in £ sterling	in £ sterling

**Explanation of the Table:**

Subtract imports from exports to obtain the balance on the commodity account, which was always negative (i.e. the British imported a greater value of goods than they exported). To that negative balance on the commodity account, add the "invisibles" consisting of "services" (i.e. shipping, banking, insurance revenues, etc.) and those dividends and interest payments received on foreign (overseas) investments, in order to obtain the final balance on Current Account, which was always positive. Gold movements and other items on Capital Account are not shown here.

**The Equation:** Exports - Imports = Balance on the Commodity Account + Services + Dividends & Interest = Balance on the Current Account.

\* The accumulated net balance of overseas investments (foreign credits) includes the retained or re-invested interest and dividends on accumulated foreign investments. Gold movements and other items on the capital account are not given.

**Source:** Calculated from Peter Mathias, First Industrial Nation (London, 1969), Table VII, p. 305.

**Table 3. Capital Investments, Domestic and Foreign, in the British Economy,  
1870-4 to 1910-14**

**Net Domestic Capital Formation and Net Foreign Investments,  
in Millions of Pounds Sterling, Current Values,  
and as Percentages of Net National Product:**

**Quinquennial Means, 1870 - 1914**

<b>Period</b>	<b>Net National Product in Millions £</b>	<b>Net Domestic Capital Formation in Millions £</b>	<b>N.D.C.F. as % of NNP</b>	<b>Net Foreign Invest- ment in Millions £</b>	<b>N.F.I. as % of NNP</b>	<b>Total Investment as % of NNP</b>
<b>1870-4</b>	1,020.6	26.6	2.6%	78.4	7.7%	10.3%
<b>1875-9</b>	1,036.8	48.6	4.7%	30.4	2.9%	7.6%
<b>1880-4</b>	1,080.8	32.4	3.0%	54.6	5.1%	8.0%
<b>1885-9</b>	1,153.4	14.2	1.2%	80.4	7.0%	8.2%
<b>1890-4</b>	1,307.4	29.0	2.2%	69.8	5.3%	7.5%
<b>1895-9</b>	1,503.8	66.8	4.4%	44.4	3.0%	7.4%
<b>1900-4</b>	1,671.6	109.2	6.5%	34.4	2.1%	8.6%
<b>1905-9</b>	1,833.0	57.4	3.1%	132.6	7.2%	10.4%
<b>1910-4</b>	2,107.4	36.0	1.7%	190.0	9.0%	10.7%

**Source:** Charles H. Feinstein, *Statistical Tables of National Income, Expenditure and Output of the U.K., 1855-1965* (Cambridge, 1976), pp. T-4, 5, T-37, 38; T-106, 107.

**Table 4 Net Capital Formation (Domestic and Foreign) as a Percentage of Net National Product in Germany and the U.K.: 1860-1910**

<b>Decade</b>	<b>Germany (Mitchell 1975)</b>	<b>U.K. (Kuznets 1961)</b>	<b>U.K. (Feinstein 1976)</b>
<b>1860-9</b>	11.9%	10.0%	-
<b>1870-9</b>	12.1%	11.8%	8.9%
<b>1880-9</b>	11.1%	10.9%	8.1%
<b>1890-9</b>	13.6%	10.1%	7.5%
<b>1900-9</b>	14.4%	11.7%	9.5%

**Table 5: Capital Formation Ratios in the UK and Germany, 1865 - 1904****in current nominal values and in constant 1913 values**

<b>Years</b>	<b>UK: NDCF/ NDP current values</b>	<b>UK: NDCF/ NDP constant values</b>	<b>UK: NNCF/N NP current values</b>	<b>UK: NNCF/ NNP constant values</b>	<b>Germ- any NDCF/N DP current</b>	<b>Germ-any NNCF/ NNP current</b>	<b>Germ-any NNCF/ NNP constant</b>
<b>1860- 1870</b>	7.20	8.60	10.00	11.50	8.50	9.70	10.60
<b>1870- 1880</b>	8.20	7.30	11.80	10.90	11.60	13.50	13.00
<b>1880- 1890</b>	6.40	3.40	10.90	8.10	11.20	14.00	14.50
<b>1890- 1900</b>	7.30	3.00	10.10	6.00	13.90	15.40	15.90
<b>1900- 1910*</b>	8.80	4.80	10.50	6.70	15.60	16.50	15.90

