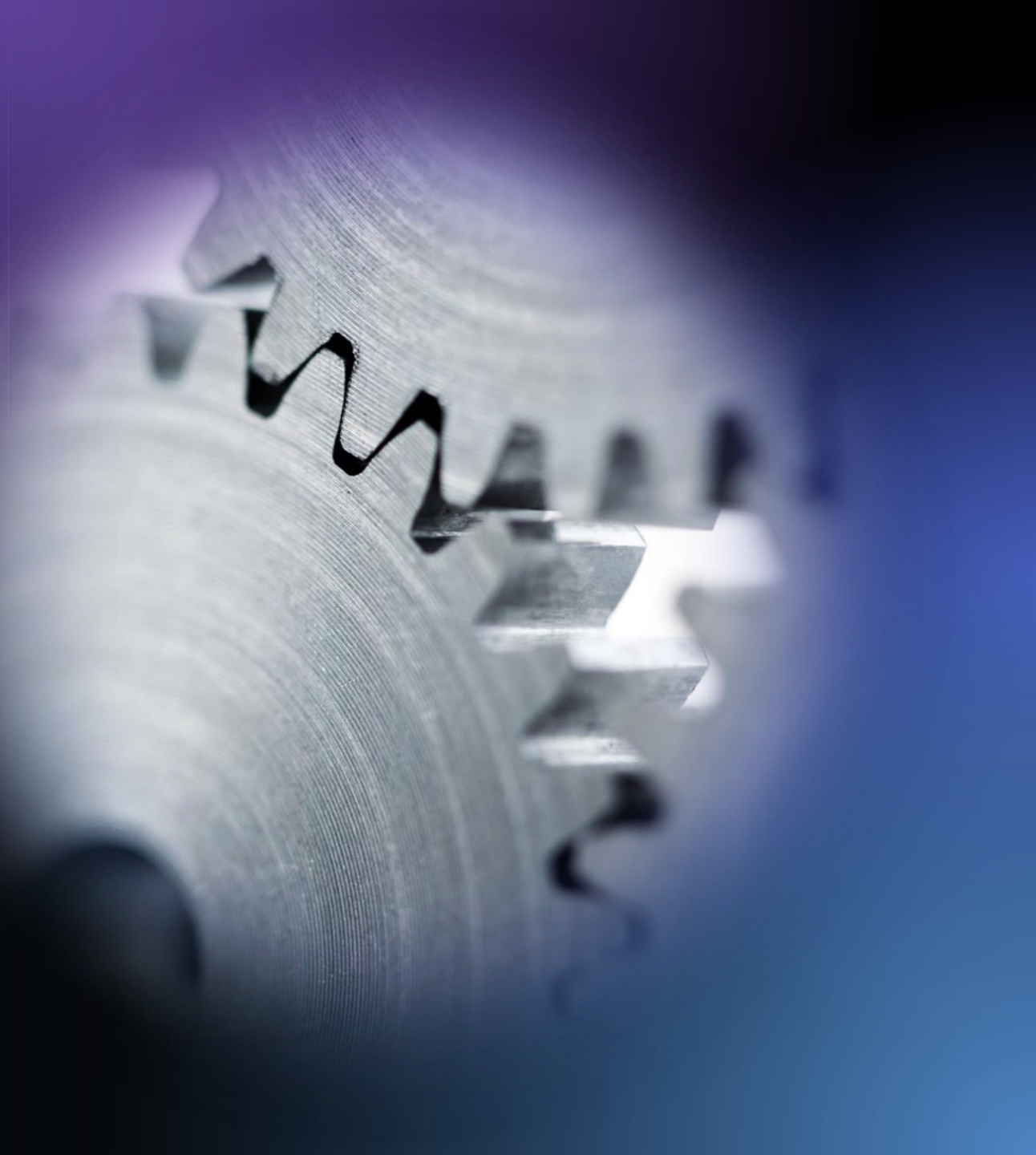


# **The Baran Ratio, Investment, and British Economic Growth and Development**

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# Background on Paul Baran

- Studied Marxism
- Long time friend and collaborator of Paul M. Sweezy
- Theme of Economic Surplus developed in *Political Economy of Economic Growth* (1957)
- This concept was developed further in *Monopoly Capital* (1966) with Sweezy.

# Economic Surplus

- Originally Baran's concept of economic surplus mostly focused on profits and rents extracted from workers.
- Later he and Sweezy amended this to include money spent on advertising, promotions, research and development spent on package design, military spending, etc. That is, spending on items that did not have use value or did not enhance standards of living.
- Baran also wrote about potential versus actual economic surplus.
- For this paper, Clark's capital income, rental income, and taxes are used as surplus estimates along with estimates of capital surpluses.

