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European Historical Economics and Globalisation

James Foreman-Peck

Abstract: Globalisation is here considered as the increasing specialisation or complexity that accompanies extension of spatially limited markets to include larger and larger sections of the world. To the extent that the enlargement of one market brings contact with others, the process is one of market integration. This paper focuses on two millennia of globalisation so defined, from the perspective of the European economies. It shows that there have been several waves of globalisation linked with rising productivity and prosperity, followed by long economic contractions. Expansions took place within new frameworks for internal and external security and the disintegration of these regimes typically reversed the process. Higher incomes were the reward for accepting the greater vulnerability of stronger interdependency.

Keywords: globalisation, long cycle, productivity

Historical Economics is the economics of the past (McCloskey 1976, 1994), and the past is all we can know. Globalisation is a major theme of the economics of the past. It influences, and is influenced by technology, as well as relations within and between states and economies. Improvements in transport and communication boost especially long distance trade, weaving together the fortunes of regions far from each other (Bernanke 2006). Hence a compelling definition of economic globalisation is international market integration. Another, related but more limited, approach is to consider globalisation as the consequence for the world as a whole of a sudden improvement in productivity in one trading region (Spange and Young 2007). These consequences include cultural transformation associated with consumption (McDonalds, Coca-Cola, blue jeans), as well as changes in prices and shifts in the functional and international income distribution (the losers from which often resist globalisation if they are strong enough).

Globalisation is defined here as the increasing specialisation or complexity that accompanies extension of a spatially limited market to include larger and larger sections of the world. Greater productivity is the reward for the greater vulnerability of stronger interdependency. The globalisation process contrasts with, but is also often associated with, monetisation, the intensive spread of the market to cover a higher proportion of social life in any given area. To the extent that the enlargement of one market brings contact with others, the process is one of market integration. Expanding demand or supply, driving down prices sufficiently to overcome barriers between markets, including tariffs, transport costs, and risk of robbery and death, bring about globalisation, as defined. Market integration from falling barriers, and therefore price convergence, is a special case. A trade boom can also constitute globalisation. Even if prices do not converge, more cannot be imported in the long run without an increase in resources devoted to export production, greater specialisation and interdependency. Non-competing, as well as competing, product imports affect resource allocation.

Distinctive elements of European historical economics (as a discipline rather than as an area of study) are quantification and the use of theory. National income accounting provides a theoretical framework to assess and compare productivity and living standards, essential to any economic historical narrative. Globalisation differs from the classical or neoclassical growth scheme in which population growth drives down living standards unless exogenous technical progress is fast enough to offset it. The difference is increasing returns with constant technology. Peace, together with law and order, plays a key role in allowing the market to extend and creating increasing returns.

This paper focuses on two millennia of globalisation so defined, from the perspective of the European economies before 1945. It shows that there have been several waves of globalisation linked with rising productivity and prosperity, followed by economic contractions. Expansions took place within new frameworks for internal and/or external security and the disintegration of these regimes typically reversed the process. Section 1 covers the early globalisation and politically-induced contraction of the Ancient Mediterranean world. Section 2 recounts the medieval recovery, and the subsequent collapse largely because of plague. The third globalisation phase (section 3) begins with the mercantilist era that draws the New World into the competitive struggle of European nations. The most extensive burst of globalisation, before the present wave, and its institutional support, is described in section 4 on the nineteenth century. Section 5 explains the end of this liberal epoch of globalisation in the thirty years crisis before 1945.

European Globalisation in the Ancient World and Contraction in the West

The opening wave of European globalisation peaked in the first two centuries AD, within the structure provided by the Roman Empire. Evidence of seaborne trade, pottery dispersion, agricultural productivity and urbanisation is consistent with an extensive spatial division of labour and productivity not matched afterwards for many centuries.

The critical institution was the state, and its ability to deliver defence against outsiders while avoiding civil war and banditry, without too great a cost. This explains why, despite the absence of much technological innovation (Mokyr 1990 Ch.2), Roman living standards and productivity were high in comparison with what was achieved a thousand or more years later. To the extent the Roman Empire succeeded in delivering security it did so over a huge area in comparison with successor states, with a correspondingly large payoff. And it was in a position to ensure relatively stable relations with major trading states to the East as well (Jones 1964 pp. 1030-1). Markets can flourish without state enforcement of contracts (Greif 2000) but they need some assurance of life, limb and property if they are to extend over a substantial area. The fundamental problem of exchange was avoiding being robbed or murdered on the way to, or from, the market, rather than being cheated.

Using both expenditure and income approaches as checks on each other, Goldsmith (1984) calculated that national income per head in the Roman Empire c AD14 was perhaps 380 sesterčius (hs), or 31 g of gold, (with a probable range of 320-440 hs). Comparing Goldsmith's (1984) estimate of Empire per capita income with estimates for England and Wales in 1688 suggests Maddison (2001) understated first century western European income (he put it at \$450) (cf. Federico 2002). Goldsmith's measure is, rather, comparable with Maddison's estimate for Britain in 1500 (\$700 [1]). From the third century, and especially with the collapse of the western Empire in the fifth century, there was an economic and demographic contraction in western (but not south eastern) Europe to perhaps 800 or 1000 AD.

Consistent with the national income estimate, agricultural production and productivity were as high in 150 as in 1300 and best practice in 1300 was comparable to that 400 years later (Grantham 1999). Erdkamp (2005 pp. 36, 318)

believes an 8:1 normal wheat grain yield, and a 10:1 good yield as good, is indicative of Italy, with less for Greece and more for Egypt [2]. On large estates labour productivity must have been raised in first century France by the oxen-driven mechanical harvesters employed (Pliny 78 p. 221). Overall arable productivity was high enough for Britain regularly to export grain to the Rhine in the fourth century (Marcellinus 390 p. 144). High pastoral productivity is implied by the greater size of the Roman cow than earlier or later cattle (Ward-Perkins 2005 p. 145), an index of specialisation that implies comparatively high pastoral productivity and therefore probably also high population.

