ECONOMIC AND BUSINESS HISTORY 2024-2025 B

Text 5 – Michel Graff, A. G. Kenwood; A. L. Lougheed (2013), “International aspects of economic growth in the nineteenth century: the spread of industrialization”. In *The growth of the international economy – 1820-2015*. London and New York: Routledge, pp. 121-129.

Text 6 – Charles H. Feinstein; Peter Temin; Gianni Toniolo. “Epilogue: the past and the present”. In *The European Economy Between the Wars*. Oxford: Oxford University Press, 1997, pp. 187-204).

Text 7 – Thomas K. McCraw e William R. Childs. “Modern Management in the 1920s: GM Defeats Ford”. In American Business Since 1920: How It Worked. Third Edition. Hoboken: John Wiley & Sons, 2018, pp. 15-28) -

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Text 5

Michael Graff, A. G. Kenwood and A. L. Lougheed, *International aspects of economic growth in the nineteenth century: The spread of industrialization*

INTRODUCTION

The international economy played a major role in promoting the spread of economic growth in the nineteenth century. The flows of trade, capital and labour, which linked countries together economically, not only provided the means whereby the benefits of economic growth, in the form of higher real incomes, could be transmitted from country to country, but they were also the mechanism through which the technological and social innovations that are the essence of modern economic growth could be diffused. As a result, the economic growth of most countries came to depend as much on their ability to take advantage of the opportunities for trade and for the acquisition of new knowledge and additional

factors of production presented by the international economy as on the quantity and quality of the economic resources domestically available to them. It is for this reason that any discussion of the nineteenth century international economy must include an examination of its function as a potential 'engine of growth'.

Obviously the international diffusion of modern technology and the stimulation of economic growth through an expansion of foreign trade are economic processes that are not independent of each other, if only because export-led growth implies some measure of technological and social change. Nevertheless, it does simplify our discussion of the international economy as a mechanism for transmitting economic growth and technical change between countries in the nineteenth century if we treat the two processes separately. Separate treatment is further justified by the fact that the spread of industrialization throughout Europe and North America, and the export-led growth characteristic of primary producing countries, represented significantly different responses to the economic opportunities presented by the emergence of an international economy in the century or so before the First World War.

The nineteenth century world economy is best viewed as being composed of a centre and a periphery, with growth at the centre building up economic pressures tending to diffuse the development process to the periphery. Initially, Britain stood at the centre of this growth process, but as the century progressed, continental Europe, and in particular Northwest Europe, came to play a larger part in fostering the spread of economic development overseas. Britain's central role in the world economy during these years rested on a technological revolution that had begun in the second half of the eighteenth century with the Industrial Revolution, and continued between 1820 and 1880 to transform a predominantly agrarian economy into the world's first industrial nation. But imitators were not lacking and, partly through a flow of capital and skilled labour from Britain, the new industrial technology spread first to continental Europe and then to the US, so that by the 1870s, when Britain's rate of industrial growth began to slow down, these other countries began to play their part in the process of transmitting growth to the less developed regions of the world.[1]

[1] But, as Rondo Cameron has stressed, 'It is necessary … to distinguish between the mere diffusion of technology and the distinctive pattern of industrialization that occurred on the continent as a

The peripheral regions were incorporated in this international growth process through a steady and persistent increase in the demand for primary products, which many of these areas were well able to produce. Industrialization in Britain soon exposed her limited range of natural resources and her growing inability to feed a rapidly growing population. Increasingly, Britain was forced to rely on other countries to supply her mounting needs for foodstuffs and industrial raw materials. To a lesser extent the other industrializing countries of Europe also came to depend on overseas sources of supply of primary products. The growing pressure of industrial demand on the centre's natural resources and supplies of foodstuffs and raw materials, and the resulting tendency towards rising prices, prompted a search for cheaper supplies in the periphery and an outflow of capital and skilled labour to develop peripheral sources of supply. In this way, a cumulative process of growth was initiated in a number of countries overseas by the relation between the export demand for primary products and the inflow of foreign capital and labour that was associated with the expansion of the export sector. Particularly favoured by these developments were the US and, later, the regions of recent settlement, including Canada, Argentina, Uruguay, South Africa, Australia and New Zealand, each of which, at different times and to varying degrees, came to depend on growth through primary product exports and the inflows of foreign capital and labour associated with it. At the other end of the spectrum were those peripheral countries which remained largely unaffected by these revolutionary changes, or those which became ‘enclave economies’, that is, countries in which foreign demand and the new technology served to revolutionize the export sector while leaving the rest of the economy virtually unchanged.

The failure of the expansion and modernization of the export sector of the enclave economy to spark off growth in the rest of the economy is only one of the problems arising out of the international record of economic growth in the nineteenth century. There are many others. Why, for example, did economic

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result of this diffusion’. ('A New View of European Industrialization', *Economic History Review* (Feb., 1985), p. 10). Cameron goes on to argue (pp. 22f.) that, besides the British model of industrialization, there were several others in which such factors as the availability of coal and the needed human resources formed two basic ingredients, with international investment and financial institutions performing subordinate roles.

growth spread to only a limited proportion of the total world population? What accounts for the slow spread of industrialization? For even in Europe and the US, rapid industrialization occurred only after 1870, more than a century after the new technology had emerged in Britain. More pertinent to the present discussion is the question of whether these 'failures' in the diffusion of economic growth reflected weaknesses in the functioning of the international economy or whether they were the result of the existence of other obstacles to the spread of economic development. These questions, and many others like them, are the subject of a continuing and lively debate, for they are matters of enormous importance to the study of the economic problem of under-development, and to cover adequately the issues they raise would require another and much longer book than this. All that is possible here is for us to offer a few general observations on these issues so that the broad nature of the problems they raise and their relevance to the functioning of the international economy are more easily appreciated.

THE SPREAD OF INDUSTRIALIZATION

It is a matter of general observation that the diffusion of technology is closely related to the problem of mobility – of goods, people, ideas and behaviour. It is also apparent from what has been said so far in this book, that mobility in this sense was greatly enhanced during the nineteenth century by innovations in transportation and communications and in the field of international finance, which greatly facilitated the large-scale movement of goods, men and capital between countries. These flows of economic resources were, in turn, important channels for the diffusion of the new industrial technology, since physical capital embodied it, immigrant artisans and entrepreneurs possessed the required technical skills, and imported goods provided opportunities for adaptive imitation.

Given the opportunity for adopting new methods of production presented by the international economy, the spread of technical innovation also required an economic incentive. Probably the most effective stimulus to innovation is the market to be supplied: both its size and the rate at which it is growing. A large and rapidly expanding market creates an environment that is highly conductive to

technological advance and to all forms of innovation, including the adoption and adaptation of foreign techniques.

THE CONTRIBUTION OF THE INTERNATIONAL ECONOMY

The emerging international economy was itself an important form of market expansion in the nineteenth century. Without legal barriers and potential problems created by exchange rate uncertainty – which, as we have seen, were minimal in the late nineteenth century – foreign trade is in principle simply an extension of domestic trade; and expanding opportunities for the international exchange of commodities did encourage the spread of industrialization. In Britain, industrialization was initially based on a rapidly expanding export of cotton textiles, and later it came to depend increasingly on exports of iron manufactures and coal. In the US before 1860, raw cotton exports played a part in supporting early industrial development in the country; and industrialization in Germany late in the nineteenth century was also closely tied up with an expansion of manufactured exports. Even in Russia and Japan, where governments created domestic markets for industrial goods through their own demands for military and railway equipment, the ability to develop an export trade, in wheat for Russia and in cotton textiles for Japan, was necessary to provide the foreign exchange needed to service the inflow of foreign capital or to purchase the foreign machinery essential to industrialization. Whether the demand for industrial goods was satisfied directly through an expansion of manufactured exports, or whether it was created indirectly through the growth of primary products exports leading to a rise in domestic real incomes, expanding foreign markets created an environment highly favourable to technological diffusion.

The growth of markets, both at home and abroad, is closely related to improvements in transportation, since poor transport facilities automatically restrict the size of the market thus limiting the scope for the use of modern technology. For this reason, good transport is perhaps the most powerful single means for accelerating the importation of modern industrial techniques. In this respect, foreign investment was often of vital significance, since much of it in the nineteenth century went into railway building on the Continent and in North and South America and Australasia. Some of this capital also went into

the development of shipping lines, the construction of docks and harbours, improvements in communications and the provision of other ancillary services necessary for an expanding foreign trade.

The size of the domestic markets of some countries was also increased by immigration, which allowed population to grow faster than it would have done if dependent only on natural increase. Moreover, where the immigrant population could be used in combination with unexploited or unused economic resources, per capita real incomes often rose (thus further increasing market size) because a larger workforce permitted greater specialization and the use of more productive techniques. Furthermore, as in the US and elsewhere, part of the immigrant workforce could be utilized in constructing the transport network so important for the growth and exploitation of domestic and foreign markets.

Finally, for a number of countries within Europe the movement towards larger domestic markets was aided by the gradual reduction of internal barriers to trade by such trade liberalizing measures as the freeing of the Rhine to all shipping, and by the setting up of customs unions, such as the German Zollverein. At the same time the spread of free-trade policies after 1850 provided most countries with expanding opportunities for the international exchange of goods and services. Later in the nineteenth century, however, the widespread adoption of protectionist policies, while reducing the size of foreign markets, encouraged industrialization in some countries by preserving the domestic market for local producers.

On the supply side, a country's rate of capital accumulation is obviously a major determinant of its capacity to absorb new ideas and new methods of production. Where, for example, technical change is embodied in capital equipment, a country's rate of capital investment is all-important, since, in general, the more investment the greater the degree of technological progress. Capital shortage therefore may hinder technological diffusion in a number of ways. For example, it will place limits on a country's stock of social overhead capital, especially transport facilities, with all that that implies for the growth of the market. The need for relatively abundant supplies of capital is also stressed, where innovations in techniques cannot be made singly but require simultaneous development in a number of industries. Moreover, the fact that techniques can rarely be borrowed without adaptation further adds to the capital

cost of introducing the new methods of production. Finally, the fact that industrialization in the nineteenth century was accompanied by population growth and urban development meant that there were heavy demands on capital in the form of housing, public utilities and the additional tools and machines needed to equip an expanding workforce. While, in most countries, the bulk of their capital needs were satisfied out of domestic savings, the availability of foreign funds to finance the construction of social overhead capital – especially transport facilities, communications and public utilities (the demand for which was particularly heavy in the new countries overseas) – meant that domestic savings could be used largely to finance the growth of primary production and manufacturing industry in borrowing countries without this expansion being threatened by inadequate transport or the lack of other ancillary services.

