



# Accounting for the great divergence

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*The economic divergence we observe today was existent even a thousand years ago. Thanks to recent work on historical data, we can now trace the economic development of different countries centuries back in the past. This column discusses the roots of the Great Divergence between European and Asian economies. The column argues that divergence is due to the differential impact of shocks that hit economies with different structural features.*

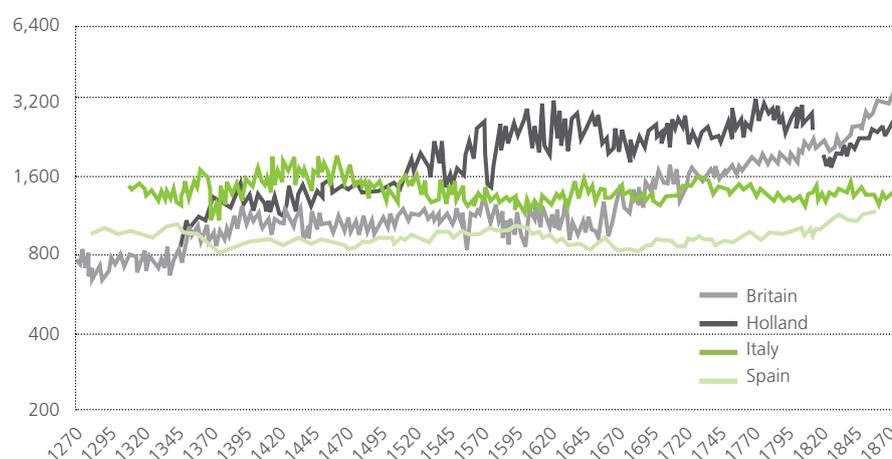
As a result of recent work, economic historians have produced historical national accounts reaching back to the early years of the second millennium (derived from data collected at the time). For the major European economies, at least, data are now available on an annual basis back to 1300.

## Measuring the Great Divergence: Maddison revised

This new work presents quite a different picture of the development of European and Asian nations from that surmised by Angus Maddison in his widely used book, *The World Economy: A Millennial Perspective*, where pre-1820 estimates of per capita GDP were based largely on conjecture, and provided only for a small number of benchmark years.

As it turns out, medieval and early modern European and Asian nations were much more literate and numerate than is often thought. They left behind a wealth of data in documents such as government accounts, customs accounts, poll tax returns, Parish registers, city records, trading company records, hospital and educational establishment records, manorial accounts, probate inventories, farm accounts, tithe files. With a national accounting framework and careful cross-checking, it is possible to reconstruct population and GDP back to the medieval period. The picture that emerges is of reversals of fortune within both Europe and Asia, as well as between the two continents.

**Figure 1.** Real GDP per capita in European countries, 1270-1870 (1990 international dollars, log scale)



Sources: see Table 1.

**Table 1.** GDP per capita levels in Europe and Asia (1990 international dollars)

	England/ GB	Holland/ NL	Italy	Spain	Japan	China	India
725	-	-	-	-	483	-	-
900	-	-	-	-	534	-	-
980	-	-	-	-	-	1,247	-
1086	754	-	-	-	-	1,204	-
1120	-	-	-	-	-	1,063	-
1150	-	-	-	-	603	-	-
1280	679	-	-	957	560	-	-
1300	755	-	1,482	957	-	-	-
1348	777	876	1,376	1,030	-	-	-
1400	1,090	1,245	1,601	885	-	-	-
1450	1,055	1,432	1,668	889	554	983	-
1500	1,114	1,483	1,403	889	-	1,127	-
1570	1,143	1,783	1,337	990	-	968	-
1600	1,123	2,372	1,244	944	791	977	682
1650	1,110	2,171	1,271	820	838	-	638
1700	1,563	2,403	1,350	880	879	841	622
1750	1,710	2,440	1,403	910	818	685	573
1800	2,080	1,752	1,244	962	876	597	569
1850	2,997	2,397	1,350	1,144	933	594	556

**Sources:** Broadberry et al. 2011, Broadberry and van Leeuwen 2011, van Zanden and van Leeuwen 2012, Malanima 2011, Álvarez-Nogal and Prados de la Escosura 2013, Bassino et al. 2012, Broadberry et al 2013a, Broadberry et al 2013b;

**Notes:** The British data refer to the territory of England before 1700 and Great Britain thereafter; the Dutch data refer to the territory of Holland before 1800 and the Netherlands thereafter. Data for all countries except Japan and India are for ten-year averages starting in the year stated (e.g. 1300= 1300-09).

