

Small & Medium Enterprises Policy in the New Millennium

A Study on Developed & Emerging Economies

by
P M Mathew



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Preface

Small and medium enterprises(SMEs),once considered as a peripheral area of the economy, has of late, become the centre-stage of economic life in most countries. In the mainstream debates of today, the subject has been extensively dealt with from the angle of policy making and strategy development.

The global experience of SME development is broadly divided into two streams today: that of the developed countries, on the one hand, and of the developing and emerging economies, on the other. While, concepts such as space, time, and scale, are giving way to scope, it is important to have cross-national learning, sharing of experience, exploration of joint strategies, and action for the best interests of individual countries and their people. It is against this background that the present author has proposed an idea of a two-year initiative of looking into the comparative experience of developed and emerging economies, with special focus on two countries, i.e., United Kingdom and India. I am extremely thankful to the Indian Council of Social Science Research (ICSSR) for honouring me with its prestigious Senior Fellowship. As a top level honour granted by the Council, to senior level scholars and policy experts in the country, I feel humbled to make a comparative analysis in the subject area.

I understand that the challenge is stupendous. However, I was encouraged to take it up, because of my limited track record in Europe and Asia, and more specifically, in countries like the United Kingdom and the Netherlands, where I had my advanced studies and research. Following my earlier research at the International Centre for Corporate Social Responsibility (ICCSR, Nottingham), and at the Developmental Research Institute, Tilburg, the Netherlands, I had taken some efforts to take it at a comparative plane to the context of India,U.K., Indonesia, and Bangladesh. Subsequently, the Birla Foundation honoured me with the prestigious Birla National Award in Economics, wherein, in partial fulfilment of the same, I tried to look into the SME policy experience in the UK and India in the 1990s. I am glad to note that the present research forms a continuation of the same.

Since my explorations on the 'new economy' and its implications for the SME sector, at the Development Research Institute, Tilburg, a couple of years back, there has been a sea-change in the SME paradigm around the world. Fortunately, India has a proud of place as torch-bearer of the 'micro multinationals' movement. Given all these developments, this report makes a humble attempt to circumscribe the changing world of SMEs, and to bring to light its potential in the years to come.

Besides the ICSSR, various other institutions and experts deserve acknowledgement, for sharing with me their deep insights and ideas. At the national level, my exposure with several policy bodies, such as, the Office of the Prime Minister, Planning Commission, Reserve Bank of India, Ministry of MSME, and Ministry of Statistics and Programme Implementation, have provided me rich inputs and insights for shaping this report. At the United Kingdom, in my capacity as a Senior Chevening Fellow, and otherwise, I had the

opportunity of close interactions with the officials of the Department of Trade and Industry (DTI), the Foreign and Commonwealth Office, various City Councils such as, in Nottingham, London, and Ealing, prestigious international institutes, like the Institute of Development Studies, Sussex, Overseas Development Institute London, London School of Economics and University of Oxford. I am thankful to all these institutions and experts for interactions, and for sharing of rich information in the subject area. I am also deeply grateful for the British High Commission, New Delhi, as also, for the Deputy High Commission Chennai, for collaboration, sharing of ideas, and for all necessary support, in connection with my visit to the UK.

The Institute of Small Enterprises and Development (ISED) has provided me an unusual and congenial environment by hosting this project. I am thankful to the Board of Governors and especially to Dr. K. N. Kabra, Chairman, Dr. M.K.S. Nair and Dr. Philip Kurian, for all their necessary support and cooperation. The rich resources of the ISED Small Enterprise Observatory have a significantly added value to this research. At the research desk, S. Jagannathan and Vishnu Vardhanan provided extensive support for data analysis. Liju M.J. and Vaishnav M.V. provided necessary support in collection of literature and for data sourcing. Jovel Johnson extended commendable support for taking dictations from time to time and for arranging the chapters in a presentable form.

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Abstract

1.0.Introduction

Like 'democracy', in the dominant paradigm of government and governance, 'Small and Medium Enterprises' adorns the centre stage of debates on income opportunities and livelihoods of the people. Having universal acceptability of a concept, can be both beneficial and deceptive. It may have constructive as well as destructive potential. That makes, an examination of the development experience, on the one hand, and the process of SME policy making, all the more important today. While, income opportunities and livelihoods are essentially micro and meso-level subjects, they need to be focussed in the context of countries and their people. Therefore, while attempting to grapple with the global processes and phenomena, there is the imperative for understanding the SME role in the context of specific countries. It is against this background that, the larger question of SME policy making and public policy architecture, discussed in the specific context of two countries, i.e., India and the UK. Though these countries represent two distinct global cultures, they have several things to share in terms of history, practices, and the opportunities of mutual learning.

2.0.Emerging Role of SMEs in the Global Development Agenda

The twentieth century has witnessed a transition in the global perceptions on the role of SMEs in the economy, in relation to their social and economic roles. However, these perceptions were essentially grounded on two key developments: First, the pattern of economic growth became increasingly job-displacing rather than job-creating, which demanded greater responsibilities on the part of governments to create employment opportunities of a massive scale. Secondly, global production itself became increasingly space-neutral, which would naturally imply, several of the erstwhile processes of capitalist production can easily be managed at a significantly lower cost while engaging SMEs.