\* For the UK: 1895-1904; for Germany: 1901-13

NDCF/NDP: Net Domestic Capital Formation as a Percentage of Net Domestic Product

NNCF/NNP: Net National Capital Formation (Total) as a Percentage of Net National Product

**Source:**Y. Goo Park, 'Depression and Capital Formation: the United Kingdom and Germany, 1873 - 1896', *Journal of European Economic History*, 26:3 (Winter 1997), p.514

**Table 6.****United Kingdom****Average Annual Growth Rates (% p.a.)**

<b>Period</b>	<b>Manufacturing &amp; Mining</b>	<b>Gross Domestic Product (1907 Prices)</b>
<b>1853-1873</b>	2.7%	1.95%
<b>1873-1883</b>	2.2%	1.90%
<b>1883-1899</b>	2.1%	1.85%
<b>1899-1913</b>	2.0%	1.70%

**Source:** W.A. Lewis, *Growth and Fluctuations, 1870-1913* (1978)

**Table 7. Average Annual Rates of Real Growth  
in the United Kingdom, 1855 - 1913**

<b>Period</b>	<b>No. Years</b>	<b>Total Real Industrial Output (at constant price)</b>	<b>Gross Domestic Product at Constant Factor Prices (from output data)</b>
<b>1855-69</b>	15	2.08%	1.63%
<b>1870-84</b>	15	2.04%	1.71%
<b>1885-99</b>	15	2.91%	2.14%
<b>1900-13</b>	14	1.60%	1.64%
.....			
<b>1855-1913</b>	59	2.29%	1.87%
<b>1870-1913</b>	44	2.09%	1.82%

**Source:** Charles Feinstein, *Statistical Tables of National Income, Expenditure, and Output of the United Kingdom, 1855-1965* (1976)

**Table 8. Aggregate and Per Capita Indices of Industrial Production (United Kingdom in 1900 = 100), and percentage shares of World Industrial Production, for various countries: in 1860 and 1913**

Country With 1913 Frontiers	Total Industrial Output		Per Capita Industrial Output		Percentage Shares of World Industrial Production	
	1860	1913	1860	1913	1860	1913
	Index	Index	Index	Index	per cent	per cent
United Kingdom*	45	127	64	115	20%	14%
Germany	11	138	15	85	5%	15%
France	18	57	20	59	8%	6%
Russia	16	77	8	20	7%	8%
<b>ALL EUROPE</b>	<b>120</b>	<b>528</b>	<b>17</b>	<b>45</b>	<b>53%</b>	<b>57%</b>
United States	16	298	21	126	7%	32%
Canada	1	9	7	46	--	1%

**Source:** Paul Bairoch, 'International Industrialization Levels from 1760 to 1980,' *Journal of European Economic History*, 11 (Fall 1982), 269-333, tables 4 - 13.

\* The United Kingdom of Great Britain and Ireland: the values for its aggregate and per capita industrial outputs for 1900 are taken as the base 100 for all the indices in columns 1 to 4. Note that columns 5 and 6 are percentages of total world industrial output.



**Table 9. Indices of Industrial Output\*: in the United Kingdom, France, Germany, and the United States in quinquennial means, 1860-4 to 1910-13**

**Mean of 1870-4 = 100**

<b>Period</b>	<b>United Kingdom</b>	<b>France</b>	<b>Germany</b>	<b>United States</b>
<b>1860-64</b>	72.6			
<b>1865-69</b>	82.8	95.8	72.6	75.5
<b>1870-74</b>	100.0	100.0	100.0	100.0
<b>1875-79</b>	105.5	109.5	120.8	111.4
<b>1880-84</b>	123.4	126.6	160.6	170.4
<b>1885-89</b>	129.5	130.3	194.9	214.9
<b>1890-94</b>	144.2	151.5	240.6	266.4
<b>1895-99</b>	167.4	167.8	306.4	314.2
<b>1900-04</b>	181.1	176.1	354.3	445.7
<b>1905-09</b>	201.1	206.2	437.4	570.0
<b>1910-13</b>	219.5	250.2	539.5	674.9

\* Excluding construction, but including building materials.

