# Britain's Industrial Evolution: From Industrial Districts to Large Scale Production and Back Again?

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## Abstract

Liberal economics has traditionally emphasised individualism and specialization; and economists have struggled with the notion of co-operation. In theorising industrial organization, the growing prominence of equilibrium analysis – and the dichotomization of the "market" and the "firm" – meant that the study of industrial development was progressively divorced from the environment within which it took place. An important exception was Alfred Marshall's analysis of the industrial districts of the 19th and early 20th centuries, which was based on careful first-hand observation. In theorizing them, Marshall identified what he termed "external economies", derived from the concentration of production in particular localities in which the balance between competition and co-operation – both within and between district firms – was an important determinant of success, not only of the district but also its constituent (mostly small) firms. During the 1920s, however, Marshall's thinking shifted to viewing large size as the next stage in industrial evolution. As this came to be the conventional wisdom in industrial organization and policy, the role of small firms and localized productive systems was increasingly marginalized. However, their "re-discovery" by Italian scholars during the 1960s revived interest in this form of industrial organisation. This paper traces the co-evolution of British industrial organisation and the ideas and policies and that have influenced Britain's industrial development, from Alfred Marshall's pioneering work to the present. It then examines the cases of three successful British industrial districts – Northamptonshire footwear, Motor Sport Valley and English sparkling wine – to demonstrate the complex, dynamic and non-equilibrium processes involved in the emergence, development and performance of productive systems.

## 1. Introduction

Liberal economics[2] has traditionally put strong emphasis on individualism and specialization; and economists have struggled with the notion of co-operation. In the context of production, the central question of securing co-operation has been subsumed in theories of market exchange and managerial authority, where both the "invisible hand" of the market and the "visible hand" of management serve to co-ordinate and control. An important exception was Alfred Marshall's analysis of the English industrial districts – localized clusters of small enterprises and their suppliers, which were at the heart of British industrial development during the 19th century – which was based on careful first-hand observation.[3] In theorizing them, Marshall identified what he termed "external economies" of scale and scope, derived from the concentration of production in particular localities, in which the balance between

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[2] "Liberal economics" is a term for the classical and neo-classical economic theories that emphasize individualism in free markets and laissez-faire policies in which the government's role is limited to the provision of support services.

[3] Marshall's methodological approach involved a combination of induction and deduction – of combining history and empirical observation with theory – in such a way as to evolve dynamic theories on the basis of observed reality. According to Marshall, "the function … of analysis and deduction in economics is not to forge a few long chains of reasoning, but to forge rightly many short chains and single connecting links" (Marshall 1920 [1890], p. 450).

competition and co-operation – both within and between district firms – was an important determinant of success, not only of the district but also its constituent (mostly small) firms.

During the early decades of the 20th century, however, the emergence and increasing size of highly successful American and German enterprises revived the question – which John Stuart Mill had grappled with three quarters of a century earlier[4] – of how to reconcile increasing returns (in production) with perfect competition (in markets). From the perspective of (static) neo-classical economic theory, the first firm to adopt the most efficient scale of production in relation to the size of the market takes the whole of the market and becomes a monopolist. Marshall's theory of industrial districts thus sparked a vigorous debate about the problem of increasing returns and competitive equilibrium, which his "external economies" – that were *external* to the firm but *internal* to the clusters and enabled member firms to *compete effectively*, even with much larger, vertically integrated firms – purported to resolve.

Perhaps the most influential attack on Marshall's theory came from Piero Sraffa, who argued that because "[e]veryday experience shows that a very large number of undertakings … work under conditions of individual diminishing costs" (Sraffa, 1926, p. 543), resolving the dilemma required dispensing with the assumption of perfect competition in favour of monopoly. He went on to dismiss external economies on the grounds that "[t]hose economies which are external from the point of view of the individual firms, but internal as regards the industry in its aggregate, constitute precisely the class which is *most seldom* to be met with" (ibid, p. 540, emphasis added). Sraffa contended that increasing returns were pervasive in industry and incompatible with competition, suggesting that the solution to the problem was to turn to the theory of monopoly;[5] and his conclusion – that "in the circumstances, I think it is Marshall's theory that should be discarded" (Robertson, Sraffa & Shove, 1930, p. 93) – apparently settled the debate.

During the interwar years, the focus of attention in the study of industrial organisation shifted away from the industrial sector and towards individual firms; and the conventional wisdom evolved to contend that the historical tendency in capitalist development is towards large firm dominance, with the progressive reduction of the small firm sector to a residuum. At the same time, Marshall's dynamic and evolutionary approach to the theory and analysis of industrial organization and development was abandoned as neoclassical micro-economic theory embraced a static equilibrium approach – at the same time as "Keynesian" theory was evolving to inform macro-economic policy. In this context, micro-economic theories of monopolistic and oligopolistic competition contended that the long-run equilibrium level of output for firms operating in these markets is at a level below full capacity utilization; so the associated unemployment is efficient. Although Keynesian macro-economic theory explained unemployment as being "involuntary" and the consequence of insufficient effective demand, it was micro-economic theories that ultimately informed industrial policy. Thus, from this point onward, the role of small firms and localized productive systems was progressively marginalized; and the idea of geographic location and external economies generated only a "thin trickle" of contributions in relation to forms of firm agglomeration in local and regional productive systems (De Propris 2009, p. 361). However, their "re-discovery" by Italian scholars during the 1960s – and the crisis of "Fordist" mass production during the 1970s and 1980s – revived interest in this form of industrial organization.

[4] As the British industrial revolution progressed, and with the development of the factory system and market expansion, Mill (1848) argued that in response to increases in the size of the market, firms would have incentives to increase their scale of production, which would undermine competition (Book 1, Chapter 7).

[5] This position was strongly challenged by Allyn Young, among others, who returned to Adam Smith's conceptualisation of the division of labour and its relation to the extent of the market. For further elaboration, see Konzelmann and Wilkinson, forthcoming.

But are rumours of the death of the British industrial district "greatly exaggerated"? Despite their decline, which has been in no small part a consequence of policy choices that prioritized the interests of large multi-divisional firms over smaller firms in localized productive systems, some – such as the British footwear industry in Northamptonshire – have survived; and new ones – such as Motor Sport Valley in the Home Counties and English sparkling wine in Sussex, Kent and Cornwall – have emerged and thrive. In many respects, the firms in these districts, like their predecessors, have benefitted from both the economies of large scale (district) production and the agility of being small. They are therefore able to compete effectively with much larger producers; and in the face of unpredictable fluctuations in demand, their constituent smaller firms are able to adjust capacity, innovate and adapt. By contrast, large firms are less agile; and when confronted with a downturn in demand, they are often forced to shutter factories and eliminate capacity, which is then no longer available when the trade cycle reverses.

This paper traces the co-evolution of British industrial organisation and the policies and ideas that have influenced Britain's industrial development from Alfred Marshall's pioneering work on the English industrial districts to the present. It then examines the cases of three successful British industrial districts – in footwear, motor sport and sparkling wine – to demonstrate the complex, dynamic and non-equilibrium processes involved in the emergence, development and performance of productive systems over time.

## 2. Marshall's Theory of Industrial Districts

Between the invisible hand of the market and the visible hand of managerial authority in large firms are organisational forms composed of "small- and medium-sized firms in particular branches of industry, localized in a specific area and participating in a production system characterized by divisions of labour between firms" (Hirst 1999, p. 111). The organisation of such systems involves a blending of networks of interdependent actors and firms, of hierarchies and of markets that evolve over time as the structures of these relationships are cast and re-cast and as the environments within which they are embedded change. Alfred Marshall was a pioneer in theorising these systems, which he identified as *industrial districts* (Marshall 1920 [1890], p. 157).

In developing his theory of industrial organisation, Marshall welded Adam Smith's notion of the division of labour as the primary vehicle of economic progress to Darwinian evolutionary theory.[6] He argued that in economic life, the struggle for survival selects the fittest and fitness depends upon two complementary factors: increased differentiation and more sophisticated co-ordination. A finer division of labour – which requires ever-more sophisticated co-ordination of productive activities – leads to a more efficient use of resources; and the development of specialized skills, knowledge and machinery leads to increased differentiation.

Marshall was acutely aware of the systemic nature of production; and central to his understanding of the evolutionary trajectory of capitalism was the interaction between organisation and knowledge. He argued:

> "Capital consists in a great part of knowledge and organisation … Knowledge is our most powerful engine of production; it enables us to subdue Nature and force her to satisfy our wants. Organisation aids knowledge; it has many forms, e.g. that of a single business, that of several businesses in the same

[6] See Marshall, 1920 [1890], Book IV, Ch VIII.

trade, that of various trades relatively to one another" (Marshall, 1920 [1890], p.84).