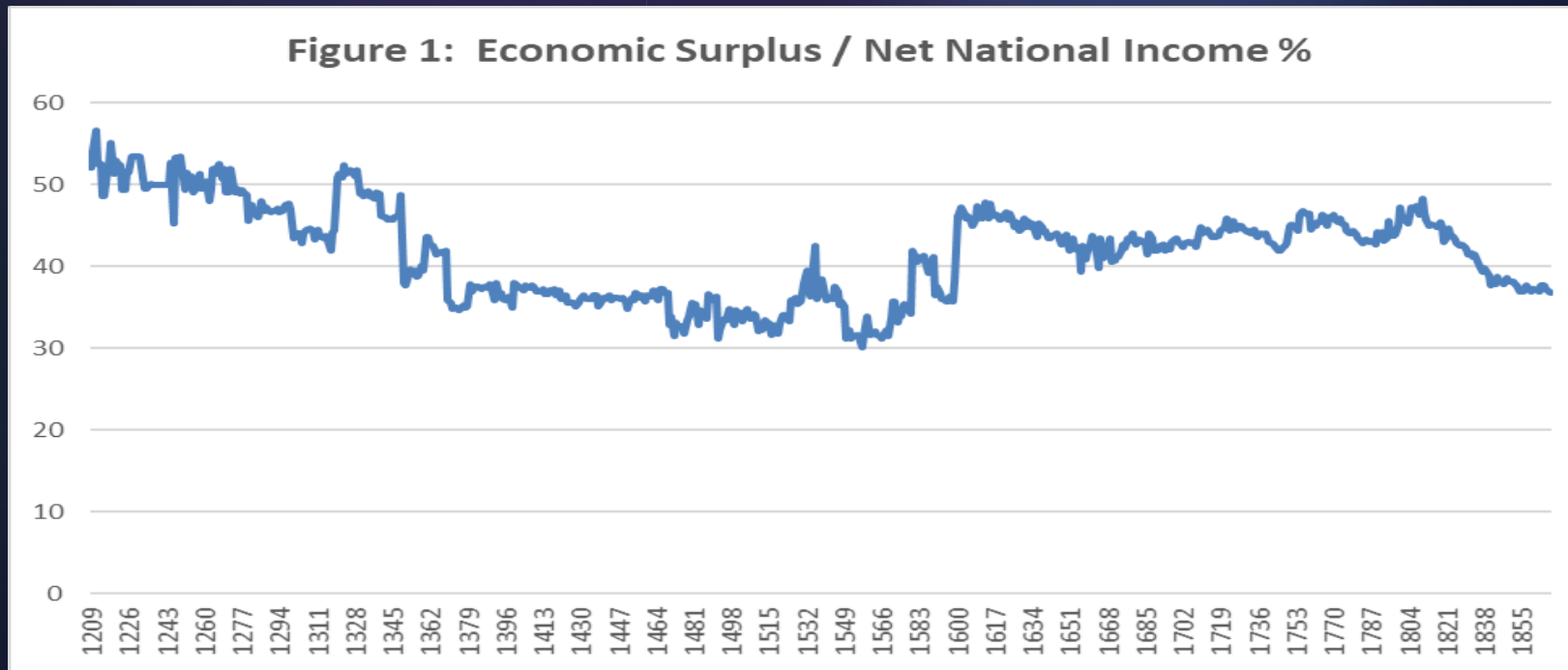
# Of court jesters, minstrels and grand cathedrals and palaces

- Surplus wasted versus that which is used “productively.”
- Productive versus unproductive debate and classical Marxian views.
- Feudalism had lack of property rights, lack of incentives, and too much “unproductive labor” and wasted surplus.
- Capitalism begins to employ the surplus more productively.

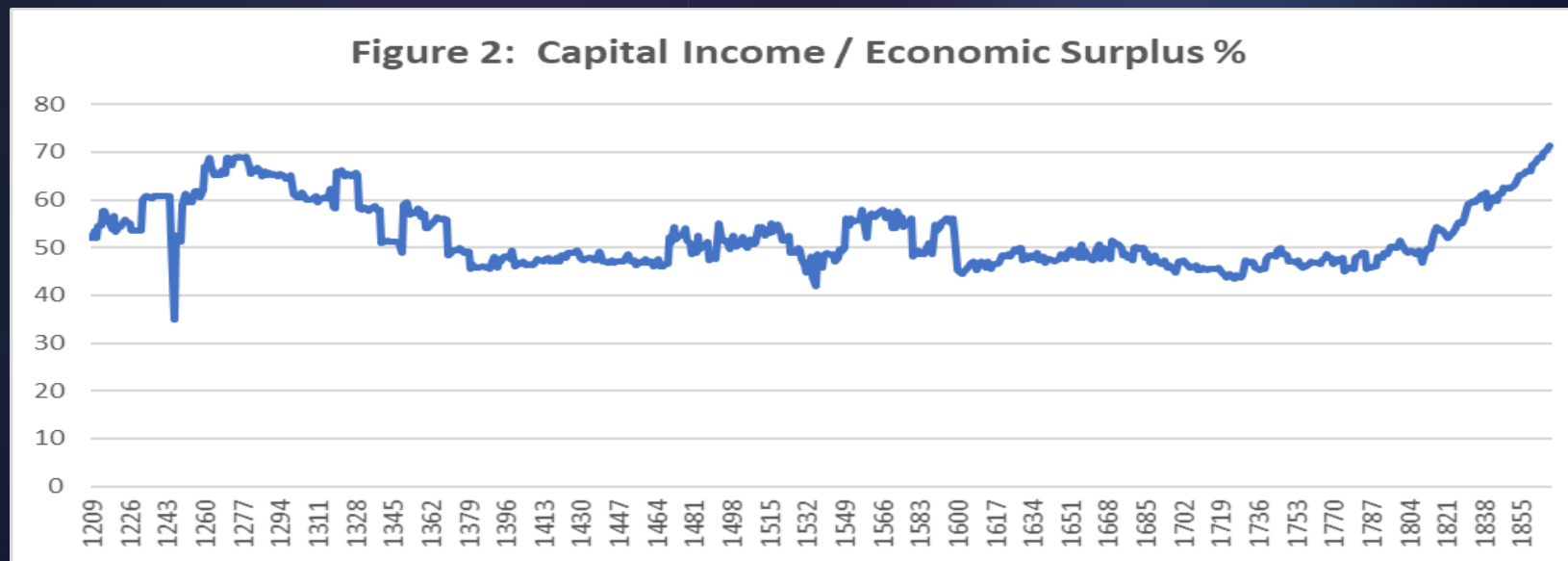
# Conjectures of English and UK Economic data from 13<sup>th</sup> to 19<sup>th</sup> Centuries