**Source:** W. Arthur Lewis, *Growth and Fluctuations, 1870 - 1913* (London, 1978), pp. 248-50, 269, 271, 273.

Table 10

**Real Gross Domestic Product per Worker****in the United Kingdom, 1856 - 1913****Average Annual Percentage Rates of Growth**

<b>Period</b>	<b>Income</b>	<b>Expenditure</b>	<b>Output</b>
<b>1856 - 73</b>	1.32	1.38	1.12
<b>1873 - 82</b>	0.90	1.03	1.20
<b>1882 - 99</b>	1.49	1.27	0.85
<b>1899 - 1913</b>	0.09	0.33	0.72
.....			
<b>1856 - 1882</b>	1.18	1.26	1.15
<b>1882 - 1913</b>	0.86	0.84	0.79
<b>1856 - 1913</b>	1.01	1.03	0.95

**Source:** Charles Feinstein, 'What Really Happened to Real Wages: Trends in Wages, Prices, and Productivity in the United Kingdom, 1880 - 1913,' *Economic History Review*, 2nd ser. 43 (August 1990).

**Table 11: Indices of Industrial Output and of Unemployment in the British Economy,  
1851 - 60 to 1926 - 30**  
**Mean of Industrial Outputs, 1920 - 1938 = 100**  
**Index Numbers of Industrial Employment and**  
**Trade Union Unemployment Rates in Great Britain**  
**1851 - 1938, in five year means**

<b>Date</b>	<b>Construction</b>	<b>Textiles</b>	<b>Other Industries</b>	<b>All Industries</b>	<b>Beveridge Unemployment Rate</b>	<b>Pigou Unemployment Rate</b>
<b>1851-55</b>						3.98
<b>1856-60</b>	98.06	106.08	102.08	101.56	3.86	5.66
<b>1861-65</b>	105.20	79.16	100.84	97.06	3.64	4.88
<b>1866-70</b>	96.28	95.44	102.90	98.12	5.08	5.84
<b>1871-75</b>	107.70	109.00	107.02	107.84	1.51	1.56
<b>1876-80</b>	96.74	99.58	104.18	100.14	6.00	6.42
<b>1881-85</b>	105.76	101.00	104.06	103.74	4.84	5.16
<b>1886-90</b>	96.16	102.28	98.04	98.62	5.00	5.38
<b>1891-95</b>	93.80	100.88	94.10	95.30	6.10	6.00
<b>1896-00</b>	104.70	101.36	97.20	101.16	2.85	2.78
<b>1901-05</b>	101.20	94.00	96.24	97.34	4.84	4.60
<b>1906-10</b>	96.54	99.16	100.90	98.80	6.02	5.50
<b>1911-15</b>	103.73	105.73	101.80	103.70	2.51	2.52
<b>1916-20</b>					1.36	
<b>1921-25</b>	102.20	101.94	100.70	100.24	13.08	

**Source:** William Beveridge, *Full Employment in a Free Society*, 2nd edn (London, 1960), Appendix A: 'Trade Union Unemployment Rate,' pp. 312-13; Arthur Pigou, *Industrial Fluctuations* (London, 1927), pp. 353-54.

**Table 12: Per Capita Product in Selected European Countries, 1850 - 1910:**  
**Measured in Constant 1970 U.S. Dollars**

<b>COUNTRY</b>	<b>1850</b>	<b>1870</b>	<b>1890</b>	<b>1910</b>	<b>Percentage Total Growth 1850-1910</b>
<b>BRITAIN</b>	660	904	1,130	1,302	197%
<b>FRANCE</b>	432	567	668	883	204%
<b>GERMANY</b>	418	579	729	958	229%
<b>BELGIUM</b>	534	738	932	1,110	208%
<b>NETHERLANDS</b>	481	591	768	952	198%

**Source:** Nicholas Crafts, 'Gross National Product in Europe, 1870 - 1910: Some New Estimates,' *Explorations in Economic History*, 20 (October 1983), 387-401.

**Table 13: International Acceptance Banking by British and Continental Banks in 1900 and 1913 in Millions of Pounds Sterling**