The fruits of this strong economic performance were not entirely absorbed by the elite – although the income distribution was highly skewed. The widespread distribution of good quality pottery cannot be explained solely by military use (eg. Ward-Perkins 2005 figA2 p. 186); it must indicate a high quality of material life spread down the social scale, as well as the pervasion of market relations. So too does the extensive use of casual writing and small value (copper) coins. Even in low status rural sites in relatively unsophisticated Britain styluses and coins have been found.

Analysis of lead and copper airborne particles deposited in the Greenland ice cap imply levels of production as high in 150 AD as in 1750 (Grantham 1999). Although the deposits include those from China and India, the timing of the peak is consistent with the ancient European economy achieving specialisation and productivity comparable to seventeenth and early eighteenth century- as far as lead and copper production are concerned.

Trade also flourished in the first two centuries of the Empire. The Hopkins-Parker shipwreck index indicates that in the period 200 B.C.-A.D. 200, there was more sea-borne trade in the Mediterranean than ever before, and more than for the next thousand years (Hopkins 1980) [3]. Hopkins (1980) argues that trade was forced by the tax demands for the army and for the Roman elite. Wheat was shipped from Egypt and North Africa to feed Rome and provisioning of the armies on the frontiers required resource transfers from the non-military to the military provinces. When inflation ruined the monetary economy in the third century, payments in kind for the army replaced money payments and provisions therefore needed to come from sources closer to the point of consumption. Mediterranean trade then fell. But lower trade could simply reflect the poverty of the fourth century economy compared with that of the first. Hopkins observes that

the fourth century shipwreck index values showed some recovery from the third century low, not consistent with the forced trade thesis, but the average for 200-400 AD was well below the peak period.

The importance Hopkins ascribed to government transactions is inconsistent with the small share of government in total spending in Goldsmith's (1984) estimate. Much trade was unrelated to government, such as that with Arabia, India and beyond, substantial enough to give rise to concerns about the balance of payments. Pliny claimed a minimum of 100 million sesterces each year flowed out of the Empire down the Red Sea to pay for the spices and luxuries (Pliny 78 bk12 p. 84). This sum would have been almost enough to provide the annual wheat rations for a million people or pay for up to 100,000 legionnaires. Even a sailing manual survives, advising on the ports on the Indian route and what was traded at each of them (Anon. 150).

The downside of this trade, and further evidence of globalisation, is the periodic transmission of plague from the East (Diamond 1998). In the second century under Marcus Aurelius (Birley 1976 p. 122)

pestilence devoured many thousands including many of the leading men.

Even after the collapse of the Empire in the West, the Eastern Empire's external trade links transmitted bubonic plague particularly in AD 542 (Procopius 570 xx11 pp. 451-473)

the whole human race came near to being annihilated...[the plague] fell upon the Persians and all other barbarians.

The epidemic was believed to have originated among the Egyptians in Pelusium (consistent with an eastern trade source) then moved to Alexandria and Palestine. It always began from the coast, as would be expected if rats and shipping were the transmission agents. The bubonic plague lasted four months, with deaths rising to over 10,000 a day in Constantinople.

Apparently contradictory evidence relating to the prosperity of the Western Empire concerns (human) heights. These have often been taken to indicate nutritional status. Hence the finding that heights uniquely increased in the fifth and sixth century after the fall of the Western Empire (Koepeke and Baten 2005) does not seem consistent with high productivity under the first and second century Empire. At first sight it seems to indicate that the reduction of population relaxed

the Malthusian constraint, and a higher land-labour ratio raised nutritional status. By making the environment healthier, reduced urbanisation might in some circumstances raise average heights – though the sixth century plagues are not consistent with this position. Another explanation could be the spread of Germanic tribes across Europe [4], for according to the late fourth century Vegetius (c.390)

Without [training and discipline]... what success would [the Romans] small size have [achieved] opposed to the prodigious stature of the Germans?

The fifth and sixth century samples may have been biased upwards by inclusion of higher than usual proportions of Germans.

Two questions at least arise from this assessment of high productivity under the western Roman Empire in the first and second centuries; why or how did Malthusian pressure not eliminate it? And what created and ended the political conditions that gave rise to the trading opportunities? An element of the first was presumably the very high death rate- an especially challenging disease environment and the effects of war (Woods 2007). Key features of the demographic regime were early marriage for females, low marital fertility and poor infant survival chances. Mortality was likely to be especially great in towns, and the Empire was highly urbanised for the time. Even so Woods (2007) revises upwards life expectancy at birth from the generally accepted around 25 years to perhaps the upper twenties or low thirties.

The necessary political conditions for much trade were the security supplied by the survival of the low cost state. On the other hand, the margin of Roman military advantage over outsiders was always small, and in the later empire key military innovations, as Vegetius (390 I 20) notes for cavalry, were adopted from beyond the frontier. The military establishment under the later Empire was twice as large as under the wealthier early empire [5]. In both phases military finance and staffing differed from successor European regimes. The army and navy were funded by taxes and employed long serving regulars, paid seniority wages. Civilians were forbidden to bear arms. This (modern) security arrangement may have been especially vulnerable to external shocks. The survival and growth of Latin, and an indigenous Church, in the less Romanised western Britain in contrast to their elimination in eastern Britain, after the Saxon mercenaries' revolt, is consistent with a greater robustness of surviving tribal bonds than the complex division of labour of Eastern Britain (Dark 2000 ch. 4).

Merely doubling the armed forces must have created a strain on a tax system which anyway does not appear to have been very efficient in terms of the ratio of what was paid to what was received by the government (even granted a reduction in real rates of pay). The short-lived (fourth century) emperor Julian's tax reforms in France more than tripled their yield, but it may be doubted that the reform outlasted his reign (Marcellinus 390 pp. 120-1, 93). An indication that the expense of a professional standing army was one of the heavy burdens of the later Roman Empire is the fourth century anonymous petitioner to the Emperor, proposing soldiers did not serve their full twenty year term but were put on a reserve list and allowed to earn their living earlier from agriculture (Thompson 1996). Also the suggestions for various weapons that economised on military manpower were evidently motivated by a desire to reduce the tax burden.

