A hesitant evolution: industrialisation and de-industrialisation in Greece over the long run

Louri, Helen and Pepelasis Minoglou, Ioanna

Athens University of Economics and Business

2002

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Helen Louri - Ioanna Pepelasis Minoglou

Athens University of Economics and Business

In the late 1860s a poverty-ridden Greece was experiencing a brief industrial upsurge. Over a century later, in the second half of the 1970s, and by then a middle-income economy, Greece entered a phase of de-industrialisation. Scholars have presented the historical trajectory of Greek industry in a fragmented manner.[2] This paper is an attempt to examine the unfolding of Greek industrialisation and de-industrialisation from a long-run perspective.

Undoubtedly, industrialisation is a complex process. It entails transformations of an economic nature, and sometimes is analysed in socio-cultural and political terms.[3] For the purpose of this study, which is cast in the tradition of 'stylized facts', the term industrialisation is employed in the 'narrow sense' of a rising trend in the share of manufacturing output in GDP. It is juxtaposed to de-industrialisation, i.e. a fall in the same share.

For the first time in the case of Greece an analysis focuses on the shifts in the composition of GDP from 1867 up to 1994.[4] In specific

[1] We wish to thank Lewis Fischer, Theodore Lianos, Colin M. Lewis and George Kostelenos for their comments. Earlier versions of this paper were presented at the annual Economic History and Development Group Conference, SOAS; European Studies Centre, St. Antony's College University of Oxford; and the European Business History Association. 1998 Conference, ISCIM, Terni.

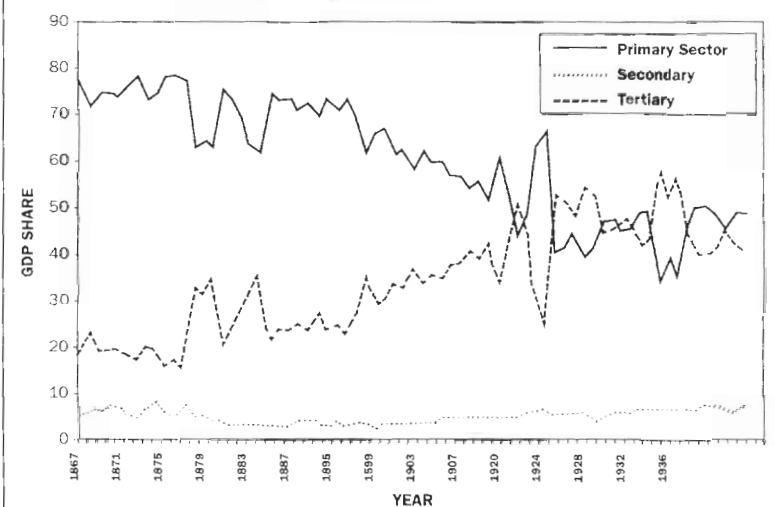
[2] For the nineteenth century see: Agriantoni,1986; Dertilis, 1984. For the first half of the XXth century see: Tsotsoros,1993; Hadziiossif,1993; Dritsas, 1993. For the second half see: Vaitsos and Yiannitsis, 1987; Kintis,1982. The only study to run from the nineteenth to the twentieth century is that of Hadziiossif, 1993, which goes up to the 1940s.

[3] O'Brien, 1998 p. iii

terms, the trends in the share of manufacturing and industrial output in GDP (depending on the time period and data available) are examined in relation to the changes over time in: the composition of manufacturing; the export-import (henceforth X/M) ratio; and per capita GDP. For the post-WWII era the trends in labour productivity are charted as well.

This long-run historical survey contributes to a fuller understanding of the Greek industrialisation process. In the first place, it reveals that the main shifts over the last hundred and thirty years in the composition of GDP occurred outside industry: Graphs 1 and 2 show that the

GRAPH 1 - GDP shares, 1867-1938



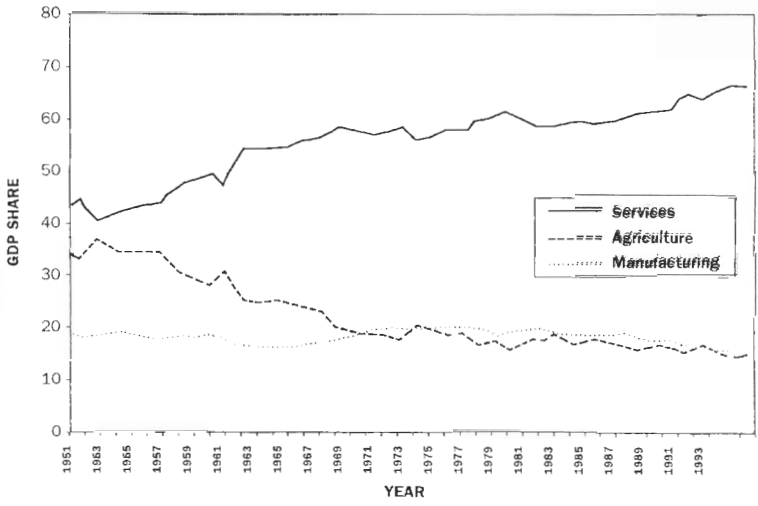
Source: G. Kostelenos, (1995). *Money and Output in Modern Greece: 1835-1938*, (Athens, Center for Planning and Economic Research).

* The years 1867/8 mark the opening of a brief industrial upsurge. For the years after 1994 any analysis would at this stage be problematic as there are still gaps in the data. In addition, there is the problem that the National Statistical Service of Greece has thereafter drastically changed its data classification methods and the manner in which GDP structure is presented.

downward trend in the share of agriculture in GDP was largely counterbalanced by the upward trend in the share of services. Evidently, before de-industrialisation started, manufacturing industry increased its share in GDP, but this movement was not strong enough for industrial 'maturity' to be attained.[5] This is probably the most distinctive characteristic of the Greek case.

Second, this long-run survey reveals that industrial expansion transpired into industrialisation, (i.e. an upward rising trend in the share of manufacturing output in GDP), during 1922-1938/9 and 1965-1974. Neither of these two industrialisation phases consisted of an abrupt discontinuity, i.e., a quick and deep transformation. Pointedly, de-industrialisation (1975/7-1994) was likewise 'hesitant' in that there was no marked fall in the share of manufacturing. The smoothness of the

GRAPH 2 - GDP shares 1950-1994



Source: National Statistical Service of Greece (1954-1996), *Statistical Yearbooks*, Athens

[5] By industrial maturity we mean the all-time peak of the share of manufacturing industry in GDP (and total employment) attained by the advanced capitalist economies. Rowthorn and Wells, 1987 pp. 207-213.

slope of the curve depicting the trend in the share of manufacturing in GDP (Graphs 1 and 2) is remarkable in face of the tumultuous events and changes in Greek society and economic life, such as successive territorial expansions, irredentist upheavals, wars and sudden refugee influx.[6]

The third contribution is the detection of a positive relationship between industrialisation and modern economic growth as defined by Simon Kuznets.[7] In specific terms, the rise in the share of manufacturing in GDP was closely associated with increasing per capita incomes, rising trends in the rate of growth of technology-intensive branches within manufacturing industry, and an improvement in the X/M ratio.[8] This pattern characterised both industrialisation phases (1922-1938/9 and 1965-1974).