- Gregory Clark. 2009. “The Macroeconomic Aggregates for England, 1209-2008”, UC Davis, Economics WP 09-19. <http://faculty.econ.ucdavis.edu/faculty/gclark/data.html> . Accessed on February 23, 2020.
- Stephen Broadberry, S., Campbell, Bruce, Klein, A., Overton, M., & Van Leeuwen, B. 2015. *British Economic Growth, 1270–1870*. Cambridge: Cambridge University Press. Doi:10.1017/CBO9781107707603 . Data set located at <https://www.cambridge.org/gb/academic/subjects/history/economic-history/british-economic-growth-12701870?format=PB> .
- I have used these conjectures to build estimates of investment and the Baran Ratio for some of my papers.

# Economic Surplus as Pct of Clark's NNI

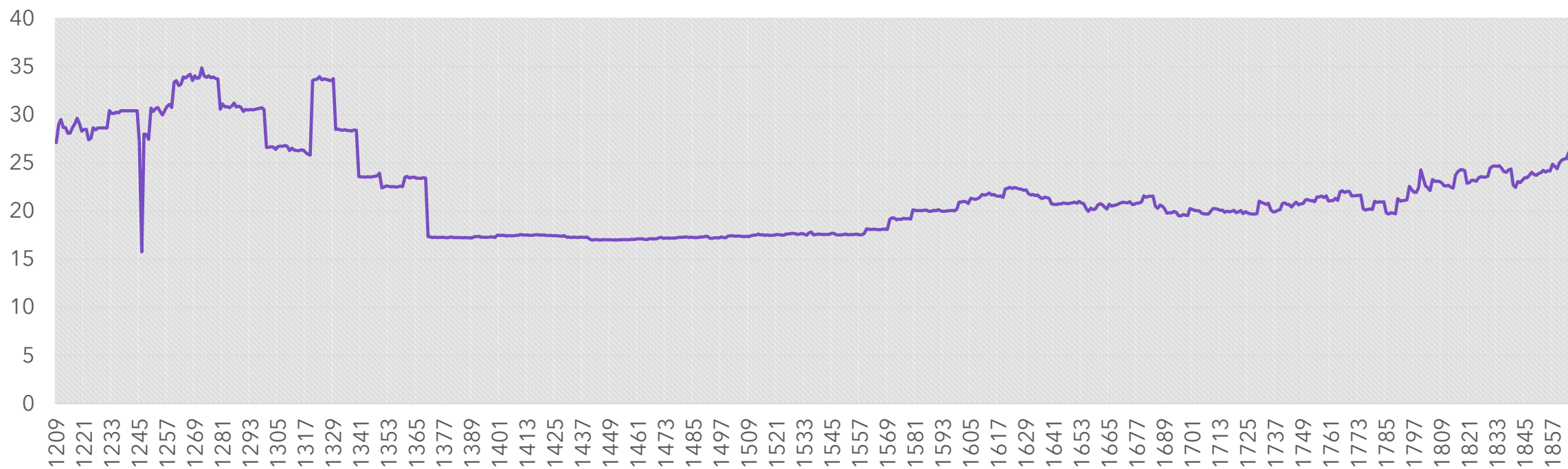


# Capital Income as Pct of Economic Surplus



# Capital Income as Pct of NNI

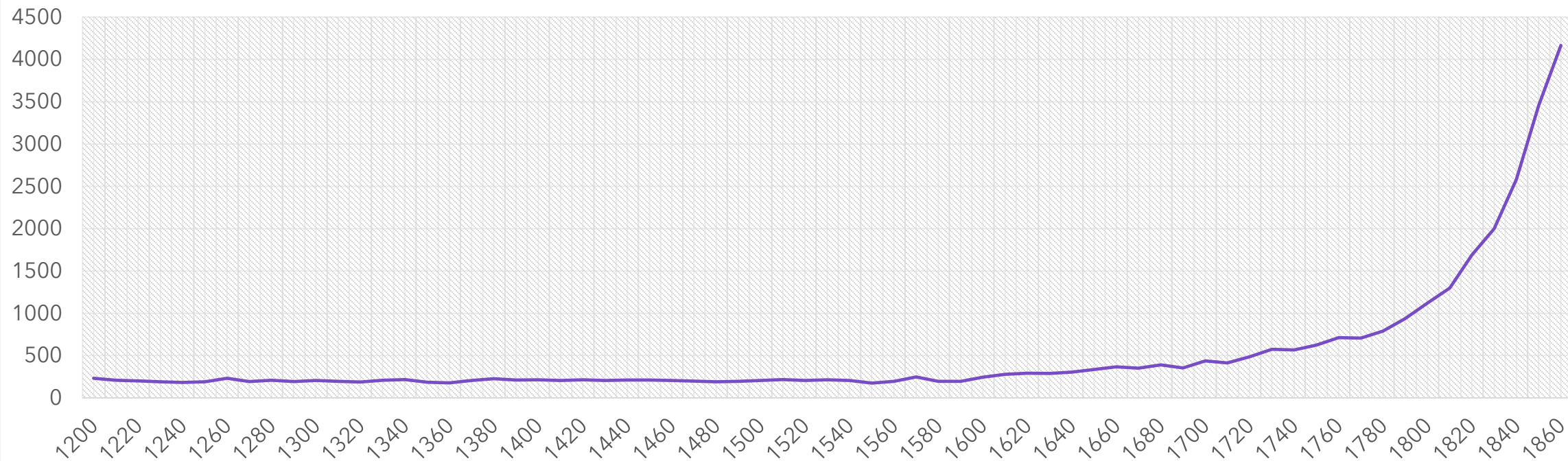
Figure 3: Capital Income / Net National Income %