For Marshall, the central role of organisation is the "integration" of the increasing subdivision of production with the increasing division of labour, and the development of specialised skills, knowledge and machinery to achieve this (Marshall, 1920 [1890], p. 139).

Marshall drew a clear distinction between relationships within the firm and relationships between firms. Within the firm, relationships are co-ordinated by the manager-entrepreneur and take the Marxian form, in which co-operation in production permits the realization of increased output per worker. By contrast, outside the firm, relationships are co-ordinated by the market and take the Adam Smith form, where co-operation in exchange, secured by competition among individuals motivated by self-interest, permits the realization of gains from trade. At both levels, dynamic forces are at work, with increased specialisation and improved industrial organisation operating both within the firm and between firms, by creating new market opportunities for other firms, who could thus see the benefits from economies generated external to their own boundaries. In this process, freedom of enterprise and the rivalry it generates between firms is a vital element, rewarding successful firms and punishing failures.

In theorizing industrial districts, Marshall identified "external economies" and an "industrial atmosphere" resulting from the localization of industry as being important determinants of the competitive success of both the district and its constituent firms. The close geographical proximity of firms within a particular industry provides opportunities for specialization and for the district as a whole to secure the benefits both of economies of scale and scope (both static and dynamic) in production and of technical and organisational innovation, which are beyond the reach of isolated individual firms. The benefits of proximity also include increases in the degree and specialization of skills; their diffusion throughout the community, creating an abundant supply of appropriately qualified labour; the growth of "subsidiary" trades and specialized services; and an expansion in the use of highly specialized machinery made possible by the combined demand of many firms. Firms concentrate their initiative and inventiveness on what they do best and establish an environment that improves the overall competitiveness of the locality.[7] In early versions of his analysis, Marshall placed limits on firm size by the growing problems of internal co-ordination, the aging of the founder and the failure to find a successor. But these are individual failures and the forward impetus of the system is maintained as vigorous new firms replace the old.

Marshall recognized that industrial districts occupy both a physical and a social space, with its own structure and history. In his view, district effects are long-term, cumulative and dependent upon co-operation in knowledge creation and innovation. For Marshall:

> "When an industry has thus chosen a locality for itself, it is likely to stay there long: so great are the advantages which people following the same skilled trade get from near neighbourhood to one another. The mysteries of the trade become no mysteries; but are as it were in the air, and children learn many of them unconsciously. Good work is rightly appreciated, inventions and improvements in machinery, in processes and the general organisation of the business have their merits promptly discussed: if one man starts a new idea, it

[7] Contemporary analyses of industrial districts put greater stress than did Marshall on the collectivist and institutional basis for successful co-ordination. See, for example, Brusco & Sabel (1981); Brusco (1982); Sengenberger, Loveman & Piore (1990); Amin & Thrift (1994).

> is taken up by others and combined with suggestions of their own; and thus becomes the source of further good ideas" (Marshall, 1920 [1890], p. 156).

He added "[t]he broadest, and in some respects the most efficient forms of constructive co-operation are seen in a great industrial district where numerous specialised branches of the industry have been welded almost automatically into an organic whole" (Marshall, 1920 [1919], p. 380).

However, Marshall considered individualistic initiative and free enterprise to be the drivers of economic progress. In Marshall's view, while collective action may foster individual success, it risks blunting initiative and inhibiting competition. Thus, such collective institutions as trade associations had a role to play in co-ordinating production, enforcing quality standards, redressing power imbalances, ensuring constructive forms of competition and providing scientific and other specialized services; but, lacking the profit motive, they are of secondary importance to the individual effort of entrepreneurs. For similar reasons, public sector intervention was seen to have a limited role to play in industrial organisation and technical progress.[8]

## 3. The Evolution of British Industrial Organisation since Marshall

In Marshall's view, the industrial district's vitality stems from its ability to innovate and to respond flexibly to changes in its environment. Although he also recognized that districts could decline just as easily as they could prosper, Marshall expressed confidence in the resilience of this form of industrial organisation and the dynamism it engendered. In *Industry and Trade*, published 5 years before his death in 1924, Marshall wrote:

> "Thus, although even a little obstinacy or inertia may ruin an old home of industry whose conditions are changing; and although the opening out of new sources of supply or new markets for sale may quickly overbear the strength which old districts have inherited from past conditions: yet history shows that a strong centre of specialized industry often attracts much new shrewd energy to supplement that of native origin, and is thus able to expand and maintain its lead" (Marshall 1920 [1919], p. 190-91).

Nevertheless, during the 1920s Britain suffered de-industrialisation and the decline of its industrial districts. Whilst Marshall's students of the "Old Cambridge School"[9] studied this phenomenon, Marshall's thinking was shifting towards viewing large size as the next stage in industrial evolution, with the disappearance of small firms being "inevitable" (Marshall 1920

[8] This is in contrast to more recent discussions of industrial districts, where collectivity in the form of direct inter-firm relationships, formal and informal institutions and public policy are seen to play a central role in establishing and guaranteeing business and labour standards, fostering innovation and technology diffusion and organising education and training. This collective framework serves to generate and release widespread enterprise and entrepreneurial talents which are the source of the dynamism of productive systems. There are therefore important differences between Marshall and his modern followers in the boundaries between direct economic relationships and those mediated by the market. For Marshall this boundary by and large coincided with that of the firm, whereas in more recent accounts, direct relationships extend beyond that of the firm, with significant implications for our understanding of the nature of industrial organisation, the positioning of the firm within it and how these factors influence economic performance.

[9] Becattini (1990a) distinguishes two Cambridge Schools of Economics. The first is the one surrounding JM Keynes and his followers, including, among others, Richard Kahn, Joan Robinson, Gerald Shove, Nicholas Kaldor, Austin Robinson and Piero Sraffa. The second – 'the 'Old Cambridge School' – surrounds Alfred Marshall and his students who studied and developed research fields within industrial economics. These included, among others, SC Pigou, DH Robertson, Arthur Bowley, Sydney Chapman, DH MacGregor, Charles Sanger, CR Fay and Philip Sargent Florence.

[1919], pp. 369-72). Increasing industrial concentration in Germany and the USA led Marshall to place less emphasis on the limits to firm size and on the importance of external economies.

> "[W]ith the growth of capital, the development of machinery and the improvement of the means of communication, the importance of internal economies has increased steadily and fast, while some of the old external economies have declined in importance; and many of those which have risen in their place are national or even cosmopolitan, rather than local" (Marshall, 1920 [1919], p. 115).

The driving force remained the entrepreneurial owners – the *captains of industry* – but since increased specialization required more effective co-ordination, a precondition was continuous refinement of management.[10] Whilst Marshall recognized the potential of the joint stock company for expanding the productive capacity of firms, he warned against putting shares of stock on the market because in his view, the separation of (share-holder) ownership from (managerial) control weakened managerial power and incentives to innovate, and to reorganize the firm.

What economists and policy-makers ultimately took from Marshall's theorizing on industrial organisation informed economic theories of firms and markets; and these provided a crucial under-pinning for explanations of – and justification for – large-scale capitalism, which was actively pursued from the inter-war period onward.

### *From Industrial Districts to Large-Scale Production*

But why did the British districts decline so rapidly? Based on their reading of the work of Marshall and his students, Belussi and Caldari (2009) suggest that the demise of the British industrial districts was a consequence of the cumulative impact of: the gradual acquisition of knowledge, skills and competitive capabilities in other countries; superior innovation and technological development by competitors; and the conservative attitude of British entrepreneurs (pp. 349-50). "The local industrial atmosphere degraded, and so did the capabilities of local firms to absorb external technical change. Industrial secrecy and cut-through competition took place. The automatic organisation and the district division of labour were suffocated" (p. 354). Thus, by this account, somewhat contrary to the conventional wisdom of the time – that the evolutionary trajectory of industrial capitalism was towards large firm dominance – the decline of the British industrial districts from the 1920s onwards could be explained not so much by the superior performance and efficiency of administrative co-ordination in large firms as by "exhaustion of the original conditions and the ill-conceived Victorian heredity of believing themselves technologically superior to any international competitor" (p. 354). This ultimately prevented local entrepreneurs from recognising and responding effectively to radical changes in international competitive conditions.

However, there is also substantial evidence that the decline of the British industrial districts was hastened by banking concentration, which starved them of industrial finance, as well as by deliberate policy choices in favour of industrial concentration and *inter-firm* competition.