Why the Roman system ever worked may have been an 'accident' of discipline, (as Vegetius claims,) or when robust it was fuelled by successful military expansion. Anyway in the story of globalisation and contraction we need not give a complete explanation but simply chart the pattern. It is clear that in western Europe the fall of the Empire to the Goths, Vandals and others in the fifth century was marked by 'de-globalisation' and plummeting living standards. All over Britain the art of making pottery on a wheel disappeared then and was not reintroduced for almost 300 years (Ward-Perkins 2005 p. 117). The British economy sank to a simplicity well below the pre-Roman Iron Age. Italy and North Africa declined more slowly, while the Eastern Mediterranean, still under Roman rule, expanded. Stability and prosperity were linked. When the division of labour and specialisation were no longer applicable, living standards fell and population declined. The eastern Empire survived in increasingly attenuated form for another millennium, in part because it was more easily defended, perhaps also because it was richer and/or more egalitarian (Jones 1964 pp. 1064-8). Certainly, measured by scholarly and literary remains, the eastern Mediterranean was more cultured than the West and this is sometimes a sign of rather more widely diffused high living standards.

Medieval Recovery and Collapse

Judged by the decline of urbanisation, literacy, and population, incomes fell to levels little above subsistence for the surviving mass of population in much of Europe, under the pressures of civil disorder and external attacks on the

fragmented post-Roman states. During the seventh century the Arabs conquered much of what remained of the east Roman Empire, through North Africa to Spain. The Frankish Carolingian Empire restored some order in the eighth century in the west, particularly with Charles Martel's defeat of the Arabs at Tours in 732. This formed the nucleus of what came to be known as the Holy Roman Empire (neither holy, Roman nor an empire, for much of its existence). But continuing conflict restricted market size, and therefore productivity, under the successors of Charlemagne.

Across the Channel the Domesday Book of 1086 provides a basis for calculating another national income estimate, albeit with a much smaller geographical coverage. In order to assess tax and military capacity, the Book carefully describes the rents that feudal lords were able to extract from their unfree peasants (serfs) on their estates in England, recently conquered by William of Normandy. The sum of the cost of maintaining labour (unfree peasant subsistence income) and manorial value added (desmesne income) constitutes English national income. (1.785 shillings per head and 1.5 million heads) (Snooks 1993, 1994). Consumption of the serfs approached the minimum subsistence requirement.

To compare per capita income in 1086 with that of 1688, Snooks (1994) uses a price index, weighting together household consumables and wheat. He concludes that over 600 years real income per head multiplied by a factor of 5.8 and real per household income, a measure of labour productivity, increased by a factor of 4.1. Even allowing for redistribution over the six centuries, this is very surprising. Was it possible for people to live on one quarter or less of national income per head in 1688? The major improvement was in the consumption of services from better housing and communication, according to Snooks. Consumption of perishables improved by a factor of three, perhaps mainly through the expansion of the middle class. Snook's (1994) estimate for England in 1086, at less than one quarter of 1688 income per head, is therefore less than one half of first century Empire income.

Incomes and economic growth rates can be inferred also from urbanisation rates, because town dwellers must live off produce grown in the countryside, surplus to the agricultural population's requirements. The more productive is agriculture the larger the urban population that can be supported. Urbanisation was particularly high in thirteenth century Flanders and Italy. Using the urbanization measure, Persson (1988) estimates income growth rate in this period as in the range 0.1-0.24 percent per annum, lower than Snooks' 0.3 percent average.

The agricultural sector in which the great majority of people worked acquired improved ploughs, watermills spread, and seed yields rose. By the thirteenth century agricultural productivity was able to match that of the eighteenth century (Grantham 1999 p. 210) because the technical capacity already existed; the techniques had been available since the early iron age. The productivity of agrarian estates depended on market size, which had been growing in the eleventh and twelfth centuries, encouraging specialisation. An indicator of this specialisation was the northern grain trade. Baltic imports to Hull in the normal year 1305 would sell for more than double their dutiable value- perhaps indicative of pressure on land on the east coast of England. However the quantities involved were relatively small, enough to feed 1500 people a year perhaps (Hybey 2002).

Industrial activity rose over the approximate period 1000-1300 as well, for the Greenland ice cap data confirms rising levels of metallurgical activity (Grantham 1999). One of the conditions underlying the upswing in economic activity from around 1000AD was developments in the 'market for security'. Unlike the centralised tax-financed professional armed forces of the Roman Empire, the feudal regimes of mediaeval Europe linked land-holding to the obligation to provide specified numbers and types of soldiers when called upon. The hierarchy of military organisation was also reflected in the structure of landholding, with the monarch at the top, giving land to the Dukes, who subcontracted land and military obligations to lesser officers. This arrangement could be more robust to external shocks than the centralised system and more economical, for when no campaigns were underway, much of the military could be engaged in earning their keep on the land, as long as campaigns were short.

Security encourages population growth, which changes the balance of power between the owners of land in a feudal system (who also supply security and/or oppression) and labourers (North and Thomas 1973). When labour is scarce landowners try to enslave peasants in order to capture their surplus over subsistence. As population increases and this surplus falls, landlords have an incentive to save on supervision costs and adopt performance-related wages by abandoning serfdom. But the converse must be true also. When disease, famine and war reduce the labour-land ratio, landlords try to re-impose feudal dues. They may not be successful, insofar as there is a market for security and landowners compete with each other. Serfdom ended more quickly in England (fifteenth century) than in much of central Europe and Russia (eighteenth century and nineteenth century) presumably because there was more competition between landowners earlier in England.

In comparison with unitary China or the Roman Empire, the diversity of the European state system supposedly offered opportunities to learn from more successful economies (Jones 1987). Those that did not learn might be eliminated by interstate competition. One such formulation is that in the face of external attacks on the Carolingian Empire and civil war and banditry, the market for security took shape, and from that ultimately stemmed other markets (Volckart 2002).

A vital institution for understanding medieval markets is the gild. There are at least two traditional opposed views of medieval guilds. Ashley (1914) maintained that their

... uniformity, like the uniformity of the manorial system, extended to the whole of western Europe. The craft societies of London, Paris, Nuremberg and Florence were fundamentally alike in form and function.....Apparently the same institutions grew up in much the same way owing to the operation of the same causes. These causes were the uniform intellectual, social and economic conditions. Everywhere industry could only create a market in the towns; everywhere natural gregariousness drew the men of each craft together; everywhere public opinion demanded supervision and regulation; everywhere production was on a small scale; everywhere skill and reputation were more important than capital. The gild system would seem indeed to be a necessary stage in the development of industry; and the Chinese guilds of today show the ideas and machinery of the guilds of medieval Europe still actively at work.