For many countries foreign trade and immigration flows also partly overcame the obstacles to industrialization caused by lack of natural resources, skilled labour and enterprise. In so far as the adoption of modern industrial techniques is dependent on natural resources, geographical location or some other unequally distributed endowment, growth opportunities are not likely to be equally available to all countries. Limited natural resources were probably an important factor restricting industrialization in many of the smaller countries of Europe. French economic development, it has been argued, suffered from a shortage of coal. But, whatever the relevance of scarcity of natural resources as an obstacle to technological diffusion, it must have become less important with time, as progress during the nineteenth century began to make alternative processes possible, or to make imported resources effective substitutes for inefficient, highly-priced domestic supplies. Moreover, if the raw materials necessary for industrial development could be imported from abroad, so too could the necessary skills and organizational ability. Historically, the trader from abroad and the immigrant artisan have long been the main channel for the importation of foreign techniques; where the nineteenth century differed from earlier times was in the scale on which these movements of labour occurred and in the wider range of skills that people carried with them when they moved from country to country.

International Transfer Mechanisms

What prompted the greater part of the flow of labour, capital and trade between countries were differences in the relative prices of these resources in different countries. In the case of both labour and capital, non-economic considerations exerted some influence on their movement internationally, but for the most part it was differences in wage rates and the rates of return on investment that prompted the flow of factors of production from regions where earnings were low to those where they were higher. With commodity trade, too, the exchange was prompted by differences in the relative prices of the goods traded, which reflected in turn differences in the costs of production in the various countries engaged in foreign trade. In so far as the flows of goods, capital and labour took place in response to differential economic advantages of this kind, they acted as spontaneous or 'natural' carriers of modern technology and ideas. On the other hand, specific and direct attempts were often made by governments and other interested bodies to transfer technologies internationally. In addition to sending students abroad to study the new techniques, governments also encouraged the inflow of foreign skills and capital through the use of subventions to immigrant entrepreneurs and guarantees of dividends on foreign loans. Implicit in such policies was the assumption that the diffusion of the new knowledge, either nationally or internationally, was likely to be slow in the absence of conscious efforts to encourage technological change.[2]

CAUSES OF THE LIMITED SPREAD OF INDUSTRIALIZATION

International

[2] These two methods of transmitting technical knowledge enable us to draw a distinction between technological diffusion, on the one hand, and technological transfer, on the other. Whereas the former term can be used to describe a natural spontaneous process of knowledge transmission, technological transfer is based on deliberate effort (see D. L. Spencer and A. Woroniak (eds.), *The Transfer of Technology to Developing Countries* (New York, 1967)). Both mechanisms played their part in the process of economic development in the nineteenth century.

Despite the existence of these natural carriers of technology on a scale previously unmatched in history, and despite the efforts made by some governments to reinforce the market influences determining the volume of direction of these trade and factor flows, the rate at which the new technology diffused was slow, and the spread of modern industry limited. Thus, by 1913 the spread of industrialization was limited largely to Western Europe, North America and Japan. While questions concerning the slow spread of industrialization in the period up to 1913 can be answered only by a more detailed analysis of the problem than can be attempted here, the question is whether the slow rate of diffusion of modern industrial growth across borders reflected weaknesses in the functioning of the international economy as a mechanism for transmitting growth between countries, or whether it was largely the result of the existence of other obstacles to the spread of modern technology. Unfortunately we are still far from fully understanding the detailed working of the international economy as a potential 'engine of growth' in the nineteenth century, and much research remains to be done to fill the gaps in our knowledge. We are, for example, still limited in our knowledge concerning the extent to which the economic growth of individual countries was dependent on the existence of the international economy, or how a country's dependence on the international economy may have changed over time, answers to which are obviously needed if we are to be able to weigh the relative importance of domestic and international obstacles to the spread of industrialization. Because of our lack of knowledge in these matters, comment on the problem just raised is necessarily limited, but nevertheless a few general observations on it can be offered.

To begin with, if the diffusion of modern industrial technology was limited before 1913, it was partly because the supply of capital and labour available for international transfer was limited, and because not all of the countries desiring to import these productive resources were equally well placed to attract them. For a number of reasons North America, and especially the US, was particularly attractive for foreign investors and migrant labour; and Western Europe, because of its compactness and its proximity to Britain, the seat of the Industrial Revolution, was also conveniently placed to take advantage of the new technology. The fact that these two regions received the lion's share of the economic resources that did shift internationally during these years meant

simply that there were fewer of these resources available for other capital and labour importing countries, and their prospects for industrial development suffered correspondingly.

Moreover, in some countries primary production continued to be more profitable than manufacturing activities, in the sense that these countries' real income could be increased more rapidly by their specializing in agricultural and mining production and exchanging their surpluses of primary products for manufactures produced elsewhere. As long as the real incomes of primary producers were sustained by the mounting demand for foodstuffs and raw materials of the industrializing regions at the centre of the international economy, the spread of industrialization to peripheral countries was limited by the economic advantages accruing to them from the growing territorial division of labour which formed the basis of the expanding international economy of the nineteenth century.[3] When, however, changing demand and supply conditions in the post First World War period resulted in a downward pressure on primary product prices, which reduced the real incomes of countries supplying these commodities, industrialization programmes became a feature of many of these countries, as their governments endeavoured to diversify domestic economic activity by encouraging the production of manufactured goods previously purchased out of the export earnings of primary producers.

National

While the international economy may have functioned in such a way as to limit the spread of industrialization in the nineteenth century, for the most part the major obstacles to the diffusion of modern technology were to be found within countries rather than between them. The available evidence for this period suggests that the diffusion of modern industrial technology between countries was much faster than its diffusion within countries. Thus, Watt's steam engine, first brought out in England in 1776, was introduced into France in 1779, into Germany in 1788, and into Italy in 1816. On the other hand, within Britain the steam engine did not come into general use until after 1850. In the other

[3] In this context, Argentina may be cited as the principal example.

European countries, however, the lag was even greater, and in Italy the steam engine was still far from widely used even in 1913. A similar situation developed in the US, where the steam engine was introduced towards the end of the eighteenth century and quickly adopted for use in river boats. But it was not widely used in American industry until after the Civil War. Another example is to be found in the spread of the idea of interchangeable parts and standardized production. Developed in the US well before 1850, and introduced into the British government's arms factory at Enfield in the 1850s, these innovations were adopted only very slowly by British manufacturers. While further evidence of disparate rates of technological diffusion between and within countries exists – for example, in the spread of new textile machinery and modern metallurgical processes during the nineteenth century – what obviously needs explanation is the cause of this disparity. In particular we need to know why exactly, with easy international movement of inventions, a country's capacity to adopt new techniques on a wide scale should be so difficult to foster or impart.

As we have already indicated, the adoption of modern technology is partly dependent on the availability of capital, natural resources, and the necessary labour skills (initially, above all else, literacy) and organizational ability. But while limited markets and shortages of productive resources could be partially overcome with the help of foreign trade, capital and labour, in the final analysis the available domestic supplies of capital and organizational skills were often crucial in bringing about successful industrialization. Moreover, non-economic influences, particularly social attitudes, customs, beliefs and motivation to succeed economically, are important determinants of the rate at which new techniques are diffused throughout an economy. The incompatibility of the new industrial technology with existing institutional arrangements, the reactions of merchants and businessmen to the uncertainty and risks attached to new ways of doing things, and the concern for social and political stability are only a few examples of the forces generating the social rigidities and resistance to change likely to be encountered in an industrializing society. The existence of such forces serves to remind us that technological change is a cultural, social, psychological and political process, as well as an imitation and adoption of techniques. Yet on the question of whether major structural shifts in the socio-political fabric must precede or accompany the adoption of industrial

technology, the facts, such as they are, are not unambiguous. In France, for example, a very strong concern for continuity in the social and cultural sphere meant that technical change was relatively slow and that the government did not play a major role in promoting economic development. Germany, on the other hand, achieved rapid industrialization despite the fact that the old order retained much of its force. Denmark and Sweden also appear to have created expansionary economies as much by changing the direction of their economic efforts as by altering the structure of their institutions or the habits of their peoples. In South and East Europe, however, the existence of an essentially feudal system, and the rigid social stratification which accompanied it, as well as the low social value attached to industry and profit in the culture of some of these countries, constituted insurmountable barriers to the adoption of the new industrial technology, backed up as they were by deficiencies of resources, scale of markets and education. Only Russia, in this part of the continent, succeeded in industrializing to any significant extent, and then only after the resistance of the government and other conservative forces had been overcome, largely by outside events, notably the lost Russo-Japanese War of 1904-5.

Outside Europe, the spread of industrialization to the US, Canada and, to a lesser extent, the other regions of European settlement overseas was helped by a level of receptivity to the new technology that was at least as high as that in Britain and the more industrially advanced countries in Europe, with which countries they shared a common social, economic, cultural and linguistic background. These ties were also useful in fostering periodic inflows of European capital and labour, which considerably assisted the diffusion of industrial techniques within the countries concerned.

High receptivity to the new technology was not confined to European countries or their offshoots overseas however. In Asia, Japan began industrializing rapidly towards the end of the nineteenth century, and in this respect it is interesting to contrast the experiences of Japan and China before 1914 when confronted by Western technology and economic intervention. Displaying a common policy of exclusiveness and virtual absence of contracts with foreign countries, as well as a social structure and system of land ownership that acted as a barrier to industrialization, their responses to Western intervention in their affairs were totally different. Whereas Japan adopted Western industrial

techniques rapidly and succeeded in achieving economic 'take-off' seemingly without any major social or cultural changes, the Chinese government remained contemptuous of Western civilization and opposed to all forms of social and economic change.

Some idea of the extent of the spread of modern industrialization by 1913 is given in Table 8.1, which contains indices of output of manufactures per head of the population for a wide range of countries. These output indices are based on the average share of manufacturing output for the period 1925-9 allocated to each country and taken back to 1913 by the use of industrial production indices. The measure of industrial output for each country was then divided by its population and the result expressed as a proportion of US output per head. Given the manner of their construction the indices contained in Table 8.1 obviously should be treated as orders of magnitude, with wide margins of error.

