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Working Paper

You take the high road and i'll take the low road: Economic success and wellbeing in the longer run

Centre for Economic Research Working Paper Series, No. WP05/10

Provided in Cooperation with:

UCD School of Economics, University College Dublin (UCD)

Suggested Citation: Ó Gráda, Cormac (2005) : You take the high road and i'll take the low road: Economic success and wellbeing in the longer run, Centre for Economic Research Working Paper Series, No. WP05/10, University College Dublin, Department of Economics, Dublin, <https://hdl.handle.net/10197/472>

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CENTRE FOR ECONOMIC RESEARCH

WORKING PAPER SERIES

2005

**You Take the High Road and I'll Take the Low Road:
Economic Success and Wellbeing in the Longer Run**

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WP05/10

June 2005

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You Take the High Road and I'll Take the Low Road:
Economic Success and Wellbeing in the Longer Run¹

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Since the outset economics has been concerned with what Adam Smith called the 'wealth of nations' – although today we differentiate more clearly between 'wealth' and 'income' than Smith did. Economic historians in turn seek to explain differences and changes over time in the 'income of nations'. Explanations are plentiful, and there are many ways too of measuring the differences and changes. Although GDP per head remains the most popular measure and the one with the widest geographical and chronological reach, anthropometric measures such as body mass index, mean adult height, and birth weight, and survey data on life satisfaction offer alternative perspectives on wellbeing (compare Easterlin 2003; Offer 2002; Fogel 2004: 36).²

The focus of this paper is not on explaining growth, but on the output and welfare implications of the different routes from 'there' to 'here' taken by two pairs of economies. The case studies concern [i] Ireland and Italy during the second half of the twentieth century; and [ii] the United Provinces of the Netherlands and Great Britain between the sixteenth and nineteenth centuries. Both case studies concern alternative growth paths involving initial divergence or 'forging ahead' by one country followed by the other catching up. In effect, Italy and Britain describe the counterfactual paths

not taken by Ireland and the Netherlands, respectively. In the case of Ireland and Italy, both economies set out at roughly the same point in terms of productivity in mid-century. Between the 1950s and the 1980s Italy forged ahead, only to be caught up by a late surge from Ireland in the 1990s. In the Anglo-Dutch case, it was the Netherlands that opened up a lead during the Dutch Golden Age (c. 1580-1670) only to be tagged by industrializing Britain more than a century later. The paper is about the measurement and some welfare implications of the different paths travelled.

1.1. *Ireland and Italy*

1987 was the year of much-vaunted *il sorpasso*, when the aggregate output of the Italian economy, albeit briefly, overtook that of Great Britain (Maddison 2001: Tables C1-b and C1-c).³ For Ireland 1999, when GDP per head overtook that of the United Kingdom, marked a similar defining moment. In 1998 Irish GDP per head also overtook that of Italy. By the mid-2000s Ireland was well ahead of the UK in terms of GDP per head and even further ahead of Northern Ireland, traditionally the more developed region of the island.

During the 1990s much was made of the dynamism of the Irish economy, and outside observers focused on what the Celtic Tiger might teach other economies about rapid growth. It seemed as if the Irish had just unlocked the secret to fast, sustained economic growth. The celebratory commentary on that era from far and near (e.g. Gray 1997), and the eagerness elsewhere to learn from Ireland, might seem to imply that the

Celtic Tiger's growth compensated for the earlier delay: the main thing is that Ireland got there eventually. Ó Gráda and O'Rourke (2000) suggest otherwise: they argue that Ireland's route of under-achievement followed by convergence and even overshooting exacted a heavy price in economic welfare.

If a shift in economic policy was a precondition for the economic boom that began in the late 1980s and made Ireland 'Europe's star-performing economy', by the same token earlier underperformance can be blamed largely on policy failure. Inward-looking economic policies, including tariff protection and restrictions on capital imports, were mainly responsible for the stagnation of the 1950s. The opening up of the economy in the late 1950s yielded results in the following decade, but the gains were negated by the disastrous policy response to the second oil crisis of the late 1970s. That response sought to match the impact of the price shock through fiscal expansion, with the result that public expenditure rose to levels that by the early 1980s threatened national bankruptcy. There followed a period of fiscal rectitude and high unemployment. The public debt/GDP ratio peaked at 129% in 1986; in that same year the unemployment rate was 18%, and it would remain above ten per cent for another decade.

Between 1987 and 2000 the economy grew at an annual rate of 7%, faster than any other OECD economy. Even today Irish economic growth continues to exceed the OECD and EU averages. This suggests that there is more to the achievement of the Irish economy than 'catch-up' or belated convergence. However, compensation for underperformance since mid-century is a crucial part of the story. Two features of economic growth in

this period support this view. First, when adjusted for the effects of transfer pricing, productivity growth in the 1990s was ‘within the range exhibited by other countries and by Ireland itself in earlier periods’ (Honohan and Walsh 2002: 45-46). Second, when the spare capacity that had accumulated since the early 1980s had been mopped up, the rate of economic growth slowed down, although it still remained considerably above the EU average.

The course of the Irish economy since 1950 – initial under-performance, mitigated by rapid advance from the late 1980s on – prompts an analysis of the last half century or so of Irish economic history as a unit.⁴ Although dwarfing Ireland in terms of both population and output⁵, Italy offers a useful comparative perspective, since both economies were backward by west European standards in mid-century, with GDPs per head barely half those of the United Kingdom, Sweden, or Denmark.⁶ Of course, these two economies differed in obvious ways that conditioned their very different trajectories. In geographic terms, Italy is located in the heart of Europe while Ireland is on the periphery. At the outset Italy benefited from generous doses of Marshall Aid and from the stimulus of European economic integration. Ireland’s gains from European integration and foreign largesse would come toward the end of the century, at a time when the tyranny of distance mattered much less than in mid-century.

In the 1950s and 1960s real Irish GDP per head fell way behind Italian; the gap narrowed thereafter, but it took the hectic growth of the Celtic Tiger era to bridge it once more. The contrasting growth paths of the two economies are described in Tables 1 and 2 and in Figures 1 and 2. In Italy GDP per head grew steadily until near the end of the period, while the

rate of growth of population fell from 0.6% in the 1950s and 1960s to close to zero today. In Ireland, the rate of GDP growth per head accelerated over the half century, even during the years of gloom and doom in the 1980s. Short-run movements in the two economies were poorly correlated: while the 1950s are deemed Ireland's 'lost decade', in Italy they were years of 'economic miracle', and while Italy was enjoying its 'splendid eighties', Ireland was digging its way out of a deep economic crisis.⁷ Short-term population movements differed too. While Italian population growth decelerated over the half-century, Irish population growth was subject to wide fluctuations. The half-century included two stretches of decline when emigration was substantial and a time in the late 1960s and 1970s when population grew by over one per cent annually.

Imagine for a moment that statistical artefact, the average citizen, faced with the choice of either the Italian or Irish route to affluence in 1950. The cumulative difference in income (which we take to be a proxy for consumption) to 1998 – i.e. the value of the wedge in Figure 1 – is 42 times Irish 1950 GDP per head or eight times 1998 GDP per head. Alternatively, had Ireland followed the Italian road, Irish GDP per head would have been forty per cent higher on average in the interim. Discounting forward at two per cent gives ratios of 24 times Irish 1950 GDP per head and 4.6 times 1998 GDP per head, and discounting forward at three per cent gives ones of 19 and 3.6. Discounting or no discounting, the cost of slower growth in the early phases was clearly 'big'.

