

Capital and economic growth in Britain: 1270-1870

By Stephen Broadberry and Alexandra M. de Pleijt

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10%

DOMESTIC INVESTMENT
SHARE OF GDP
IN BRITAIN
BY THE 1860s



14%

TOTAL INVESTMENT
SHARE OF GDP
IN BRITAIN
BY THE 1860s

Little is known about the role of capital in economic growth before the late 19th century. We provide the first estimates of investment and the capital stock in Britain for the period 1270–1870.

Although important changes did occur in the role of capital – such as the growing importance of fixed capital relative to working capital and a substantial increase in the investment share of GDP – growth-accounting analysis shows that productivity growth was more important than capital-deepening in explaining the growth of output per head. Economists and economic historians have often speculated about the role of capital in economic growth during the rise of capitalism. However, until now they have lacked the data needed to conduct a systematic analysis of the phenomenon.

Recent research has shown that the British Industrial Revolution of the 18th century was preceded by two earlier growth spurts during the

second half of the 14th century and the second half of the 17th century. But for Britain, the first economy to achieve modern economic growth, data on capital accumulation have been available only from 1760 onwards, making it impossible to provide long-run growth accounts.

Our research addresses this data gap. We estimate capital formation and the stock of fixed capital in Britain, for the period 1270 to 1870, providing data for the three main sectors of the economy (agriculture, industry and services) and combining them into aggregate fixed capital. We then combine fixed capital with working capital (farm stocks and non-farm stocks) to provide domestic reproducible capital, which we join with land and overseas assets to generate a series of national wealth. ►

How has the composition of national wealth changed?

Our findings suggest that there was a sharp decline in the share of land and a corresponding rise in the shares of domestic reproducible capital and overseas assets.

These trends partly reflect the growing importance of industry and services relative to agriculture. They also indicate the increased importance of reproducible capital in all sectors, including agriculture.

The growth in the share of domestic reproducible capital was driven by the growing importance of fixed capital relative to working capital, while the growing importance of overseas assets was a relatively late phenomenon, beginning in the 1750s.

What has happened to capital-labour and capital-output ratios?

Trends in the capital-labour and capital-output ratios (see Figures

1 and 2) move broadly in line with Nicholas Kaldor's 'stylised facts' of economic growth, with the capital-labour ratio trending upwards but the capital-output ratio remaining stationary.

It should be noted, however, that these trends are dependent on the use of fixed capital. Using reproducible capital, the capital-labour ratio was stationary until the 19th century and the capital-output ratio trended downwards.

Figure 1: Capital per head of the population, 1270–1870 (£ at constant 1700 prices)

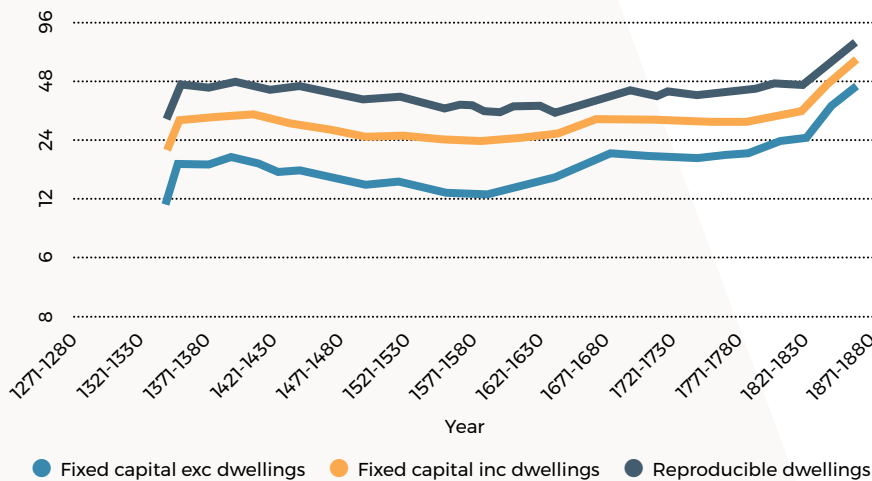
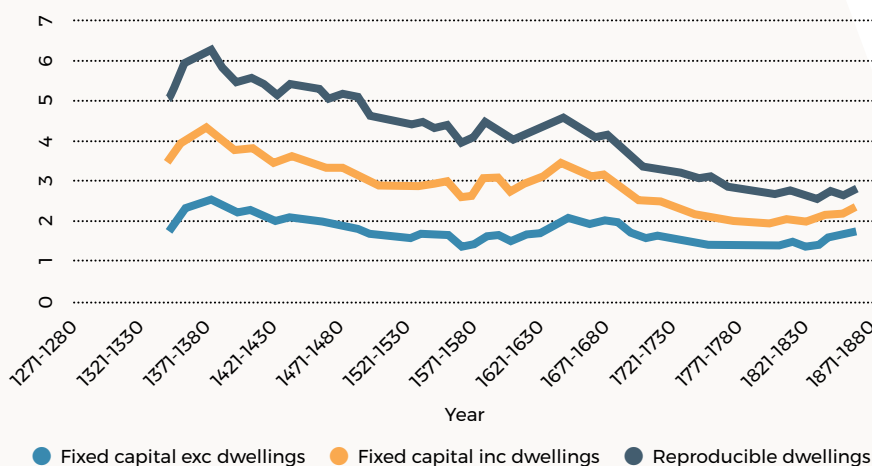