The findings of this study will possibly make it easier to place the Greek case in the international context and to develop a persuasive explanation of why Greece never fully completed the transition from a backward mercantile/agricultural economy to an advanced capitalist economy.

Section 1 summarises the 'theoretical' background to the study of industrialisation and de-industrialisation. Section 2 delineates the trajectory of Greek manufacturing industry from the brief upward surge of the 1860s and throughout the first industrialisation phase (1922-1938/9). Section 3 addresses in a broad manner the problems posed by the statistical break in National Accounts between 1938 and 1951. Section 4 discusses the second industrialisation phase (1965-1974). Section 5 outlines the main features of de-industrialisation (1975/7-1994). Here, as in Sections 2 and 4 the trends in manufacturing are

[6] Clogg, 1994.

[7] Modern economic growth as defined by Simon Kuznets being a process characterised by a [sustained] rate of growth in per capita income ranging mostly from about 10% to over 20% per decade and structural change. Kuznets, 1976, p.18; Kuznets, *et al.*, 1955, p.1. See also: Jones, 1993, pp. 29-30.

[8] By technology-intensive branches specifically is meant: machinery, chemicals and metallurgy. Among the low technology branches, specifically we refer to food, beverages, tobacco and tanning. For the period before WWII we consider textiles as belonging to the first group, whereas after WWII we have classified them in the second group.

delineated within the wider context of the exogenous circumstantial changes (mainly economic policy). Section 6 places Greece in an international context. And last, Section 7 makes a synopsis of the contribution of this study to the relevant literature and suggests questions for further research.

At the outset, it should be underlined that the charting of the long-term trends of Greek industry is not an easy task. Different types of data are available for each period, with varying degrees of reliability and continuity.[9] In addition there are difficulties relating to semantics. In Greek statistical data the term industry was narrower than the Kuznetian definition;[10] and has been 'everchanging'. In the pre-WWII period the term was meant to be manufacturing plus electricity. Whereas, in the post WWII statistics, industry consisted of manufacturing, mining and energy. To avoid frequent changes and possible misunderstandings, our main focus in this study (depending on data availability) is the relative role of manufacturing and its main co-determinants.

1. Industrialisation and De-Industrialisation in the Literature

The themes of industrialisation and de-industrialisation have been approached from various perspectives. The interest in industrialisation

[9] Prior to WWII the available data are: (i) the 'industrial' censuses which were undertaken irregularly (see Mansolas,1876: *Economic Yearbooks 1929, 1939);* (ii) the index of industrial output compiled by the Supreme Economic Council for the interwar period *(Economic Yearbook, 1939);* and (iii) the recently available information on the secondary sector available in the retrospective National Account estimates compiled by George C.Kostelenos. (1995*)*. Between 1938 and 1951 there is a statistical break: the only available data for industry is the industrial production index compiled in the early 1950s by the Bank of Greece and the Association of Greek Industrialists (Candilis,1968*)*. From 1951 onwards new statistical methods were introduced. The most reliable source (with details for industry and in specific manufacturing) is the National Statistical series (*Statistical Yearbooks of Greece: 1955-1994)*.

[10] According to the classical definition of industry as given by Simon Kuznets, industry is supposed to consist of: mining, manufacturing, construction, power and light utilities, transportation and communications. Kuznets,1976, p. 86. Contemporary Greek scholars who have written on industry have adopted a similar conceptual framework to that of the Greek National Statistical Service, i.e. industry is defined as manufacturing, mining and energy.

has been particularly long-standing and keen, as it is considered the leading sector in modern economic growth.[11] It has been associated with rising per capita incomes[12] and a structural transformation of the economy, whereby societies devote more and more of their resources and labour to the production of non-agricultural commodities and services. But, beyond these fundamental and somewhat 'invariant' elements, a general theory or an agreed typology of industrialisation has as yet failed to emerge.[13] Over the years, scholars have increasingly emphasized that industrialisation as a historical process involves institutional and non-economic variables; that it is complex and defies a single-cause explanation; and that it is marked by variations across countries.[14]

The term 'de-industrialisation' first originated with the later dependency literature and associated explorations on proto-industrialisation. It was employed to signal absolute contraction in industrial output and an aborting of a 'natural' growth trajectory. Usually this process was associated with 'imperialism' and the forced opening of economies (such as India), hence the aborting of a natural growth trajectory. More recently, the term has been used by neo-structuralists and neo-marxists to describe the consequences of imposed neo-liberal policies in Eastern Europe, Asia and Latin America.[15]

Within the economics literature, de-industrialisation is discussed in reference to advanced economies. In the analysis the emphasis is on relative shares and not absolute values. Thus, de-industrialisation is defined as a decrease in the relative importance of manufacturing (as exemplified in a continuing downward trend in the share of

[11] O'Brien, 1998, p. xliii; Kuznets, et al 1955, p.15, Kuznets, 1976, p.158.

[12] Although here the direction of causation is not always clear, the rise in the share of manufacturing in GDP being " both a cause and an effect of rising income". Chenery, 1981, p.70.

[13] The discourse is ongoing, and continuously new approaches are explored: Mori, 1979, pp. 61-82; Cameron, 1985, pp. 1-23; Foreman-Peck, 1995, pp. 441-479; Sylla and Toniolo, 1992, pp. 1-26; Mihci, 1998, pp.557-575.

[14] North, 1981, pp.158-170; Jones, 1993, pp.29-30; Pollard, 1995, pp.viii-ix; Landes, 1998, pp.186-199; Gerschenkron, 1998, pp. 218-238; Chenery, 1979, pp. 90-108; Chenery and Syrquin, 1975, pp.1-45; O'Brien, 1998, p.xxvi; O'Brien, *1986*, pp.464-495.