What the table reveals is the relatively limited spread of the new industrial technology by 1913. The US, Britain and most of western Europe were relatively well industrialized by this time, as were Canada, Australia and New Zealand, whose highly productive agriculture provided, as in the other industrially advanced countries, a strong domestic demand for manufactured goods. Elsewhere, however, in East and South Europe, in much of Latin America, and in most of Asia and Africa, the process of modern industrial developments had barely begun by the outbreak of the First World War.

Table 8.1 – Index of output of manufactures per head of population, 1913

USA	100		Poland	13
			Russia	9
Europe			Yugoslavia	6
UK	90		Romania	6
Belgium	73		Greece	4
Germany	64			
Switzerland	64		Other	
Sweden	50		Canada	84
France	46		Australia	75
Denmark	46		New Zealand	66

Netherlands	44		Argentina	23
Norway	39		Chile	17
Austria	31		Japan	6
Czechoslovakia	28		Mexico	5
Finland	27		South Africa	5
Italy	20		Brazil	2
Hungary	19		India	1
Spain	15			

Source: WA. Lewis, *Growth and Fluctuations 1870-1913* (London, 1978), Table 7.1, p. 163. For a more detailed explanation of the construction of the Table, see ibid., p. 313, footnote 9.

CONCLUSIONS

The spread of industrialization from Britain to continental Europe and North America was assisted by the functioning of the international economy. The flows of capital, labour and goods and services, which linked together the countries of the world, provided the channels through which modern industrial technology diffused between nations. If the extent of this technological diffusion was limited in the nineteenth century, it was partly because the stock of capital and labour available for international transfer was limited, and partly because not all of the countries desiring to import these extra productive resources were equally well placed to attract them. But what was an even greater obstacle to the spread of industrialization was the fact that many countries, even when they received inflows of foreign labour and capital, lacked absorptive capacity, the knowledge base, institutions and flexibility necessary to take advantage of the changing technological opportunities that presented themselves. It was this weakness rather than any fundamental deficiency in the functioning of the international economy as an 'engine of growth' that accounts for the limited industrialization up to 1914. To industrialize successfully, there had to be capital formation, technical change and reallocation of resources, as well as changes in social, political and cultural attitudes to economic activity. Since in most countries the forces of inertia were strong and

deeply entrenched, the spread of industrialization was necessarily a slow process.

Text 6

Charles Feinstein, Peter Temin and Gianni Toniolo, *Epilogue: the Past and the Present.*

The shock of the First World War, coupled with the policies adopted after the war, led to the economic disasters of the inter-war years: more specifically, that it was the gold standard, reintroduced in the 1920s to cure the instability of the immediate post-war years which prevented the world economy from dealing with the problems which emerged at the end of the decade and deepened in the early 1930s. The failure of institutions was exacerbated by failures of leadership and cooperation. Policy failures were more important than they would have been in other circumstances because the underlying situation was so difficult, the need for enlightened and constructive policies so great.

We began our history of the period by placing the developments between the wars in historical perspective, showing how far interwar economic growth fell short of the standard achieved in earlier and later periods (Chapter 1.2). We close by looking back at that period in comparison with the aftermath of the Second World War, and with the current situation created by the collapse of the centrally planned economies of central and eastern Europe, and the end of the cold war. The comparison suggests two fundamental questions which might fruitfully be addressed in the context of our analysis of the primary determinants of the failures of policy and of performance in the inter-war period. First, if the result of the First World War was economic crisis and severe depression, why were the consequences of the second, larger conflict not equally disastrous? Secondly, are there any parallels between the position after the two world wars and that created today by the breakup of the Communist regimes, the end of the cold war, and the new economic and political attitudes and policies emerging among the governments and people of the European Union and the United States?

The aftermath of two world wars – similarities and differences

As is well known, economic and political developments after the Second World War effectively avoided the crises which followed the First World War; instead they ushered in a period of remarkable success. Reconstruction was very

rapid. Three to six years after the end of hostilities, even those countries whose economies were most damaged by the conflict had recovered to their highest prewar GDP levels. Moreover, and more importantly, reconstruction was followed by a quarter of a century of exceptionally high rates of growth, more rapid than anything ever experienced before or since. This was particularly true of continental Europe and of Japan.

Not only was economic growth extremely rapid, but fluctuations were very mild and unemployment extremely low. So exceptional and unexpected was this stream of events that the years 1950-73 came to be known as the `golden age', and in countries like Germany and Italy people talked of an economic miracle. Why was the outcome of the so-called ‘second post-war settlement’ so distinctly different from that of thirty years earlier? We discuss three possible contributory factors: the scale of the shocks created by the wars; the nature of the international economic organization created after the wars, and the degree of international co-operation and aid both within Europe and between Europe and the United States.

The scale of the shocks

The magnitude of the two world wars in terms of the relative scale of military spending can be seen from Table 10.1. In the First World War the share of net national product allocated to the war effort reached a peak in 1917 at 53 per cent in Germany and at 38 per cent in the United Kingdom. In the United States, a late and reluctant entrant into the war, war expenditures peaked at 13 per cent of NNP in 1918. When the war was over the proportion of resources devoted to military expenditure fell swiftly to a quite low level.

The pattern of expenditures in the Second World War was more uniform and more dramatic. All five of the countries shown in the lower block of Table 10.1 devoted more than half their national product to the war. Germany and the Soviet Union devoted as much as three-quarters to this end. At the end of the war military spending again declined rapidly, but continued to absorb about 10 per cent of NNP in the United Kingdom and the United States, less in Germany. In both global conflicts the wartime rise and the postwar decline in military spending were large shocks to the world economy. It is clear, however, that the end of the Second World War was a considerably larger shock, forcing a

reallocation of close to half the national product in many of the major industrial countries in a very few years.

A second element in the assessment of the impact of the wars is the extent of the destruction, damage, and economic dislocation which they caused. Here too, the set-back to the economies of the belligerent countries during the Second World War was much more severe than in 1914-18. By 1945 the level of GDP per head of France, the Netherlands, Germany, Italy, and Japan had fallen back to late nineteenth - or early twentieth-century levels; the position in Austria was even worse. One or two generations of work were lost. Of the major powers, only the United States and the United Kingdom managed to end the war with per capita GDP higher than it had been in 1938.

It is thus evident that the Second World War was responsible for a far more severe shock to the world economic system than the First. Other institutional and policy developments must therefore have been sufficiently favourable and conducive to good economic performance to more than offset this adverse initial position.

Table 10.1. Military expenditure as a percentage of net national product at factor cost, selected countries, 1913-1920 and 1937-1951

	UK	USA	USSR	Germany	Japan
First World War					
1913	4	1		-	
1914	9	1		14	
1915	34	1		41	
1916	38	1		35	
1917	38	6		53	
1918	32	13		32	
1919	13	9			
1920	4	3			
Second World War					
1937	-		9		13

1938	7			17	
1939	16	2		25	-
1940	49	2	21	44	17
1941	55	12		56	25
1942	54	34	75	69	36
1943	57	44	76	76	47
1944	56	45	69		64
1945	47	38			
1946	19	10			
1947	11	5	-		
1948	8	5	18		
1949	8	6	17		
1950	8	5	16		
1951	10	11	17		

Institutional changes and a new international monetary system

The real shocks resulting from the wars were massive. Even in the absence of other problems, they would have posed formidable challenges to economic policy makers. But they were not the only problem. After each war, the international monetary regime lay in shreds and needed to be reconstructed.

The gold standard was suspended at the start of the First World War. Even before the conflict ended, policy makers were anticipating its resumption. Alternatives existed but were firmly rejected. The argument in favour of its restoration seemed to be reinforced as prices accelerated and Germany and other countries suffered the ravages of hyper-inflation (see Chapter 3.1). The gold exchange standard was formally revived in 1925 with the British return to gold, but it did not achieve what its advocates had predicted. On the contrary, we have argued that its rigidity was a prime cause, and even *the* prime cause, of the Great Depression; its abandonment was the way out of the depression (Chapter 6.5). A further consequence of the depression which it created was the disintegration of the world monetary system. The international economy split into currency and trading blocs. Trade barriers between the blocs rose dramatically (Chapter 8).

Bilateral barter often substituted for multilateral arrangements; international trade and capital flows essentially vanished (Chapter 9.1).

Why was the situation so different after 1945? In a broad historical perspective, it is possible to see that both the United States and Europe had changed since 1919. The former emerged from the Second World War as undisputed world leader, and this time was ready to accept the responsibility. The lesson of Versailles had been absorbed: if stability and prosperity were to be achieved a sufficient degree of international co-ordination and co-operation had to be established. The United States could provide the relevant preconditions for a new international order based upon mutual trust and collaboration, but it could not impose this; Europe also had to be ready to play its part.

European societies had long been divided. The blame for the unsatisfactory first post-war settlement cannot be laid solely at the door of incompetent politicians and central bankers: its outcome was deeply rooted in Europe's history and its social and political structures. The changes required in order for the post-1945 settlement to yield a better outcome were finally possible as a result of a long historical process inaugurated with the crisis of European liberal capitalism at the end of the nineteenth century. It has been persuasively argued by Maier (1987: 162) that reversing that crisis took half a century: ‘the cumulative achievement required the institutional flux that was left in the wake of not one but two wartime upheavals’.

The military, political, and social situation of 1945 was so much more favourable to the creation of pre-conditions for stability and consensus than that of 1919 precisely because it came at the end of this long and tragic historical process. There were two components of the mid-century settlement, international and domestic, and they were mutually reinforcing. This created a virtuous circle, in sharp contrast to the previous occasion when the mistakes made at Versailles amplified the domestic fragility which afflicted European countries in the aftermath of the war.

The international part of the second post-war settlement rested on the determination of the United States and the United Kingdom to reverse the conditions which had prevailed in the inter-war period. The bitter lessons of the 1930s were well learnt. The aim this time was to create a radically different framework of international economic relations, one which would enable countries

to cooperate in trade and investment to their mutual advantage, and so help to sustain high levels of domestic activity. The economic advantages of such co-operation were powerfully reinforced by the belief that this would also promote world peace.

As early as 1941 Roosevelt and Churchill recognized the need to avoid the problems which the enormous burden of war debts had created after 1918. The outcome was the generous scheme for Lend-Lease, under which supplies required by the United Kingdom for the war effort were in effect provided free of charge by the United States and Canada. In 1942 the two powers also reached a preliminary agreement to set international economic relations on a new footing. The Bretton Woods Conference which followed in 1944, and gave rise to the system of that name, was a deliberate attempt to avoid the deficiencies of the inter-war gold standard. It is noteworthy that consensus on the broad lines of the whole project 'derived from a shared interpretation of the inter-war years, which owed much to the analysis of the League of Nations' (Foreman-Peck 1995: 240).