Whether discounting is appropriate here is rather a moot point. Discounting is equivalent to treating all those who lived in the country for

part or whole of the period in question as if they were represented by a lone individual with no thought for the next generation and with 'no family or friends interested in his (her) survival' (Williamson 1984: 158). Whatever about the validity of such an analogy for periods of a few decades, the historical record usually refers to longer spells, necessarily involving successive cohorts of individuals. In analysing the period 1600-1800, for example, there is no reason why the average individual living in 1620-50 should be valued more than the average individual living in 1720-50. A second reason for not discounting is time inconsistency: those same young people who tend to heavily discount the future in retrospect regret what seemed like careless over-spending (van den Berg 2002).

Pair-wise GDP comparisons are usually misleading when Ireland is involved, since they ignore the significant (though now stabilising) gap between Irish GDP and GNP, due to transfer pricing and the repatriation of royalties and profits by foreign multinationals. In mid-century this gap was insignificant but by the mid-1980s Irish GDP was only 90% of GNP, and today it is only 85%. Thus while Irish GDP per head overtook Italian in 1997/8 – the gap between Irish GNP per head and Italian GDP per head was not closed until 2001.⁸ Thus repeating the above calculation, but using Italian GDP per head and Irish GNP per head between 1950 and 2000 (when the latter overtook the former), yields a cumulative wedge one-fifth bigger than that using both Italian and Irish GDP per head.

1.2. Demographic Considerations

So far our focus has been on measures of output per head. In assessing economic performance account should also be taken of extensive growth, i.e. allowance should be made for any major differences in the rates of population growth. Economic historians tend to focus on measures of intensive growth such as GDP per head or the real wage; but surely the scale of extensive growth matters too. Throughout most of history, maintaining living standards while population grew meant keeping the Malthusian wolf away from the door.

In what follows, when comparing economic welfare and performance I shall simply add the rate of population growth to that in GDP per head. An Economy *A* in which GDP per head doubles over a given period while population remains the same is deemed to perform as well as an Economy *B* where GDP per head fails to grow but population doubles. In other words, this means comparing growth rates in real GDP.

As Figure 2 shows, although the population growth rates in Ireland and Italy over the period as a whole were similar, short-term trends were very different. In the 1950s and 1960s, in particular, the gaps in rates of population growth were considerable, with negative implications for Ireland's relative economic performance. The wedge between population-growth augmented GDPs was nearly ten times 1998 Irish GDP per head (as opposed to eight times when population is not taken into account).

In assessing the two growth paths, the influence of improvements in life expectancy should also be factored in. In 1950 Irish males stood to live 1.4 years longer than their Italian peers, and Irish females 0.4 years longer. Half a century later the gap was reversed, with Italian males expected to

outlive Irishmen by 1.2 years, and Italian females to outlive Irishwomen by 1.9 years (see Figure 3). Thus allowing for differences in the changes in the expectation of life at age zero, or $e(0)$, between 1950 and 2000 would marginally increase Italy's advantage. The timing of the catch-up obviously matters. Italian women overtook Irishwomen in the mid-1950s, while Italian men overtook Irishmen a decade or so later. Here we work with the average.

In 'British mortality and the value of life', Jeff Williamson, building on a classic paper by Dan Usher (1973), explained how to factor in increasing life expectancy in assessments of the economic performance of industrializing Britain. Usher's widely used measure reduces to the expression:

$$G_{\hat{C}} = G_C + (1/\beta).G_L$$

where $G_{\hat{C}}$ represents growth rate of \hat{C} , the 'true' standard of living after taking the change in life expectancy into account, G_C the growth rate of GDP per head, β the elasticity of utility with respect to GDP per head, and G_L the change in life expectancy. In this simple model the role of β is pivotal; in his study of Britain c. 1780-1930 Williamson worked with values of $\beta = 0.25$ to 0.45. An even simpler but serviceable way of dealing with the issue is that proposed by Lichtenberg (2003).⁹ He defines expected individual lifetime wellbeing (*EILW*) as $Y_A.e_A$, where Y_A is average income and e_A is expectation of life at birth in Economy A. Relative *EILW* at a point in time then is measured as: $[Y_A.e_A]/[Y_B.e_B]$. This amounts to assuming that the marginal utility from additions to Y and e is constant. In effect Lichtenberg's measure

of 'true' change implies $\beta = 1$, so it yields a lower return on improved life expectancy than the Usher-Williamson measure, which assumes $\beta < 1$.

For Ireland-Italy, I compare $U = \sum Y_i \bar{e}_i$, where Y_i is GDP per head in year i and \bar{e}_i is life expectancy in year i relative to life expectancy in 1950. Figure 4 combines the data that produced Figures 1 and 3; it describes the gap between GDP per head (*GAP*) and GDP per head augmented by an index of life expectancy (*GAP**). For the purposes of Figure 4 the index is set at unity in 1950. Adding up over the entire period, *GAP** is 17.9% greater than *GAP*.¹⁰ Here I follow Williamson and others in assuming that the improvements in life expectancy in this period were mainly due to exogenous factors such as improvements in medical technology and public health (Williamson 1984: 162-5). Taking into account demographic factors just reinforces the point that the extra consumption that Italy gained by being the early starter was considerable.

1.3. *Did Inequality Matter?*

In Ireland the affluence of the recent past has not brought a reduction in income inequality. To what extent might differences in income inequality trends in Ireland and Italy affect the above comparisons? International comparisons of income distribution are a minefield (Atkinson and Brandolini 2001). Broadly comparable Irish and Italian data are available from the early 1970s on, however (Nolan and Smeeding 2004; Brandolini 2004).¹¹ Table 3 compares household level data from 1973 to 2000. It suggests that

income inequality in Italy was considerably greater in the 1970s than in Ireland, but that the gap closed quickly thereafter, and that by turn of the century inequality in Ireland was marginally greater.¹²

These data can be used to estimate an abbreviated social welfare index for each economy over the 1973-2000 period. The social welfare index defined as $W_S = \mu(1-G)$, where μ is mean income and G the Gini coefficient (Sen 1976).¹³ The ratios of resultant W_S , and of Italian GDP per head to Irish GNP per head, are plotted in Figure 5. They imply that Italy lost less ground to Ireland in ‘social welfare’ terms (as captured by W_S) than in income terms between 1973 and 2000. It bears noting, however, that both Ireland and Italy were characterised by high income inequality relative to other Western European countries throughout this period (e.g. Nolan and Smeeding 2004).

	<i>IRELAND</i>		<i>ITALY</i>	
<i>Year</i>	<i>GDP per head (1990 intl \$)</i>	<i>Population (1,000s)</i>	<i>GDP per head (1990 intl \$)</i>	<i>Population (1,000s)</i>
1950	3,446	2,969	3,502	47,105
1973	6,867	3,073	10,643	54,751
1990	11,825	3,506	16,320	56,719
1998	18,183	3,705	17,759	57,592

Source: Maddison (2001: Tables A1-a, A1-c); Eurostat

	<i>GDP per head</i>		<i>Population</i>		<i>GDP</i>	
<i>Period</i>	<i>Italy</i>	<i>Ireland</i>	<i>Italy</i>	<i>Ireland</i>	<i>Italy</i>	<i>Ireland</i>
1950-9	4.8	1.6	0.6	-0.4	5.4	1.2
1960-9	4.8	3.5	0.6	0.3	5.4	3.8
1970-9	2.7	3.0	0.5	1.3	3.2	4.3
1980-9	2.0	2.4	0.0	0.3	2.0	2.7

1990-8	0.9	4.8	0.2	0.6	1.1	5.4
1950-98	3.4	3.5	0.4	0.5	3.7	3.9

<i>Year</i>	<i>Italy</i>	<i>Ireland</i>
1973	42	36.7
1980	37	36.0
1987	34.4	35.2
1994/5	36.3	36.2
2000	36.0	37.5

Source: see text.