[15] Lamb, 1955,pp.464-495; Tomlinson, 1996,pp.101-104; Moosvi, 1994, pp.49-59.

manufacturing in total employment and/or GDP). De-industrialisation can occur in a variety of ways. It has been argued that falling shares of manufacturing output may be related to autonomous developments regarding changes in the structure of a country's foreign trade causing services to account for a larger share in GDP (Specialization Hypothesis). Or, de-industrialisation may be a symptom of industrial failure in which case it is associated with a general slowdown in economic development (Failure Hypothesis).[16] A third 'pattern' is that de-industrialisation need not be a symptom of economic decline, and that it can be the normal outcome of a successful mature economy. According to this explanation, once a certain per capita GDP is reached, the share of manufacturing product increases, but following growing productivity, manufacturing employment falls (Maturity Hypothesis). Given the spread of de-industrialisation internationally and the variety of forms it can take, the study of this phenomenon is likely to lead to a lively debate in the international literature in the coming years, as has been the case with industrialisation in the past.

The ongoing theoretical discourses underscore the need for extending the scope of empirical historical research. Perhaps one of the areas where theory and the history of industrialisation/de-industrializaton may find a fruitful meeting ground is the study of long-term trends, such as the one that follows.

2. Early Industrialisation Trends

An industrial 'spurt' appeared some thirty-five years after Greece became a nation state. In less than a decade (i.e. between 1867 and 1875), the total horsepower of industrial establishments starting from an almost 'zero' base (i.e. 296 hp) reached some 1,890 hp.[17] Recently composed retrospective GDP estimations provide information on the share of the secondary sector (i.e. basically manufacturing) in GDP for the pre-WWII

[16] Cairncross, 1978, pp. 8-9; Rowthorn and Wells, 1987,pp.101-104; 213-219.
[17] The data available for industrial establishments refers in this instance to manufacturing and electricity. *Economic Yearbook 1929*, p.172.

era.[18] These estimations show that between 1867 and 1875 the share of the secondary sector in GDP rose from 5% to 8%. However, the figure of 8% was attained only in 1875, and abrupt oscillations, typical of pre-industrial societies, followed.[19] A comparison of the structure of GDP for 1867 and 1912 (the eve of the Balkan wars) reveals that the share of the secondary sector remained static at 5% of GDP. In addition, growth in real GDP per capita was restrained.[20] Nevertheless, there was some change in the economy, but it occurred outside manufacturing industry. Namely, there was a decline in the share of the primary sector in GDP from 77% in 1867, to 53% in 1912, all of this contraction going exclusively towards the enlargement of the tertiary sector (Graph 1).

Among the most important factors impeding industrialisation were the small size of the domestic market; and the low levels of literacy, capital accumulation and agricultural productivity.[21] Moreover, tariffs raised for revenue purposes allowed Greek industry to be protected from international competition, but there was no notion of an infant-industry argument and comparative advantage. Whatever positive benefit was attained from this

[18] Contemporaneous data for the pre-WWII era do not allow an exact calculation of industry as broadly defined by Kuznets. George Kostelenos in his retrospective National Accounts estimations for the pre-WWII era preferred not to use a broad definition of industry because only rather vague calculations can be made regarding the specific branches of construction, transportation and primary/primitive processing. Thus, Kostelenos refers not to industry (in the Kuznetian sense) but to the secondary sector. The secondary sector estimates of Kostelenos include manufacturing industry without primary processing. (For the years after 1914 electrical power and light utilities are also included but the latter were small branches at the time anyway. Moreover, for the years before 1914 Kostelenos allocates the tobacco industry to the primary and not the secondary sector). Kostelenos, 1995, pp.172-277.

[19] The trough years registering a 3% share for the secondary sector were five. The figure of 7% was reached on four occasions. Per decade the picture was as follows: The share of the secondary sector in GDP was 5.1 % in the 1860s, 6.2% in the 1870s, 3.4% in the 1880s, 3.9% in the 1890s and 3.7% in the first decade of the twentieth century. Kostelenos, 1995, pp. 453-455. It should be noted, however, that although the share of manufacturing industry in GDP oscillated after 1875, in absolute terms there was some expansion as the steady rise in the horsepower of industry indicates. *Economic Yearbook 1929*, p.172.

[20] Between 1866-73 and 1906-13 GDP per capita as measured in constant 1914 prices rose from 243.3 drs to 301.8 drs. Kostlenos, 1995, p.450.

[21] Haritakis, 1927, p.20, Dertilis, 1984, pp. 67-88. Some have linked backwardness to the peripheral and vulnerable position of Greece in the world economic system. See Petrakis and Panorios, 1992, pp.31-46.

primitive protectionism was erased by other government measures contributing to the shortage of supply-side factors such as capital.[22]

From 1912 and for ten years Greece was either at war or lived under the spectre of war.[23] There was a downward trend in GDP per capita in constant prices.[24] Within this general atmosphere of economic 'deprivation', the figures for the share of the secondary sector in GDP attest to a slight move in the direction of industrialisation. The share of the secondary sector increased from 5% in 1912 to 6% in 1921.[25] This 'war decade' rise has been considered to be related to a number of demand-led factors such as the procurement policy initiated by the army during the Balkan Wars (1912-1913).[26]

Following the return to peace in 1922, Greece embarked on industrialisation.[27] Between 1922 and 1938 the share of the secondary sector in GDP rose from 5% to 8% (Graph 1).[28] Industrialisation was associated with a rise in per capita GDP (which at constant 1914 prices increased over 20% between 1922 and 1938),[29] structural change, and a rising X/M ratio.

In particular, there was an impressive move towards a more diversified structure of manufacturing. Between 1921 and 1939 the share of food, tobacco, and tanning (all low technology goods) dropped from 53% to 26% of the total of manufacturing production, whereas the share of the technology-intensive branches - i.e. chemicals, machinery and textiles - increased from 36% to 56% (Table 1).

[22] Stephanides, 1938, pp.22-27; Hadziiossif, 1993, pp.271-279.

[23] At first there were the Balkan Wars, 1912-1913. Greece officially entered WWI in February 1918 and between 1919 and 1922 the country was engaged in military conflict with Turkey. Clogg, 1994, pp.81-99.

[24] GDP per capita in constant 1914 prices was 405.9 drs in 1912 and 341.8 drs in 1920. Kostelenos, 1995, pp. 458-9.

[25] In detail the trend was as follows: The share of the secondary sector jumped to 6% in 1915, it then increased to 7% in 1916 . In 1918 it fell to 6%, where it remained until 1921. See Graph 1 in the text.

[26] The 1916/1917 allied blockade and the presence of the allied forces in Macedonia from 1915 to 1918 are two other factors that were supposed to have led at the time to an increase in the size of the market for Greek industrial goods.

[27] For the increase in the horsepower of industry in the interwar years see: Dritsas, 1990, pp.126-127and *Economic Yearbook 1929*, p.172.