Bretton Woods set the framework for a new international monetary system based on fixed exchange rates, with the dollar as anchor currency. It was accepted, however, that there might be special circumstances in which it was necessary for a country to adjust the relative value of its currency, and procedures were created under which this could be done. Britain took advantage of this in 1949, France in 1955 and 1957. Two international bodies were established. The International Monetary Fund (IMF) was designed to allow the smooth adjustment of temporary balance-of-payments disequilibria; the International Bank for Reconstruction and Development (normally known as the World Bank) was to take care of longer-term development needs. Commercial policy was dealt with under the auspices of the General Agreement on Trade and Tariffs (GATT), signed in Geneva in 1947. This initiated the lengthy process of reducing tariff barriers on manufactured goods.

When even the moderated discipline of the Bretton Woods system proved too harsh for the still-prostrate western European economies in the immediate post-war period, they were exempted from the requirements of convertible currencies. The European Payments Union allowed its members to discriminate against outside suppliers for over a decade after the conclusion of the war. It was

a vital first step towards reconstructing multilateral trade and eventually bringing about full currency convertibility.

Aid and co-operation

As soon as the war was over, it became clear that implementation of these plans for a new international economic system would need robust transitory measures if the colossal task of reconstruction and conversion to peacetime economies was to be successfully achieved. In another far-sighted departure from the attitudes which prevailed after Versailles, the United States recognized its responsibility for providing the essential bridge to prosperity. There was inevitably some friction in the discussion of the terms on which aid and loans would be granted, but the contrast with the post-1918 wrangling over war debts and reparations was enormous.

Immediate relief aid (UNRRA) was provided to avoid major hardship in devastated Europe. A large loan was made to the United Kingdom. More than this was needed, however, if trade was to revive to the extent necessary. Europe's foreign exchange reserves were virtually exhausted and exports to the dollar area were still very low, making it impossible for Europe to import vital supplies and equipment from the United States and Canada. What was needed was a major injection of purchasing power into the international economy in dollars. A similar problem had arisen after 1919, and in that era it was left to private capital markets to take care of, with the destabilizing results that we have seen (Chapter 5.3 and 5.4). This time, the United States government made available a total of over 13 billion dollars in grants and loans to Europe between 1948 and 1951 through the so-called Marshall Plan (officially the European Recovery Programme).

While scholarship has failed to uncover specific links between American aid and European investment, it seems clear that the Marshall Plan kept the nascent investment plans of the western European countries from being strangled, either by foreign exchange scarcity or by planning bureaucrats. The Marshall Plan also eased the harshest post-war living conditions, fostering a relatively peaceful social context in which reconstruction could be more easily effected; and it contributed to the creation of a new climate of confidence and co-operation within

and between the nations of Europe, which was a critical element in the domestic aspects of the new post-war settlement.

One other contrast between the two post-war settlements is also of great importance. The 1920s were dominated by disagreements between the former enemies, most conspicuously the bitter disputes between France and Germany over reparations and territory. The political leaders who came to power after the Second World War were determined to avoid such divisive and destructive policies and instead initiated the successive measures which led by 1956 to the formation of the European Common Market. At that point it included only six countries with the United Kingdom, the Scandinavian countries, and others outside but it provided economic and political unity at the heart of Europe.

However, all these constructive measures also sharpened the distinction between the Atlantic economy and the centrally planned economies led by the USSR. Although invited to join in the Marshall Plan, the Communist nations were not willing to allow the Americans to have the say in their affairs this would have involved. After initial hesitation, the Soviet Union and its allies also declined to participate in the arrangements established at Bretton Woods. The post-war international system of which we speak therefore refers to only a part of the world economy. Trade and finance among the Communist nations was organized quite separately and was not part of the system of free multilateral trade and payments.

It would be claiming too much to say that the monetary flexibility which the Bretton Woods system provided in place of the rigidities of the inter-war gold standard was the principal key to European prosperity after the Second World War. Numerous problems had to be overcome in order for this to be achieved. We have emphasized certain changes in policy and institutions, but numerous other factors also changed between 1919 and 1945. Because we are observing history, not conducting a controlled experiment, we cannot be certain which subset of these changes was responsible for enabling the world economy to escape a repetition of the disasters of the interwar period. We can say, however, that macro-economic policies, monetary conditions, and international trade arrangements can help to solve problems or they can make matters worse. We have tried to show why we believe that they did the former after the Second World War, the latter after the First.

Convergence to a common productivity standard

In discussing the features of the golden age which followed the Second World War the focus has been on the exceptional growth of output and trade achieved by the developed capitalist countries in the years 1948-73. There is one further feature of this period which is also extremely important and relevant to the themes of this book. When the war ended, the disparity in productivity levels between the various countries was remarkably large, larger even than it had been in 1913. This is partly a reflection of their different starting-points and the divergence in their economic fortunes in the period from the First World War to 1938 covered in earlier chapters, but is mainly the result of their very different experience during the Second World War.

A broad indication of the relative economic efficiency of twelve European capitalist countries in 1913, 1950, 1973, and 1992 is shown in the upper block of Table 10.2, with labour productivity (GDP per hour worked) taken as the measure of economic performance. At each date the level of productivity in the most advanced nation, the United States of America, is set at 100, and the level in the individual European countries is compared with that. The countries are listed according to their rank in 1950. At that date the performance gap between the United States and almost all European countries had widened considerably compared to the position in 1913. Productivity in the four countries most adversely affected by the war, Germany, Italy, Finland, and Austria, was barely one-third of the level in the United States; Switzerland was the only country which came within two-thirds of that level.

By 1973 the position had been totally transformed. The lowest of the twelve European countries at that date, Finland, had reached 57 per cent of the US level, and six other countries were within 70 per cent of that. In the course of this convergence the dispersion within this group of European nations had thus narrowed substantially. The process of catch-up continued in the subsequent phase, though more slowly. By 1992 productivity in all twelve countries was within 70 per cent of the United States level, and in seven it was at least 85 per cent. The evidence of Table 10.2 thus suggests that when the overall economic environment is appropriate – as it was after 1945 but not after 1918 – all these western European economies can converge towards the highest levels of

economic performance. Their achievement in the four decades following the Second World War thus vividly underlines the heavy costs of the turmoil and policy errors between the wars.

Table 10.2. GDP per hour worked relative to the United States: European countries and regions, 1913, 1950, 1973, and 1992 (level in the USA = 100)

	1913	1950	1973	1992
12 western European countries				
Switzerland	63	69	78	87
United Kingdom	86	62	68	82
Sweden	50	56	77	79
Netherlands	78	51	81	99
Belgium	70	48	70	98
Denmark	66	46	68	75
France	56	45	76	102
Norway	43	43	60	88
Germany	68	35	71	95
Italy	41	34	66	85
Finland	35	32	57	70
Austria	57	32	65	83
European regions[a]				
Western Europe	60	46	70	87
Southern Europe	33	23	44	62
Central and eastern Europe		19	26	23[b]

[a] Arithmetic averages: for western Europe of the estimates for the 12 countries listed above; for southern Europe for Greece, Ireland, Portugal, and Spain; and for central and eastern Europe for Bulgaria, Czechoslovakia, Hungary, Poland, Romania, and the USSR.

[b] This is a very rough approximation. A rough estimate of the Figure for 1989, the last year before the collapse of central planning, is 27.

Several factors contributed to this process of convergence. All the countries in the upper block of Table 10.2 possessed the necessary pre-conditions for economic growth, including a well-educated labour force, efficient government,

competent managers, entrepreneurs willing to innovate and take risks, and suitable financial and legal systems. In the countries which had suffered most severely from the Second World War the determination at all levels of society to improve their economic conditions, and a willingness to accept the sacrifices and changes required for this (for example in forgoing consumption to raise investment), was a powerful force.

However, the most significant explanatory factor was the ability of the relatively backward countries to borrow from those ahead of them, particularly the United States of America. The latecomers did lot have to generate their own technical progress. They could learn from the experience of those who had gone first, study the sources of high levels of productivity in the leading economies, apply and adapt these to their own conditions. This applied not only to all forms of modem technology, such as machinery or electronic equipment, but also to a wide range of economic and social best-practice features; for example, in corporate organization, management, financial systems, property relations, and government supply-side policies. Changes in economic structure, notably the transfer of labour from agriculture to industry and services, were also important both as a direct contribution to higher productivity and, indirectly, as a source of labour permitting the expanding sectors to grow without being constrained by a tight labour market.

The countries of southern Europe also participated in this process, and have indeed converged on the United States more rapidly than those in western Europe, thus narrowing the gap between them and their European neighbours. However, they started from a much lower base and are still a considerable way behind. As can be seen in the lower block of Table 10.2, the average GDP per hour worked of four countries in this region was only 23 per cent of the United States level in 1950; by 1973 it had risen to 44 per cent and by 1992 to 62 per cent. The process of catch-up in these countries has been considerably assisted by their membership of the European Union, and there is every prospect that they will continue to move closer to the productivity levels of the leading group.

The position in central and eastern Europe (including the former USSR) is much less promising. In the years following the Second World War, the then Communist economies also enjoyed a rapid growth spurt, but the rate of advance in labour productivity was slower than in other European countries and it was not

sustained. Once the possibilities of extensive growth had been exhausted, systemic weaknesses, most notably in respect of technical progress, became increasingly evident. The position of these countries relative to the United States improved slightly, but only from 19 per cent in 1950 to 26 per cent in 1973, and then levelled off. By 1989 they were probably no nearer than they had been in 1913. Since then their relative position has deteriorated sharply, with output and income declining after the collapse of their planned economies. The massive problems of the transition in these former socialist economies of Europe brings us to our final theme.

The European economy in the 1990s

Are there any further lessons which might be learned from the historical developments studied in this book? We suggest in closing that it may be peculiarly important to explore this question at the present time. The end of the cold war has produced a shock that is in some respects comparable with that delivered by the two world wars. The problems arise first from the reduction in military expenditure from the levels thought necessary on both sides during the cold war; and secondly from the fundamental economic restructuring which is required in the former socialist countries. The new structures and patterns of production emerging in those countries have major implications both for them and for the international system of trade and finance.