#### *Industrial Finance*

During the 19th century, the market power of British banks was widely dispersed; and the banking system was mainly comprised of small local banks, whose fortunes were closely tied to the communities in which they were located. Few banks had branch networks; the main

[10] See Marshall, 1920 [1919], Book 2, Ch X.

source of funds was deposits collected locally; and most lending took the form of short-term credit and medium- and long-term loans to local businesses (Cottrell, 1979; Collins & Baker 2003). However, following the banking crises of 1866, 1878 and 1890, there was a shift away from non-bank private sector financing towards larger holdings of government securities (Goodhart 1972, pp. 167-01; Collins & Baker, 2003, p. 105; Checkland, 1975, pp. 469-81); and banking concentration significantly increased, with the five largest banks (Midland, Barclays, Lloyds, Westminster and National Provincial) accounting for approximately 80 percent of English deposits by 1920, each with a head office in London and a national branch banking system (Carnevali, 2005, p. 15). Incentives driving the amalgamation process included the ability to standardize operations, diffuse credit risks and transfer surpluses through branch networks; and institutional regulations created incentives for provincial banks to move their headquarters to London, which typically involved acquiring a London-based bank.

Through this process of consolidation, by the end of the First World War, local and regional banks had all but disappeared; and the dominant form of commercial bank was a joint-stock London-based bank with a national branch network. However, branch bank managers had very little discretion with regard to the terms and conditions of lending to local businesses; and the near absence of local and regional banks meant that there were no financial institutions whose economic interests were aligned with those of regionally-based smaller firms. The internal structure of the national banks made administration of small loans expensive because of the difficulty of assessing the lending risks. Thus, the disappearance of bank-based financial support for industrial enterprise forced businesses to turn to the stock market to finance expansion, which ultimately made them vulnerable to hostile action on the part of share-holders in the event that share price appreciation failed to meet share-holders' expectations.

*Rationalisation of the Industrial Structure*

The economic difficulties of the 1920s and 1930s led many to question the ability of the market to deliver growth – and to consider whether the economy might be better managed at a macro-economic level with Keynesian tools and at a micro-level by "rationalising" the industrial structure. The 1929 Report of the Balfour Committee concluded that British industry should be re-organised along the lines of large American and German businesses; and following the merger wave of the 1920s, industrial output became increasingly concentrated. In 1948, under the Marshall Plan, the Anglo-American Productivity Council was set up to facilitate the exchange of knowledge in the areas of industrial organisation and methods, with the aim of assisting British industry in raising productivity levels; and between 1948 and 1952, British industrial teams of supervisory, technical, and workshop personnel were sent to America to study production methods and to make recommendations on the basis of their findings – all of which stressed the need to emulate American techniques (Hannah, 1983, pp. 140-2).

Thus, following the Second World War, there was an acceptance of a role for the state in managing the economy; and governments of all persuasions prioritized *re*-industrialization, promoting concentration through mergers and acquisitions, which were seen to be a means of raising efficiency (Meeks 1977). Fuelled by strong war-time demand, which extended into the 1950s with post-war reconstruction, large mass production firms reaped the benefits of internal economies of scale, which gave the appearance of improved productivity. Nationalization was also a key feature of postwar industrial policy; but the initial Attlee Government nationalizations were largely utilities (including coal, electricity, gas and

railways) rather than manufacturing firms, which were nationalized much later.[11] The policy appeals of the 1960s emphasized the pursuit of economies of scale and merger promotion via the Industrial Reorganization Corporation (1966);[12] the establishment of Industrial Training Boards (1964); the expansion of higher education; and a short-lived experiment with indicative planning (1960-64).[13]

But instead of developing new industries and technologies, in response to well-connected special interest groups, British industrial policy tended to take the form of shoring-up ailing industries and helping old ones to survive.[14] Although "picking winners" may have been the aspiration, "it was losers like Rolls Royce, British Leyland and Alfred Herbert who picked Ministers" (Morris and Stout 1985, p. 873). Thus, whilst British management and governments were dominated by a belief in the competitive advantages of large firms and the efficiency gains of internal economies of scale, the large firms put together by nationalization, mergers and acquisitions tended to be larger than the most efficient scale of production; and more often than not, they were composed of groupings of less-than-efficient plants (Prais 1976). This created large, inefficient mass production corporations that were either state-owned or characterized by widely-dispersed share-holder ownership that would eventually become vulnerable to corporate restructuring via the stock market. In the end, UK manufacturing capability was severely weakened. But rather than evolve a strategy for addressing the plight of industry, the general view was that the economy was progressing to a "post-industrial" service-based stage of capitalism (Gibson 1993; Dunham-Jones 2000).

*Competition Policy*

Much of the post-war merger activity did not improve efficiency; and it was soon apparent that British industry was becoming progressively less competitive. However, the revival of competition policy – which took place against the backdrop of an economy full of anti-competitive practices inherited from the Great Depression and the War – worked to the advantage of large, multi-divisional/multi-national companies and to the disadvantage of small firms in industrial districts.

The 1956 Restrictive Trade Practices Act was the first of a series of acts aimed at increasing product market competition, which was seen to be a means of promoting investment and

[11] British Steel was created in 1967, bringing together the 14 largest British steelmakers under public ownership and to create large integrated steelworks; and during the 1970s, nationalization was extended to shipbuilding, aerospace and motor vehicles (Rolls-Royce and British Leyland), resulting in further concentration.

[12] The Industrial Reorganisation Corporation (IRC), in operation between 1966 and 1971, was established by Labour to assist with mergers due to the belief that because much of British industry was unnecessarily and inefficiently fragmented and "there was a need for more concentration and rationalization to promote greater efficiency and international competitiveness of British industry" (IRC First Report of Accounts, p. 5).

[13] The National Economic Development Council (NEDC, or "Neddy") was established in 1962 through a joint initiative of leading industrialists and the Conservative Government, with the objective of improving economic co-ordination between businesses and policy-makers, thus enabling Britain to steer a course away from the "stop-go" cycle produced by post-war economic fine-tuning and towards stable growth. However, whereas leading industrialists considered the NEDC to be a vehicle for increasing their influence over the direction of economic policy, the government was primarily interested in using the NEDC as a signal to currency speculators of their commitment to dealing with the economy's various supply-side problems. According to Wood (2000), two sets of "institutional" factors doomed the NEDC's transformative potential: First, business was suspicious of co-operation with a body that was so close to central government due to the risk that the NEDC would be used by future governments as the basis for more directive instead of indicative planning. Second, companies favouring "collective laissez-faire" resisted efforts to induce co-ordination. Thus, the very co-ordination problems in British business that motivated the establishment of the NEDC were the main reasons it failed.

[14] See, for example, BIS 2010; Wren 1996b; Greenway and Milner 1994; Silbertson 1981; Vickers and Yarrrow 1988.

rationalisation within private industry, with the ultimate objective of boosting productivity, economic growth and employment. However, it dealt a serious blow to the British industrial districts, by making many of the informal co-operative agreements among district firms either illegal or subject to scrutiny. Important among these were resale price maintenance agreements which had prevented sellers from competing too fiercely on the basis of price by their agreement to sell products at or above a certain minimum price floor and/or at or below a maximum price ceiling. The Act specifically prohibited enforcement of resale price maintenance agreements. It required firms individually – and industries collectively – to register all agreements that restricted trade; and it set-up the Restrictive Trade Practices Court to investigate registered agreements and to judge whether they were anti-competitive and against the public interest. But the Act did not require large multi-divisional firms to register such agreements between their various departments and subsidiaries. The Act also curtailed the activity of trade associations, which not only provided valuable services for their members (mostly small and medium-sized firms), such as joint marketing and dissemination of technical knowledge, but had also played a role in pricing agreements (which were now considered anti-competitive).

*The Stock Market as Industrial Re-organiser*

With growing confidence in financial markets, the stock market came to be viewed as a mechanism for restructuring industry.[15] The rationale was based on the "efficient markets hypothesis", that a firm's share price is an accurate reflection of the value of the underlying productive enterprise. Using this logic, the stock market was theorized to be an efficient "market for corporate control" and the "discipline mechanism" by which under-performing management teams could be replaced by more effective ones when share price fell (Schleiffer and Vishny 1997). Industrial restructuring by means of hostile take-over was therefore viewed as performance-enhancing (Fama 1970). However, the leverage used to finance these take-overs meant that the targets needed to be cash and asset rich, the selling-off of which could be used to repay the debt (Lazonick and O'Sullivan 2000). Thus, during the 1960s and 1970s, corporate raiders and investors targeted companies whose assets and productive resources were under-valued by the stock market. In the process, they made enormous profits, fuelling a stock market boom that only lent strength to the theory, since the boom was interpreted as evidence of improved industrial performance. The reality, however, was that asset-stripping to repay the debt used to finance hostile take-overs dismantled vast segments of British industry, triggering a process of de-industrialisation on a massive scale.