Yet writing in Germany only a few years later, acknowledging common factors at work in gild formation, Max Weber (1927,1981 pp. 136-152), by contrast represents them principally as restrictive practices [6].

In the first case, guilds are a solution to a 'Fundamental Problem of Exchange' (Greif 2000) - how to ensure traders do not renege on contracts without such expensive monitoring and enforcement as to make the exchange worthless. Volckart (2002) instead adopts Weber's position. He contends that at first restrictions on competition quickly developed in (non-security) markets because monopoly rents were a collective good for those (gild members) who managed to exclude outsiders, thereby preventing them driving down wages and prices. In the Holy Roman Empire political actors, suppliers of security or oppression, wanted to attract mobile labour and capital, but could not control the autonomous city corporations and guilds that disliked competition. As territorial monopolies, states, emerged in 'security markets', crop yields improved over the centuries after 1000AD. When state formation was completed, competition between states took

place. The fiscal needs of the state for survival then determined that internal restrictions on competition be lifted, and productive craftsmen and capital be attracted, regardless of the consequences for established interests. The efficient state required well-functioning markets and therefore the elimination of the restrictions of corporatism.

The end of medieval expansion is well documented, particularly with the Great European Famine of 1315-18,

Four pennies worth of coarse bread was not enough to feed a common man for one day. The usual kinds of meat, suitable for eating, were too scarce; horse meat was precious; plump dogs were stolen. And, according to many reports, men and women in many places secretly ate their own children... (de Trokelowe 1330?)

Then came the Black Death of 1348, perhaps the most virulent pervasive plague in recorded history. Like the sixth century plague, it originated in the Far East , consistent with the recovery of globalisation. Estimates of death rates are very uncertain but the loss of one third of the population in Europe is on the conservative side. Other subsequent plagues contributed to demographic decline that continued for the next century. One interpretation has been that European vulnerability to plague and famine stemmed from the pressure of population on resources in Malthusian fashion (for example Postan 1972 p. 34). Land desertion began before the Black Death. Lower productivity land naturally was given up first perhaps because of greater susceptibility to soil exhaustion. The population was becoming especially sensitive to poor harvests, when death rates rose. Many entire villages were deserted during the fourteenth century. Demand for the specialized products of trade, such as wool fleeces, fell off and prices collapsed.

In the Durham area of northern England, tithe evidence suggests that during the century after the Black Death grain production levels declined by as much as 53 percent. Mortality varied between 20 and 80 percent in the villis. Counting tenants suggests population fell to 45 percent of pre-Black Death levels by the end of fourteenth century, so the decline in output matched the fall in population (Dodds 2004). Average yields dropped during the later middle ages with the rising land-labour ratio, as they were to do again in the seventeenth century. Acreage also decreased and grain prices fell, a consequence of economic depression and consequent reduced inputs (Slicher van Bath 1963)

Supporting a general Malthusian interpretation was the continuation of warfare throughout the century of decline- the Hundred Years War between England and

France for instance. This is another phase of deglobalisation, or unravelling of 'complexity'.

Poor climate triggered the Great European Famine and an obvious question is whether the longer term movements in the European economy were related. A Northern Hemisphere temperature series constructed by Moberg *et al.* (2005) is based upon tree ring and lake and ocean sediment data among other. It is rather variable but shows that mean temperatures apparently rose from about 700 to 1100, so that high temperatures—similar to those observed in the twentieth century before 1990—occurred around AD 1000 to 1100. Thereafter the trend was downwards until around 1600, when minimum temperatures were about 0.7 °C below the average of 1961–90. From the beginning of the seventeenth century the trend has been upwards. Mills (2007) interprets the record as a sequence of long swings around a fairly stable average. In any case there is a lack of obvious direct or immediate association with expansion and contraction phases of globalisation. A caveat is that one of the problems for medieval grain farmers was that often, excessive summer rain, rather than temperature extremes, would destroy harvests.

Because of the favourable population-resources balance, households in the fifteenth century experienced a period of high wages and living standards. Apparently in many countries this level of real wages was not attained for another three or four centuries (Allen 2001, Van Zanden 1999).

The shock that ended this second phase of expansion or globalisation was very different from that which brought down the Roman Empire in the West. It was apparently beyond human control. Although it triggered social and economic change, it did not destroy the security structure—perhaps because the European state system or feudalism was more robust and/or the economies were less complex. Hence unlike those of the post-Roman era, living standards of fourteenth century survivors could rise strongly much sooner.

Sixteenth to Eighteenth Century Globalisation; Mercantilism and the Rise of the Atlantic trades

The next expansion phase coincided with the 'voyages of discovery' and the incorporation of the New World into European economic relations. Industrial and agricultural productivity was growing in North West Europe but not elsewhere.

Population also increased into the seventeenth century, when globalisation paused before expansion resumed in the eighteenth century. First the Netherlands and then Britain assumed European productivity leadership. The new regime consisted of either absolutist monarchies or mercantile states, fighting to capture high value entrepot trade from each other.

International price convergence was hindered not merely by transport technology but by these frequent wars that could cause a tripling or more of freight rates, with consequential severe price hikes, even if supplies were not directly disrupted by hostilities. The Thirty Years War centred on Germany from 1618 to 1648 was particularly destructive and pervasive in its effects. Conversely peace brought down prices. The price of a dyestuff, Mexican cochineal, on the Amsterdam exchange fell from 33.9 guilders in 1642 to 13.2 in 1652, mainly because of the Dutch-Spanish Peace of Munster in 1647-8. Revolt of Portuguese Catholics in Netherlands Brazil stopped sugar production in 1645, so that price jumped the following year by 40 percent. With peace, sugar prices fell between 1664 to 1669 to one quarter below the level of 1624 (Israel 1989).