There are also more subtle factors in the present situation which could have a significant influence on the way in which the world economy responds to this dual shock. The threat of war was a powerful force binding the western allies together and encouraging unity and co-operation for many purposes. With the removal of that pressure divisions are beginning to appear in relation to a variety of economic and political issues. This tendency is reinforced by a further factor. It is now more than sixty years since the Great Depression. The disasters of the 1930s were cogent arguments in support of the radically different policies adopted with such success in the period after 1945. But those events are no longer fresh in the memory of the present generation. Policies which would have been briskly rejected in the 1940s are given a respectful hearing in the 1990s. The case for flexibility in the international monetary system, for free trade, and for a willingness to put international co-operation and policy co-ordination ahead of

the pursuit of narrowly conceived national interests can no longer be taken for granted.

The countries of the former USSR and the other centrally planned economies of central and eastern Europe have embarked with varying degrees of enthusiasm on a process of transformation towards the market economy. Some, notably Poland, Hungary, and the Czech Republic, have made excellent progress; others have barely begun. If the transition is to succeed it will require large shifts in the structure of production and a massive reallocation of resources. First, alternative employment must now be found for the large share of their resources previously absorbed by military outlays. Secondly, there is a very substantial mismatch between the output which resulted from the preferences of the planners who previously determined what should be produced, and the supply of goods and services which is required today for sale in a free market to domestic consumers and foreign buyers.

The problems of reconstruction are exacerbated by territorial changes involving the breakup of the former Soviet Union, of Czechoslovakia, and of Yugoslavia. In their place new states have been formed, with divergent economic strategies and interests. Supplies of raw materials and sales of finished goods, previously organized in a framework of internal trade, have now to be negotiated across national boundaries, with attendant complications of currencies and tariffs. There are obvious analogies with the problems caused after the First World War by the breakup of the Habsburg and tsarist empires. As then, so now in the 1990s, the region is beset by ethnic and national conflicts which are highly detrimental to trade and economic co-operation.

The end of the cold war has also had an impact on the capitalist economies. As the threat of global war has receded, the demand for arms has declined. NATO expenditures for major military weapons fell by one-quarter from 1989 to 1992. However, total military spending in the NATO countries has not declined rapidly as a share of the national product. It has been hard to reduce military personnel during a period of high unemployment, and military establishments in these countries have been supported in the same way uneconomic (at world prices) production has been supported in the former centrally planned economies. The full force of the economic shock has yet to be felt in the West.

We know from the preceding comparison of the experience following the First and Second World Wars that the existence of a major economic shock does not mean that there will necessarily be a crisis. What is critical is the form of the response, and the economic and political settlement that is established to deal with the new conditions. At present there are grounds for thinking that the response to the shock arising from the collapse of the Communist economies and the end of the cold war has some disturbing parallels with the period after the First World War. The most important of these are the trade barriers erected in order to regulate excess supplies of agricultural products, and the weaknesses in the international payments system. We do not want to stretch this parallel too far, only to suggest that there may be lessons for the present in our account of the past.

Agricultural markets

In each world war, non-European countries increased their supply of agricultural goods, creating the conditions for a post-war excess supply as the soldiers in former belligerent countries left the sword for the plough. The dislocation after the First World War was described in Chapter 4.3. More data are shown in Table 10.3. Western European imports of five grains increased only slightly across each of the two world wars, but exports from the western hemisphere increased dramatically in each case. They more than offset the decline in exports from eastern Europe and Russia after the First World War, and they greatly added to world supplies after the Second World War.

The post-war shock was twofold. In the Americas, the price fell back sharply from the wartime peaks that had induced the expansion of production. In western Europe, the increase in supply threatened to drown domestic agriculture in a flood of imports. This had happened once before, in the 1880s. After each world war, continental European countries responded as they had done to falling freight rates in the 1890s: they protected their farmers by restricting agricultural imports. They acted individually after the First World War; they adopted the Common Agricultural Policy after the second. The closed European markets then intensified the shock to the producing regions in the rest of the world.

Table 10.3. World trade in five grains, 1909-1913 to 1948/1949 (millions of tons)

	1909-13	1925-29	1934-38	1948/9
European net imports				
Western continental Europe	16.4	17.7	10.5	13.5
United Kingdom and Ireland	9.9	9.1	10.4	8.5
Total	26.3	26.8	20.9	22.0
Main exporting areas, net exports				
Eastern continental Europe	2.7	0.6	2.0	
Russia/USSR	10.5	0.8	1.2	-
United States and Canada	6.4	15.1	5.4	23.8
Southern hemisphere	7.5	13.6	13.9	9.7

Note: The five grains are wheat, rye, barley, oats, and maize.

The end of the cold war poses a similar allocative problem. The countries of eastern Europe are returning to the world economy after a prolonged absence. Their industrialization in the intervening period was based on a set of prices very different from those in the western economy. They consequently find themselves in a position similar to that of the southern hemisphere after the two world wars. They need revenue from exports to finance the reconstruction of their industrial base. Agricultural products represent one area where they can compete on world markets at their new exchange rates. But the Common Agricultural Policy bars them from their natural markets.

The current protectionist stance of the European Union in agriculture points perilously in the direction of a similarity with the 1920s and 1930s. Indeed, western Europe has put itself in the untenable position of simultaneously asking the countries of eastern Europe to open up their economies while maintaining trade barriers against their exports. This results in a crippling of eastern European growth, and also in great loss of credibility at a time when leadership is not only needed but sought after.

The current international payments system

The current international payments system, while not totally dysfunctional, is also not in robust health. The Bretton Woods system was abandoned at the end of the long post-war boom, essentially because the economic revival of Europe and Japan had fundamentally changed their relationship with the United States. Parities and policies appropriate in the 1940s were no longer suitable in the 1970s. While the aftermath of Bretton Woods has not been as inimical as the trading blocs of the Great Depression, trade has suffered both from persistent barriers and from wild exchange rate fluctuations, particularly for the dollar and the yen. The countries of the European Union reacted to the end of the Bretton Woods era by attempting to establish a system linking their currencies within narrow bands, and are now planning to move towards a single currency.

The end of the cold war has made its main impact in this sphere as a consequence of the problems created by the reunification of Germany. From a macro-economic point of view the best policy would have been a temporary increase in German taxes in order to finance the investment required in the former eastern territories. Chancellor Kohl chose instead to finance the investment by borrowing. Germany's macro-economic stance was thus composed of a very expansive fiscal policy countered by a very tight monetary policy. This policy configuration represented a large shock to the European economy and the European Monetary System (EMS).

The EMS prevented the mark from rising relative to other European currencies. The result was great strain in Germany's trading partners as they raised interest rates in an attempt to protect their currencies. As in the early 1930s, a commitment to fixed exchange rates threatened to transmit a macro-economic shock around Europe (Chapter 6.2). On this occasion, however, Britain, Italy, and Finland were willing to abandon the EMS at that point before it could do lasting damage to their economies.

Despite these and other strains, monetary prospects within the European Union continue to be dominated by the project to establish a single currency by 1999. The driving force behind this proposal is the political determination of France and Germany to cement the political unity which both countries for different reasons see as essential to the future peace and security of Europe.

Unfortunately such political motives, however worthy, may not be the best guide to economic policy. The attempt to bring budget deficits within the range prescribed by the Maastricht Treaty is forcing countries to impose severe deflationary pressure at a time when unemployment still remains at very high levels in Europe. This inevitably provokes a hostile response and increases political instability.

Perhaps more seriously, the introduction of a single currency will deprive the countries concerned of a significant element of flexibility in adjusting to changing economic circumstances. If changes in exchange rate parities are no longer possible, deflation is effectively the only option left for a country which develops a persistent balance-of-payments deficit. It is by no means clear that the benefits of the policy will outweigh these disadvantages. It is notable that it is the leaders of the former gold bloc countries who are today most strongly committed to the EMS and the single currency. Only time will tell if they are condemning their people to relive the painful contractions of the mid-1930s.

The need for international leadership and co-operation

The issues outlined above would by themselves be sufficient grounds for unease about the ability of the world economy to cope successfully with the problems posed by the end of the cold war. Our analysis of the past suggests two further factors which may add to the difficulties. In the inter-war years the problems of managing the gold standard were aggravated by the absence of adequate international leadership and co-operation. Here too there are overtones of the 1920s in the current situation.

In discussing possible explanations for the Great Depression we noted what has come to be known as the hegemonic theory. Britain was the hegemon before the First World War, the United States after the Second. In the middle there was a void: no longer London, not yet New York. The lack of clear leadership, in this story, led to poor policies which led in turn to depression. After 1929 each country tried to deal with the fall in demand in its own way; there was no effective lender of last resort for banks or currencies in distress.

The United States is the only candidate for hegemonic status today. But there is a tendency in the United States to turn away from external responsibilities, much as there was in the 1920s. Just as Congress then refused

to support the League of Nations, so Congress today wants to cripple the United Nations. There are signs of a popular impatience with the burdens of world leadership, a growing belief that the United States should concentrate on solving its internal problems. More importantly, the United States is currently an importer of capital on a large scale. Britain's leadership before 1914, and America's after 1945, were based on capital exports. It is hard to see how the United States can exert the kind of economic leadership that is needed today, given its current balance of payments problems.

We also referred to an alternative view of the inter-war period: that it was the absence of international co-operation which led to the policy mistakes that caused the Great Depression. The most powerful factor inhibiting the necessary co-operation was the move to more representative governments in the aftermath of the First World War. The rise of organized labour and of the political parties (see Chapter 2.3) reduced the autonomy of all central bankers in charge of maintaining the gold standard. It was increasingly difficult to give priority to external balance if achieving this required continuous deflationary measures and higher unemployment at home.

How does this affect the present time? If international leadership is lacking today, can international co-operation substitute for it? The signs are not encouraging. The end of the cold war has loosened the ties that bound the western community. International political disarray is evident in divergent policies toward the former Yugoslavia and in the conflicts over trade with Cuba, Libya, and Iran. International economic disunity is shown in the disagreements within Europe over the European Monetary System and the single currency, and between Europe and the United States over the GATT negotiations and other issues of trade and investment. There is also the intense rivalry between the United States and Japan, and disagreements among the leading countries over the IMF policy towards the developing countries.

History never repeats itself, and we are aware of both the analogies and the enormous differences with the situation after 1918 and after 1945. However, one of the principal lessons to be learned from our study of the economic history of twentieth-century Europe is that growth and prosperity were achieved in periods when there was an environment of multilateral trade, regulated exchange rate flexibility, and international financial co-operation, not in periods of tariff barriers,

trade wars, financial rigidity, and conflicting monetary areas. Is that elementary lesson in danger of being forgotten?