***The Crisis-ridden 1970s, De-industrialisation and the Crisis of "Fordism"***

The UK's entry into the European Economic Community in 1973 abruptly exposed British industry to further competitive pressures, with which it was ill-prepared to cope; and many workers lost their jobs. The resulting industrial unrest was met with fierce government opposition, which only served to exacerbate the problem; and in the end, manufacturing capability was further weakened. At the same time, the progressive relaxation of exchange rate controls and the growing importance of multi-national firms fuelled the process of globalization, as firms relocated production abroad in an effort to escape higher labour and social welfare costs. This accelerated de-industrialization in long-established industrial regions and significantly weakened the ability of the government to influence macro-economic outcomes. During the 1970s, the effects of simultaneously rising unemployment and accelerating in inflation – "stagflation" – were exacerbated by de-industrialisation and

[15] British industry was particularly vulnerable, since it had historically been reliant on the stock market, instead of banks, for financing that could not be generated internally.

rapidly rising state expenditure to meet the growing costs of mass redundancies and attempts to salvage failing industries.

Stagflation, de-industrialisation and import penetration ultimately put a halt to mergers and acquisitions and led to a process of vertical *dis*-integration and a crisis of "Fordist" mass production. During the 1980s, as attention turned to the small firm sector, policies were aimed at promoting small firm business growth – of *individual* small firms as a generic category – rather than upgrading the performance of local or sectoral networks of firms (Zeitlin 1995). This was supported by the idea that the emphasis should be on the "competitiveness" of individual firms in isolation rather than on the competitiveness of the industrial districts or sectors of which they formed a part. The survival of old industrial districts (like footwear) and the success of newer ones (like motor sport and sparkling wine) is therefore an empirical and theoretical "puzzle" since they have managed to succeed against the odds and despite the challenges associated with the dominant bodies of theory and policy.

### *Co-operation and the "New Competition": Re-discovery of the Industrial District Model*

During the 1970s and 1980s, more co-operative forms of industrial organisation emerged as competitors to the dominant vertically integrated corporations. This "new competition" (Best, 1990) originated with Italian, Japanese and German producers who had evolved more co-operative relationships both with their work forces and their suppliers than was usual in the large-firm dominated Anglo-American system. Greater motivation to co-operate on the part of managers, workers and suppliers resulted in high levels of operational and dynamic efficiency based on improved labour productivity; the more effective use of equipment and materials; better quality control; and mobilisation of the skills and knowledge of workers and suppliers in the improvement, design and innovation of products, processes and the organisation of production (Howes, 1991).

In Italy, the new competition took the form of the re-activation of the "Marshallian"[16] industrial district model of production in the "Third Italy",[17] the study of which was pioneered by Giacomo Becattini and Sebastiano Brusco during the 1960s and 1970s.[18] However, it was not until the failings of the Fordist mass production model became increasingly obvious, during the 1980s and 1990s, that the wider international scientific and political community took notice of the district form of industrial organisation and policy (Landstrom 2002). This can be at least partly explained by the fact the early research findings on the Italian industrial districts were mainly published in Italian, so that their dissemination outside of Italy was limited.[19]

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[16] However, "[t]he industrial districts that the district interpretation of Italian development identified in economic reality were not simply replicas of the nineteenth century English industrial districts on which Marshall had worked: the reference to districts being "Marshallian" related to a particular analytical tool, not to an empirical identification. An industrial district can be said to be a "Marshallian industrial district" if it is so identified by empirical research using methodological criteria derived from the Marshallian analytical tool" (Sforzi 2015, p. 16).

[17] Prior to the emergence and discovery of the thriving industrial districts in Italy's Central and Northeast regions (the "Third Italy"), the country had been divided into the 'First Italy' in the Northwest, composed of large-scale producers and capital-intensive industries, and the 'Second Italy', the poor Southern regions.

[18] For a further elaboration, see Konzelmann and Wilkinson (forthcoming).

[19] The international diffusion of the analysis of the re-emergence of Marshallian industrial districts in Italy began with publication of the 1981 Conference papers of the International Working Party on Labour Market Segmentation (Wilkinson, 1981), which included a paper by Brusco and Sabel (1981), entitled 'Artisan Production and Economic Growth' and with Brusco's (1982) paper in the *Cambridge Journal of Economics.*[19] Soon after, the classification "Emilian Model" entered into discussions of regional policy-makers and international researchers, where it has figured prominently in the debate about alternative modes of production. In 1990, the International Institute for Labour Studies in Geneva made a major contribution to

The success of these modern industrial districts in securing inter-firm co-operation and channeling their joint efforts towards quality upgrading and product and process innovation brought them to the attention of the international research community. Yet the success of this form of industrial organisation presented a challenge to the orthodox economists' view that inter-firm co-operation mainly represents an attempt to fix prices[20] and is therefore inefficient; and it questioned their strict dichotomisation of "firms" and "markets". The district form of industrial organisation also sparked debate about both de-industrialisation, which found "a powerful trend towards geographic *dispersal* of at least productive (if not distributive) activity" (Harrison, 1992, p. 470, emphasis in the original), and globalisation, which some have argued signals the "de-localisation" of economic and social relationships (Gray, 1998, p.57).[21]

## 4. Contemporary British Industrial Districts: Northamptonshire Footwear, Motor Sport Valley and English Sparkling Wine

Contemporary studies of industrial districts identify them as local agglomerations of small firms engaged in the production of particular products, in close association with their suppliers, operating within a highly developed market for appropriately skilled labour, where inter-firm relationships are typified by a mixture of competition and co-operation. Their key distinguishing feature is the mix of competition and co-operation among constituent firms in which member firms are specialised but closely linked by subcontracting and the mutual benefits derived from co-operation. In this context, co-operation takes the form of close and direct technical, design and other linkages between firms at different stages of vertical subcontracting chains. However, there are other forms of co-operation involving firms supplying similar products. Such "horizontal" co-operation includes the common provision of services and advice – including accountancy and finance; technical, fashion and design; marketing and export – and firms' sub-contracting to potential competitors of orders in excess of their own productive capacity. Nevertheless, district firms are highly competitive in their product markets, with fellow members of the industrial district supplying similar products or services. The balance between competition and co-operation in industrial districts is therefore crucial to their viability. Co-operative aspects of inter-firm relationships help to minimise disadvantages of small size, while competitive aspects, along with the specialisation, impart the dynamism and flexibility that are often lacking in large, vertically-integrated firms.

The *Northamptonshire Footwear* sector is a traditional industry that has operated in the same location for centuries, with the first recorded large contract being awarded to Northampton shoemakers for an army campaign in 1642. British shoe-making was an early adopter of both the factory approach to industrial organisation and the automation of parts of the design and manufacturing process. Whilst adoption of mass production eventually allowed lower cost overseas producers to come to dominate a majority of the industry's market segments, high quality shoes for men, made in the traditional, labour-intensive fashion, remains a strong industry throughout Northamptonshire. Not only have businesses in this segment of the market survived, they continue to enjoy strong demand for their products; and new companies have emerged to develop and exploit new markets within the sector. Nicholas Cooper, for example, who founded Stamp Shoes in 2011, recently caused something of a stir

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the understanding and dissemination of the theory and practice of industrial districts, with publication of *Industrial Districts and Inter-firm Co-operation in Italy* (Pyke, Becattini & Sengeberger, 1990), which contained influential papers by both Becattini and Brusco.

[20] Adam Smith wrote: "People of the same trade seldom meet together, even for merriment and diversion, but the conversation ends in a conspiracy against the public, or in some contrivance to raise prices" (Smith 1999 [1776], p232).

[21] See also: Cairncross (1997); Dore (2001); O'Brien (1992); and Reich (2001).

within the industry by introducing the innovative "No Place Like Home" concept: handmade shoes with built-in GPS. Much the same evolutionary phenomenon experienced in British footwear can be observed in the British textile industry more broadly, where the mass market segments are also now being largely supplied by low cost foreign producers, with smaller British specialised manufacturers continuing to supply high value luxury markets and often remaining in their original locations. According to the British Footwear Association, the British footwear industry employs around 5,000 people producing approximately 5 million pairs of shoes each year, with an annual turnover of £2.3 billion; more than 60 percent of UK-made shoes are exported.