Trends in the regional variation of incomes are also worth considering. In Italy the gap between richer and poorer regions was greater throughout than in Ireland. The long-standing backwardness of the Mezzogiorno is an important factor here.¹⁴ In both economies there is evidence of considerable convergence between provinces or regions during the 1960s and 1970s, and of marking time in the 1980s and 1990s. In Italy the coefficient of variation of regional GDP per head across Italy's twenty provinces fell from 0.35 in the early 1960s to 0.27 in the late 1970s, but it was still 0.25 at the turn of the century.¹⁵ Data are available on gross value added per head in Irish regions since 1973, and on personal income or disposable income per head since 1960.¹⁶ Throughout, not surprisingly, the regional variation in disposable income was less than that in value added.

Let us define a pseudo-abbreviated social welfare function $W_R = \mu(1 - CV_R)$, where μ is mean income/output per head and CV_R the coefficient of variation of regional income/output per head. Figure 6 describes the two ratios of Italian to Irish W_R (using both disposable income and value added

measures of Irish CV_R , respectively termed $G(IRA)$ and $G(IRB)$) and of Italian GDP per head to Irish GNP per head between the 1960s and the present. Allowing for regional inequality makes Ireland look comparatively better throughout the period, but this outcome is the product of the different histories and geographies of the two economies. More to the point, regional inequality decreased slightly more in Italy than in Ireland. The ratio of Italian GDP to Irish GNP fell by 26% between 1960 and 2000, whereas the ratios of W_R fell by 18% (using Irish personal/disposable income) and 23.4% (using Irish gross value added).