Efficiency gains in the tobacco trade exercised the same effect as falling transport costs (O'Rourke and Williamson 2002), but by and large there was little evidence of secular price declines elsewhere in the colonial trades. One reason is that the demand for these products expanded so strongly, much more rapidly than the growth of population, though of course from a low base. Tea consumption was rising briskly in the UK in the eighteenth century and probably the seventeenth century. Earlier sugar consumption also must have been growing strongly to reach the high late eighteenth century consumption levels. The coffee houses of eighteenth century London that came to form the basis of the Stock Exchange testify to coffee's importance. There was perhaps some substitution away from spirits towards tea and coffee from the mid-eighteenth century, for apparent national consumption of spirits had risen from just under a million gallons in 1687 to 7.2 million gallons by 1745, before declining. The effect may have been to reduce death rates from alcohol and perhaps increase productivity.

Wages in Antwerp, Amsterdam and London were buoyant. In the other major cities of Europe - Milan, Naples, Valencia, Strasbourg, Munich, Vienna, Krakow, and Lwow - real wages collapsed between 1500 and 1750. The only exceptions to this trend were capital cities—Madrid, Paris and Warsaw. Matters changed little in the following century (Allen 2001). The Balassa-Samuelson effect may explain

some of this pattern; prices (of non-traded goods and services) are lower in less productive areas and therefore using a common price deflator with high productivity cities (London and Amsterdam) will understate real incomes in east and south Europe (Van Zanden 1999).

Even granted this qualification, there is a contradiction between the accumulation of material possession revealed by probate inventories in Western Europe and the apparent failure of real wages to rise during the seventeenth and eighteenth centuries. English real wage indices show the 1500 level was not attained again until the 1850s. The index falls to the early 17th century and displays signs of rising towards the end of the century. There are shortcomings of available indices as guides to general wage trends. For England, builders' wages indices from the south do not capture the eighteenth century improvement in the north. In addition there is an index number problem with the new consumption products of the potato and tea; greater product variety can be equivalent to an increase in living standards, but this is typically ignored in the index. Another difficulty is that the apparent poor performance of real wages does not correspond with improving mortality trends, indicative of rising real incomes per head.

Reasons real wages could fall from 1500, yet income per head rise, are increasing rents, growing capital, and more intensive labour and labour force participation (Allen 2001, Van Zanden 1999, De Vries 1994). There was perhaps an 'industrious revolution' (De Vries 1994), a reduction in the valuation of leisure, and an increase in the demand for marketed goods- which is consistent with the spread (globalisation?) of the Protestant Ethic (Weber 1905).

A *prima facie* piece of evidence in favour of the Protestant Ethic, might be the Netherlands. This (Protestant) country showed the earliest evidence of sustained economic growth and 'rational' economic organisation. On the other hand both the religion and the economic performance may stem from so much of the land having been created out of the sea and lacking the feudal apparatus that tied most other European societies. Whatever the reason, Dutch state regulation ensured the lowest interest rates in the world, high quality products and therefore high selling prices (Israel 1989 ch11). The seventeenth century technical superiority of Dutch craftsmen, and of Dutch shipbuilding techniques and ship owning, might be related to their mercantile government and Atlantic location which allowed them to extend their markets globally, rather than religion.

economic vitality in Europe was transferred not to a large part of northern Europe in any way comparable with the Mediterranean world but to a mere tiny fringe, the extreme northwestern corner of the continent. (Israel 1989 p. 5)

A way of estimating variations in the supply of hard work and effort over time is through law court records. These have been used to infer that more time was spent working in eighteenth century London (Voth 1998). This last would be consistent with a 'natural selection' of Protestant Ethics, and the Ethic indirectly driving the Industrial Revolution. So also would be the difference in the number of public holidays in Catholic European countries and those in Protestant countries that abolished Saints days.

Supposing there was greater effort, there are other possible explanations than the spread of the Protestant Ethic. One is that the increased availability of such products as tea, sugar, coffee, tobacco, and chocolate, provided an incentive for higher earnings (and therefore more work) to buy them. This would be another consequence of globalisation.

However inspection of other data pertaining to food consumption, wages and productivity does not give much evidence of an increase in work intensity over the five centuries before 1850 (Clark and van der Werf 1998). At the most an increase of about half a day a week, 10 percent, is possible. But perhaps that would be enough for a revolution, if sustained.

The extent of governing class interest in mercantile activity is a plausible contributor to the national economic development in this period (Cameron 1989) and the Dutch state certainly was at one end of this spectrum. Demonstrating that urbanisation in west Europe grew faster than in east Europe, and taking urbanisation as a proxy for income growth, Acemoglu et al (2005) contend that it was interaction between institutions and Atlantic access that made for the economic success of NW Europe. Venice and Genoa had the right mercantile government on the one hand, and Spain and Portugal had Atlantic access on the other, but both were needed for success. Why was Atlantic access important? One possibility is that the traditional admission to the Eastern trade routes- important in the ancient world- was blocked in the seventeenth and eighteenth centuries by the Ottomans, whereas in the nineteenth century to some extent this constraint was shifted and technological developments reduced the importance of distance from the Atlantic.

If the Atlantic trade was critical to Britain's economic development, then we would expect to find a high proportion of British trade after 1500 across the Atlantic. But as late as 1710, 87.6 percent of Britain's exports and re-exports went to Europe and 63.6 percent of British imports were from Europe (Maddison 2001 p. 93). This was not the Atlantic economy driving the most advanced European economies. The share of non-European trade in British total trade is too small for that, by 1710. Judged by the walled area, London (defined as an Atlantic port) was the largest town north of the Alps (in western Europe) even under the Roman Empire, suggesting that the trading advantage conferred by its location was not primarily dependent on the discovery of the New World or the Cape of Good Hope route to the East.

The eventual economic stagnation of the Netherlands in the later eighteenth century stemmed from the Dutch state being too small to fight the British and the French for market access, and the absence of a liberal world order conducive to international price convergence. Prussia squeezed Poland in much the same way as Britain and France ground down the Dutch, as shown by the changing fortunes of the respectively Prussian and Polish ports of Stettin and Danzig (Gdansk).

Nineteenth Century Liberal Globalisation

So long as European nations regarded international trade as a zero-sum game, the prospects for sustained market integration were limited. Globalisation, as measured by substantial price convergence, therefore could begin only when liberal economic policies displaced mercantilism. The rallying cry for liberal policies was abandonment of trade protectionism and introduction of free trade (Dormois and Lains 2006). Much lower long distance transport costs would also help globalisation. A supporting condition was that the fruits of economic expansion were not entirely absorbed by greater populations.