Text 7

McCraw, Thomas K. and Childs, William R., "Modern Management in the 1920s: GM Defeats Ford.

Cars, Trucks, and Freedom

During the first half of the twentieth century, the motor vehicle industry best symbolized the genius of American business. Even before World War II began, the car came to be regarded as a necessity, just as televisions, computers, and cell phones later became essentials of modern life.

The first cars and trucks were built in Europe in the1880s and 1890s. By 1899, 30

American firms produced 2,500 cars annually. Because the American market was the richest in the world and expanding rapidly, it furnished the necessary mass market for the automobile manufacturing industry to prosper; by the 1920s it was the largest in the nation. Its connections with suppliers of steel, rubber, and glass, plus its relianceon the oil industry for fuel, lubricants, and service stations made the car the most important product of the twentieth century. By the 1970s about one-sixth of all business firms in the United States participated in some way in the manufacture, distribution, service, or operation of cars and trucks.

Meanwhile, governments at the local, state, and national levels played catch-up to

promote and regulate the industry. They financed the construction of roads and

bridges, registered motor vehicles and licensed operators, installed traffic lights and

set speed limits, and expanded police and state trooper forces. Later in the century,

governments mandated safety and fuel efficiency standards.

During the 1920s, the car became the center of the national consumer economy, and until the successful Japanese challenge of the 1970s it remained a pre-eminently American-made product. An astounding 80 percent of all cars in the world were made in America by the mid-1920s. There was one automobile for every 5.3 people. In contrast, in Britain and France, there was one car for every 44 people.

The word automobile expresses the exhilarating idea of autonomous mobility, and for a great many people everywhere, driving became a means of escape, a way to express personal freedom, and, perhaps, the biggest leap in world history toward a sense of individual freedom.

Trucks, too, were liberating, for both consumers and entrepreneurs. Trucks deliver agricultural products to towns and cities, transport retail goods from assembly plants to department stores, and transfer household goods from one home to another.

Entrepreneurs may offer painting or plumbing services or tacos to paying customers right from their trucks, and they always have the option of growing their business by adding more trucks. Today online commerce depends on fleets of trucks of United Parcel Service (UPS), FedEx, and owner-operated trucking firms

As in the case of most new industries, a few bold entrepreneurs created the mighty US automobile manufacturing industry. These included Ransom Olds, James Packard, the Dodge brothers, and Walter Chrysler. The two greatest giants were Henry Ford, who became the best known manufacturer of anything anywhere, and Alfred P. Sloan, Jr., who built General Motors into the world's largest industrial corporation. The competition between Ford and Sloan in the 1920s and 1930s remains one of the epic stories in the history of business, and a near-perfect example of the superiority of decentralized decision making.

Henry Ford, Mass Production, and Centralized Management

Growing up in Dearborn, MI, Henry Ford (1863–1947) loved to tinker, amusing himself by taking apart watches and putting them back together. At the age of 16 he worked in a Detroit machine shop, and later he became chief engineer at an electric utility. His first two auto making companies failed, but his third one would change the world. When Ford launched his third company in 1903, other makers were building cars in small numbers of diverse and expensive models. But Ford, now a handsome, selfconfident,

fit-looking man, instructed one of his partners: “The way to make automobiles is to make one automobile like another automobile, to make them all alike,

to make them come from the factory just alike – just like one pin is like another pin when it comes from a pin factory ….” His goals were “to build a motor car for the great multitude … constructed of the best materials, by the best men to be hired, after the simplest designs that modern engineering can devise … so low in price that no man making a good salary will be unable to own one – and enjoy with his family the blessing of hours of pleasure in God’s great open spaces.” Ford’s Model T, brought out in 1908, revolutionized the industry. From that point he stopped work on all other models, and concentrated his efforts on improving the T and reducing its costs of production. A major step in Ford’s miracle of production was the refinement of the moving assembly line. By 1914 the time of assembly for a Model T chassis had dropped from 12 hours to 1. Ford’s incessant focus on improving the assembly process reduced the selling price of the Model T (originally $850 in 1908) to $290 in 1925 (the equivalent of $3,988 in 2016). That year, Ford Motor Company sold its ten millionth car.

The very standardization that made lower prices possible, however, also led to high turnover rates among the workers. By 1914, to maintain an annual workforce of 15,000, Ford had to hire 50,000. This whopping 300-percent turnover rate derived from the pressures and boredom of assembly-line work and almost complete management centralization. Ford’s response was to increase wages to $5.00 a day (twice the prevailing rate) and reduce the length of the

workday from nine hours to eight. The combined magic of the assembly line and the five-dollar day made Henry Ford famous all over the world. Indeed, by the 1920s, planners in the Soviet Union studied his techniques carefully.

Increased pay and reduced working hours did not improve shop-floor conditions, but the changes partly compensated workers for the monotony of their tasks. In the 1920s Ford went a step further and shortened the work week from six days to five, without a commensurate decrease in pay. Assembly-line production represented a dramatic contrast with the pre-industrial identification of the craftsman's product with his personal pride and sense of self. Paradoxically, the ownership of a car by those who assembled them offered an offsetting sense of autonomy. Ford wanted his employees to be able to buy one of his cars, and many thousands of them did.

But it was Ford's overbearing centralized management style that undermined his attempts to humanize the factory experiment. Perhaps no one has so clearly and insightfully analyzed this aspect of Ford's system as did Upton Sinclair in his novel,

The Flivver King: A Story of Ford-America (1937). In it, Sinclair recognizes the good in Henry Ford, as well as why so many followed him, but he also shows clearly that Ford never understood how truly debilitating working in his assembly plants was; never understood why workers rejected his attempts to force them to follow his values (na infamous undercover police force spied on the workers' private lives); and never understood why those who worked in the plant wanted to join a union.

This myopia also shaped Henry Ford's business strategies. Ford held to two basic principles: he would produce high-quality cars and sell them as inexpensively as possible. He liked to assert that every dollar he could chop off the price of a Model T would attract at least a thousand new buyers. Many customers, he said in 1916, "willpay $360 for a car who would not pay $440. We had in round numbers 500,000 buyers of cars on the $440 basis, and I figure that on the $360 basis we can increase the sales to possibly 800,000 cars for the year – less profit on each car, but more cars, more employment of labor, and in the end we get all the total profit we ought to make."

Although Ford was one of the richest men in the world, remarks such as these appealed to everyday people, who seemed to admire and trust him as the embodiment of the common man, somebody much like themselves. The Ford Motor Company courted journalists, and Henry was always good copy. Thus, it is not surprising that it was often said that Ford's fortune of more than a billion dollars had been earned "cleanly," unlike the wealth of "robber barons" such as John D. Rockefeller and Andrew Carnegie. Ford himself made no secret of his disdain for some of the trappings of capitalism. He spoke harshly of "financeering."

He detested stockholders, whom he described as "parasites." In 1919, to rid himself of any stockholder influence, Ford bought up all the outstanding shares of his company and took it private. This was a profound and ominous step. At a single stroke, it put the gigantic Ford Motor Company under the absolute control of one erratic "Genius Ignoramus," as biographer David Lewis calls Ford. The centralization of management had now become total. A short time later Ford forced his dealers to buy his cars with cash, which caused many of them to borrow money from banks. So much for hatred of "financeering." And at just that moment, Ford's company was about to confront a formidable competitor, the emerging General Motors Corporation.

Alfred P. Sloan, Jr. and Decentralized Management

The man who became Henry Ford's great rival grew up a city boy in New Haven, CT, for the first ten years of his life. Alfred Sloan's (1875–1966) prosperous Merchant father moved the family to Brooklyn in the mid-1880s, and Sloan achieved a splendid academic record at Brooklyn Polytechnic Institute, where he studied electrical engineering. Working "every possible minute, so that I might be graduated a year ahead," he finished his degree at the Massachusetts Institute of Technology in three years. When Sloan graduated from college in 1895 ("I was thin as a rail, young and unimpressive"), he took a job at the Hyatt Roller Bearing Company, a small New Jersey firm with 25 employees and $2,000 in monthly sales. Sloan's father helped finance the firm's survival in hard times,

and then its expansion. Sloan came to know the car industry well as Hyatt marketed its products to more and more manufacturers. He sold roller bearings to Ransom Olds and William C. Durant, and his best customer was Henry Ford. “Blue-eyed Billy” Durant, a business visionary, had put together the General Motors Corporation in 1908, the same year the Model T first appeared. A wheeler-dealer, Durant enjoyed buying and selling whole companies. General Motors continued to grow, but it remained a loose group of separate firms that often competed with one another! Buick, the best of the lot, made money that Durant then dissipated among the less successful companies. Buick’s leaders, Charles Nash and Walter Chrysler, became so angry with this mismanagement that they walked away and set up their own auto firms. Alfred Sloan summed up the problem: “Mr. Durant was a great man with a great weakness – he could create but he could not administer.”

Still, Durant envisioned what others had not: the car industry’s future lay in combining within one big firm all the diverse elements involved in the production of cars: engine and parts manufacturers, chassis works, body companies, and assemblers. Only through this kind of “vertical integration,” bringing togethervall manufacturing and assembly steps from raw materials to finished product, could a reliable flow of mass-produced output bevachieved. Exploiting these economies of scale would increase output and lower the cost of each car. Durant and Ford, then, held similar obsessive commitments to vertical integration. While Ford developed them from within his firm, Durant did so by buying related companies and integrating them into General Motors. Hyatt Roller Bearing was a company Durant wanted to include in a group of accessory firms, which he called United Motors. By 1916 Hyatt had grown into a prosperous enterprise with 4,000 employees, and Sloan and his family now owned most of the company.

Durant paid $13.5 million (the equivalent of almost $300 million in 2016) for Hyatt and named Alfred Sloan president of United. Two years later Durant merged United Motors into General Motors and made Sloan a vice-president and member of the GM Executive Committee. A stockholders’ revolt in 1920 forced Durant out. Pierre du Pont, a major investor in GM and one of the shrewdest business executives in the country, assumed the GM presidency and made Sloan his chief assistant.