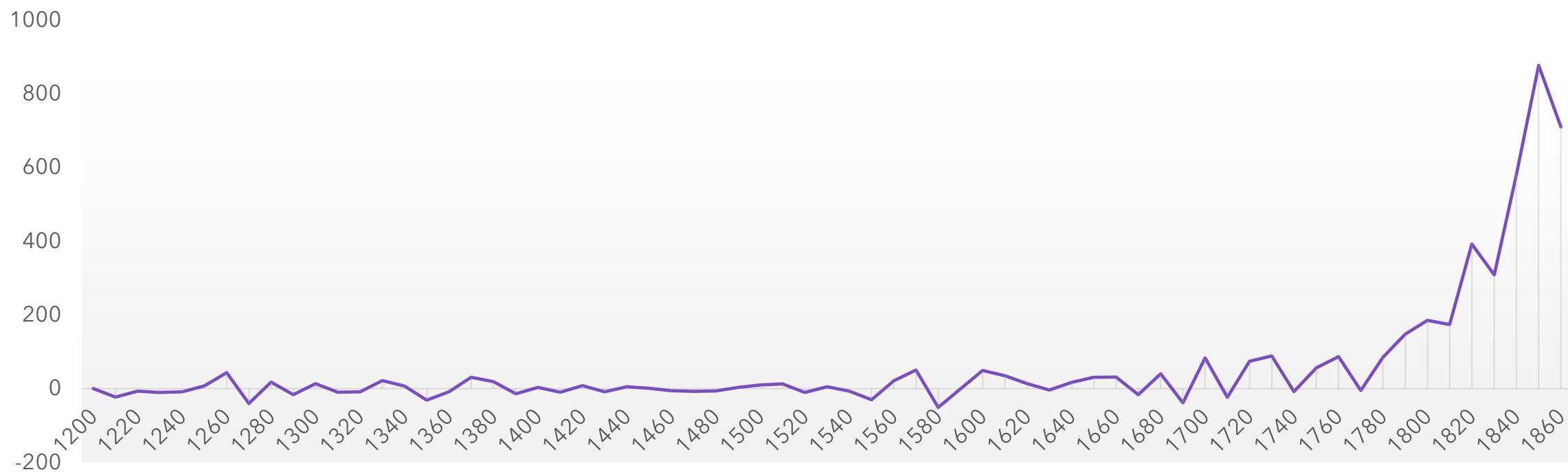
# Real Capital Stock, £ millions

Figure 4: Real Capital Stock, £ millions



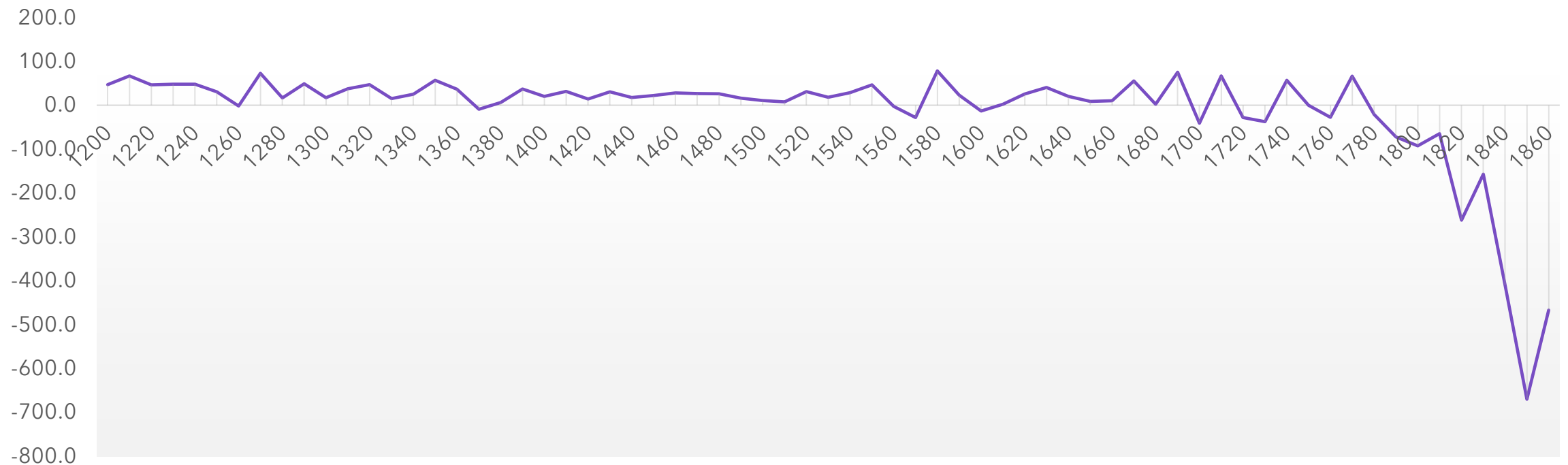
# Real Investment, £ millions

Figure 5: Real Investment, £ millions



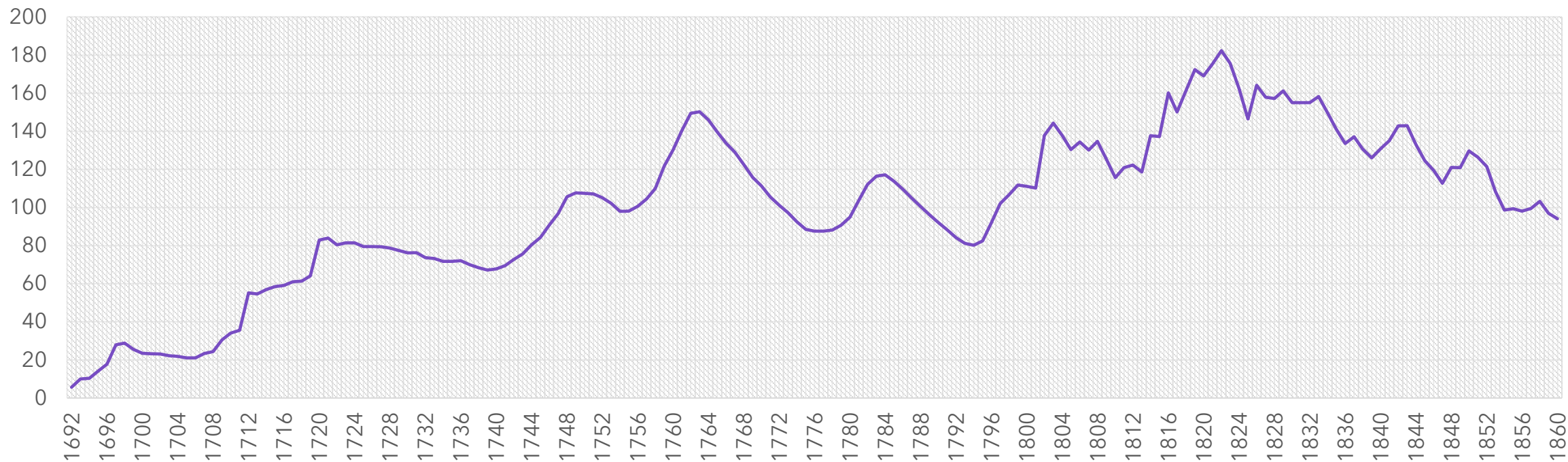
# Real Govt Deficit/Surplus, £ millions

Figure 6: Real Govt Deficit/Surplus, £ millions



# Public Net Debt / GDP %, 1692-1860

Figure 7: Public Net Debt / GDP %, 1692-1860