[28] 1922 as a result of the dislocation caused by the massive refugee influx was not a typical year. Notably, the years 1919,1920 and 1921 registered a share of 6% in GDP for manufacturing. See Graph 1 in the text.

[29] Kostelenos, 1995, pp. 451,458-9.

During this first industrialisation effort, the overall X/M ratio increased from 0.61 in 1926 to 0.67 in 1937 (Table 2). Part of the rise in the X/M ratio must have been related to the increase in the scale of protection. In 1923 there was a shift from revenue-seeking duties to deliberate import-substitution with the average tariff rate rising from 22-30% of the value of imported industrial goods to 35-40%.

More importantly some direct measures were taken to promote industry and it is possible to discern an incipient industrial policy. Subsidies were introduced for industrial investment and property rights became more defined. (For the first time patents were allowed to be registered without the provision of a guarantee and industrial trademarks were given protection).[30] In addition, certain bottlenecks were removed. Notably, Greece surpassed the 40% literacy rate threshold considered by

TABLE 1. Structure of Manufacturing Output, Interwar Years

%

	1921	1930	1935	1938
Food-Tobacco	38	22	18	19
Textiles	18	28	32	27
Tanning	15	9	8	7
Chemicals	15	13	16	21
Machinery	3	4	4	5
Metallurgy	0.5	0.5	0.5	0.5
Other	10	23	23	20
Total	100.0	100.0	100.0	100.0

Source: G. Haritakis (ed.), (1929-1939), *Economic Yearbook of Greece*, Athens.

TABLE 2. Export/Import Ratio, Interwar Years

	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937
Type of goods												
Consumer	0.76	0.70	0.75	0.82	0.88	0.78	0.95	0.97	1.05	1.15	1.03	1.01
Capital	0.03	0.02	0.15	0.02	0.13	0.04	0.21	0.05	0.05	0.02	0.02	0.17
Total	0.61	0.54	0.54	0.60	0.63	0.53	0.70	0.68	0.69	0.74	0.63	0.67

Source: G. Haritakis (ed.), (1929-1939), *Economic Yearbook of Greece*, Athens.

[30] Haritakis, pp.156-170; Tsotsoros, 1993, pp.229-253; Hadziiossif, 1993, pp.279-319. Another explanation for fast growth has been that Greece went off gold at a relatively early date. Christodoulaki, 1999, p.35.

some economists as essential to achieve the breakthrough in development.[51] Moreover, the massive 1922/23 refugee influx was a major factor in alleviating the shortage of urban labour and entrepreneurship.[52] However, serious 'institutional' obstacles continued to persist. For example, the permanence of the division of the country into regional protected markets by a national network of toll stations and communal taxes impeded the creation of a unified domestic market, contributing to the perpetuation of barter trade and self-sufficiency.[53]

In sum, industrialisation as defined by a rise in the share of manufacturing product in GDP has been a twentieth-century phenomenon in the case of Greece. At first, from 1912 onwards there was a slow move towards industrialisation. The pace soon quickened and industrialisation set in between 1922 and the eve of WWII: the share of the secondary sector in GDP increased by 60%. Industrialisation was associated with a rise in per capita GDP, the creation of a more balanced structure of manufacturing output and an improved X/M ratio.

3. From the Pre-to the Post-WW II Era

Industrialisation was disrupted by WWII and the ensuing civil war which ended in 1949. Almost all accounts of Greek industry refer either to the pre-WWII era or to the period after 1950. This compartmentalization is in part the result of a popular perception that economic history studies should be placed within the context of a specific political era; and indeed the political framework of post-WWII Greece has been markedly different to that of the previous period.[54] However, there is also from a quantitative and methodological perspective a logical basis for this compartmentalization.

There is a gap in the data for the 1940s. The retrospective GDP estimations for the pre-WWII era stop in 1938. The first post-WWII GDP figure is for 1951. The available estimate for 1938 and the figure for 1951

[51] Aldcroft and Ville, 1994, p.16 .
[52] Clogg, 1994, pp. 100-107; Stephanides, 1938, pp.27-32.
[53] Tsoukalas, 1981, p.55. Supreme Economic Council, 1940, pp.24-42.
[54] Clogg, 1994, pp.100-203; Freris, 1986, pp.36-200.

have a large difference between them, i.e. for 1938 the share of manufacturing in GDP is 8% and for 1951 it is 19.8%. How can we reconcile the 'low' pre-WWII figure with the 'high' figure for 1951? The rising share of manufacturing in GDP was in some part due to a shrinking of agriculture, brought about by the severe physical damages this sector suffered during the War. But, in large part, the difference is also related to the wider definition of manufacturing in the post 1951 National Accounts.[35]

It would be rash to assume that Greece experienced an 'Industrial Revolution' while involved in a World War and ensuing civil war, at an immense cost in physical and human capital. Pointedly, the index of 'manufacturing' production[36] - the only statistical item linking the two decades, shows that growth was non-existent between 1940 and 1950. Taking 1939 as a base year (1939=100), the index of 'manufacturing' production throughout the 1940s was lower than the base. On the basis of this index it can be suggested that at the opening of the post-WWII era, (which came late, i.e. in 1951/53)[37] the level of industrialisation was not more advanced compared to what it had been on the eve of WWII. In fact, in the case of Greece the pre- and post-WWII worlds were not separate 'entities'. As is shown below, there were basic similarities between the interwar and the post-WWII industrialisation phases.

4. Post -WWII Industrialisation

During the civil war, following WWII, most of the productive capital surviving the German occupation was destroyed.[38] Economic reconstruction was carried out under the Marshall Plan (1947-1952).

[35] As mentioned in note 18 above the recently available National Accounts estimates on the pre-WWII GDP and its structure do not include in the secondary sector (i.e.basically manufacturing) primary processing activities.

[36] This, so called, industrial output index, which was compiled by the Association of Greek Industrialists and the Bank of Greece, presumably in the early 1950s, consists of manufacturing and energy. This is why in the text we have described it as a 'manufacturing' production index. Candilis, 1968, pp. 49, 65.

[37] The statistical data become more reliable from 1953 onwards. Lianos, 1986, p. 617.

[38] Candilis, 1968;pp.41-48; Lykogiannis, 1994, pp.345-364.