Forty-five years old and at the peak of his abilities, Sloan faced daunting problems. Internally, GM remained an organizational mess, and Durant's maneuvers had put the firm in bad financial shape. Externally, and worst of all, the economic depression of 1920–1921 was threatening to kill the company. As Sloan later wrote, "The automobile market had nearly vanished and with it our income." With some difficulty, GM weathered the short depression, and in 1923 Sloan became president of the entire firm. He turned out to be a very different kind of businessman from either Bill Durant or Henry Ford. Whereas Durant and Ford wooed the press and welcomed media coverage, Sloan shunned personal publicity. He did not have much of a private life, seemingly uninterested in any subject other than the welfare of General Motors. In what is arguably one of the most brilliant performances in the history of business, Sloan proceeded to turn GM around and build it into the largest company in the world.

As a writer in Fortune described him, Sloan "displays an almost inhuman detachment from personalities [but] a human and infectious enthusiasm for the facts. Never, in committee or out, does he give an order in the ordinary sense, saying, 'I want you to do this.' Rather he reviews the data and then sells an idea, pointing out, 'Here is what could be done.' Brought to consider the facts in open discussion, all men, he feels, are on an equal footing. Management is no longer a matter of taking orders, but of taking counsel." Unlike Henry Ford, Sloan valued the contributions of the many supervisors

to whom he delegated major responsibilities. An associate compared Sloan's style to the roller bearings he once sold: "selflubricating,smooth, eliminates friction and carries the load." By rejecting selfaggrandizement and empowering his junior associates, Sloan led General Motors to a very advantageous position.

General Motors Versus the Ford Motor Company: The Triumph of Decentralized Management

At the time Henry Ford took his company private, he also embarked on an expensive construction project at his River Rouge manufacturing complex near

Detroit. These costs, coupled with the recession of 1920–1921 and Ford's dislike of banks, led him to force his dealers to buy his cars with cash. In contrast, Alfred Sloan established a subsidiary of GM called General Motors Acceptance Corporation. This financial agency enabled GM dealers to finance bulk purchases and customers to buy cars and trucks on credit. The use of the installment plan (which Ford never embraced) empowered consumers and entrepreneurs alike. And it helped GM weather the recession. Among other ways in which Sloan out-managed Ford in the 1920s and 1930s, he recognized that a fast-changing situation in the automobile industry demanded more sophisticated management:

There was no awareness of the used-car market. There were no statistics on the different cars' market penetration; no one kept track of registrations. Production schedules, therefore, were set with no real relationship to final demand. Our products had no planned relation to one another or to the market.

The concept of a line of products to meet the full challenge of the market place had not been thought of. The annual model change as we know it today was still far in the future. The quality of the products was sometimes good, sometimes bad.

Well before Henry Ford, Sloan saw that the industry was becoming a trade-in business. Eventually, used cars would account for three units out of every four sold. Additionally, Sloan realized that Americans viewed the purchase of their cars as status symbols of their progress up the income scale. He responded by diversifying GM's product line, starting with Chevrolet, which was designed to compete with Ford's Model T. At progressively higher prices to imply higher social status, GM created Pontiac, Oldsmobile, Buick, and at the top, Cadillac. Its advertising touted "a car for every purse and purpose." Significantly, by the mid-1920s, GM's cars and trucks equaled and sometimes surpassed Ford's in styling, basic engineering, and production qualities.

Henry Ford stuck to his simpler approach: building a better version of one car in one color (black) and continually cutting costs. While successful in the early years, this strategy wilted in the relentlessly changing market of the 1920s and 1930s. In 1921 Ford's share of the domestic market stood at 56 percent; by 1925 it had dropped to 40 percent. Meanwhile, GM soared from13 percent to 20 percent. In 1929 each firm produced 1.5 million cars. By 1937 GM's market share

had shot up to 42 percent while Ford's slumped to 21 percent. Meanwhile, the Chrysler Corporation took over second place with 25 percent of the market. Ford resisted the changes of the new economy of the 1920s.

He was slow to respond to consumer demand for "closed cars" that protected riders from the elements, for different styles in different colors, and for annual model changes. After shutting down the River Rouge plant for nearly a year to retool, Ford finally produced the Model A in 1928. While it was clearly superior to the Model T, it was only one model. A second model produced in 1929, the Lincoln, did not compete effectively with Cadillac.

Only in 1933 did Ford begin to bring out yearly models, and not until 1938 did the firm offer a new mid-sized car (the Mercury) toc ompete with GM's higher-income lines of Pontiac, Oldsmobile, and Buick.

Internally, chaos reigned at Ford Motor Company. Information flows grew confused and irregular. Managers could not seem to identify problems or pinpoint responsibilities. Budgeting procedures fell so far behind that overburdened accountants actually began using scales to weigh piles of invoices rather than add up the numbers written on each sheet. The company had become a victim of its own success: It had grown too large to manage in the way Henry Ford insisted on managing it.

Not surprisingly, Ford's once-stellar management team disintegrated. Long before turning 70 in 1933 Henry Ford had become a rigid, peevish, and arbitrary chief executive. His autocratic management style pushed young executives out, and na emerging commitment to decentralized management at GM and a few other companies drew them to other opportunities. What saved the Ford Motor Company from going under completely in the 1930s were the brand name and its high quality of manufacturing, as well as the fact that Sloan purposely kept GM's share of the market under 45 percent in order to avoid anticipated antitrust action.

While Sloan developed engineering and marketing strategies to meet the demands of the new consumer economy, he would not have been successful without forging a better management structure to implement them. The tradition

in business before the 1920s was to organize a large firm not according to its products, but according to just three functions: purchasing of raw materials, manufacturing, and selling. The executives who oversaw these functions had responsibility for all of the company's products, no matter how many or diverse they were. When things went wrong with a product under such a system, it was impossible to pinpoint how to respond.

In answer to the demands of the new consumer economy of the 1920s, Sloan devised the decentralized, multidivisional management structure. Consumer choices led to the diversification of product lines, which led to the creation of separate product divisions, each one headed by a semi-autonomous chief executive. Each executive had "bottomline responsibility" for the operation of his division. This meant that he oversaw purchasing, manufacturing and marketing of the division's product.

The idea of having semi-autonomous product divisions within one big company sounds simple today, as does the idea of an assembly line. But in the 1920s it was na intelectual breakthrough of the first order, and it took Sloan some time to work out the particulars.

Years later, he realized that the puzzle of centralization versus decentralization "is the crux of the matter," and "interaction … is the thing." Centralization had to be mixed with decentralization in order for the firm to prosper.

The multidivisional structure made such a mixture possible. Among its other virtues, the new structure in effect turned a large company into groups of smaller-scale entities. It provided incentives for numerous managers to work together in a spirit of cooperation as they moved up the corporate ladder. Sloan fostered this behavior when he established cross-divisional committees, and made sure that executives served on several of them at one time. This ensured that important decision makers communicated with one another and helped reconcile the goals of "decentralization with coordinated control." Coordinated control came primarily through financial reporting and capital allocations. Sloan worked hard on these issues, and GM soon became one of the most sophisticated of all American companies in its use of budget targets and financial ratios such as inventory turnover, fixed versus variable costs, and profit as a percentage of sales. This

was difficult to pull off, and GM did not always do it well. Managers made continual adjustments along the production lines based on what the numbers were telling top executives at headquarters. Sloan summed it up:

"From decentralization we get initiative, responsibility, development of personnel, decisions closest to the facts, flexibility. …From co-ordination we get efficiencies and economies. It must be apparent that coordinated decentralization is not an easy concept to apply."

For one thing, "first-mover advantages" that Ford enjoyed, while powerful, do not ensure permanent supremacy. The market punishes those who will not or cannot adapt. Henry Ford understood part of the relentlessness of change, particularly the creative destruction on the manufacturing side.

"Not a single item of equipment can be regarded as permanent," he wrote. "Not even the site can be taken as fixed. We abandoned our Highland Park plant – which was in its day the largest automobile plant in the world – and moved to the River Rouge plant because in the new plant there could be less handling of materials and consequently a saving. We frequently scrap whole divisions of our business – and as a routine affair."

Ford, however, did not translate this insight to marketing. He refused to see that marketing, in every aspect from product policy to styling to advertising to sales, is as important to success as is manufacturing. He had little respect for the tastes of. consumers, whom he (correctly) regarded as fickle. Ford thought he knew what they needed. He could not bring himself to admit that in a market economy the consumerreally does reign supreme, and that for an organization to act otherwise is to invite disaster.

The car wars also reveal that in the modern economy how decision making takes place looms as a key to continued success. If all decisions are made at the top of the organization, as they were at Ford, then sooner or later two things will happen. First, the quality of decision making will deteriorate as the business grows larger. There is too much to know and much of that is changing constantly. Second, employees not directly in touch with the process of decision making will

grow bored with routine, their potential contributions lost to the organization. Just moving decision making down the organizational chart is not the answer, however, for such a course will lead to faltering cooperation and anarchy.

The car wars, then, reveal that the pivotal challenge of modern management lies in finding the right balance between centralization and decentralization, and in continually adjusting the mix in response to changing circumstances. Fixing the decision making at the point at which the best information is available requires the right design of the organization. And the answer for GM in the 1920s and 1930s, and after World War II for thousands of other firms, was the multidivisional, decentralized management organization.

Text 8

Barry Eichengreen, ***Institutional prerequisites for economic growth: Europe after World War II***

Introduction

The quarter century that ended around 1973 was for Western Europe a golden age of economic growth. Real GDP rose nearly twice as rapidly as over any comparable period before or since.[4] Understanding the sources of this admirable performance would shed important light on the causes of the growth slowdown through which Europe has suffered subsequently.

Part of the explanation is surely ·catch-up', as Abramovitz (1986) emphasized. The gaps that had opened up vis-à-vis both the United States and Europe's own prewar trend as a result of two decades of depression and war offered considerable scope for rapid growth after 1945. But cross-section regressions relating growth rates to per capita GDP differentials show that catch-up explains only part of the acceleration: purged of catch-up, growth from 1950 through 1973 was still more than 50 percent faster than subsequently.[5] And even insofar as catch-up is the explanation, understand- ing what enabled post-World War II Western Europe to so effectively exploit the opportunity for catch-up can have important implications for countries in Eastern Europe and the developing world currently seeking to join the 'convergence club'.

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[4] The unweighted average of the annualized growth rate of GDP per hour worked for 8 European countries was 4.4 percent in 1950-73 but only 2.4 percent in 1922-37 and 2.1 percent in 1973-88. Calculated from Crafts (l992). Maddison (1991, Table l) and Boltho (1982, Table 1.l).

[5] Crafts (1992) presents calculations of the growth bonus due to catch-up vis-à-vis the U.S. and 'spring-back' to prewar levels for the same 8 European countries, finding that purged of catch-up and spring-back, growth rates decelerated from 3. l percent in 1950-73 to l.9 percent in l979-88.