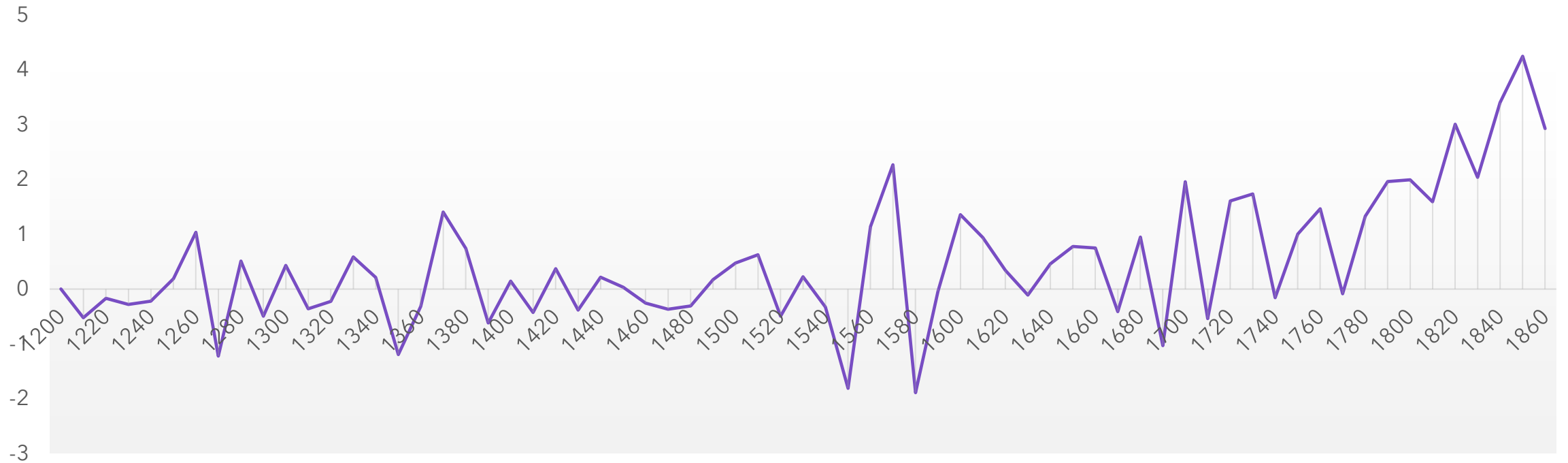


# Baran Ratio

- Baran Ratio (BR) = Annual Investment Expenditures / Economic Surplus (Xu 2019)
- Xu (2019) believes that Baran's concept of the economic surplus is important in understanding investment in a capitalist economy because investment spending can only come from the surplus generated from labor.
- This can be a ratio greater than one of domestic surplus if capital account surpluses are combined with profits, rents, and taxes.