Figure 2: Capital-output ratio at constant 1700 prices, 1270–1870



What are the causes of economic growth in Britain?

We combine these new data on capital and investment with estimates of per capita GDP and labour input to assess whether economic growth came from the use of more factor inputs or from the more effective use of existing inputs. Growth accounts are provided in both extensive and intensive form, accounting for the growth of output and output per head, respectively.

Table 1 presents the results of the growth-accounting exercise in extensive form, using fixed capital excluding dwellings – but the findings are similar for reproducible capital. They suggest that output growth was driven largely by the growth of factor inputs rather than the more efficient use of factors (total factor productivity, or TFP growth). The one period that does not conform to this strong dominance of factor inputs over efficiency was between the 1640s and 1690s, when TFP growth made a much larger contribution to output growth.

However, in the intensive form accounts, depicted in Table 2, the growth of output per head was driven more by the growth of efficiency than by capital deepening (an increase in capital per head).

Deirdre McCloskey once wrote 'ingenuity rather than abstention governed the industrial revolution'. That picture is confirmed here in the intensive form growth accounts, with TFP accounting for over three-quarters of GDP per head growth

between the 1690s and the 1830s, although capital deepening then became more important between the 1830s and the 1860s.

How has the role of investment changed in Britain?

The investment share of GDP increased substantially during the transition from pre-industrial to modern economic growth, but in a much more gradual way than suggested by earlier researchers such as Walt Whitman Rostow. The domestic investment rate barely reached 10% by the 1860s, when the total investment rate including overseas investment was just 14%. This compares with much higher savings and investment rates of 30–40% in many later-developing economies. ◀

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Publication details

[Capital and Economic Growth in Britain 1270–1870: Preliminary Findings](#). CAGE Working paper (no.546).

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Table 1: Accounting for the growth of British GDP, 1340s to 1860s
(% per annum)

	Output growth	Due to labour	Due to capital	TFP growth
1340s – 1400s	-0.73	-0.77	-0.17	0.20
1400s – 1450s	-0.21	-0.08	-0.18	0.05
1450s – 1640s	0.50	0.32	0.20	-0.02
1640s – 1690s	0.84	-0.03	0.20	0.67
1690s – 1830s	1.08	0.45	0.38	0.26
1830s – 1860s	2.28	0.70	1.15	0.43

Notes: Results for fixed capital excluding dwellings. Output and capital stock data are in constant 1700 prices. Weights for labour and capital are 0.6 and 0.4, respectively.

Table 2: Accounting for the growth of British GDP per head, 1340s to 1860s
(% per annum)

	Output per worker growth	Due to capital capital deepening	TFP growth
1340s – 1400s	0.54	0.34	0.20
1400s – 1450s	-0.08	-0.13	0.05
1450s – 1640s	-0.03	-0.01	-0.02
1640s – 1690s	0.88	0.22	0.67
1690s – 1830s	0.34	0.08	0.26
1830s – 1860s	1.11	0.68	0.43

Notes: Results for fixed capital excluding dwellings. Output and capital stock data are in constant 1700 prices. Weights for labour and capital are 0.6 and 0.4 respectively.

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