Aside from catch-up, the proximate cause of postwar Europe's growth miracle was high investment. European investment rates were nearly twice as high in the 1950s and 1960s as either before or after.[6] Regressions for Maddison's 16 advanced countries suggest that an extra 10 points on the investment rate translate into upwards of half a point on the growth rate.[7] Together with catch-up, this gets us a long way toward 'explaining', in an accounting sense, the rapid growth of the period.

Two things then remain to be understood: what made high investment rates possible, and what made the investment so productive? This directs our attention to the other elements of the postwar growth recipe: wage mode- ration and export growth. Wage moderation stimulated both the supply and demand for investment - demand by making investment profitable, supply by making available the profits to finance it. The openness of European economies and the growth of their exports, due mainly to the expansion of intra-European trade, allowed investment to be allocated to the sectors where its productivity was highest. Nations could exploit their comparative advantage, in other words, without being constrained by the composition of domestic demand (Bhagwati, 1988).

Having stripped another layer off the onion, what must next be explained is wage moderation and the growth of trade. Both were exceptional achievements by the standards of the interwar period, when exports stagnated and wage pressure was intense.[8] A simple explanation for the contrast is that post-WWII policy-makers and market participants learned from the disasters of the interwar years and determined not to repeat them. But the desire for a better outcome may not suffice; mechanisms are required to achieve it. The mechanisms created in post-WWII Europe to secure rapid economic growth were a new set of domestic and international institutions.

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[6] The estimates of Maddison (1976) show the investment rate in Western Europe rising from 9.6 percent in 1920-38 to 16.8 percent in 1950-70.

[7] See for example Crafts (1992, Table 2).

[8] Broadberry (1993) shows that wage pressure was more intense before than after World War II.

Domestic institutions

Van der Ploeg (1987) analyzes growth and distribution in a model of capital and labor.[9] Welfare is maximized when capitalists and workers both defer current compensation in order to reap future gains. Workers moderate their wage demands in order to make profits available to industry. Capitalists restrain dividend payout in order to reinvest those profits. More investment stimulates growth, raising the future incomes of both capitalists and workers. In the cooperative equilibrium in which both workers and capitalists exercise restraint, the costs of foregoing current consumption are dominated by the benefits of the induced increase in future incomes.

But this cooperative equilibrium may be impossible to sustain, for the sequencing of events introduces a time-inconsistency problem. Workers must move first, restraining wages now in order to make profits available to capitalists for reinvestment later. But once the wage restraint has occurred, capitalists are even better off if they renege on their agreement to invest the profits, paying them out as dividends instead. Since investment is no higher than if workers had failed to moderate their wage demands, they have no incentive to be moderate. In this Nash equilibrium, workers pursue wage increases, management pays out profits as dividends, and investment and growth are depressed. Van der Ploeg shows how a contract that binds capitalists to invest profits also induces workers to exercise wage restraint - in other words, how it overcomes the problem of dynamic inconsistency - rendering them both better off.

In post-WWII Western Europe, institutions were created to enforce this implicit contract and eliminate the time-inconsistency problem.[10]

[9] A similar model. whose precise specification is somewhat more remote to the problem considered here, is Grout (1984).

[10] The notion that institutions can be used to create a credible commitment is prominent in the work of North and Weingast, among others. See for example North (1993) and North and Weingast (1989).

One set of institutions monitored compliance and disseminated evidence of noncooperative behavior; by reducing the likelihood that shirking on the agreement would go undetected, this reduced the returns to doing so. Workers were allowed to participate in a growing range of management decisions. Unions and employer associations were encouraged to exchange information on wage and investment decisions through government-sanctioned peak associations. The representation of labor unions on advisory and administrative committees of industry and government was made obligatory.

Many examples of these new post-WWII developments could be cited. In France, for example, labor-management plant committees (comités d'entre- prise) were established in the late 1940s. Their existence was required by law for all enterprises employing 50 or more workers, and they possessed consultative powers over production and investment decisions (Lorwin, 1954). In Germany, work-place codetermination, giving labor input into the formulation of firms' investment strategies, was adopted as a national model.[11] Even in Britain, not renowned for labor/management harmony, the tripartism of World War II (regular consultation between labor, management and government) survived into the postwar period, with the Trades Union Congress cooperating with management and government (Flanagan et al., 1983).

A second set of institutions helped to lock in the bargain by creating "bonds' that would be lost in the event of reneging.[12] Workers were extended public programs of support for the unemployed, the ill and the aged. Capitalists were provided limited forms of industrial support (selective investment subsidies, price-maintenance schemes, orderly marketing agreements) for sectors that would have otherwise experienced competitive difficulties. Schedules limiting rates of profit taxation were adopted in return for capitalists plowing back earnings into investment (Middlemas, 1986). This web of interlocking agreements - what can be

[11] McCain (1989) provides a model of codetermination as a solution to a game between labor and management, where cooperation leads to higher investment.

[12] On bonding see Schelling (1960).

called, for want of a better name, the 'social market economy' - functioned as an institutional exit barrier. As a commitment technology it increased the cost of reneging on the sequence of concessions and positive actions that fueled the postwar growth boom. It delivered the wage moderation and high investment that was the basis of the golden age.

International institutions

For deferring consumption to be worthwhile, investment had to be productive. To put it another way, for investment to stimulate growth, there had to be a market for the goods produced by domestic industries whose capacity was augmented and whose efficiency was enhanced. Here the expansion of trade was key. International trade, and intra-European trade in particular, allowed countries to specialize in the production of goods in which they had a comparative advantage without regard to any limits on the demand for those products existing at home.

But the expansion of trade created further coordination and commitment problems. Restructuring the economy along export-oriented lines was costly. Sinking the costs of reallocating resources along lines of comparative advantage could turn out to be an expensive mistake if one's trading partners reneged on their commitment to openness. Thus, before reorienting policy in this direction, governments had to be convinced that their partners' commitment to openness was permanent.

This problem of collective action, though relevant to all European countries, was particularly pressing in the case of Germany. Other countries were especially skeptical of its commitment to openness, given memories of the Schachtian policies of the 1930s and the second world war (Berger and Ritschl, 1993). Germany had been the continent's dominant supplier of capital goods and the single largest demander of raw materials produced by other European countries. Institutions which rendered credible Germany's commitment to intra-European trade could therefore go a long way toward reconstituting traditiona1 patterns of comparative advantage and toward curing the dollar shortage (the

balance-of-payments deficits of European countries vis-à-vis the U.S., due mainly to their excess demand for capital goods).

A solution to these commitment and coordination problems was provided by the European Payments Union (EPU) and the European Coal and Steel Community (ECSC). As a condition for participating in the payments union, countries agreed to a schedule of intra-European trade liberalization. By February 1951, less than a year after the EPU went into effect. all existing trade measures were to be applied equally to imports from all member countries. Participants were required to reduce trade barriers by one half initially, and then by 60 and 75 percent. The share of quota-free intra- European trade was to rise to 90 percent by the beginning of 1955. Countries failing to comply with this schedule or employing policies to manipulate the terms or volume of trade in undesirable ways could expect to be denied access to EPU credits.

Operating the EPU required creating a set of institutions (the Organization for European Economic Cooperation, which worked in tandem with the Bank for International Settlements) to monitor compliance and impose sanctions. Not incidentally, U.S. Marshall Plan administrators supported the EPU, providing $350 million of working capital to finance its operation.

Drawings on the system were embedded in a mechanism minimizing the likelihood that a country could use EPU credits to exploit its partners by remaining in persistent deficit. No conditions were attached to a country's drawings on its quota of 15 percent of its intra-EPU trade. But additional credits could be obtained only if a country agreed to conditions set down by the EPU's Managing Board. Officials of governments receiving exceptional credits were required to appear at the monthly meeting of the Board for questioning and to submit memoranda regarding their progress. That Europe and the EPU depended on Marshall aid reduced the likelihood that a debtor would renege on its agreement with the Managing Board and fail to take corrective action to eliminate its deficit.

For those concerned to construct a commitment technology, the EPU was preferable to unilateral current-account convertibility, the other

basis on which postwar Europe's trade might have been rebuilt. Convertibility was not technically infeasible, but, as a unilateral policy, it was too easy to reverse (Eichengreen, 1993a). It lacked the multilateral surveillance and conditionality that rendered the EPU an effective institutional barrier to exit.[13]

The ECSC further enhanced the credibility of Germany's commitment to openness by ensuring the French steel industry access to the German coal that was indispensable to its survival and by providing German steel producers guaranteed access to French iron ore. Coal and steel were viewed, rightly or wrongly, as essential to national security and to the rehabilitation of Europe's industrial base. The ECSC banned price discrimination between domestic and foreign customers and established a joint High Authority to monitor compliance with the terms of the agreement. As Gillingham (1993) puts it, the ECSC 'was based on a new idea, supranationality. Membership required transference of sovereign powers to a new European authority'. It is hard to imagine a more effective barrier to exit.

The EPU and the ECSC were just two of the international agreements committing countries to free international trade. Complementary initiatives included the Bretton Woods institutions and the GATT. But the EPU and the ECSC were specially tailored to Europe's needs; they ensured that the experience of the post-WWI period, when the commitment to openness proved ephemeral, was not repeated.

Conclusion

[13] Some might argue that IMF conditionality could have provided an effective substitute. But the Fund's failure to prevent France from adopting multiple exchange rates in the late 'forties or Canada from resorting to floating in the 'fifties raises questions about the effectiveness of IMF sanctions.

European economic growth in the quarter of a century that ended in 1973 outstripped growth in any period of comparable length before or since. The elements of Europe's growth miracle - wage moderation, high investment and rapid export growth - were delivered by a tailor-made set of domestic and international arrangements - on the domestic side the social market economy, on the external side international agreements and supranational institutions - that solved problems of commitment and cooperation that would have otherwise hindered the resumption of growth.

Why then did growth slow after 1971? One possibility is that Europe's postwar institutions eventually succumbed to problems of capture: as emphasized by Olson (1982), special interest groups may have learned over time to manipulate their operation in ways that hampered the efficiency of resource allocation. Other prerequisites for wage moderation, from elastic labor supplies (Postan, l964 Kindleberger, 1965) to the stabilizing influence on price expectations of the Bretton Woods monetary anchor (Eichengreen, 1993b), progressively weakened. Eventually, the institutional framework for European economic growth constructed after the war ceased to function.