Figure 1: GDP per head in Ireland and Italy, 1950-1998

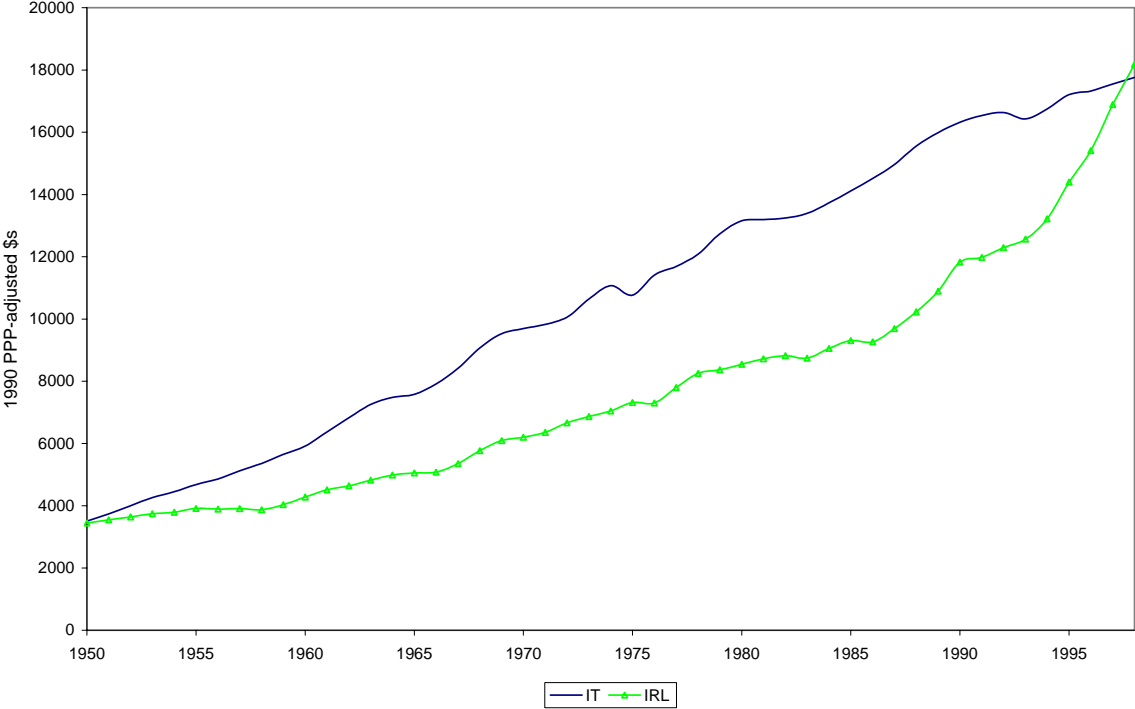


Figure 2. Population in Ireland and Italy, 1950-1998

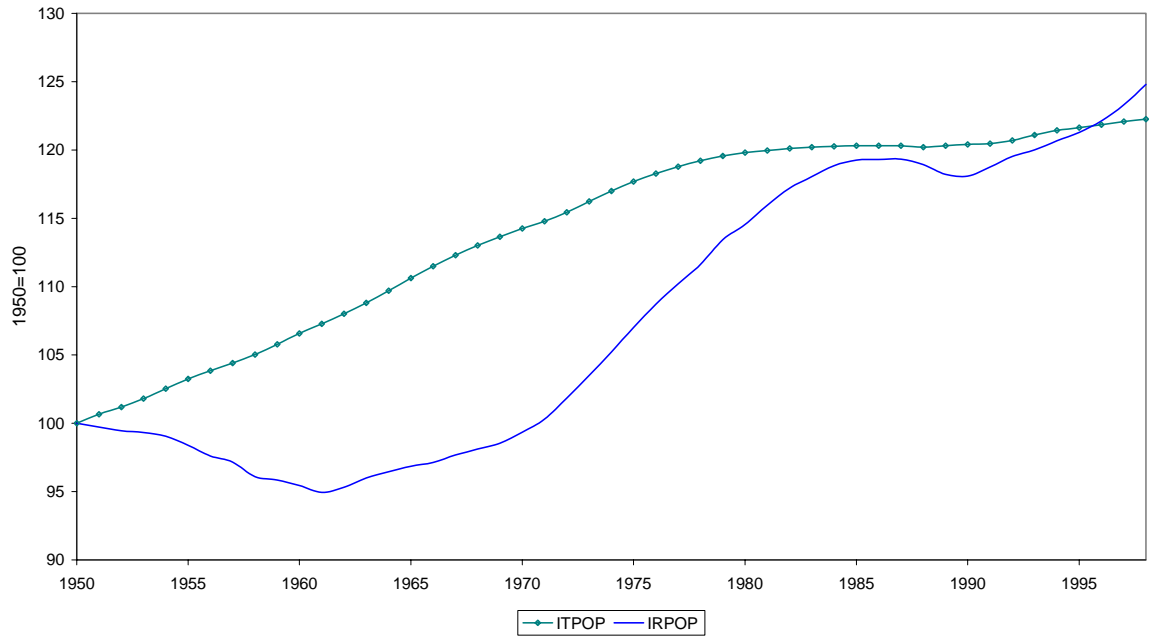


Figure 3. $e(0)$ in Italy and Ireland, 1950-2000

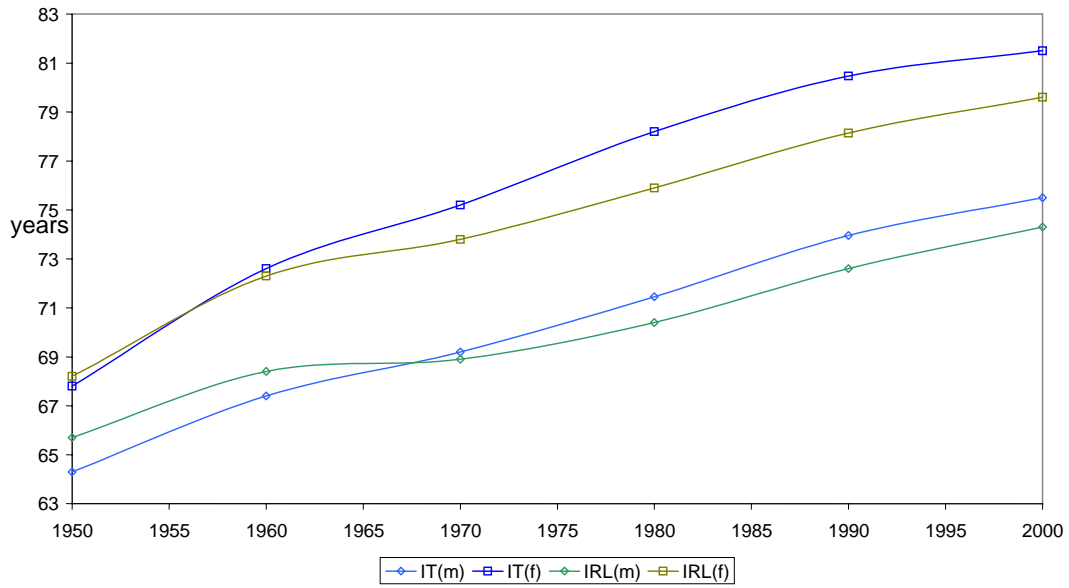
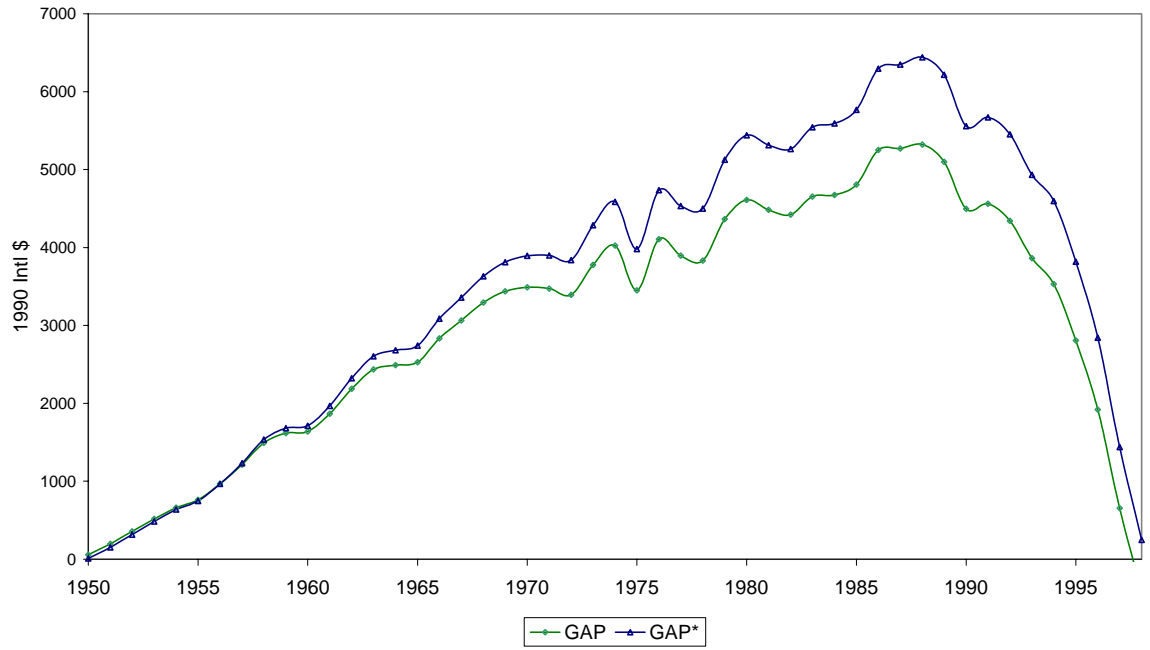


Table 4. THE GAP BETWEEN IRISH AND ITALIAN GDP, 1950-1998



Note: for the derivation of GAP* see text.

Figure 5. Relative Output and 'Social Welfare', Ireland and Italy 1973-2000

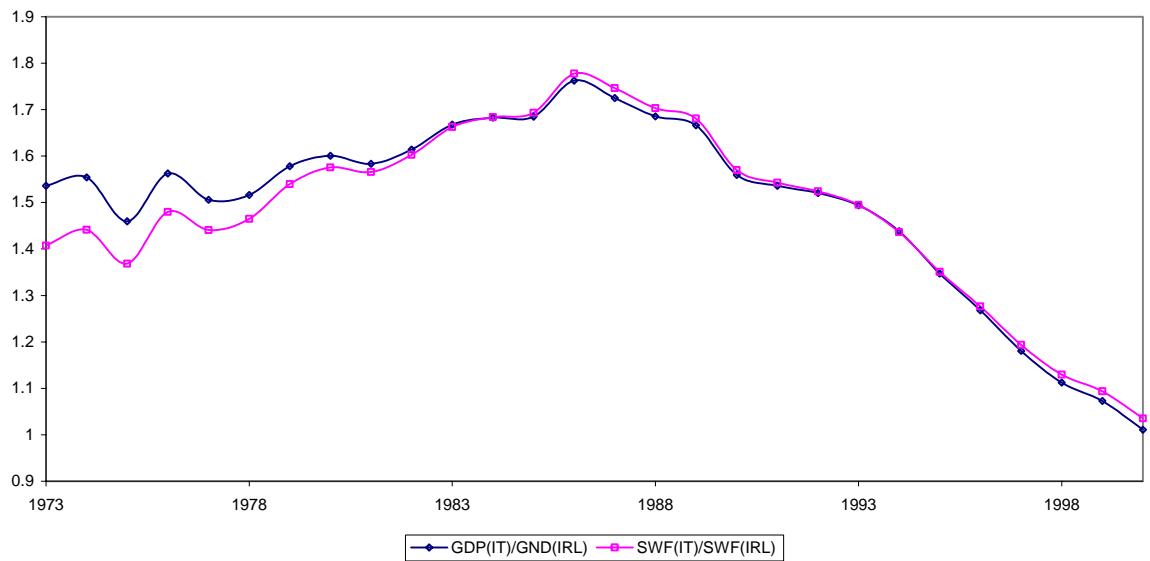
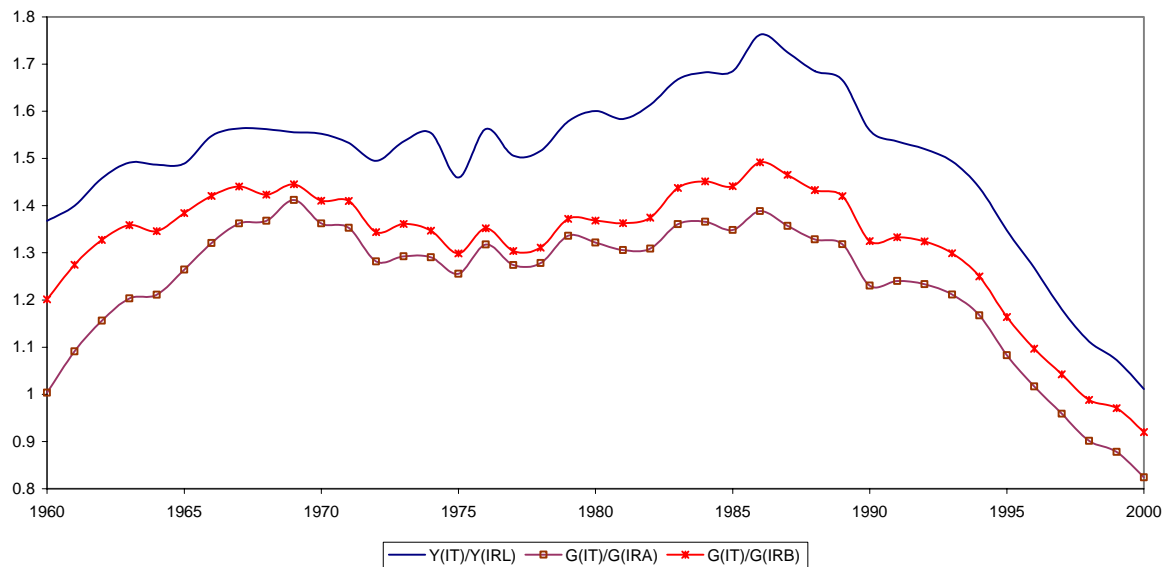