Devastating Europe for almost a quarter of a century after 1792, the French Revolutionary and Napoleonic Wars ended with the Congress of Vienna in 1815. Yet the new order ushered in a period of deflation and political repression, restraining liberalising tendencies. The 1848 revolutions were the last European-wide political disturbance before the mid-century boom. Economic liberalism, the effectiveness of which was apparently demonstrated British opulence, thereafter proved increasingly persuasive for the continental states. Free trade and cheap food were compelling slogans for urban workers and manufacturers. The market

they created for farmers and landowners spread prosperity. Rising affluence expanded tax revenues, creating opportunities to cut tariffs and remove trade prohibitions. Access to cheap British coal diffused steam power on the continent. National currency links with precious metals and falling transport costs ensured closer integration of national and world markets. But wealth seemed to spread only slowly from the north west to the south and east of Europe.

In 1820 output per head in Western Europe was about three times that of the poorest region, Africa, and similar to African output per head in the 1990s (Maddison 2001). The lead of Western Europe over Latin America was not much greater than over Eastern Europe. Exports were one per cent of world product in 1820, but for the UK the figure was over three per cent and for the US, two per cent. By 1913 the twelve richest western European countries had boosted their per capita incomes by about three times. Eastern and Southern Europe slipped behind, with incomes rather more than doubling. International trade expanded much faster than output for all countries.

Transport and information costs ensure that people are more likely to trade with those closer to them, other things being equal. So the larger the region or country, the less the external trade in relation to GDP, for given levels of economic activity. Yet what was distinctive about Western Europe was the volume of intercontinental trade. 28 percent of European foreign commerce in 1830 was with other continents. Over the eighteenth century Britain in particular specialised in this type of commerce; in 1830 only 47 percent of British exports were destined for Europe, whereas the average for continental Europe was 82 percent. Greater volumes of freight were carried over longer distances than ever before. The rise of the cotton textile industry, entirely dependent on raw materials only available in other continents, is perhaps the most spectacular example of the power of long distance trade.

Greater openness to trade brought prosperity, but also more vulnerability. Italy experienced the force of this proposition in a tariff war with France. After trade discussions between France and Italy were abandoned in 1888, each country raised duties on the other's products in a sequence of retaliations over five years. Italian exports to her principal trading partner, France, plunged by more than one half, and the collapse was not offset by greater sales to other countries (Foreman-Peck 1995 p. 114). The extreme demonstration of vulnerability came after 1914, when, despite overwhelming British surface fleet superiority, Britain's food supplies were severely curtailed by submarine warfare.

Gradually over the nineteenth century a cooperative international order emerged, exemplified by the growth of single issue international organisations, sustaining globalisation. This created the opportunity for small countries, like Belgium, to flourish through international trade and investment. Self-enforcing single issue institutions arose 'spontaneously', without multilateral agreements or large permanent international organisations (Welfens 2000; Foreman-Peck 2000). These institutions include the gold standard, financial exclusion of sovereign debt defaulters, and the unconditional Most Favoured Nation Clause (MFN) [7].

With by far the largest share of world trade and of the steam shipping fleet, Britain in retrospect has been represented as the guarantor of economic and political stability, the essential pre-condition of flourishing European trade and economic growth (Kindleberger 1973). This hypothesis was formulated in the light of the United States hegemony in the Western world after 1945. Whether the hegemonic doctrine, that a dominant nation lead is needed to ensure a workable international economic order, applies in the nineteenth century, is questionable. True, regulation of sovereign debt in the nineteenth century was strongly influenced by the British capital market. No nation was permitted by the Council of Foreign Bondholders to raise fresh capital if it had defaulted on an earlier loan unless the new issue included provision for repayment of the old. But the Council of Foreign Bondholders was not Britain, and viewed from continental Europe, rather than across the Atlantic, the case for nineteenth century British hegemony looks less convincing (McGillivray, McLean, Pahre and Schonhardt-Bailey, 2002).

There certainly were trade wars in the later nineteenth century – one of them already noted. Throughout them, the world's then largest trader, Britain, remained committed to free trade. Yet this hardly amounts to 'hegemonic leadership'. Single issue institutions based on bilateral bargaining or self-enforcement were much less in need of hegemonic leadership than those concerned with multiple issues - especially the League of Nations and the United Nations. These last were subject to much greater transactions costs and were less liable to achieve cooperation spontaneously (Keohane 1984 pp. 89-92).

In any case Britain's free trade stance did not prevent an eventual reaction to globalisation in the form of rising tariff protection. Transport costs were formerly a barrier to foreign competition but the steamship and the railway brought them down rapidly. The contribution of steam to British economic growth in the nineteenth century can be compared with the impact of ICT in the late twentieth

century (Crafts 2004). Steam contributed little to growth before 1830. The peak impact was in the 1870s- just when cheap New World grain imports were also bringing down prices.

An intellectual reaction to globalisation and the supporting Classical School of Economics was the Historical Economics of nineteenth century Europe, dominated by the German Historical School. Perhaps the School's best known policy recommendation was to oppose the free trade economists' prescription with Friedrich List's 'infant industry argument'. List contended that protection against foreign (especially British) competition was necessary for the industrial education of the nation – German states in the 1840s in particular- to integrate new ideas, rights, duties and institutions into national life (List 1856 pp. 181,183). Society and markets are more than agglomerations of atomised optimising agents. How they interact and what they want depends upon their social framework. Untrammelled globalisation would damage nation-building.

The Prussian civil servants behind the Zollverein, the German customs union of 1832, put a more positive gloss on the problem (Henderson 1939). They encouraged nation-building by improving trade integration between German states, by more than adaption to the rest of the world. Taxes on imported consumption goods, such as tea and coffee, provided much needed revenue for the states.

Cheap food arriving *en masse* from the new world in the last quarter of the nineteenth century was too much of a shock for those European countries with large agricultural populations and influential landowners. Restrictions on trade began to increase again.