# Estimated Baran Ratio over the Centuries

Figure 8: Baran Ratio

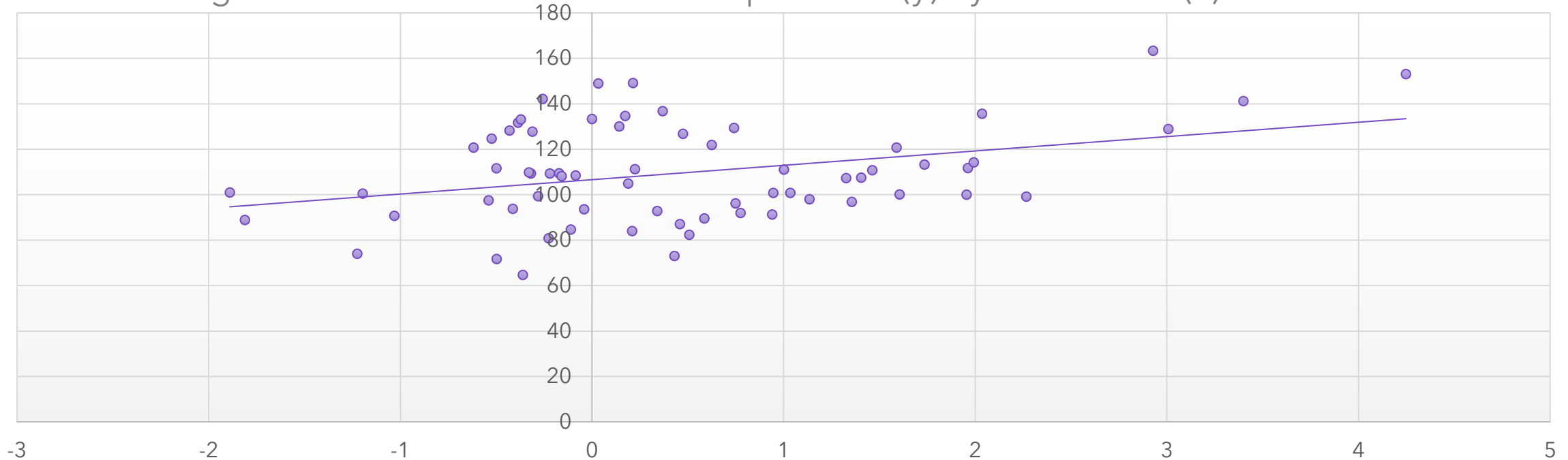


# Correlation Matrix for 1200 to 1860 Values

	Real Economic Surplus per Head	Real Investment per Head	Real Govt Surpluses/Deficits per Head	Baran Ratio	Clark Real Income per Head	Broadberry, et al Real GDP per Head	Debt/GDP Pct
Real Economic Surplus per Head	1						
Real Investment per Head	0.4357*	1					
Real Govt Surpluses/Deficits per Head	-0.2991*	-0.9892*	1				
Baran Ratio	0.3851*	0.9739*	-0.9698*	1			
Clark Real Income per Head	0.7312*	0.4032*	-0.3084*	0.3495*	1		
Broadberry, et al Real GDP per Head	0.7329*	0.8195*	-0.7875*	0.7304*	0.5295*	1	
Debt/GDP Pct	0.6900*	0.5386*	-0.5116*	0.5034*	0.5489*	0.4993*	1