During this five-year transition period, Greece received substantial foreign aid for military purposes, and nation-wide networks for electrification, telecommunications and roads were constructed. The infrastructure boom created indirectly a positive environment for the development of industry. The direct benefits were less obvious, as only a small part of the original loan package designed by the American Mission for Aid to support industry was disbursed. Actually, industrial loans amounted to less than 1% of the total amount of aid granted to Greece under the Marshall Plan.[39]

With the official termination of the Marshall Plan in 1952, the government opted for a free-market path of economic development based on foreign direct investment (FDI) and local private initiative. The 50% devaluation of the drachma in April 1953 is considered as the starting date for the new policy orientation. For the next twenty years monetary stability and fiscal restraint became the cornerstones of macroeconomic policy. The direct entrepreneurial role of the state was basically confined to public utilities.[40]

The first post-WWII census (1951) showed that Greece was largely still an agricultural country. The share of agriculture in employment was 51% and in GDP 35.2% (Tables 3 and 4). Industrialisation restarted in the mid-1960s and lasted for roughly a decade.[41] Between 1965 and 1974 the share of manufacturing in GDP increased from 16.5% of GDP to 20.2%.

TABLE 3. Employment Structure, 1951-91, (%)

%

	1951	1961	1971	1981	1991
Agriculture	0.51	0.56	0.39	0.29	0.19
Industry	0.19	0.19	0.26	0.30	0.24
Manufacturing	0.16	0.13	0.17	0.19	0.15
Services	0.30	0.25	0.35	0.42	0.57

Source: National Statistical Service of Greece (1951-1991), *Censuses of Population and Household in Greece*, Athens (Industry included manufacturing).

[39] Stathakis, 1992 , pp. 133-135, 149.

[40] Alogoskoufis, 1995, pp. 147-184; Kintis, 1982, pp. 156-160.

[41] From 1951 to 1964 included, the rate of growth of the share of industry in GDP was negative for nine out of the total of thirteen years. The same was the case with the rate of growth of the share of manufacturing in GDP.

TABLE 4. GDP Structure, 1951-94

Year	% Agriculture	% Industry	% Manufacturing	% Services
1951	35.2	21.4	19.8	43.4
1952	34.1	20.5	18.5	45.4
1953	37.7	21.1	18.9	41.2
1954	35.6	21.9	19.5	42.5
1955	34.8	21.6	19.3	43.6
1956	34.8	20.8	18.3	44.4
1957	34.7	20.5	18.0	44.8
1958	31.1	21.3	18.7	47.6
1959	30.1	21.1	18.4	48.8
1960	28.4	21.8	18.9	49.8
1961	30.6	21.0	18.1	48.4
1962	26.3	19.4	16.7	54.3
1963	25.8	19.1	16.3	55.2
1964	25.5	19.0	16.2	55.5
1965	25.0	19.4	16.5	55.7
1966	23.6	19.8	16.9	56.5
1967	23.2	19.9	17.0	56.9
1968	20.2	20.9	17.7	58.8
1969	19.3	21.9	18.5	58.7
1970	18.9	22.9	19.5	58.2
1971	18.6	23.3	19.9	58.1
1972	17.9	23.1	19.7	59.1
1973	20.4	23.2	20.1	56.4
1974	19.8	23.1	20.2	57.1
1975	18.7	22.9	19.9	58.4
1976	18.7	23.3	20.1	58.0
1977	16.8	22.7	19.6	60.5
1978	17.4	21.8	18.8	60.8
1979	15.9	22.4	19.2	61.7
1980	17.7	22.6	19.5	59.7
1981	17.7	23.0	19.4	59.3
1982	18.4	22.6	18.3	59.1
1983	16.9	22.8	18.4	60.2
1984	17.6	22.9	18.3	59.6
1985	17.3	22.9	18.2	59.9
1986	16.2	23.2	18.7	60.6
1987	15.8	22.4	17.7	61.8
1988	16.4	21.6	17.4	62.0
1989	16.3	21.1	17.2	62.6
1990	14.5	20.7	16.4	64.8
1991	16.4	19.7	15.7	63.8
1992	14.8	19.5	15.5	65.7
1993	13.8	19.3	15.5	66.9
1994	14.9	18.7	15.0	66.3

Source: National Statistical Service of Greece (1954-1996), *Statistical Yearbooks*, Athens (Industry included manufacturing).

It was during this time that Greece joined the league of the 'middle income economies'. Indeed, among the eleven European countries of the OECD Greece was first in terms of the rate of growth of labour productivity between 1965 and 1973.[42] Moreover, GDP per capita increased from 3,685 constant 1990 US dollars in 1965 to 6,311 in 1975 (Table 5) This second industrialisation phase materialized against a background of large foreign capital inflows, which peaked during 1960-1966, amounting to 50.5% of gross fixed capital formation in manufacturing. The economy also became more open: the value of exports and imports as a percentage of GNP increased from 22.5% in 1960 to 47% in 1980.[43]

As was the case in the interwar industrialisation phase, the rise in the share of manufacturing in GDP was associated with structural change within manufacturing, a rising X/M ratio and a high growth in per capita income.[44] More specifically, in 1955 the share of the technology-intensive branches - chemicals, machinery, metallurgy - did not exceed 17% of manufacturing output. The shift in the structure of output (i.e a rise in the share of technology goods) was particularly marked in the five years up to 1960 (Table 6). There was change before gain. Namely, structural transformation within manufacturing came first and industrialisation, as measured in terms of the rate of growth of the share of manufacturing in GDP, accelerated only from 1965 onwards.[45] To all appearances at the time, it seemed as if a balanced

TABLE 5. Per Capita GDP in Constant 1987 US $, 1960-1994

1960	1965	1970	1975	1980	1985	1990	1994
2,571	3,685	5,076	6,311	7,332	7,605	8,160	8,287

Source: OECD (1999), *National Accounts Main Aggregates 1960-1997*. Paris.

[42] Indeed, for almost a decade (1965-1973), Greece had one of the highest growth rates in the world. Vaitsos and Yiannitsis, 1987, pp.19, 91.

[43] Mouzelis,1978, pp.28-29,121-122. *Statistical Yearbooks*, selected years.

[44] Actually, the respective correlation rates during the post-WWII era were 0.44 , 0.49 and 0.20, all statistically significant.

[45] Between 1955 and 1965 the share of manufacturing in GDP fell for eight years and only for two years can we register a rise. For the share of industry in GDP, the picture is exactly the same.

manufacturing sector, favouring both high and low technology goods, was in the process of being created. But, this trend did not continue beyond 1975, by which point the share of the technology intensive goods group had risen to 31%.