International competition made some groups worse off and improved the lot of others. If the losers were politically powerful they demanded protection from foreign competition. Land rents fell with imports of cheap food. In France where land ownership was widely distributed and the franchise was broad, electoral considerations required agricultural protection. In Britain where land ownership was highly concentrated, the broad franchise offered no support for tariffs to make agricultural produce more expensive. In Germany eastern land owners allied themselves with western industrialist to demand protection for both agriculture and industry. This is resistance to globalisation; impeding international price convergence. Britain did not resist and the land-labour ratio fell while the price of agricultural produce relative to manufactures no longer necessarily increased,

as would be expected in a closed economy where agriculture is land-intensive (O'Rourke and Williamson 2002).

Rising West European prosperity boosted the demand for products that could not be produced in Europe; not only the so-called colonial goods, but also now Chilean nitrate, gutta percha from Malaysia, Peruvian guano, African palm oil, Brazilian rubber, and indigo and opium from India. These demands created opportunities for economic development in the rest of the world. But since the populations in low productivity tropical agriculture were so great, the impact on GDP of trade expansion was unlikely to be large.

Where commercial relations crossed national boundaries, issues of international law and order and state policy could arise. As ancient Rome demonstrated, one solution was the imposition of empire and the reduction or abolition of very substantial negative 'boundary effects' on international trade (Anderson and van Wincoop 2004). European Empires also sometimes widened the sphere over which goods could move freely, though in other instances they may have been irrelevant or harmful to economic liberalism.

Reversing causation, globalisation and trade could precipitate the extension of European Empire. On balance European power politics (together with European technological advantages) seems to have been the principal impetus to imperialism. India became the jewel in the nineteenth century crown of the British Empire, partly through conflict with the French. Africa was brought under European rule, as a distraction from German domestic politics, between 1884 and 1900. Areas of the decaying Chinese Empire were divided into spheres of influence among the European powers and the United States, to prevent any one power gaining undue commercial advantage. Yet in the later nineteenth century liberal economic order, colonies were neither necessary nor sufficient for economic development. Germany and Belgium showed they were not necessary and Spain and Portugal that they were not sufficient.

Friction over potential colonial territories, arms races and tendencies towards higher tariffs did not prevent European nations being integrated into a global economy and open to the movement of goods and people in 1910. Low rail and steamship transport costs and economic policies that, in historical perspective, were still liberal, underlay these globalised economic relations. At a peak not achieved again until the 1960s and 1970s, Europe's 1913 trade/gross national product ratio indicated that the late nineteenth century nationalist/liberal

international order supported markets at least as globalised as the earlier years of those created by the post 1945 institutions of GATT, the World Bank and the IMF. Britain and Scandinavia only returned to the 1913 level of integration with the world economy around 1970 and Italy did so perhaps five years earlier (Grassman 1980; Beenstock and Warburton 1983).

Because globalisation advanced in the half century before the outbreak of the First World War, so too did European gains from trade and specialisation. Increasing integration meant a tendency towards single European prices for all goods and services, for labour, capital and land. In practice, transport costs, state policies, adjustment costs and other influences prevented perfect integration between national economies but the proportion of internationally 'traded' to 'non-traded' goods increased. The second category is much less responsive to world market conditions, including as it does rents, wages, services and products with high weight to value ratios. Nonetheless non-traded good prices are ultimately affected by world conditions, most immediately in areas specialising in export products. The rising ratio of traded to non-traded goods meant the European economies were more prone to fluctuate with each other and with the rest of the world economy. Booms and slumps spread more pervasively around Europe and the world, as was to be demonstrated devastatingly in 'the thirty year crisis' beginning around 1914.

The End of Globalisation: The Thirty Years Crisis

Measured by growth in exports per head, globalisation stopped in the period 1914-45. It was not just two world wars and the slump that interrupted what otherwise looks like exponential expansion. A world influenza epidemic and above all economic nationalism contracted international economic relations in these years. The Versailles Treaty of 1919 set the stage, with the creation of a multitude of new nations from the disintegrated empires of Austria-Hungary, Russia and Ottoman Turkey. But the struggle over who should pay for the past war, and how, continued to damage economic and political relations throughout the 1920s. Then came the most traumatic episode, the 'Slump'.

World trade volumes fell by one quarter between 1929 and 1932. Five years later, the 1929 peak had still not been recovered (League 1942 p. 68). Most trade contraction during the Great Depression was due to trade restrictions, as were falls of several percent in international output and investment according to one study

(Crucini and Kahn 1996). Another study estimates that, of real world trade decline, 8 percent stemmed from discretionary increases in tariffs, 5 percent from deflation-induced tariff increases and 6 percent from non-tariff barriers (Madsen 2001). The trigger for much of the contractionary trade policy was United States' protectionism, the Hawley–Smoot tariff.

The culmination of interwar efforts at cooperation to recover the momentum of globalisation was the 1933 London Conference- 'the last major attempt to deal with international policy questions of the depression in an international framework' (James 2001). Originating in a US proposal of October 1930 intended to avoid or attenuate retaliation to the Hawley-Smoot tariff (James 2001 p. 128), the initiative was adopted enthusiastically by the German government (Eichengreen 1992). Preliminary discussions took place in Geneva late in 1932. But by then President Hoover's defeat had changed the balance of power and interest in the US.

An arrangement that would benefit all parties would entail, in return for Britain and America conceding that they would stabilize their exchange rates, the French agreeing to reduce their tariffs and quotas (Eichengreen 1992 p. 322). Perhaps the US would have needed to give concessions on war debts as well. In combination these measures could have relieved the balance of payments problems that the restrictive or disruptive policies had originally been intended to address.

Unfortunately, domestic pressure precluded both US agreement on war debts and French agreement on tariffs, and the Bank of England did not favour stabilisation. Moreover the Ottawa conference, which led to Britain adopting Empire preferences, did not seem helpful for general tariff reductions, especially to the Germans. British and American policy makers by 1933 were concerned with price stability and freedom of action (Eichengreen 1992 p. 333) rather than with exchange rate stability. They wanted reflation abroad before linking exchange rates with gold standard countries; the British demanded that France revise their central bank statutes to permit open market operations as a means of doing so.