# Clark Income based GDP per Head (y) by Baran Ratio (x)

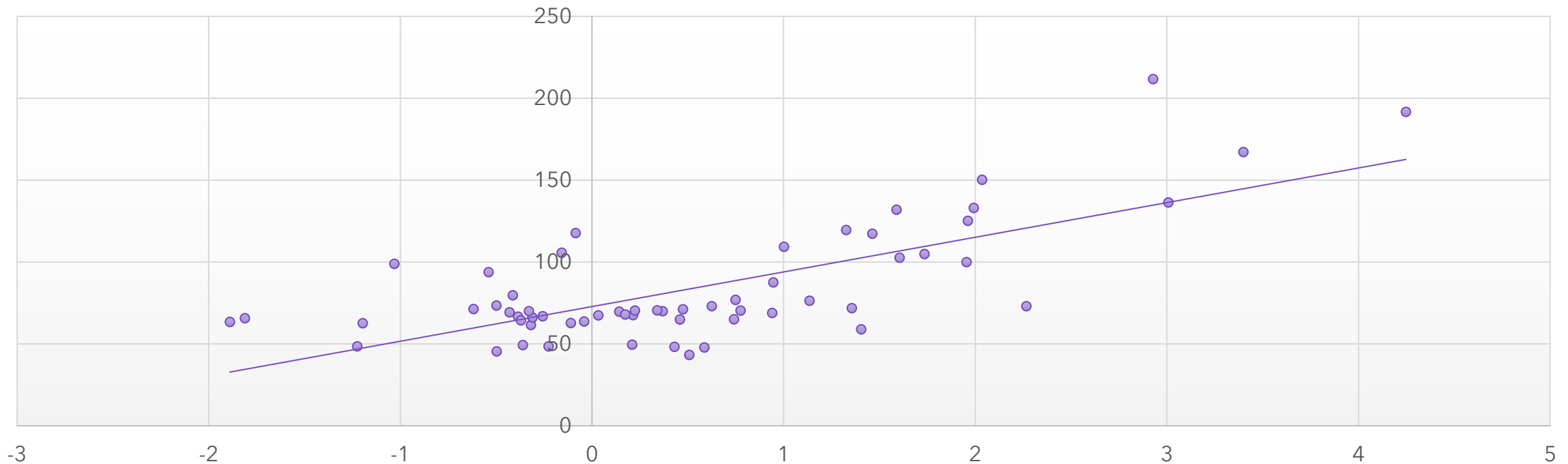
Figure 9: Clark Income based GDP per Head (y) by Baran Ratio (x)





# Broadberry, et al Real GDP per Capita (y) by Baran Ratio (x)

Figure 10: Broadberry, et al Real GDP per Capita (y) by Baran Ratio (x)



# Vector Autoregression Results

- **Table 3—Vector Autoregression Results**

- 1) Dependent Variable is Clark Real Income Based GDP per Capita

	<u>b</u>	<u>S.E.</u>
• Constant	8.59	5.2
• Baran Ratio, 1 lag	3.93*	0.82

- 
- n=66
- Adj.  $r^2 = 0.87$

# Vector Autoregression Results

1) Dependent Variable is Broadberry Real GDP per Capita

- 
- Constant
- Baran Ratio, 1 lag
- 
- $n=59$
- $\text{Adj. } r^2 = 0.98$
- 
- 
- $p < 0.05$

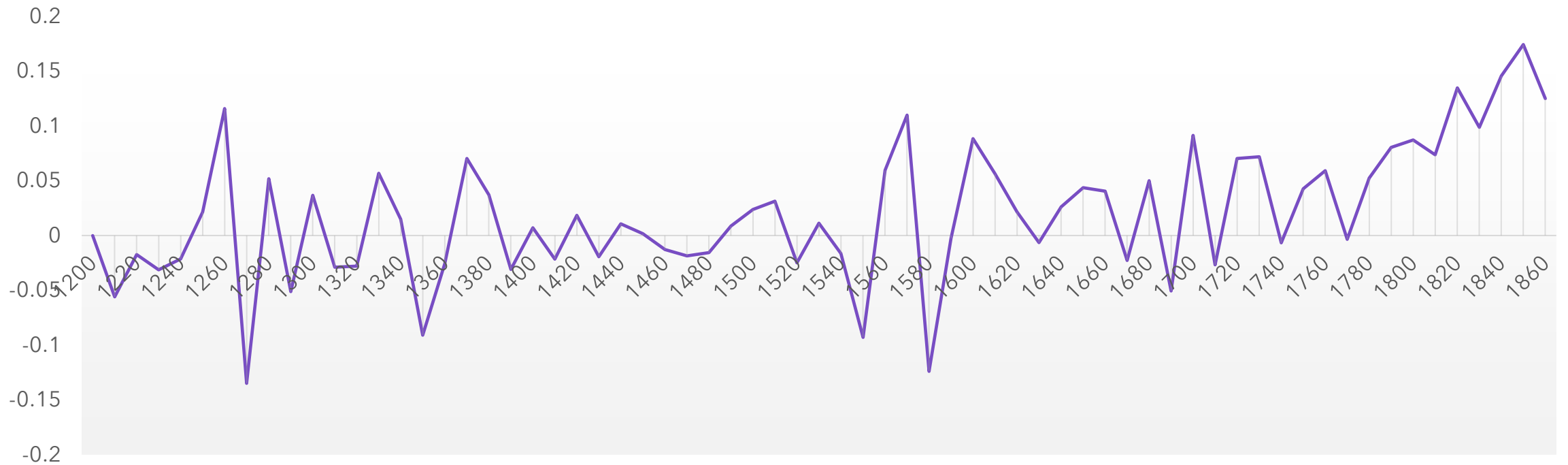
<u>b</u>	<u>S.E.</u>
-3.17	2.17
2.06*	0.74

# A Post Keynesian Application

- Using a simplified “old post-Keynesian” or Cambridge growth equation (Pasinetti 1974, Lavoie 2009, 108-109)
- $r = g / s$
- where “ $r$ ” is the profit rate or rate of return to capital, “ $g$ ” is the economic growth rate, and “ $s$ ” is the propensity to save out of profits, and it is assumed that workers either do not save or save very little out of total savings, then rearranging we have
- $g = s \cdot r$  , an equation for growth rate.