*Motor Sport Valley* has a much shorter history than British shoe-making, only really beginning to develop after the Second World War. Since the objective is to win, as with luxury shoes, the cost of motor sport products is very much a secondary factor governing demand for them. But unlike shoe-making, there is little room for tradition, with the pressure of competition demanding constant innovation and evolution; having started out as a "garage" industry, this ever present requirement to develop has, over the past 60 years, produced a highly technical skill set within the industry as well as an ability to design, develop and deliver technologically advanced products to very short time-scales. So it is no surprise that of the 40,000 or so people employed in Motor Sport Valley, some 25,000 are engineers. However, rather than being a segment of what was once a much larger industry (as is largely the case in British shoe-making and textiles), businesses in Motor Sport Valley are finding that their skills and reputation are opening up new market segments in defense, the marine industry, aviation and road vehicles – including those as *non*-sporting as the latest London Routemaster bus. Yet this may well bring its own complications and challenges, as the increasing cost of developing new technologies – along with increasing demand for them – may have implications in terms of the ease of entry, size, ownership structure and funding of many businesses within the sector. How this and other factors influence the future evolution of the sector remains to be seen; but in a rapidly developing sector such as motor sport, the evolutionary process is continuous, as opposed to one of periodic step-changes. Motor Sport Valley is currently the largest of our three industrial districts, comprising over 4,500 motor sport and high performance engineering businesses, of which around 90 percent export their products and services; it provides employment for more than 40,000 people, with a combined annual turnover of around £9 billion, of which 65 percent is accounted for by exports (Motorsport Industry Association 2013; Nathan 2015).

*English Sparkling Wine* is the youngest of our three districts. Whilst there have been vineyards in England again since the 1970s, it has only been in the last decade or so that English wines have begun to make their presence felt on the international stage. If this continues, improvements in the quality of the product, combined with the exclusivity associated with the relatively small quantities produced, will likely create a market with very little price sensitivity. Being at an early stage of development, unlike the other two sectors, English sparkling wine does not yet have a strong international reputation to support it; continuing success however, could eventually exert a powerful influence on the developing value of "English" as a point of origin for sparkling wines. There is some question regarding the footprint of the English sparkling wine "district", which has largely been a consequence of climate change – and the ability to ripen classic Champagne grape varietals in certain parts of England. Whilst the best known, award winning estates are in Sussex, Kent and Cornwall, there are presently vineyards as far north as York. It may well be that as the sector develops, local groups of associated businesses will coalesce around initially isolated vineyards and wine producers. This suggests that the term "English sparkling wine" might eventually need to be re-defined if particular sub-regions begin to build reputations of their own; it may also become possible to successfully create higher quality still wines. Like motor sport, English sparkling wine is a fast growing sector. According to English Wine Producers (2016), the

land devoted to viticulture has doubled in the past decade and currently stands at over 2,000 hectares; and it is predicted to increase by a further 50 percent by 2020. Annual production of wine has also increased; present production stands at over 5 million bottles, up from 3 million just four years previously, with English wine sales reaching a record £100 million in 2015. Sparkling wines account for 66 percent of all production, although this is still very small in global terms. Exports are expected to increase from 5 percent of current production to 25 percent by 2020.

***Industry Origins and the Value Associated with "Place"***

The footwear industry developed in Northamptonshire largely as a consequence of the presence of key natural resources and one of the largest cattle markets in the country. In addition to an abundant source of leather, there was also a plentiful supply of oak trees for bark to assist in tanning, a process which requires considerable quantities of water – conveniently supplied by the River Nene – along with good transportation links for shipping-out the finished product. Although shoe-making originally became a Northamptonshire industry for very practical reasons, by the 21st century, a Northamptonshire location has established itself as a significant part of a shoe company's trademark, particularly if it makes gentlemen's shoes; and it can be a source of value in itself, especially in overseas markets.

Motor Sport Valley also owes its original location to the availability of essential resources. Prior to the Second World War, Grand Prix motor racing was largely the preserve of Italian, French and German car manufacturers while British involvement was limited, in part by a preference for more established horse racing over motor racing. British involvement was also seriously hampered by a lack of places – other than the by then out-dated Brooklands circuit – where motor racing could actually take place. With the cessation of hostilities after the war, however, a considerable amount of land was returned to private ownership – along with large numbers of ex-military airfields – many of which were located in the Midlands and Eastern regions of the country. There was suddenly no shortage of motor racing venues, or, indeed, engineers to take advantage of the opportunities they provided.

Since then, the British Grand Prix has mostly been hosted by the Silverstone Circuit, which began life in 1943 as an RAF training airfield, but was first used for motor racing just four years later in 1947. Silverstone is now also home to a range of motor sport related businesses and a University Technical College, with a number of Formula One teams based close by. Other circuits, such as Hethel (where Group Lotus is based) and Snetterton – both of which are located in Norfolk – also started life as military airfields. Because of the need to supply major airbases with large amounts of military supplies, early motor sport businesses also benefitted from well-developed transportation and communications systems. Although like shoe-making in Northamptonshire, the motor sport industry has now grown beyond the immediate need for some of the resources which originally brought it to life, ever-improving communication and transport links remain a very high priority for shipping components and other motor sport products all over the world.

A location in Motor Sport Valley also adds value to a motor sport business located there; but, equally significantly, it helps to attract the best talent, internationally. Yet many of the 4,500 companies in Motor Sport Valley are hardly household names, either supplying components or building products that then carry the client's brand, rather than their own. The original Mercedes Grand Prix engine, for example, was designed and built by Ilmor in Northamptonshire; but it was given its customer's branding. Well-known Formula One teams, on the other hand – such as Williams, McLaren and Red Bull – have become household names in their own right, with the industrial district of which they form a part being less obvious. Motor Sport Valley is also no longer restricted to the UK; many

companies originating there – such as Ilmor, Cosworth and Judd – now also have a strong presence in the USA, which is one of the largest markets in the world for motor sport.

English sparkling wine is inseparably connected to its location. Like Champagne – which can only be produced in the Champagne region in France – it can only be made in England or Wales. Although considered a relatively young industrial district, like the Northamptonshire footwear industry, English sparkling wine has its roots in the 17th century. In "Some Observations Concerning the Ordering of Wines", a paper submitted to the Royal Society in 1662, Christopher Merrett was the first to describe the process of inducing secondary fermentation in the bottle, some 30 years prior to its "official" invention in France by the monk Dom Perignon. Whilst there has never been a shortage of appropriate soil conditions for growing grapes in the south of England, it was not until a degree of climate change from the 1980s onwards allowed English vineyards to successfully ripen three of the classic Champagne grape varietals – Chardonnay, Pinot Noir and Pinot Meunier – that the English sparkling wine sector was finally able to produce a very high quality product. However, English wines are of necessity targeting small market segments, due to the limited (albeit increasing) quantities produced. Thus, unlike Northamptonshire footwear and Motor Sport Valley, the English sparkling wine industry is at an early stage of development and has not yet been able to turn its English origins into significant "place" value. Instead, it is competing with at least one industry that already has – France's Champagne region. A Champagne origin presently adds significant value for sparkling wine producers in France; indeed, it is so jealously guarded that sparkling wine produced anywhere else in France is usually referred to merely as "Cremant". However, in the foreseeable future this may well change for the English producers who have, during the past five years or so, been accumulating an ever-increasing succession of global awards for sparkling wine – frequently beating established Champagnes in the process. If wines produced in England continue to improve in both quality and style, English sparkling wine or perhaps some sort of collective brand – of a similar nature to Italy's "Prosecco" or Spain's "Cava" – will eventually be able to add value in the way that "made in Northamptonshire" adds value to a pair of men's shoes.

### *High Value-Added, Price-Insensitive Products*

In all of our cases, the focus within the businesses is not purely on money and profits: there is a pride in – and awareness of – the importance of producing the best possible product, which is both essential to survival in a relatively small, high value-added sector as well as being a source of satisfaction in itself. Thus, whilst there is strong competition to produce ever better products – especially in sectors like English sparkling wine and motor sport, very little, if any, competition is based on price. Aside from recognition that a single-minded focus on price would be destructive of the industrial district's ethos, it would also mean starving the businesses involved of funding for such collective goods as training, research and development and market promotion. As a result, competition is constructive and based on things such as product quality, differentiation and performance.

Motor Sport Valley must continually innovate in order to remain competitive; and a high priority is placed on research and development, with the result that, on average, around 30 percent of profits are ploughed back into the businesses for this purpose. During the course of the Formula One season, teams will make hundreds of different components, but few of any one type. By the following season, the vast majority, if not all of these will already be obsolete. The ability to rapidly design and produce high quality components requires not only a highly technical manufacturing system but also one that is very flexible, fast-moving and capable of reliably delivering products against a very tight schedule. This means that although the cost of each component – as well as the finished product using it – is usually very high, the emphasis is firmly on performance rather than price.

In the case of a pair of bespoke shoes, the emphasis – whilst still squarely on producing a high quality end product – is on the employment of a very different process of production, which is more about traditional skills and the investment of time and care that they demand. This is an essential part of the value added to the end product; and it is a key component of the appeal of these products to their target market. Whilst mass produced alternatives certainly exist, customers continue to favour the more hand-made approach in spite – or more probably at least partly because of – the higher "human" investment involved. The relationship between customer and manufacturer is often maintained not only by repeat purchases but also by repairs and maintenance – further developing and reinforcing the bond between the shoemaker, the customer and the high value product.