Name of the Bank	Date Founded	1900: Acceptances in £ millions	1913: Acceptances in £ millions
<b>London Merchant Banks:</b> * German origin + Dutch origin ++ U.S. origin			
Kleinwort, Sons & Co.*	1796	8.2	13.6
J. Henry Schröder & Co.*	1815	5.9	11.6
Baring Bros & Co. Ltd.+	1763	3.9	6.6
Brown, Shipley & Co.++	1805	n.d.	5.1
W. Brandt's Sons & Co.*	1805	1.2	3.3
N.M. Rothschild & Sons *	1798	1.5	3.2
C.J. Hambro & Son*	1800	1.9	3.0
<b>British Joint Stock Banks</b>			
London Country & Westminster	1834	0.2	7.8
Union of London & Smiths Bank	1839	3.1	5.8
Parr's Bank	1865	2.4	5.4
London Joint Stock Bank	1836	1.4	3.2
Manchester & Liverpool District	1829	1.7	2.7
Glyn, Mills, and Co.	1753	1.2	1.4
<b>Continental Banks</b>			
Dresdner Bank	1872	6.1	14.4
Discontogesellschaft	1851	3.0	12.5
Crédit Lyonnais	1863	0.0	5.7
Russian Bank of Foreign Trade	1871	2.2	3.7
Credito Italiano	1870	n.d.	1.9

**Source:** Stanley Chapman, *The Rise of Merchant Banking* (London, 1984), Table 7.2, p. 121.

Table 14.

**London Merchant Banks: Issuance of U.S. and Canadian  
Railroad Stocks, 1865 - 1890**

Name of the Merchant Bank	Value of Issues in £ millions	Percentage of Total Issues
Baring Bros	34.68	28.7%
J.S. Morgan *	26.09	21.6%
Bischoffsheim & Goldschmidt	10.17	8.4%
Morton, Rose & Co.*	9.48	7.8%
Speyer Bros. *	9.16	7.6%
Brown, Shipley & Co. **	6.39	5.2%
Robert Benson & Co.	6.07	5.0%
Jay Cooke, McCulloch & Co. *	5.12	4.2%
L. Cohen & Sons	2.31	1.9%
Union Bank of London (Schuster)	2.24	1.9%
Thomson, Bonar & Co.	2.00	1.7%
J.H. Schröder & Co.	1.85	1.5%
R. Raphael & Sons	1.50	1.2%
Seligman & Co. *	1.40	1.2%
N.M. Rothschild & Sons	0.80	0.7%
C. de Murrieta & Co.	0.55	0.5%
C.J. Hambro & Sons	0.50	0.4%
Henry S. King & Co. *	0.45	0.4%
Jay & Co. *	0.10	0.1%
<b>TOTAL of 19 merchant banks</b>	<b>120.86</b>	<b>100.0%</b>

\* Branch of a U.S. banking house    \*\* U.S. origins

**Source:** Stanley Chapman, *The Rise of Merchant Banking* (1984), p. 97.

**Table 15. Banking Structures in England & Wales and the United Kingdom**

**EW:** England and Wales

**UK:** United Kingdom (England, Wales, Scotland, and Ireland)

**PB:** private partnership banks

**JSB:** joint-stock banks

<b>Year</b>	<b>EW: Private Banks</b>	<b>EW: PB Offices/ Branches</b>	<b>EW: Joint- Stock Banks</b>	<b>EW: JSB Offices/ Branches</b>	<b>UK: Total Banks</b>	<b>UK: Total Offices/ Branches</b>	<b>UK: Average No. of Branches</b>
<b>1850</b>	327	518	99	576	<b>459</b>	1,685	3.67
<b>1875</b>	236	595	122	1,364	<b>381</b>	3,320	8.71
<b>1900</b>	81	358	83	4,212	<b>184</b>	6,269	34.07
<b>1913</b>	29	147	41	6,426	<b>88</b>	8,610	97.84

**Table 16:****English Commercial Banking Asset Ratios (percentages)**

<b>Years</b>	<b>Private Sector Loans</b>	<b>Advances</b>	<b>Bills</b>	<b>Investments</b>	<b>Cash</b>
<b>1860</b>	69.4	46.7	30.7	16.2	13.1
<b>1870</b>	75.9	49.0	33.6	13.3	13.8
<b>1880</b>	65.1	47.6	20.0	17.7	19.2
<b>1890</b>	62.6	50.1	15.7	18.5	17.8
<b>1900</b>	57.0	50.6	11.1	22.8	18.7
<b>1910</b>	54.0	48.0	10.2	22.0	22.2
<b>1913</b>	55.6	46.8	12.0	17.9	24.6

**Source:** Mae Baker and Michael Collins, 'Financial Crises and Structural Change in English Commercial Bank Assets, 1860 - 1913', *Explorations in Economic History*, 26:4 (October 1999), 428-44.



Table 17.