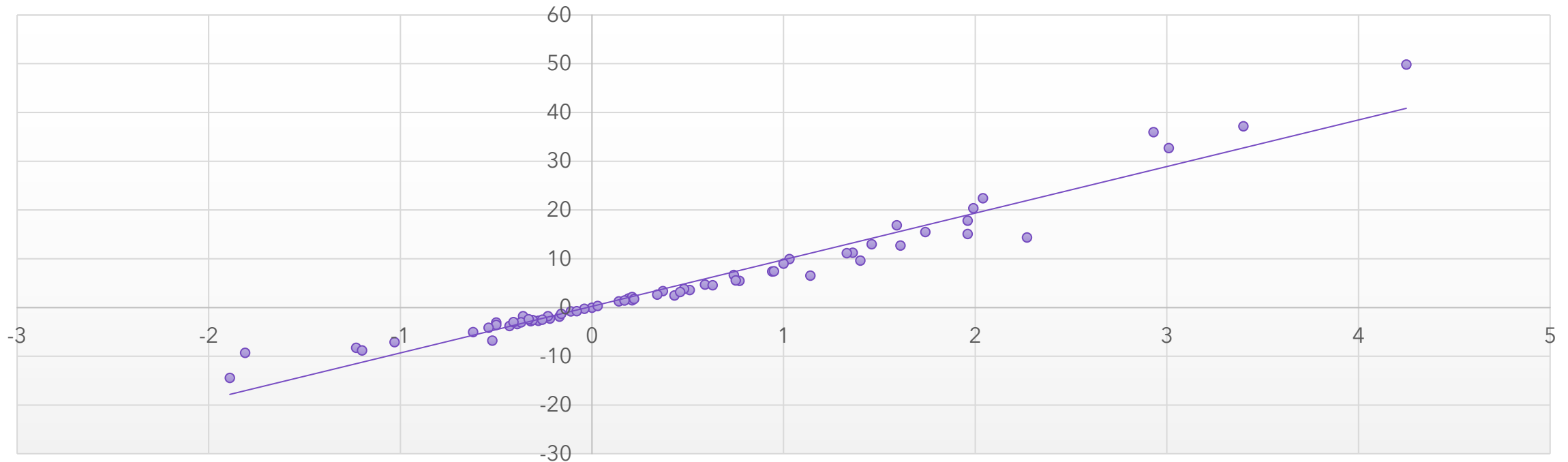
# Growth Rates over Time

Figure 11: Growth Rates over Time



# Investment per Capita, £ (y) by Baran Ratio (x)

Fig. 12: Investment per Capita, £ (y) by Baran Ratio (x)

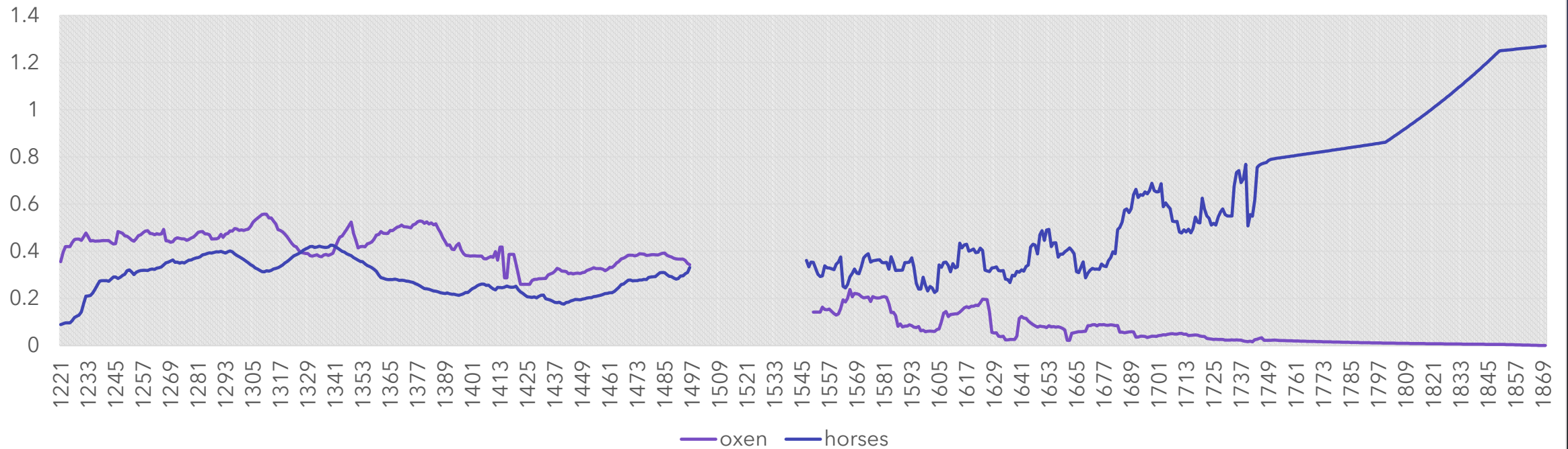


# Demand does not always lead to Investment

- While some can assert that demand for certain goods and services creates the investment that is needed to supply the goods and services, there are some lessons from history that show that this can be a very slow process, and sometimes the potential investment is still not made. As an illustration of how investment opportunities and levels of investment matter in England and the UK over the transition from feudalism to capitalism, Figure 13 below shows estimates for the number in millions of oxen and horses used in England and Britain from 1221 to 1496 and then from 1550 to 1870 (Broadberry, et al 2015).

# Oxen vs. Horses, 1221 to 1496 and 1550 to 1870

Figure 13: Oxen vs. Horses, 1221 to 1496 and 1550 to 1870





# Thank you!

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