Figure 6. Relative Y and G: Italy and Ireland, 1960-2000



2.1. The Dutch Republic and Great Britain

For much of the seventeenth century the most significant commercial and military rivalry in Europe was that between Great Britain and the Dutch Republic. The rivalry resulted in a series of vicious, mainly naval wars between 1652 and 1684. Although in the long run Britain's beggar-my-neighbour commercial policies prevailed over the Dutch, for decades travellers to Holland and those who formed British public opinion marvelled at Dutch ingenuity and success. A well-informed contemporary, Sir William Temple, noted that the Dutch Republic's 'prodigious growth in Riches, Beauty, extent of Commerce, and number of Inhabitants' had made it 'the Envy of Some, the fear of others, and the Wonder of all their Neighbours'

(Temple 1673: Preface). Political arithmetician Gregory King's national accounts imply that by the end of the Golden Age the Dutch Republic was the richest economy in Europe (de Vries 1974: 242-3). The population of Amsterdam, a city of thirty thousand souls in 1550, surged to 175,000 by 1650, making it the fourth city in Europe by the latter date (after London, Paris, and Naples) (de Vries 1984: 271). Historians such as Simon Schama and Jonathan Israel have celebrated Dutch 'precocity' and 'primacy in world trade' during the Golden Age (c. 1580-1670) (Schama 1987; Israel 1989). The ability of a small nation – the Netherlands contained only 1.5 million people in 1600, compared to Britain's six million and France's 18.5 million – to thrive on a thin natural resource base was the envy of its rivals.

Three decades ago Jan de Vries described the economy of the Golden Age era as 'high-level traditionalist', which by the eighteenth century had sunk 'into a complacent stagnation'. Jan Luiten Van Zanden supports this assessment; he recently dubbed the growth of the Golden Age era 'pre-modern' because it failed to generate significant gains in living standards and could not sustain itself in the long run. Others, however, have stressed Dutch breakthroughs in the realms of agriculture, financial institutions, shipping, and public finance. More recently, de Vries and Ad van der Woude have described the early modern Dutch economy as the first to experience 'modern economic growth' (de Vries 1976: 251, 252; Soltow and van Zanden 1998: 31; de Vries and van der Woude 1997; see too Goldstone 2002).

Either way, for all its earlier successes the Dutch economy was widely deemed a failure by the early nineteenth century. Joel Mokyr in his

pioneering comparative study of the Low Countries offers an overview of ‘the non-event of [Dutch] economic stagnation’ in the early nineteenth century (1976: 84). Some historians link Dutch ‘failure’ relative to industrialising Britain or, indeed, to Belgium to its own earlier success. They blame the institutional sclerosis of a high wage economy encumbered by a generous social welfare regime, unable to cope with competition from poorer latecomers, especially Belgium and Great Britain (de Vries 1973; Mokyr 1976; de Vries and van der Woude 1997; van Zanden 2002a, 2002b; van Zanden and van Riel 2004). The historiography of the post-Golden Age economy is sombre in tone. And according to Angus Maddison’s national account estimates (on which more below) Dutch GDP rose only by 7% between 1700 and 1820, while Belgium’s doubled and the United Kingdom’s more than trebled. Over the same period, Dutch GDP per head fell.

In the late seventeenth century Gregory King reckoned that Dutch national income exceeded that of England by ten to fifteen per cent. This gap is much less than that allowed by Angus Maddison, who implies that for over three centuries the Dutch enjoyed higher GDP per head than anywhere else, and that in 1700 Dutch GDP per head was 1.7 times the United Kingdom level (de Vries 1974: 242-3; Maddison 2000: Table B-21). Maddison’s data imply that the Dutch and British economies had roughly the same GDP per head c. 1500. Then the Netherlands forged ahead of its great rival, only to lose ground from the late seventeenth-century on, and to be overtaken c. 1800. This, and the sense that the Netherlands paid a price for being an ‘early starter’, suggests the case for taking a longer perspective

in assessing the performance of the early modern Dutch economy, and for focusing on the period 1500-1800 or so as a whole.

Table 4. Estimates of Dutch GDP per head, 1500-1820

<i>Year</i>	<i>[1] Maddison</i>	<i>[2] Van Zanden</i>	<i>[2]/[1]</i>
c. 1500	761	1,252	1.65
c. 1650	1,700	2,411	1.42
c. 1700	2,100	2,386	1.14
c. 1750	1,985	2,337	1.28
1820	1,838	1,838	1.00

Source: Maddison 2001 (for 1500, 1700, and 1820); van Zanden 2001: Table 4.3; Maddison 2005: 25; my interpolations for Maddison c. 1650, and c. 1750.

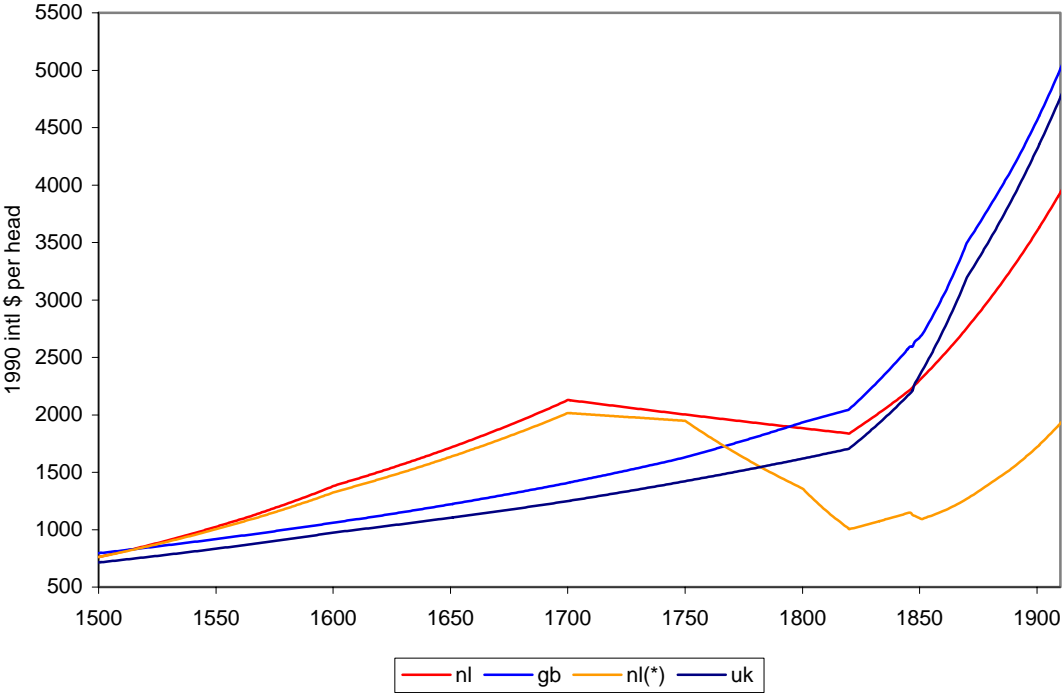
In the present paper, I work with an amended version of Maddison's estimates. These imply that GDP per head in the Netherlands and the United Kingdom were roughly equal c. 1500, and again c. 1835. In-between, the Dutch built up a lead over the British that reached its peak in proportional terms in the 1690s; from then on the gap was slowly whittled away. However, since the historiography is really about Anglo-Dutch rivalry, I have adjusted Maddison's GDP per head data to exclude Ireland. The adjustment matters because Irish GDP per head was much less than British in this period -- I assume, arbitrarily, that Irish GDP per head was half British throughout -- and Irish population a significant proportion of the United Kingdom total, rising from about one-fifth c. 1500 to one-third c. 1820 (Ó Gráda 1997b). Figure 7 plots the trends in Dutch, United Kingdom, and British GDP per head between 1500 and the late 1840s, as inferred from Maddison's data.