This means that the Great Divergence of living standards between Europe and Asia had late medieval origins and was already well under way during the early modern period, contrary to the recent revisionist views of writers such as Kenneth Pomeranz. However, the revisionists are correct to point to regional variation within both continents. Figure 1 shows the European Little Divergence, or reversal of fortunes between the North Sea Area and Mediterranean Europe, as Britain and Holland began to catch up with Italy and Spain from 1348 – and then forged ahead from 1500 – led first by the Dutch Golden Age, and later by the British Industrial Revolution.

Putting together the GDP per capita data for these key European economies, with data on a number of important Asian economies in Table 1, suggests also an Asian Little Divergence, with Japan overtaking China and India. However, Japan started at a lower level of per capita income than Britain and Holland and grew at a slower rate, so continued to fall behind until after the Meiji Restoration of 1868. Thus the two continents diverged as reversals of fortune occurred within each continent.

## Explaining the Great Divergence: Shocks with asymmetric effects

Economic historians can now, therefore, account for the Great Divergence, using the word “accounting” in the sense of measurement – by providing a quantitative picture of when and where the Great Divergence occurred. However, there is a second sense in which the word “accounting” can be used – to provide an explanatory narrative.

Much remains to be done on the measurement of the key explanatory factors, but the framework adopted here is to see the divergences as arising from the differential impact of shocks hitting economies with different structural features. The economic history literature suggests two important shocks coinciding with the turning points identified above around 1348 and 1500.

- The Black Death – which began in western China before spreading to Europe and reaching England in 1348 – wiped out around one-third of Europe’s population within three years, and more than a half over the following century.
- Around 1500, new trade routes were opened up between Europe and Asia around the south of Africa, and between Europe and the Americas.
- These shocks had asymmetric effects on different economies because of four important structural factors.
- The type of agriculture.
- The age of first marriage for women.
- The flexibility of labour supply.
- The nature of state institutions.

## The effects of the Black Death

The Black Death of the mid-fourteenth century had quite different effects in different parts of Europe. The classic Malthusian response to such a mortality crisis is a rise in incomes for those lucky enough to survive because of an increase in the per capita endowment of land and capital for survivors.

However, as population recovers, it should lead to a corresponding decline in per capita incomes.

- This happened in Italy, but not in Britain or Holland, as a result of the high age of marriage of females (linked to labour market opportunities in pastoral agriculture) and people working more days per year (the industrious revolution).
- The situation was different in Spain, which was a land-abundant frontier economy during the Reconquest, and, hence, did not see a rise in per capita incomes following the Black Death.

Here, population decline destroyed commercial networks and further isolated an already scarce population, reducing specialisation and the division of labour, so that Spain did not take share in the general West European increase in per capita incomes.

- There are no signs of a positive Black Death effect in Asia, since Japan remained isolated, so that the disease never took root, while the period was marked in China by the Mongol interlude, which destroyed the institutional framework that had underpinned the high per capita incomes of the Northern Song dynasty.

## New trade routes

The opening up of new trade routes from Europe to Asia and the Americas accelerated the process of divergence, again through their interaction with structural features of the different economies. It might be expected that Spain and Portugal would have been the gainers from these changes, since they were the pioneers and both had Atlantic, as well as Mediterranean coasts. However, early modern Britain and Holland dominated Spain and Portugal in terms of institutional structures, including both the ability of states to raise taxes to finance the expansion of state capacity (needed for the effective enforcement of property rights), and the control exercised by mercantile interests over the state through parliament (needed to limit arbitrary intervention in business affairs by rulers).

China adopted a restrictive closed-door policy towards long-distance trade after the “voyages to the western oceans” that had occurred between 1405 and 1433, which had shown China to be technologically ahead in shipbuilding. However, following an initial period of openness to relations with European traders, Tokugawa Japan adopted a policy of seclusion from the 1630s, so any Japanese advantage from the earlier Chinese turn inwards was short lived.

Although recent work has tended to question the extent to which trade really was closed off by these policies, the contrast with the outward orientation of the European states which sponsored the voyages of discovery from the 15th century remains striking. With early modern China and Japan turned inwards, India was the Asian country most open to trade, with its major export business in cotton textiles. However, this did not lead to Indian prosperity because of the low levels of state capacity and its consequences for the enforcement of property rights.

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