In the case of English sparkling wine, the more lucrative revenue stream associated with the production of higher value products has attracted farmers into viticulture and wine-making, many of whom have experienced sustained downward pressure on their prices from supermarkets and other outlets for their more usual products. Whilst some grow grapes to supply other wineries, an ever-increasing number have also started to make their own wine, adding further value. This is also a significant contributor to the bottom-up development of the sector, which plays an important role in its current rapid growth. Some have established their own wineries, whilst others rely on neighbouring estates to produce the wine for them; this allows a range of options for market entry, which in turn is helping to further drive the rapid expansion of the English wine-making industry.

***Ownership Structures and Ease of Market Entry***

Shoe-making in Northamptonshire has always been something of an artisan industry, with relatively low barriers to market entry; and many companies started out being individually or family owned, either wholly or by a small group of share-holders. This scale of business is thus accessible to more market entrants, allowing those whose main contribution is a new idea, to have a realistic chance of putting it into practice. Many businesses have continued in this way, whilst others are now owned by large fashion and footwear companies. Church's, for example is currently owned by Prada; however it continues to operate successfully in much the same way as it always has done, but with better access to global markets. This tendency, on the part of a larger owner, to respect a new acquisition's origins and independence, is largely due to recognition of the importance of authenticity in limited quantity luxury products, where there is strong resistance on the part of customers to paying premium prices for poorly produced or undifferentiated products. Thus, whilst there remains a risk that acquisition will threaten the smaller shoemaker's ability to maintain autonomy and the quality standards required by its customers, this recognition plays a role in the success of both enterprises involved.

Whilst motor sport is nowadays a highly skilled and capital-intensive business, it was not always so. When large numbers of airfields became available for motor racing after the Second World War, it was neither large car manufacturers nor glamorous Grand Prix teams that initially drove the development of British motor sport. Rather, it was smaller engineering companies in the lower cost formulae that provided a large and rich pool of talent. John Cooper, for example, when trying to produce a competitive chassis in the then 500cc Formula Two category, initially used the undamaged front ends of two written-off FIAT 500s, welded back-to-back in order to get independent suspension all round. When the design was then put into short run production however, there were no longer any FIAT parts involved. The relative ease of entry into the industry at this point, as well as an emphasis on innovation, rather than worrying about what had already been tried, is almost certainly what provided the necessary creativity and agility that it needed to grow rapidly.

At present, many businesses in Motor Sport Valley are share-holder owned, usually by a small group of investors, often with close connections to the sport, rather than by many distant investors whose primary interest is in short-term financial returns. This is important for a number of reasons: Firstly, it allows established businesses, such as Ilmor or Cosworth, to continue following the retirement of their original owners. Secondly, it facilitates the raising of capital to fund what is becoming an increasingly expensive development process – both in motor sport and beyond. It is also a key means of entry for "new" teams into Formula One and other series, obviating the need to set up a new team from scratch, and it keeps groups of engineers and designers together, along with their skills, networks and relationships. For example, the team now based at Enstone in Oxfordshire has, since 1981, competed as Toleman, Benetton, Renault, Team Lotus and presently Renault again; for this reason it is usually known as the "Enstone Team" within the sector. Likewise, the present Mercedes AMG Petronas Formula One Team at Brackley, which originally started out as Tyrrell Racing in 1968, has previously competed as Brawn Grand Prix, Honda Racing and British American Racing. This process represents a means of entry into a market which would otherwise require even higher set-up costs as well as a significant delay in becoming competitive; it also preserves and develops the motor sport businesses and networks through the succession of relatively short-term owners.

Other businesses, including what were once exclusively Formula One teams such as Williams and McLaren, have taken a different route, and have found other outlets for their technical, manufacturing and consultancy skills. This process has sometimes involved the need to raise capital, resulting in a variety of approaches to the problem. Williams Grand Prix Holdings, for example, floated on the Frankfurt stock exchange in 2011, selling a minority interest, with Sir Frank Williams retaining over 70 percent of the existing shares. This obviously has the benefit of raising the required funds without losing control of the company; but the choice of Frankfurt over London is also significant. In London, the International Accounting Standards Board's International Financial Reporting Standards (IFRS) 8, would have required the disclosure of the value of any contracts amounting to 10 percent or more of turnover, whilst the Generally Accepted Accounting Practice (GAAP) in force at Frankfurt does not. In a highly competitive business and racing environment, the ability to keep such information confidential is a clear advantage. The McLaren Group, on the other hand, as of 2014, was 25 percent owned by its Chairman, Ron Dennis, with the remainder split between his business partner, Mansour Ojjeh (25 percent) and the Bahraini investment company, Mumtalakat (50 percent). Both Dennis and Ojjeh have had a long involvement in motor sport, which provides the group with both a narrow range of share-holders and a significant understanding of the businesses the group is involved in. A larger, more widely-dispersed group of share-holders would be much more likely to dilute this and, perhaps as a result, be more inclined to prioritise short-term returns to share-holders over the longer-term objectives of the group.

The English sparkling wine sector also accommodates a broad range of ownership structures. Leaving Waitrose – the grocery division of the John Lewis Partnership – and their relatively small Leckford Estate vineyard to one side for the present, many vineyards were established on existing farms, such as Camel Valley. Others, like Ridgeview, were funded by the sale of the founding owner's previous businesses. But these are far from the only means of market entry. Forty Hall, in the Lea Valley, whilst sharing the objectives of other award-winning English wineries, is run as a charitable foundation in co-operation with the local authority. Chapel Down in Kent is partly crowd-funded; in 2015 they raised £1 million by this means, to build a new brewery for their specialist beers. However, once again, there are relatively few, if any, wineries or vineyards that are funded through widely-dispersed share-holder ownership. This is partly because of the time it takes to bring a winery on stream, with most of the investment being required in advance – which means that investors have to have an eye to the long-term, rather than dreams of short-term gain. Once the winery itself is in place, and

the vines are producing grapes, development of the product and its subsequent marketing is a relatively incremental, skill-driven process. Given the amount of time before a vineyard becomes productive (typically, around five years), the main consideration is recouping the initial investment. For many English wine producers, aside from the cost of the winery, the main investment is the land itself – and time – which is what allows existing land-owners and tenants a variety of means of entering the sector. Since many farmers entering the sector already own the land – and in many cases also have suitable buildings available for a winery – the planting of vines and the winery is usually the most significant expense. But it is probable that as the sector develops and evolves, with more wineries being created, some will eventually begin to change hands – especially if England develops some very famous estates – and that as a result, the nature and range of ownership structures will also continue to evolve.

***Co-operation and Competition – and the Role of Industry Bodies***

Early-on in the history of Motor Sport Valley, co-operation played a key role in the sector's development and the competitiveness of its early racing teams. The Cosworth DFV Formula One engine, for example, which was originally designed purely for Colin Chapman's Team Lotus, was put into series production by Ford Motor Company during the 1970s and 1980s; and it was made available for purchase by any private team that wanted to enter the sport. Along with the Hewland gearbox, this provided the basics for designing a Formula One car which stood a good chance of being reasonably competitive. This relative ease of entry served as the basis for the emergence of a number of new Formula One teams, as well as providing work for a wide variety of other suppliers, significantly spurring the development of Motor Sport Valley in the process. The businesses doing this were dismissed by Enzo Ferrari as "Garagistas" and "Assembliatores"– that is to say, people who fiddled about in garages assembling other manufacturer's components. In his view, they were not proper racing car manufacturers; and on seeing Cooper and Lotus moving the engine from the front to the back of their car, Ferrari's opinion was that "The horse should pull, not push…" But the "garagistas" had the last word – as indeed they also did with the importance of aerodynamics – since it has been more than fifty years since a front-engined car won a Grand Prix race.

Whilst the basis for competition is reasonably clear in motor sport, its underpinnings in both footwear and sparkling are more complex. In footwear, where production levels are relatively low – necessitated by the labour-intensive methods of production – and demand is increasing, there is little pressure on individual shoemakers to directly compete with each other. Given the nature of the product, some customers form a long term relationship with a favoured firm, whilst others might well buy from a number of manufacturers. This relative under-supply to the market is an important component of strategy in many true luxury categories, which tends to promote co-operation as much as competition, when an industrial district is tackling a large market.