Jan Luiten van Zanden's reconstructions of Dutch GDP imply a very different trajectory before c. 1820. Whereas Maddison's numbers imply only a small Dutch advantage over the United Kingdom c. 1500, van Zanden's imply a Dutch advantage of nearly three-fifths. And while Maddison reckons that real GDP per head in the Netherlands rose by 140% between 1500 and 1820, van Zanden's best guess is that the rise was about one-third that (Maddison 2001 Table B-21; van Zanden 2001; compare Federico 2002). The contrasting Maddison and van Zanden trajectories are summarized in Table 4. Meanwhile Jan de Vries and Ad van der Woude (1997: 709-710) refuse to 'venture an estimate' of the growth rate of the Dutch economy before the 1660s, but nonetheless they are confident that income per capita rose, pointing to significant productivity increases in agriculture, services, and shipping, the big rise in energy consumption in the previous two centuries or so. It is enough to point out here that if Van Zanden's estimate for 1500 is correct, then the Anglo-Dutch gap would have opened up earlier and all the following calculations will be underestimates of the gap.

By Maddison's reckoning Dutch GDP per head overtook British GDP per head in the mid-1510s and maintained its edge until mid-1790s. How much was the extra Dutch output worth? Between 1514/5 and 1794/5 the average gap was one-fifth of Dutch GDP per head. Alternatively, adding together the annual gaps yields a wedge equivalent to 52 times 1795 GDP per head! It would take a long time before faster British growth 'recouped' the accumulated Dutch advantage. By 1850 only about 12% of the accumulated gap in annual GDPs per head had been 'recouped'. Six

decades or so later, only three-fifths of the gap had been made up. Since Britain’s population grew faster than Dutch over the period, allowing for differences in population growth attenuates the Dutch advantage somewhat, to 39 times 1795 GDP per head. In Figure 8, the *nl(*)* schedule tracks Dutch GNP per head, weighted by an index that sets Dutch population relative to British in 1500 at unity. Here the British subsequently ‘recoup’ more quickly, by 1858.

Figure 7. Economic Growth in NL, GB, and UK 1500-1910



Source: see text

Table 5. Population and GDP per head, the Netherlands, France and Great Britain

Year	Population (1,000)			GDP per head (1990 international \$)		
	NL	GB	FR	NL	GB	FR

1500	950	3,142	15,000	754	795	727
1600	1,500	5,700	18,500	1,368	1,060	841
1700	1,900	6,640	21,471	2,110	1,408	986
1820	2,355	14,139	31,246	1,821	2,048	1,230

Source: NL and FR are taken from Maddison 2001, Tables B-10 and B-21. For GB see text.

2.2. *Allowing for urbanisation.*

The Dutch economy's precocity was founded on the productivity of its agriculture and the strength of its commercial sector and its cities, but as Wrigley et al. (1997: 204) warn, 'the severity of the urban penalty should not be underestimated'. Figure 8 describes urbanisation rates (where 'urban' includes towns and cities of ten thousand or more) in the Netherlands, Great Britain, and France c. 1500-1900. Dutch urbanisation rates, unparalleled in early modern Europe, imposed a toll in terms of morbidity and life expectancy. Although it remains unclear whether the nutritional status of urban populations generally was inferior to that of their rural cousins, we know for sure that they suffered from congestion, poor sanitation, adulterated food, and endemic diseases (Riley 2001: 161-3). Urbanites everywhere were also smaller in stature. Many rich citizens, aware of the increased mortality risk, left the cities for their rural retreats during the summer. The poor did not have that choice.

In 1673 England's former ambassador at the Hague, Sir William Temple, described the Dutch 'as generally not so long-liv'd as in better Airs; and begin to decay early, both men and women, especially in *Amsterdam*'. Temple singled out 'Diseases of the Climate [which] all hot and dry

Summers bring...that are infectious among them, especially into Amsterdam and Leyden' (Temple 1673: 161). Alas, in demographic terms, the pre-1800 Netherlands remains somewhat of a 'statistical dark age'. How Amsterdam achieved its remarkable population growth in the century or so after 1580 remains somewhat of a mystery. The high proportions of widowed household heads in Dutch towns and cities and the Dutch obsession with cleanliness in the Golden Age era are consistent with the presumption that mortality was high in a congested, damp environment (van Strien 1993: 212-3, 231n95; van de Woude 1972: 311-13; Schama 1987: 375-84).¹⁷ However, hard evidence on immigration, on mortality, and the main causes of death are lacking. Their absence has prompted some 'controlled conjectures' (de Vries 1985: 664; van der Woude 1983: 197-209; de Vries and van der Woude 1997; van Leeuwen and Oeppen 1997).

An important contribution by George Alter reports life expectancies at birth of 25.3 years for the lives of nominees in the Amsterdam life annuities of 1586-90 and 30.0 years for those of 1672-74 (Alter 1983: 33). The disappearance of plague was the main cause of the improvement between the two dates.¹⁸ Plainly, the social rank of the annuitants and their residence in Amsterdam are factors: these were prosperous people living in a port city. Although some claim that because infectious disease did not discriminate between rich and poor, mortality differed less by class in early modern Europe than later,¹⁹ evidence cited below suggests that Alter's estimates should be taken very much as an upper bound of life expectancy in the Netherlands at the time. The low life expectancies yielded by the trickle of evidence from local studies are corroborative. Dirk Noordam, for

instance, reports a strikingly low life expectancy of 26.5 years in the Maasland region (south Netherlands) in 1730-59, while Richard Paping found life expectancies of just over thirty years in five Catholic populations living in the northern clay lands around Groningen in 1731-70 (Noordam 1986; Paping 1988).

The paucity of Dutch data means that the evidence from urban communities in neighbouring countries is also worth considering. Data from England, reported in Tables 6 and 7 below, imply that the urban penalty in terms of life expectancy must have been substantial before 1800 (Woods 2001; see too Szreter and Mooney 1998). The shifting rural premium in London is of particular interest. Table 7 implies a huge gap between the average life span in London and in England as a whole in the early eighteenth century.²⁰ Thereafter the gap dwindled almost without interruption (though at an accelerating rate towards the end of the nineteenth century).

Presumably social class affected mortality too. It is also interesting to compare life expectancy of Londoners in general with that of London Quakers, a largely middle-class group. The average Quaker might expect to live 28.8 years in 1650-99, 24 years in 1700-49, 29.8 years in 1750-99, and 35.5 years in 1800-49 (Landers 1993: 158). This implies a gap of 6-7 years between the Quakers and the population of London as a whole in the eighteenth century, although London Quakers still died younger than rural Englishmen and Englishwomen. Alfred Perrenoud's findings for seventeenth-century Geneva reveal just as steep a class gradient as in

London. In 1650-84, the life expectancy of Genevan workers, male and female together, was 20.5 years; that of the middle class was 26.0 years, and that of the elite 36.8 years (cited in de Vries 1984: 184; see Perrenoud 1975).²¹ In the light of such data, Alter's estimates for Amsterdam annuitants' middle-class nominees entail very short lives indeed for the inhabitants of Amsterdam. A six-year gap between the middle-class and the population as a whole would indicate life expectancies in the cities of less than twenty years in the 1580s and 23-25 years in the 1670s.