**World Gold Mining Outputs in the 19<sup>th</sup> Century, 1850 - 1913**  
**Average Annual Gold Outputs in Metric Tonnes**

Decade	Australia	New Zealand	Russia	South Africa	Rhodesia	Mexico	Canada	United States	World Total	Total in kg.
<b>1850-9</b>	76.8	0.3	25.4					83.4	<b>185.9</b>	<b>185,900</b>
<b>1860-9</b>	61.9	14.1	25.1					70.6	<b>171.7</b>	<b>171,700</b>
<b>1870-9</b>	46.0	12.0	37.1			1.6		61.5	<b>158.2</b>	<b>158,200</b>
<b>1880-9</b>	35.8	6.7	34.8	4.5		1.6	2.0	49.6	<b>135.0</b>	<b>135,000</b>
<b>1890-9</b>	59.7	8.4	38.4	62.0	1.2	8.0	7.7	70.2	<b>255.6</b>	<b>255,600</b>
<b>1900-14</b>	94.6	13.4	39.9	171.2	14.6	25.1	22.8	132.3	<b>513.9</b>	<b>513,900</b>
<b>Totals</b>	<b>374.8</b>	<b>54.9</b>	<b>200.7</b>	<b>237.7</b>	<b>15.8</b>	<b>36.3</b>	<b>32.5</b>	<b>467.6</b>	<b>1,420.3</b>	<b>1,420,300</b>
<b>Percent</b>	<b>26.4%</b>	<b>3.9%</b>	<b>14.1%</b>	<b>16.7%</b>	<b>1.1%</b>	<b>2.6%</b>	<b>2.3%</b>	<b>32.9%</b>	<b>100.0%</b>	

Sources: C.J. Schmitz, *World Non-Ferrous Metal Production and Prices, 1700-1976* (London, 1979).

Barry Eichengreen and Ian McLean, 'The Supply of Gold under the Pre-1914 Gold Standard,' *Economic History Review*, 2nd ser. 47:2 (May 1994).



**Table 6. Money Supply, GDP, Interest Rates, and Prices in Canada, 1975 - 2011: Annual Means of monthly data**

Year	M M1+ Gross \$ billions	V = Y/M Income Velocity of M1+ Gross	k =1/V Cambridge cash balances	P CPI 2002=100	y = Y/CPI Real GDP: \$ billions in 2002 dollars	GDP = Y Gross Domestic Product in \$ billions at current market prices	Population Canadian population in millions	Inflation: Percent Change in CPI	Bank Rate Bank Rate (percent)	Real GDP p.c. Real GDP per capita in 2002 dollars
1975	34.913	4.973	0.20109	28.96	599.591	173.6210	23,102,980	10.68%	8.500	25,952.96
1976	35.719	5.599	0.17860	31.14	642.211	199.9940	23,414,365	7.55%	9.292	27,428.10
1977	39.682	5.569	0.17958	33.63	656.984	220.9730	23,694,035	8.01%	7.708	27,727.83
1978	42.886	5.710	0.17513	36.65	668.229	244.8770	23,935,651	8.95%	8.979	27,917.74
1979	44.782	6.243	0.16018	39.99	699.065	279.5770	24,170,445	9.13%	12.104	28,922.30
1980	51.033	6.161	0.16232	44.05	713.637	314.3900	24,471,129	10.16%	12.891	29,162.40
1981	49.873	7.228	0.13836	49.53	727.771	360.4710	24,785,059	12.43%	17.931	29,363.30
1982	55.175	6.885	0.14525	54.88	692.151	379.8590	25,083,479	10.80%	13.958	27,593.90
1983	62.592	6.573	0.15215	58.10	708.123	411.3860	25,336,505	5.86%	9.553	27,948.74
1984	70.527	6.375	0.15687	60.60	741.943	449.5820	25,577,353	4.30%	11.312	29,007.80
1985	89.427	5.431	0.18411	63.00	771.009	485.7140	25,813,854	3.96%	9.647	29,868.03
1986	102.767	4.987	0.20050	65.63	780.952	512.5410	26,068,353	4.18%	9.214	29,957.87
1987	108.522	5.151	0.19415	68.48	816.218	558.9490	26,399,956	4.34%	8.403	30,917.38
1988	116.428	5.266	0.18990	71.25	860.441	613.0940	26,754,940	4.05%	9.686	32,160.06
1989	125.911	5.224	0.19143	74.81	879.187	657.7280	27,219,748	4.99%	12.293	32,299.60
1990	128.499	5.291	0.18899	78.40	867.246	679.9210	27,638,583	4.76%	13.045	31,378.10
1991	134.510	5.095	0.19626	82.80	827.738	685.3670	27,987,829	5.62%	9.034	29,574.92
1992	139.841	5.009	0.19964	84.00	833.905	700.4800	28,319,473	1.49%	6.783	29,446.34
1993	151.501	4.800	0.20834	85.60	849.514	727.1840	28,648,235	1.86%	5.088	29,653.28
1994	156.280	4.933	0.20273	85.70	899.502	770.8730	28,958,270	0.16%	5.766	31,062.00
1995	160.398	5.053	0.19792	87.60	925.144	810.4260	29,262,649	2.17%	7.308	31,615.18
1996	179.464	4.663	0.21445	88.90	941.354	836.8640	29,570,577	1.58%	4.531	31,834.15
1997	197.601	4.467	0.22385	90.40	976.475	882.7330	29,868,726	1.62%	3.521	32,692.21
1998	205.509	4.452	0.22461	91.30	1,002.161	914.9730	30,125,715	0.99%	5.104	33,265.97
1999	221.764	4.430	0.22573	92.90	1,057.525	982.4410	30,369,575	1.73%	4.917	34,821.87
2000	231.436	4.652	0.21497	95.38	1,128.783	1,076.577	32,352,977	2.70%	5.771	34,889.62
2001	254.823	4.348	0.22997	97.78	1,133.170	1,108.048	31,129,298	2.52%	4.313	36,402.05
2002	282.192	4.086	0.24477	100.00	1,152.905	1,152.905	31,446,719	2.27%	2.708	36,662.17