Separate monetary (financial) and trade (economic) committees met but each considered the other's field vital (James 2001). Freer trade was perceived as a prerequisite of a return to the gold standard. For Britain the obstacles were the US tariff and German and French agricultural protection. This last stimulated over-production and reduced the ability of the vulnerable Danube states to sell their exports. Hence they were unable to service their debts. The British preferred

to address some trade issues because they did not know at what level to stabilise sterling, or even whether it could be done at reasonable cost. But they could not address Commonwealth trade preferences negotiated at Ottawa which, along with sterling devaluation, were blamed by other states for their difficulties. President Roosevelt's proposal for a tariff truce was interpreted in Britain as undermining the Ottawa agreement. Trade waited upon debt relief and currency stabilisation.

Britain wanted the problem of war debt addressed, but US negotiators had been told not to consider it. French default on war debts in December 1932 antagonised US public opinion. American Secretary of State Cordell Hull was probably correct in advocating US tariff reductions on the grounds that they were the key to foreign policy objectives (James 2001 p. 132-4). Such a lead was feasible and low cost in terms of economics, and would have eased current balance pressures for trading partners, encouraging them to make concessions. The 'leadership' needed was simply a reversal of Hawley-Smoot; but because other US policy instruments were not used appropriately, the political climate was not propitious. Eventually Roosevelt refused because he feared tariff cuts would adversely influence Congress's attitude to his New Deal policy. Without US leadership there was no resolution of the multiple issue log-jam and the London Conference was a complete failure.

Traditional institutions of international economic cooperation were abandoned without being replaced by superior arrangements, despite continuing efforts. Individual European states were dwarfed by the now massive US economy, yet US lacked interest in international cooperation and failed in domestic economic management, with severe international repercussions. Political extremism encouraged by the economic collapse and reversal of globalisation eventually triggered another world war.

Conclusion

We still live in the globalisation phase presided over by the United States-constructed international order of the 1940s; the 'Bretton Woods' system, with the World Bank, the IMF and the GATT for the economic regulation, and the UN for wider governance. Technical progress, driven by profit-seeking research and development of multinational corporations, facilitated market integration. The rising prosperity, first of western Europe and then of Japan and the 'Newly Industrialising Countries', was a sign of success of the regime. Another

was the inclusion of the former Soviet communist bloc, and a third, China joining the World Trade Organisation. Though many parts of the world are not yet showing the same strong economic growth from integration into world markets, this experience is not unique to the Bretton Woods regime.

Under the Roman Empire at its peak, the first globalisation phase, a complex division of labour and substantial volumes of cross-border, as well as internal, trade throughout Europe, North Africa and the Middle East, buoyed up general living standards. The large estimated fall in income, as well as the reduction in material possessions, at the end of the Roman Empire in the West, is consistent with a reversal of the globalisation process. The proximate reason was military and political; the tax-financed professional army was insufficiently effective and/or numerous, although the Eastern Empire was more easily defended and survived longer.

The replacement regimes were more independent of taxes and trade. Incomes were accordingly low. Outside a few city states, and with the exception of the Church, land was granted on condition of military service when required, and much was cultivated by serfs. These arrangements provided sufficient security for population growth and trade expansion once more. But the complexity was probably less than under the Empire at its peak, running in to a Malthusian constraint in the fourteenth century, which reduced population and raised real wages. Famine and plague ended the feudal system in some parts of Europe and paved the way for the next globalisation wave.

The new mercantilist system in Western Europe consisted of nation states struggling to increase their foreign trade at the expense of their neighbours. 'Colonial goods' added variety to the diet and life style of many in North Western Europe, and may have encouraged a greater supply of labour. Smaller nations ultimately could not win in the competition for markets with larger nations once they absorbed similar technologies, for they could not afford the same military and naval effort. The 'wars of limited liability' also frequently disrupted trade to the detriment of globalisation.

The greatest wave of globalisation began when mercantilism gave way to liberalism in the nineteenth century. Eventually living standards began rising throughout Europe, despite population growth, supported by burgeoning trade and specialisation. Contrary to hegemonic theories, the regime within which this expansion took place was largely spontaneous, a matter of shared values of policy

makers, rather than leadership. However Britain clearly pursued her interest in maintaining an open world economy, and almost abandoned agriculture in the ensuing international division of labour.

Another reversal of globalisation began with the First World War and the subsequent economic nationalism. But it was economic mismanagement – in Europe over German reparations, in the US of the banking system and in the western world as a whole over international economic policy - that turned these tendencies towards extremism and autarky. The collapse of incomes and jumps in unemployment were ultimately less devastating than the conflicts that the economic crises indirectly triggered. If the framework for globalisation becomes no longer fit for purpose, the years between 1914 and 1945 offer a scenario into which we may once more descend.

Globalisation experience is illuminated by the approach of business cycle theory; the system is struck by random shocks, and the structure of the system, together with the pattern of the shocks, determines the pattern of fluctuations or, in the case of globalisation, simply expansion or contraction. The most likely source of a future reversal of globalisation and living standards, is climate change. But shocks themselves by definition are unpredictable.

Endnotes

[1] This conversion uses Goldsmith's wheat equivalent measure. Maddison's measurement units are 1990 international dollars

[2] Arthur Young reports for Italy 1787-9 yields of around 6 on average but ranging from 3 to 15 or 20. These ratios were not exceeded on average according to Slicher van Bath (1963) in 1750-1820 in England, Ireland Belgium and the Netherlands. Eastern Europe averaged 4.1 for the period 1550-1820.

[3] The last two centuries of the republic were more unsafe at sea than the first two centuries of the empire. Consequently 200BC-0AD was likely to have experienced a higher ratio of shipwrecks to trade than the following two centuries.

[4] The Vandals for example provided the most successful Roman general of the period, Stilicho, and on their way to settle in North Africa, may have given their name to Andalusia.

[5] Jones (1964 pp. 683-4).estimates the strength at the beginning of the fifth century at around 600,000. The first century army was approximately 300,000.

[6] Weber (1927, 1981 pp. 212-213) also briefly discusses the role of collective reprisals in the protection of long distance trade that interest Greif (2000).

[7] All imports should be granted conditions as favourable as imports from the 'most favoured nation' regardless of whether beneficiary nations reciprocate concessions.

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