Given the high rate of Dutch urbanization at a time when the urban mortality disadvantage was very striking indeed, it is surely not farfetched to assume that urbanization reduced the average lifespan in the Netherlands by an average of three years below British levels during the *longue durée* analyzed here. In Table 8 I report the implications of factoring in the value of life for $\beta = 0.45$ and $\beta = 1$. Even $\beta = 1$ reduces the cumulative gains built up between 1515 and 1795 considerably; assuming $\beta = 0.45$ erodes all the Dutch advantage, once differential population growth is also allowed for.

Table 6. $e(0)$ in England and Wales

<i>Decade</i>	<i>London</i>	<i>Large towns</i>	<i>Small towns</i>	<i>Rural</i>
1751-60	20.1	---	27.5	41.3
1801-10	35.0	32.0	34.2	42.2
1821-30	36.9	32.7	36.2	43.3
1841-50	36.7	32.0	36.0	43.5
1861-70	37.7	33.0	38.0	46.5
1881-80	42.6	39.0	44.0	51.0

1901-10	49.4	46.3	50.5	56.5
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Source: Woods 2000: 369.

Table 7. Life expectancy in London and in England & Wales, 1700s-1860s

<i>Decade</i>	<i>[1] E&W</i>	<i>[2] London</i>	<i>[1]-[2]</i>
1700s	38.5	18.5	20.0
1730s	31.8	18.2	13.6
1740s	33.5	17.6	15.9
1750s	37.0	20.1	16.9
1760s	34.6	20.5	13.9
1770s	36.9	21.6	15.3
1780s	35.3	25.5	9.8
1790s	37.1	27.5	9.6
1800s	37.2	28.0	9.2
1810s	37.8	32.4	5.4
1820s	39.6	34.4	5.2
1830s	40.5	36.9	3.6
1840s	40.0	36.7	3.3
1850s	40.0	38.0	2.0
1860s	40.8	37.7	3.1

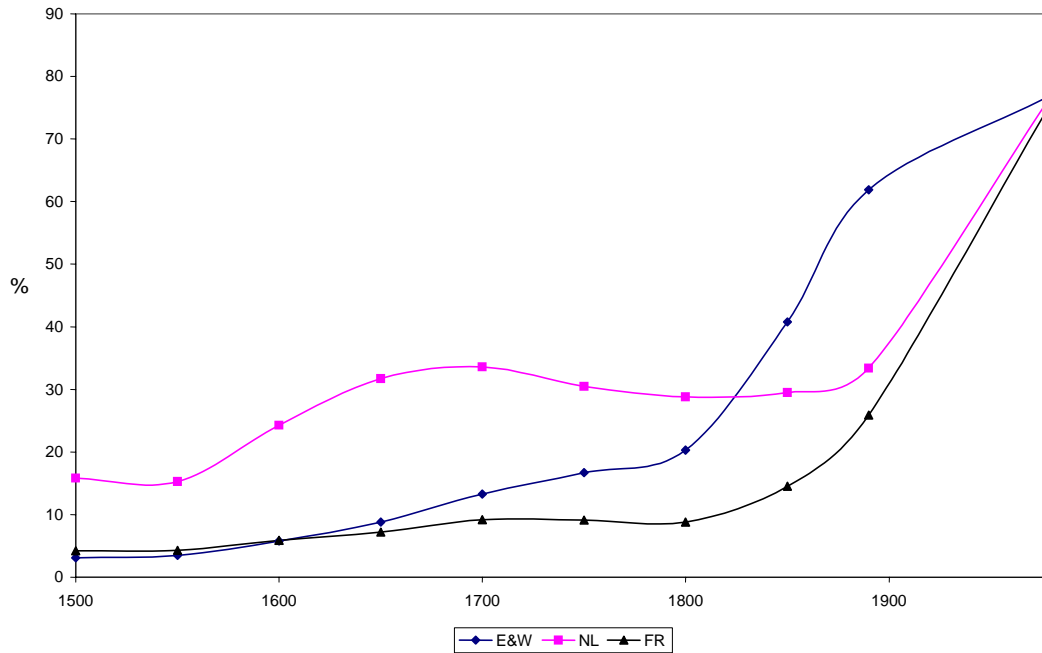
Sources:

London 1730s-1820s: Landers 2000: 171

London 1700s, 1830s-1860s: Woods 2000: 365

England & Wales: Wrigley and Schofield 1981: 230.

Fig. 8. Urbanisation Rates in E&W, FR, and NL, 1500-1980



Source: de Vries 1984: 39, 45-46.

Table 8. The Wedge in 'True' Living Standards (in multiples of 1795 British GDP per head)

	GDP per head	'True' measure $\beta = 1$	'True' measure $\beta = 0.45$
Gap relative to 1795 GDP per head	52	34	10
Allowing for extensive growth	39	21	-3

CONCLUSION:

The two comparisons described above prompt two concluding thoughts. First, economic historians tend to have less time than their colleagues in political and military history for past heroics or even for past

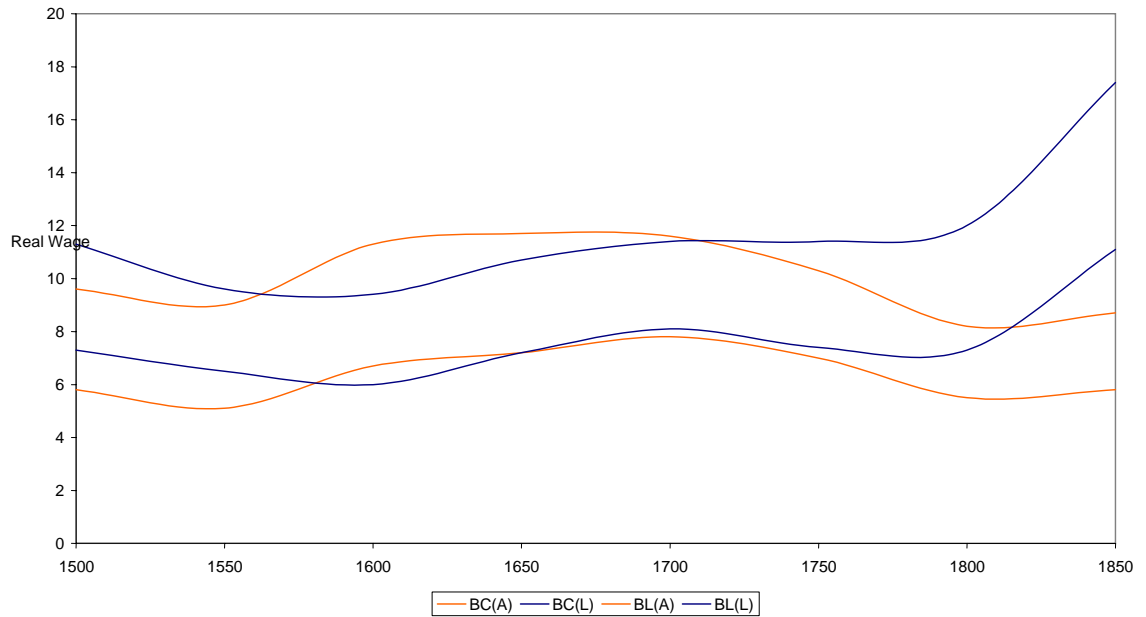
genius. They are used to their entrepreneurs being replaceable, to social savings being 'small', and to economic growth during the Industrial Revolution being 'modest'. Their answers to 'how big is big?' are conditioned by a belief in Harberger triangles and a confidence that inputs, both animate and inanimate, are highly substitutable. Against such a historiographical tradition, the 'savings' or 'costs' of the alternative routes described in this paper are very significant. When the Irish route to the present is evaluated against the Italian, the cost of policy 'failures' in the 1950s and 1970s was indeed 'big'²²; just as the benefits of Dutch economic precociousness in the sixteenth and seventeenth centuries, even when set against later retardation, were considerable.