The trends regarding the overall X/M ratio show an improvement in the trade balance. From 0.29 in 1960 the X/M ratio increased to 0.35 in 1975. The most dramatic rise was in the capital goods sector, the latter increasing from 0.09 to 0.66 between the above two dates (Table 7). Unexpectedly, the Association Agreement with the EEC in 1961 did not lead to an import inflow. On the contrary, it seems to have acted more as an export push for consumer goods produced in Greece. The European market became more open towards Greece, while industry continued to remain effectively protected. It did not face a huge and sudden influx of 'cheap goods', for falling tariffs were counterbalanced by the introduction of non-tariff barriers. Import substitution was after a point combined with

TABLE 6. Structure of Manufacturing Output, 1955-92 (%)

	1955	1960	1965	1970	1975	1980	1985	1990	1992
Sector									
Food-Drinks-Tobacco	27	22.3	21.4	18.9	17.5	19.0	22.4	22.0	25.1
Textiles	18.5	15.9	15.7	14.1	17.8	17.6	16.6	16.5	14.2
Clothing-Footwear	15.3	12.8	11.2	9.4	9.5	8.9	7.2	6.2	6.2
Chemicals	4.5	8.1	8.7	11.2	13.1	12.8	14.8	16.9	15.9
Metallurgy	0.7	1.6	1.4	7.4	6.4	6.1	5.7	5.7	6.2
Machinery	11.8	14.1	13.9	12.8	11.4	11.8	11.1	9.3	10.1
Other	22.2	25.2	27.7	25.4	24.3	23.8	22.2	23.4	28.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: H. Haritakis (ed.), (1929-1939), *Economic Yearbook of Greece*, Athens.

TABLE 7. Export/Import Ratio, 1960-1994

	1960	1965	1970	1975	1980	1985	1990	1994
Type of goods								
Consumer	1.2	0.99	1.00	0.65	1.07	0.86	0.72	0.83
Capital	0.09	0.10	0.49	0.66	0.82	0.59	0.34	0.35
Total	0.29	0.29	0.32	0.35	0.67	0.38	0.33	0.38

Source: National Statistical Service of Greece (1961-1996), *Statistical Yearbooks*, Athens.

some form of export promotion and direct subsidies were offered to firms producing industrial goods for exportation.[46]

As seen in Table 3 the first year ever that the GDP share of industry exceeded that of agriculture was 1968. This turning point was rather late for European standards. Only seven years later did de-industrialisation begin to show. It could be argued that Greece never really fully industrialized. Notably, the peak industrial employment share was merely 30% as opposed to roughly 47% for other Western economies.[47]

To recapitulate, in the case of Greece the epoch prior to WWI was marked by a brief industrial upsurge (1867/8-1875), followed by near stagnation.[48] Industrialisation came in two phases (1922-1938/9 and 1965-1974) neither of which marked a steep upward climb, an abrupt discontinuity. In both instances, a common behavioural pattern can be observed in that the rise in the share of manufacturing in GDP was positively associated with a rising per capita GDP and structural change within manufacturing and trade.[49]

5. De-industrialisation

The last year that industry registered a high level of 23.3% of GDP was 1976. Manufacturing reached its highest point in 1974 (at 20.2% of

[46] Vaitsos and Yiannitsis, 1987, pp.101-108.

[47] For example, the industrial employment all-time peak were for the UK (1955) 47.9%; Belgium (1957), 47%; Germany (1970) 48.5%; and Luxembourg (1966) 46.9%. The dates in parenthesis indicate the year in which the share of industrial employment reached its peak level in total employment. Rowthorn and Wells, 1987, p.209. The figure regarding Greece's all time peak is for 1981. Employment data are available only per decade in Greece. Thus, we have taken 1981 as a point of reference and not 1975 as we would have preferred and we have assumed that the share of industry in total employment and in GDP (total output) has been moving in the same direction. *Censuses of Population and Households in Greece*,(1981).

[48] Stagnation in that industrial expansion, as measured by the increase in horsepower and the rise in the absolute value of industrial output, was not strong enough for an upward secular trend in the share of manufacturing in GDP to materialize.

[49] For the fact that structural change within manufacturing, as expressed through a rise in the share of technology-intensive goods in industrial output, has been the norm in the industrialisation process of the western countries see: Cornwall, 1980, pp. 275-289.

GDP). From 1975 it began to decline,[50] de-industrialisation quickening from 1987 onwards (as seen also in Table 4 and Graph 2). By 1994 the share of manufacturing output in GDP was 15% compared to 19.8% in 1951. (The share of industry in GDP at these two dates was respectively 18.7% and 21.4%). The declining relative presence of manufacturing industry in the economy coincided with the post-1974 turn to demand management and direct intervention in the productive process.[51] There was also an abrupt fall in FDI. From around half of gross fixed capital formation in manufacturing during 1960-1966, by 1973-1980 FDI petered out to only 3.7%.[52]

De-industrialisation was marked by a reversal of the trends established during industrialisation regarding the structure of manufacturing output (Table 6). The share of the technology-intensive sectors stopped increasing and remained basically static from the mid-1970s onwards. Another change was the reversal in the rising trend in the X/M ratio. (Table 7) This change came shortly after the second oil crisis. It was already noticeable in the early 1980s, although effective protection declined only slightly before the end of the decade (in spite of the full entrance of Greece in the EEC in 1981). Thus, whereas at the end of the 1970s the degree of penetration of foreign industrial goods in the Greek market amounted to 23%, by the second half of the the 1980s, it had risen to 35%.[53]

The inability of industry to compete internationally allows us to extend the 'Failure Hypothesis', whereby according to the definition of Rowthorn

[50] Actually from the early 1980s (in constant 1970 prices) the total value of manufacturing and industrial output showed a downward trend, i.e. thereafter there was decline also in absolute value and not only in terms of its share in GDP. *Statistical Yearbooks*, selected years.

[51] Alogoskoufis, 1995, pp. 147-184. From 1990/1991, under the impasse of the growing fiscal imbalance and mounting pressures from the European Union, there was a new policy orientation. Demand management was replaced by a policy of monetary stability, labour market flexibility and a privatisation 'drive'.

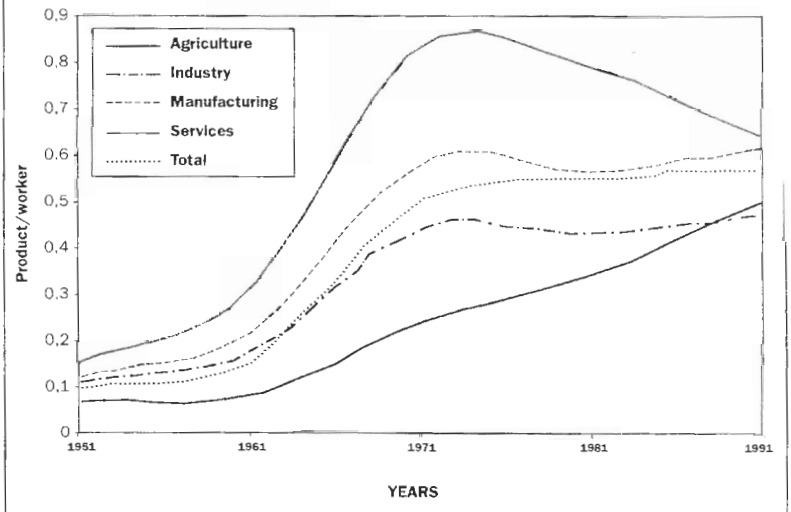
[52] Mouzelis, 1978, pp.28,119. Freris, 1986, pp. 171-181. The 'excessive' amount of FDI in the years 1960-1966 was in part the product of the fact that Greece for the first time ever adopted an open-door policy, granting foreign investors special privileges. Following the fall of the six-year miltary dictatorship in 1974, the policy towards foreign capital became less friendly. Vaitsos and Yiannitsis, 1987.