In the case of English sparkling wine, even though the largest producers are still, for the most part, relatively small, co-operation with larger businesses can play an important role. Waitrose, for example, offers significant publicity as well as another channel to market for English wine producers; and through its Leckford Estate winery, it has also recently become a producer itself. This has not only significantly raised the profile of English sparkling wines, from a retail point of view; it has also to an important degree raised the profile of English still table wines. The involvement of businesses such as Waitrose, and French champagne houses such as Taittinger, have together helped the industry to get beyond what could perhaps be best described as a "novelty value" stage. However, as Nicholas Coates, co-founder of

producer Coates & Seely recently observed, “to us, it is not a numbers game; it’s not how big we can be, it is how good our wine is” (Stodell 2016, p. 48).

Within the young English wine-making sector, however, co-operation is presently more ad hoc than is the case with either shoe-making or motor sport. Nevertheless, a number of wineries make wine for other estates; and some growers do not produce wine under their own label but simply provide grapes to larger producers. Instead of investing in their own bottling line, some groups of estates have opted for a mobile bottling plant that visits each estate in turn. All of these approaches can be used to reduce the size of the initial investment, which is crucial in an industry where the average vineyard area is less than 5 hectares, with many, much smaller than that. There has also been a degree of regional organisation and co-operation emerging in both Sussex and Kent; and it is likely that this will continue to develop as the sector matures. However, the Managing Director of both a large family wine producer and also that of a winery run as a charitable foundation, expressed the view that there should be a greater recognition among the English wine producers that they should not see themselves as in competition with each other; rather, they should be co-operating to produce the best possible product, in competition with the rest of the world. This view is based on a current lack of co-operation in such basic areas as the sourcing and bulk buying of shared requirements – such as commonly used supplies – to help reduce needless costs, to the benefit of all concerned.

In this context, a strong and active industry body is an indicator of a successful district or sector. Not only does it promote the interests of the sector in terms of marketing, it also represents the industry politically. The industry body is also usually involved in the provision and/or accreditation of training programmes. Since these bodies are largely sustained by the sector itself, they must be felt to be doing the right things, and doing them sufficiently well to justify the effort and cost of maintaining them. In all three of our industrial districts, much co-operation takes place on this basis.

The British Footwear Association (BFA) is strong and influential, helping to organise both marketing and training, which keeps the sector at the forefront of the market for high value products internationally; and it is actively involved in marketing bespoke English shoes abroad. This sense of origin is reinforced by association with other British products, with the result that when James Bond puts his foot down in his Aston Martin, for example, that foot will usually have a Northamptonshire shoe or boot on it. In terms of training, the footwear industry lends itself to both formal college-based training programmes and on-the-job learning through apprenticeships, which the BFA both organises and accredits. Apprenticeships, along with fresh employment opportunities, are also offered directly by the wide variety of thriving Northamptonshire footwear businesses – both existing and new market entrants. The BFA also provides technological input; and it has contributed to major developments in the industry’s manufacturing and design processes.

The Motorsport Industry Association (MIA), is also influential, representing the interests of the sector as a whole, assisting the development of networks and partnerships, and supporting both the provision and accreditation of training and professional qualifications to underpin the industry’s future. In addition to a focus on training, the MIA works with UK Trade and Investment (UKTI) to promote exports, and to assist entry into new markets, such as defense and aerospace. It also drives much of the co-operation within the sector. Like bespoke footwear, motor sport is a very skills-intensive sector, relying on a supply of very highly qualified recruits. For this reason, the MIA set up the first degree level course in Motorsport Engineering and Design in partnership with Swansea Institute. Since then, many other universities and colleges have followed suit; and the MIA now has both a Motorsport Education Forum and a Motorsport Employers Group, to ensure that training remains

appropriate and up-to-date. There are, of course, many other disciplines that can feed through into motor sport careers, including engineering, aerodynamics, electronics, logistics, physics and so on. But Motor Sport Valley is not solely reliant on local talent: as a consequence of its international reputation as a global motor sport centre, it draws in talent from around the world. Efforts are also being made to interest more local young people in engineering; and the University Training College at Silverstone Circuit, which caters for 14 to 19-year-olds, offers an early pathway into motor sport engineering.

In the case of English sparkling wine – as the youngest of our industrial districts – it is perhaps no surprise that the industry body, the UK Vineyard Association (UKVA), is less well developed than its counterparts in footwear and motor sport. Whilst the UKVA looks after technical matters, provides advice and represents the industry's interests to government, marketing is provided by English Wine Producers (EWP), which was originally set-up by a few of England's leading independent producers for the purpose of promoting their wines to the trade, media and consumer. EWP now serves as a complementary industry body to UKVA, carrying out a marketing role both within the UK and abroad. It remains to be seen how the industry structure of English sparkling wine will develop over the next few years; it may remain fragmented, or it may adopt a structure and strategy with similarities to comparable industries elsewhere – or develop a structure that is uniquely its own – as the sector develops and evolves. In terms of education and training, the English wine industry soon realised that its growth and development depended upon very significantly improved educational resources. Plumpton College, now a state-of-the-art facility offering courses in viticulture, was by its own admission, until recently, based in "a few old chicken sheds". Much of the funding for the transformation of Plumpton College came from within the industry, both from wineries and the educational sector itself. However, not all jobs within the wine-making industry require specialist knowledge, with many relying largely on general agricultural practice. But even here the availability of specialist training makes possible progression from these jobs to more specialist – and higher value added – roles.

***Evolution and Development***

A healthy industrial district is usually in a continual state of evolution; and whilst involving organisations of a variety of sizes and types – themselves at different stages of evolution – it is often driven by the innovative capability of its smaller, newer and more agile members. The regular appearance of new, dynamic enterprises entering the market plays a major role in our industrial districts' longer-term health. Since some companies will fail and others will merge or be bought-out, a steady stream of replacements provides new ideas to encourage innovation, maintain the critical mass required for retaining training and other key collective resources and to uphold the value of the regional location. The steady stream of new market entrants – particularly during a district's earlier phases of development – thus provides both pressure to innovate and incentives to co-operate in pursuit of collective goals, which, in turn, reinforces the dynamism of the district and its ability to sustain itself and to evolve.

Whilst it is easy to imagine that the footwear industry in Northamptonshire, being largely based on tradition, has changed very little over the centuries; but this is not in fact the case. Footwear production has always involved a combination of functional as well as fashion input. However the first examples of automation in the production process – some designed by Marc Brunel, father of Isambard Kingdom – took place as long ago as the late 17$^{th}$ and early 18$^{th}$ centuries. Since then, both the design and manufacturing processes have undergone varying degrees of change although handmade products that take a considerable amount of skill and time to produce remain significant. The production process though, is not the only focus of development, with direct marketing using the Internet providing a closer relationship with existing customers, access to new customers along with a lower cost of sales and the

more frequent production of short runs of seasonal styles – maintaining interest and encouraging customers to come back more regularly.

English sparkling wine has so far learned much from its more established continental counterparts. However, whilst this has resulted in the sector currently having much in common with the Champagne producers, the dynamism in this growing sector means that there are already signs of English wine makers starting to diverge from those in other countries, and developing their own ways of doing things. Bob and Sam Lindo of Camel Valley in Cornwall for example, feel that it is already possible to discern an emerging English style of sparkling wine, whilst the debate as to whether or not there should be a collective brand for English sparkling wine – and if so, what it should be – is ongoing. It is also noticeable that many English wines are sporting much more contemporary packaging than their French counterparts. From these beginnings, it may well be that there are many further developments to come.

Motor Sport Valley operates in a very different way. Whilst some Formula One teams have past cars on display – or locked away in storage – there is little place for tradition or resting on past glories. What was competitive even last month, may not be good enough to win next month, let alone next year. This emphasises constant development and innovation in every detail of the production of racing car components, as well as the overall package itself. This pressure to innovate has resulted in many companies becoming highly advanced technologically. They have also evolved skills in short-run design production and delivery against very tight timescales. In addition to working with manufacturers of road vehicles, this has opened-up new markets to motor sport companies in the aerospace, defense and marine industries. In 2015, McLaren Group was renamed McLaren Technology Group, to reflect diversification into fields as diverse as healthcare, oil, gas and financial services. McLaren Technology Group have, like BAE Systems, also partnered with UK Sport to produce training equipment for Olympic teams, such as rowing and canoeing, as well as highly advanced bobsleighs for the Winter Olympics – which helped win a gold medal in Sochi 2014. Similarly, Williams Grand Prix Engineering has provided energy capture technology to Porsche AG and is working on a project to make London Routemaster buses more economical and less polluting on longer trips. Red Bull Technology is contributing to the design process for Sir Ben Ainslie's Land Rover BAR America's Cup team. Motor Sport Valley companies also provide specialist consultancy, with Williams effectively setting-up Jaguar's new formula E racing team, having already worked on various of their concept road cars. Motor Sport Valley is, of those studied here, the district that has evolved furthest from its initial roots. Indeed it could be said that in contrast to either English sparkling wine or Northamptonshire footwear, Motor Sport Valley has developed a set of capabilities rather than a product. This provides the basis for a number of possible further developments, as well as a considerable degree of diversity and specialisation.