Second, the very present-centred focus on the Irish economy in the late 1990s and early 2000s has led many observers to believe that the Irish had somehow discovered secrets to rapid economic growth which were readily transferable elsewhere. Yet much of the post-1987 growth was of the catch-up kind, compensation for decades of underperformance. As for Dutch retardation in the late eighteenth and early nineteenth centuries, it was a case of *mutatis mutandis*. This study is thus also a plea for a more historical perspective.

APPENDIX 1. DUTCH AND ENGLISH WAGES

In the debate about incomes in the early modern Netherlands and Britain, wage data only muddy the waters further. Recent estimates by Bob Allen (2001), shown in Figure A1, suggest that building labourers (*BL*) and building craftsmen (*BC*) in London (*L*, representing England) were better paid than their counterparts in Amsterdam (*A*, representing the Netherlands) in the first half of the sixteenth century, but that they lost their lead thereafter and did not regain it for a century or more. Allen's data also suggest that real wages in Amsterdam were about one-fifth higher in 1750-99 than they had been in 1550-49, while in London they were about the same in both periods. Meticulous research by John Munro (2001), from which Table A1 below is taken, corroborates Allen's findings for the early sixteenth century. It reveals that wage earners in England c. 1500 had the edge over wage earners in the Antwerp region – generally conceded to be as economically advanced as Holland at this time – but that they lost it during the following few decades. Such data are not so readily squared with van Zanden's claim that Dutch GDP per head was 1.58 times British c. 1500, nor with the assertion that 'real wages declined a lot between 1500 and 1800' (van Zanden 2001; 2002: 154); but they are not so easily reconciled either with the almost three-fold rise in GDP per head indicated by Maddison over the same period. Van Zanden concedes that English GDP per head in 1650 was unlikely to be 'only about half the Dutch level' (2001: 78-9).

Fig. A1. REAL WAGES IN AMSTERDAM AND LONDON, 1500/49-1850/99



Source: Allen 2001

Table A1. Wages in Southern England and Belgium c. 1500-1540

<i>Item (Quantity per daily wage)</i>	<i>England 1501-05</i>	<i>Antwerp 1501-05</i>	<i>Ratio (England/ Antwerp)</i>
Wine (litres)	3.47	2.92	1.19
Herrings (no.)	43.32	48.45	0.89
Peas (litres)	40.27	19.70	2.05
Wheat (litres)	22.25	19.84	1.12
Sugar (kilos)	0.94	1.02	0.92
<i>Item (Quantity per daily wage)</i>	<i>England 1536-40</i>	<i>Antwerp 1536-40</i>	<i>Ratio (England/ Antwerp)</i>
Wine (litres)	2.64	3.49	0.76
Herrings (no.)	38.17	45.48	0.84
Peas (litres)	30.50	21.38	1.43
Wheat (litres)	21.90	17.15	1.28
Sugar (kilos)	0.39	0.74	0.52

Source: Munro (2001: Table 16)

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ENDNOTES

¹ Earlier versions were given at Universitat Pompeu Fabra and Queen’s University Belfast. My thanks to Andrea Brandolini, Kevin Denny, Gianfranco di Viao, Michael Edelstein, David Madden, Brian Nolan, and Brendan Walsh for sharing data and for comments.

² Survey data generally refer only to the recent past; see, however, the Subjective Impoverishment Index discussed in Mokyr and Ó Gráda 1988, which refer to data from the 1830s. While Tim Leunig and Joachim Voth have recently commented on ‘the fading use of stature’ as indicators of movements in health and wellbeing in advanced industrial societies, much is expected of the anthropometric approach in assessments of health and nutritional status in the pre-documented past, such as in medieval Europe and pre-Columbian America (Leunig and Voth 2002; Steckel 2002; Steckel and Rose 2002).

³ The *sorpasso* emerged when the Italian statistical service revised its estimate of the black economy upward.

⁴ For an account of the Irish economy before the boom see Ó Gráda 1997a.

⁵ In mid-century the Italian economy was sixteen times the size of Ireland’s.

⁶ Italy had been worse affected by World War II than neutral Ireland, and its recovery between 1945 and 1950 – spurred on by the Marshall Plan – was accordingly faster. However, by mid-century the rates of growth in both economies had declined to levels sustained in the following decade.

⁷ For an excellent overview of the Italian economy between 1945 and the mid-1990s see Rossi and Toniolo (1996).

⁸ Between 1998 and 2001 Italian GDP per head grew by 6% whereas Irish GDP per head grew by 27%.

⁹ For more recent applied work on this topic compare Nordhaus (2002) and Becker *et al.* (2003).

¹⁰ In partial mitigation, over the half-century the number of hours worked per employee in Ireland dropped more than in Italy: by 25.8% versus 18.9% (compare Gordon 2004).

¹¹ An earlier estimate for urban Ireland can be inferred from data on gross weekly household incomes in Irish cities and towns in 1965-66 (as reported in Geary 1977: 172-5). It implies a G of 0.345, but is not readily comparable to our later estimates.

¹² I owe the 2000 Irish estimate to Brian Nolan, who estimated it from the Household Budget Survey.

¹³ The following exercise implicitly assumes that both economies ‘care’ equally about inequality.

¹⁴ The problems of the Italian South, or Mezzogiorno, have been the focus of a huge literature from a variety of disciplines. For nuanced studies of the Mezzogiorno in the 1990s, with some background on earlier trends, see Barca (2001) and di Vaio (2004).

¹⁵ Calculations based on weighted standard deviations yield broadly similar results.

¹⁶ Both Irish measures involve splicing data and shifts in definition. The income data splices two series. (i) The 1960-77 estimates refer to estimates of personal income (which includes transfers). These are mainly the work of Micheál Ross, and were originally published by NESC (see National Economic and Social Council 1980). (ii) The 1980-1994 data are taken from Boyle *et al.* (1999), and the 2000 figure derived from Central Statistics Office estimates of disposable income by county

(http://www.cso.ie/releasespublications/documents/economy/2001/regincome_2001.pdf).

The gross value added series combines that of O’Leary (2004) for 1960-1996 with CSO data for 2000, adjusted downward from 0.213 to 0.177 to allow for the effect of transfer pricing. This reflects the gap between O’Leary’s estimate for 1996 (0.156) and the uncorrected CSO data (0.188). I assume that the coefficients of variation changed at a constant rate in years between observations.

¹⁷ De Vries (1995: 669) notes that in the 1730s Amsterdam parish registers recorded an annual average of 3,300 girls born; twenty-five years later, an annual average of 1,410 Amsterdam-born women were wed. The ratio seems to imply high mortality, but this makes no allowance for the relative importance of inward and outward migration, celibacy, and the likely under-registration of births.

¹⁸ These are Alter’s ‘non-select’ estimates, which exclude the first years of each annuity in order to minimize selection bias. In Amsterdam in 1636 the plague killed over seventeen thousand people, or one-seventh of the population; in Leiden and in Haarlem too it killed significant proportions of the inhabitants.

¹⁹ The estimates of life expectancy yielded by van Leeuwen and Oeppen’s Generalised Inverse Projection modeling are generally *higher* than those derived from annuities between the 1670s and 1720s; I do not invoke them here for that reason.

²⁰ Death-by-age data for London as a whole become available only in the early eighteenth century.

²¹ Life expectancy in Geneva grew roughly in tandem with London: from 23.9 years in 1625-49 to 34.3 years a century later and 39.9 years in 1800-1820 (ADH 1978: 223).

²² In a rather different vein Robert Lucas has famously argued, referring to economic growth in the developed world in recent decades, that the gap between a growth path associated with 'real' business cycles one which succeeded in eliminating the cycles was small, in the sense that society should have been prepared to pay only a small fraction of output in order to eliminate fluctuations (Lucas 2004).