[53] Alogoskoufis, 1995, p. 157. *Statistical Yearbooks*, selected years.

and Wells,[54] de-industrialisation is seen as a symptom of economic failure and has been associated with retrogression and a lack of dynamism in the economy. Notably, during the first part of the 1980s there was a small increase in GDP per capita (in constant prices), followed by a large growth in the second half of the decade, which produced a 1990 GDP per capita approximatively 10% above that of 1980.(Table 5) Moreover unemployment from 2% of the labour force in 1976 reached 9.6% by 1994.[55]

Some extra information provided by figures on labour productivity may lead to a deeper understanding of the reasons behind the onset of de-industrialisation. As seen in Graph 3 between 1951 and 1971 there was a sharp rise in the figures for labour productivity in manufacturing. But this momentum was not maintained and, between 1971 and 1981 productivity fell. During the 1980s , there was a slight

GRAPH 3 - Product per worker, 1951-1991



Source: National Statistical Service of Greece (1954-1996), *Statistical Yearbooks*, Athens

[54] See also Section 1 in the text. Rowthorn and Wells, 1987, pp.213-219.
[55] OECD. 1997, p.23.

rise, probably due to some (positive) displacing of less efficient firms obliged to leave the market. Nevertheless, the overall picture of labour productivity presented in the 1971-91 period is one of stagnant performance.

Possibly, the failure to maintain the momentum in the rise in labour productivity is an important reason why the post-WWII industrialisation effort was hesitant, failing to incorporate Greece in the league of rich industrial nations. It could also be argued, that the slight rise in labour productivity in the de-industrialisation decade and a mild growth in GDP per capita in the second part of the 1980s signify that in the Greek case de-industrialisation has been also hesitant, i.e. it has not entailed a dramatic transformation of the Greek economy. In addition, by 1991 a marked convergence had materialized among the three sectors of the economy.[56] However, the implications of this last observation should not be overstressed. In our analysis what counts above all is that Greece remained throughout her trajectory a laggard country for European standards.

[56] The issue of convergence and the changes in (relative) labour productivity among the main sectors of the economy as per capita income rises is discussed in Chenery and Syrquin, 1975, pp. 52-3. Two of the arguments of the authors appear particularly relevant to the Greek case. The first is that once a country reaches a per capita GNP level of $ 500 (in US $ 1964), relative labour productivity in total employment decreases "as surplus agricultural labour is absorbed by the rest of the economy". Greece in 1960 with a per capita GNP of $510 passed the $ 500 per capita GNP 'threshold level', and as Graph 3 in the text illustrates in the early 1960s labour productivity in agriculture began to rise. There was also a continuing shift in the share of agriculture in total employment as Table 3 demonstrates. Chenery and Syrquin's second relative argument is that as per capita GNP approaches $ 1,500 (in US $ 1964) a trend towards convergence in the labour productivity among the three main sectors of the economy (i.e. the primary secor, services and industry) can be observed (see their Figure 9 on page 52). Indeed, in 1971 Greece passed over (surpassed) the $ 1,500 benchmark, attaining a GNP per capita (in US $1964) of $1,530. Once again in conformity to the Chenery and Syrquin findings, shortly thereafter (i.e. in 1972-4) Graph 3 illustrates that the labour productivity of the main sectors of the economy embarked on a convergence process. The relative productivity of services fell markedly, the main difference with the Chenery findings being that in the Greek case at the $ 1,500 benchmark the share of the primary sector in total employment had not yet dropped to 15% (the share of agriculture alone being 19%. See Table 3 in the text). The figures for the per capita GNP of Greece in US $ 1964 have been compiled from: OECD (1999), *National Accounts Main Aggregates 1960-1997*, Paris. For the rise of percapita GDP (in constant 1990 Price levels and 1990 US $), for the years 1960-1994 see Table 5 in the Text.

6. Greece in the International Context

Where does the case of Greece stand within the international contex of modern economic growth? At a general level Greece is a latecomer,[57] and has shared with the group of late industrializers the following characteristics: lack of iron deposits and energy resources (it has lignit but no coal); low population density; delayed urbanization; and a lov level of human capital.[58]

Simultaneously, given its physical and especially agricultura endowment, Greece is a Mediterranean country. Geography ha. determined the choice of techniques and crops, and has affected th institutional make-up of the country. The similarities with Italy, Spain and Portugal are striking. For example, throughout the nineteenth an part of the twentieth century some common traits were: a large agricultura sector; absentee landownership; sharecropping; chronic budget deficits the crowding out by the state of capital for private investment; the absenc 'of trade-induced change' due to the presence of tariffs; and finally, low literacy rates.[59]

How do the long-term growth trends of the Greek economy compar with those of Western Europe? Prior to WWII Greece did not follow th Western trends. Throughout the nineteenth century Greece was in a situatio of near stagnation, failing to join Western Europe which by the 1870s wa experiencing (throughout all its countries) modern economic growth.[60] Th next period (1913-1945) was one of underperformance for Western Europe marked by a departure from its long-term trend of economic growth.[61] In contrast, for Greece this period encapsulates its first industrialisation effort

[57] Cameron, 1985 p.20; Aldcroft and Ville, 1994, pp.8,11; Haritakis,1927, pp.64-6, 240-243; *Economic Yearbook 1929*, p.93; 1939, p.36.

[58] Haritakis, 1927, pp.64-66,240-243; Candylis, 1968, pp.1-10; Freris,1986, pp.182-3 *Economic Yearbook 1929*, p.93; *Economic Yearbook 1939*, p.36; Aldcroft and Ville, 1994 p.16.

[59] Tortella,1994, pp.4, 7; Vaccaro, pp.709-711,742,750-751.

[60] Thus, on the eve of W.W.I. Greece's per capita income was 60% of the average for Europe. Aldcroft and Ville, 1994, p.11.