<b>Year</b>	<b>M</b> M1+ Gross \$ billions	<b>V</b> = Y/M Income Velocity of M1+ Gross	<b>k</b> =1/V Cambridge cash balances	<b>P</b> CPI 2002=100	<b>y</b> = Y/CPI Real GDP: \$ billions in 2002 dollars	<b>GDP</b> = Y Gross Domestic Product in \$ billions at current market prices	<b>Population</b> Canadian population in millions	<b>Inflation:</b> Percent Change in CPI	<b>Bank Rate</b> Bank Rate (percent)	<b>Real GDP</b> p.c. Real GDP per capita in 2002 dollars
<b>2003</b>	296.506	4.092	0.24440	102.75	1,180.706	1,213.175	31,734,093	2.75%	3.188	37,206.22
<b>2004</b>	322.897	3.998	0.25013	104.66	1,233.452	1,290.906	32,038,401	1.86%	2.500	38,499.17
<b>2005</b>	344.243	3.991	0.25057	106.98	1,284.267	1,373.845	32,352,977	2.21%	2.917	39,695.49
<b>2006</b>	371.124	3.908	0.25588	109.12	1,329.220	1,450.405	32,690,242	2.00%	4.313	40,661.06
<b>2007</b>	402.631	3.799	0.26323	111.45	1,372.444	1,529.589	33,048,782	2.14%	4.604	41,527.83
<b>2008</b>	436.712	3.672	0.27236	114.09	1,405.373	1,603.418	33,448,916	2.37%	3.208	42,015.50
<b>2009</b>	491.771	3.109	0.32163	114.43	1,336.140	1,528.985	33,856,945	0.30%	0.650	39,464.28
<b>2010</b>	551.750	2.944	0.33962	116.47	1,394.908	1,624.608	34,254,344	1.78%	0.850	40,722.09
<b>2011</b>	599.765	2.843	0.35173	119.86	1,422.668	1,705.181	34,605,346	2.91%	1.250	41,111.22

**Source:**

CANSIM: The Canadian Socio-Economic Management System, from Statistics Canada: on the CHASS website

<http://dc.chass.utoronto.ca/>

<b>Money</b>	<b>Source</b>	<b>Definition</b>
Monetary Base	CANSIM	notes and coin in circulation, chartered bank and other Canadian Payments Association members' deposits with the Bank of Canada
M1	IMF	notes, coins, chequable deposits: narrowly defined
M1B	CANSIM	currency outside banks, chartered bank chequable deposits, less inter-bank chequable deposits
M1+ Gross	IMF	M1 broadly defined: notes, coins, chequable and other deposits; Canada Savings Bond and other liquid assets