## 5. Conclusions

From a Marshallian perspective, the economic situation is a dynamic process of change and progress; and since Marshall's time, globalization has fundamentally changed the character of the local, national and international contexts within which firms and sectors in advanced industrial economies find themselves competing. This has had a profound effect on the fate of the English industrial districts; and many of them disappeared as a consequence of policy choices – informed by economic theory – that served the interests of large multi-divisional and multi-national corporations whilst undermining some of the key sources of the industrial districts' competitive advantages and external economies.

During the 1920s and 1930s, with the increasing size of highly successful large vertically-integrated producers in Germany and America, there was a shift away from Marshall's evolutionary theory of industrial organization and development. Static equilibrium models focused on individual firms within perfect, oligopolistic and monopolistic market structures (rather than groupings of firms operating within industrial sectors); and as the conventional wisdom came to view large firm dominance as the next stage in industrial evolution, micro-economic theories of imperfect competition – which assumed a long-run equilibrium level of output at less than full capacity utilisation – viewed the resulting unemployment as efficient. Although Keynesian macro-economic theory regarded unemployment as *involuntary* and a consequence of insufficient effective demand, these micro-economic theories informed industrial policy, which increasingly prioritized the interests of large firms through rationalization of the industrial structure by means of nationalization and encouragement of growth through mergers and acquisitions. At the same time, competition policy – notably the 1956 Restrictive Practices Act – dealt a serious blow to the British industrial districts that had survived the de-industrialization of the interwar years by making many of the informal co-operative agreements – in particular, resale price maintenance agreements – among district firms subject to scrutiny, if not illegal.

Policy choices driving the period of significant industrial concentration that followed the Second World War – and extended into 1970s – were also justified by theories about the visible hand of managerial authority and the importance of large size in capturing the *internal* economies of scale and scope made possible by technological progress. On this basis, industrial concentration was fostered by deliberate policies that encouraged the creation of "national champions". It was also driven by the institutional organisation and regulation of capital markets that forced companies without sufficient internal reserves – and in the absence of alternative sources of long-term finance – to turn to the stock market to fund expansion. Widely-dispersed share-holder ownership of financial institutions motivated them to favour short-term strategies of portfolio investment over channeling long-term finance for productive uses. This, together with the possibility of using leverage to finance the acquisition of assets made growth through mergers and acquisitions an attractive alternative to internal growth for many British firms.[22]

But from the 1960s onward, Britain's large industrial firms suffered a series of serious challenges. Weak legal constraints on hostile take-overs – theoretically justified by the efficient markets hypothesis – allowed the stock market to be used to restructure industry, in a process that triggered de-industrialization with the selling-off of productive assets to repay the leverage used to finance the buy-outs. During the same period, globalisation, the relocation of production abroad and competition from cheaper imports fueled a process of vertical dis-integration, leading to a crisis of Fordist mass production. In this context, the re-discovery of the "Marshallian" industrial district by Italian scholars in the Third Italy renewed interest in the district form of industrial organization as similar successful forms of small firm agglomerations were discovered in other advanced industrial economies around the world. In Britain, despite the policy emphasis on the competitiveness and growth of individual small firms from the 1980s onward, some industrial districts – such as the Northamptonshire footwear sector – survived and thrive; and others – such as Motor Sport Valley and English sparkling wine – have emerged and flourish.

Since actual industrial districts vary widely – and since the 1970s, a range of "district-like" productive systems have been identified – defining them has been the subject of considerable conceptual debate (Herrigal & Zeitlin 2009; Whitford 2001; Zeitlin 2007). Unlike a large

[22] See, for example, Hannah 1983, ch. 7 and 9; Williams et al 1983, pp. 76-91; Cosh et al 1989; Fairburn and Kay 1989.

multi-divisional corporation, which usually targets a mass market and which could effectively be headquartered anywhere in the world, an industrial district is populated by organisations of a variety of types and sizes, specialising in different phases of the same – or complementary – production process(es), and operating in a particular geographical location or cluster of locations. There is a division of labour among district firms that promotes the competitiveness of both the district as a whole and its constituent businesses, which itself is supported and governed by such institutions as industry bodies and local authorities that encourage, enforce and protect the bases for both competition, that is constructive and creative, and the co-operation that gives rise to external economies.

For our purposes, industrial districts are associated with certain general characteristics which manifest themselves in a variety of ways. These include the factors that serve as a catalyst for the initial appearance of an industrial district in a particular locality and those that sustain it over time, among which, the value associated with place of origin, the value of the product itself, an abundant supply of appropriately skilled labour, ease of market entry and a continuous supply of new, dynamic and innovative businesses, are especially important.

Location advantages serve as a catalyst for the initial appearance of an industrial district; but successful performance of an industrial district over time confers a reputation that assigns a premium to location in a host region, even after the original locational advantages disappear. Each of the industrial districts in our study has a very good reason – either current or historical – to be connected with the locality in which it is embedded. And although the original advantages associated with the place or origin are no longer as important as they were at the start, especially in the cases of footwear and motor sport, the reputation of the geographic location now adds value to the products being produced there; it also attracts new, innovative market entrants as well as the best talent and skills from around the world. In the case of sparkling wine, the youngest of our districts, the sector is building a reputation for world class, internationally competitive wines; if this continues, the value of "English" as a point of origin may become as valuable as Northamptonshire is for footwear and Motor Sport Valley is for engineering and motor sport.

It is now rare for an industrial district to target mass markets, or to take a price leadership position; and in our three cases, firms produce relatively low volumes of high value-added, price-insensitive products, which are either wholly or partly hand-made by highly skilled individuals. Following the increase in price-based competition from overseas mass producers, the Northamptonshire footwear manufacturers have exploited the luxury men's shoe segment of the market. By contrast, Motor Sport Valley, which emerged as a "garage" industry after the Second World War, has evolved into a high tech manufacturing, engineering and associated services sector, in which continuing success has allowed businesses within the district to expand into new industries. In sparkling wine, the emphasis is on production of the highest quality wine possible; and the English sparkling wine producers' success has been rewarded by an ever-increasing series of international awards, which is strengthening the district's reputation on the world stage.

A feature common of our industrial districts is the ability to support a range of ownership structures, although the widely-dispersed share ownership model is at present a relative rarity. This might be the result of a lower demand for capital as a consequence of a more skill-intensive approach, a focus on smaller market segments in the case of sparkling wine and footwear, or the need for high levels of reinvestment in research and development in the case of motor sport. The relatively small scale of firms within these sectors – particularly footwear and sparkling wine – makes them generally less reliant on large amounts of finance capital to set-up than their mass production counterparts. This facilitates market entry of new and innovative businesses, reinforcing the sector's vitality. The higher margins involved – in

products which are not particularly price sensitive – also provides the opportunity for both better incomes and re-investment of profits to a greater degree than is often the case in a large corporation, particularly if it has widely-dispersed share-holder ownership.

Since market competition (particularly that based on price) can be destructive of effective industrial organization – and it has the potential to impede the development of institutions which, by fostering co-operation, improve the quality of market and other relationships between firms (and hence their ability as a group to compete successfully with outsiders) – effective and successful co-operation forms the basis for creative competition. In all three of our districts, competition is constructive and based on things such as product quality, differentiation and performance; and co-operation takes the form of working together – usually in collaboration with the sector's industry body – to provide and upgrade such collective resources as training, marketing, research and development and export-related services as well as to encourage and facilitate innovation.

We conclude by returning to Alfred Marshall, who was keenly aware of the evolutionary nature of productive systems and of the environments in which they are embedded. He viewed competition as "an activity, a process with evolutionary dimensions" (Kerstenetzky 2010, p.576), rather than a market structure; and he recognized the dynamic inter-relationship between production (supply) and consumption (demand). This was perhaps most clearly articulated by Allyn Young's observation – in defending Marshall's theory of industrial organization from Sraffa's (1926) attack upon it – that "the division of labour depends upon the extent of the market, but the extent of the market also depends upon the division of labour" (Young 1928, p. 529). In this context, Young identified the "market" as "buying power" where "the capacity to buy depends upon the capacity to produce … [and] as the outlet for goods in general, the size of the market is determined and defined by the volume of production" (Young 1928, p. 532). From this perspective, the division of labour operates on both the production and consumption sides; and the ability to recognize and exploit ever evolving and new markets is an important determinant of competitiveness. In this, the contemporary British industrial districts in our study offer insight into some of the dynamic processes involved.

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