[61] I.e. it underperformed compared to its performance in the preceding epoch and the post-WWII years. Crafts and Toniolo, 1996,p.6.

Throughout the post-WWII era, Greek trends roughly conformed to the European trends of fast economic growth during the so-called European 'golden era' (i.e.1950-1973); and a slowdown after 1973.[62] Indeed, during 1950-1973 Greece was first among sixteen countries in Europe in terms of the growth rate of per capita GDP (in constant prices). But, given the low level from which Greece started off after the War, this impressive performance was not adequate. The Greek 'miracle' was too brief. From being first in terms of its growth rate between 1950 and 1973, Greece fell to being twelfth between 1973 and 1992. Thus, over the long-run, the convergence of per capita incomes between Greece and Western Europe failed to materialize.[63]

In a nutshell, Greece differs from the Western European success stories; it never fully arrived and de-industrialisation started before industrialisation was completed. The finding that, even at her industrialisation peak, Greece did not have a large industrial sector and did not enjoy the per capita income level of a 'mature' capitalist economy has wider implications.[64] It supports the thesis of the 1970s Greek sociology literature that Greece has never been a typical capitalist industrial economy.[65]

The 'peculiar' Greek socio-economic formation seems to have been characterised by three structural continuities. The first was the large state sector. From the last quarter of the nineteenth century onwards, the public sector grew at a rate faster than National Income, accounting by the 1980s for more than 30% of GNP.[66] The second structural

[62] This slow-down being linked with a shrinking of the manufacturing base by the 1980s. See for example: Crafts and Toniolo, 1996 p.159; Rowthorn and Wells, pp. 209-213.
[63] Crafts and Toniolo, 1996, pp.6, 32.
[64] For the share of industry in GDP and total employment at the industrialisation peak see in the text section 4 . It should be noted that on the eve of de-industrialisation the per capita GDP of Greece was roughly 70% of the per capita GDP at which a typical capitalist economy is supposed to reach maturity i.e. in constant 1975 US dollars the per capita GDP of Greece in 1975 was 2,807 compared to the 4,000 (constant 1975 US dollars), in the region of which the typical capitalist economy reaches its industrialisation peak. Rowthorn and Wells, 1987, p.213.
[65] Mouzelis,1978, pp.3-29.
[66] *Statistical Yearbooks*, selected years.

continuity was that Greek entrepreneurship had been basically of a commercial character;[67] and the third is related to an incomplete transition from mercantile/family capitalism to the joint stock company/corporate capitalism.[68] In Greece, artisan employment had remained dominant; the average number of employees per manufacturing establishment in 1986 being only 4.9 for the country as a whole and 5.1 for Athens.[69] In the small family firm the goal of the production unit being not profit maximization, but the maximization of family welfare, the non-market exchange of labour persisted and efficient factor markets failed to emerge.

7. Concluding Remarks

The 'idiosyncratic' socio-economic formation of Greece and the incomplete and hesitant industrialisation are intertwined phenomena. However robust, unidirectional causal relationships are hard to establish.[70] A number of unresolved questions remain. How important was the role of institutional, historical, political and geographical constraints? Need the issue of property rights be further explored? Will more research at the level of the firm add to our understanding of the phenomenon?

The adoption of a long-run perspective for a study of the relative role of industry makes sense given the continuity in the national institutions, culture and society of modern Greece. Nevertheless, we do not purport that this approach is all inclusive, the problem of the statistical constraints notwithstanding.[71] Yet, in spite of the level of uncertainty that remains, our exercise in the tradition of 'stylized facts', by charting macro indicators and structural changes over the long run, is useful. To recapitulate: the

[67] Alexander, 1964, pp.29-30,107-125.

[68] To use Chandlerian terminology, Greece did not make the transition from personal enterprise and entrepreneurial enterprise to managerial enterprise. Chandler, Amatori, Hikino eds, 1997, pp.246, 482.

[69] *Statistical Yearbook 1996*.

[70] For a discussion in particular on the relationship between Greek economic development and the political framework, see: Lianos, 1986, pp.617-621.

[71] Such as the generic problem with 'macro' data in that small beginnings are often "hidden by the mass until well after they have become routine". Mc Closkey, 1990, p.21.

analysis offers the following insights regarding the nature of the industrialisation/de-industrialisation process in Greece:

- The main shifts in the Greek economy occurred outside industry, the contraction of agriculture being basically counterbalanced by the rise of services. In fact, in Greece the rise in services came early. As shown above, prior to the onset of industrialisation (i.e. between 1867 and 1912) there was a rather sharp decline in the share of the primary sector in GDP, which went exclusively towards the enlargement of the share of services. This behaviour is an oddity seen from an international perspective, as it has not been typical of either the advanced or the backward countries.[72]

- Industrialisation has been 'hesitant' as a process. It evolved slowly, with no abrupt discontinuities. As a result, it makes sense to view both the pre-WWII and the post-WWII industrialisation efforts as parts of a greater whole. This observation calls for a greater degree of dialogue between Greek economists and the community of economic historians. The first emphasize the exceptional characteristics of what they call the Greek 'miracle' or '(near) take–off' (1965-1974), whereas the second group of scholars, emphasize the significance of the early appearance of industrial growth in the late 1860s and the first industrialisation phase (1922-1938/9).

-Although a number of factors have exercised a permanent or sometimes temporary effect (e.g. industrial policy, FDI), which cannot be adequately followed in the long run, this study proposes that a behavioural pattern can be observed. It has found that the rise in the share of manufacturing in GDP related consistently with increasing per capita income, improving trade performance and 'trading up' efforts within manufacturing.

This exercise might encourage the comparison between Greece and other countries of Southern Europe in terms of long-term trends in basic economic indicators and industrialisation patterns. The attempt at a long-term synthesis and analysis of the long-term trends may be also useful for further discussion on Greek industrialisation and de-industrialisation. In specific, it provokes a broad range of questions. Why did the share of

[72] "...recent development in numerous poor, Third World countries has been marked by an early rise in the significance of such services (at least in terms of employment and occupations). That rise is usually, however, a concomitant of population growth, urbanization and the slow growth of jobs in manufacturing". O'Brien, 1998, p.ii.

technology-intensive goods in manufacturing not continue to increase? What was the relationship of this latter phenomenon with the failure to maintain the momentum in the rise in labour productivity in manufacturing? Had the share of technology-intensive goods continued to increase would de-industrialisation have followed? Furthermore, given the hesitant nature of industrialisation, is path dependence relevant to the Greek case? Finally, why have Greek entrepreneurs behaved as 'footloose capitalists', shying away from enduring industrial ventures? Clearly more research will have to be undertaken to answer the questions posed above.

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