In the new millennium, under the 'Millennium Development Goals', the role of the SMEs became more broad-based in relation to *scope* rather than *scale*. As such, the sustainable development agenda offered an alternative framework, within which the SMEs were brought in with new responsibilities as well as opportunities. In the year 2015, the 2030 agenda for 'sustainable development', was put forward by the United Nations. It demonstrated the joint commitment of member States to free the humanity from poverty, secure a healthy and sustainable planet, and to build peace and inclusive societies that promote prosperity and dignity for all. In taking forward the above agenda, the SME role really matters, as these enterprises constitute the huge majority of all enterprises, and act as the major employment provider. Besides their direct economic role, SMEs can allocate capital to environmental and social investments, as also for inclusive finance initiatives.

Understanding the SMEs in such a global canvas, in relation to the sustainable development goals, that is going to influence global policy making, the involvement of the United Nations General Assembly through its resolution number (A/71/L60), is a path breaking initiative. It reads:

“By [designating](#) 27 June as the annual Micro-, Small and Medium-sized Enterprises Day, the UN General Assembly has recognized the importance of these enterprises in achieving the SDGs – especially by promoting innovation, creativity and decent work for all ([SDG 8](#))...”

The above resolution recognizes the importance of encouraging the formalization and growth of SMEs in international, regional and local markets, including through access for all, to capacity building and financial services. The alignment of SME sustainability strategies, with the global agenda of 'sustainable development goals', represent a productive first step, within a global multidimensional framework. It is expected that, this will only continue to grow in the coming years, as more advocacy focuses on the role of SMEs in attaining the Agenda 2030.

Supporting the United Nations Agenda, research at the World Bank and the OECD underscore the critical role of SMEs in achieving the sustainable development goals. The seventeen sustainable development goals are integrated and indivisible. However, the interesting part is that, development of SMEs may impact on all the SDGs, though in different degrees. The ground reality, as above, highlights the strategic role of SMEs in the economy today. SMEs, once considered as the "fifth wheel", has assumed the central place of policy debates today. It is important to have an understanding of this paradigm change, for future directions of policy and practice in the subject area.

3.0. Research Questions and Objectives

Against the above broad background, this research raises the following questions that demand answers:

1. What are the implications of the emerging trends in the global economy on the prospects of SMEs in developed and emerging economies?
2. How does SMEs respond to such changes in the external environment?
3. How does public policy attempt to accommodate an SME policy and strategies within the overall macro- economic policy of these countries?
4. What are the specific lessons relating to public policy on SMEs in India and the U.K., for their survival and growth?

Answers to the above questions, are important and have significant implications from the point of view of enhancing our understanding of the economy, as also for shaping policies that are attuned to the sustainable development of SMEs and entrepreneurship in general. Considering this imperative, this study examines the perspectives and practices of SME policy in the changing context of the global economy, with specific focus on the experience of the developed and emerging economies. Its seeks to study the impact of SME development on public policy, and of policy changes on the emerging practice of SME development strategies. It also makes a deeper reference to the experience of the United Kingdom and India. The study assumes that, while juxtaposing the experience of UK with that of India, the former experience is significantly reflective of the whole of Europe. Moreover, since SME policy in India has its roots in the British experience, an understanding of these historical linkages of policy is likely to be rewarding both from the point of view of analysis and policy, besides being an exercise in economic history.

The specific objectives of the study are the following:

- 1) To analyse the policy process in a comparative setting, with special focus on the relative roles of various stake holders;
- 2) To study the systems and instruments, such as consultative and advisory arrangements, advocacy platforms, regulatory system, financial system, knowledge systems, and infrastructural support systems, and to evaluate their role;
- 3) To examine the structure and relative role of policy institutions, such as the government, Central Bank, and promotional agencies;
- 4) To study the international relations of policy, and their relevance to networking and trade; and
- 5) To outline a research and public policy agenda that could be considered by researchers and policy planners.

4.0. The Global Paradigm Change

Global manufacturing, has witnessed a radical change, over the last one century. The dominant feature of such a change is a shift from 'scale economies' to 'scope economies'. Such a change has drastically altered the objective environment of small and medium enterprises around the globe. SMEs are traditionally considered as a local subject, and a marginal one. Besides, the SME role and its evolution vary from country to country. In the capitalist world, this role evolved from one of hostility and discrimination, to one of active support and promotion. These historical changes need to be understood against the rapid changes in capitalist production itself. It involves, both opportunities and threats. There are substantial opportunities for SMEs to identify a niche space for their growth and sustenance. The digital divide and/or the inability to harness the opportunities of the 'new economy', keeps the majority of the SMES lag behind, and a few, to take them on.

While, the command over knowledge has become a favourable factor, access to finance still remains a critical constraint. While, the extent of the market has been practically redrawn because of some favourable objective reasons, on the other hand, much more restrictive practices of a global canvas have emerged through the paradigm of 'hubanomics'. From the *angle* of public policy, all these have important implications. Simply by focusing on the traditional public policy thrust of employment promotion and balanced regional development, the governments can no more protect the interests of SMEs. Governments need to address the much more macro-level rigidities associated with technology, trade and investments, in order to protect the interests of SMEs, as also to uphold the needs of employment at home.

Traditionally, the geographical divide has been decisive in the comparative benefits of countries regarding manufacturing and trade. The developed countries have had an edge over the developing countries. Of late, the emerging economies have emerged as a new category, with some distinct features. Apart from the natural advantages, how public policy in general have contributed to the growth of SMEs, which have traditionally been viewed as a major income distributor, and employment promoter, is crucial for an understanding of the pace of economic

sustainability, which is a key element of the seven 'sustainable development goals' , as outlined by the United Nations.

The emerging global industrial paradigm is one of accelerated small-firm focus, space-neutral production and of humanomics. Countries have to invariably shape their SME policies around these trends. In the global kaleidoscope, Asia in general, and the emerging economies in specific, demonstrate some outstanding natural advantages.

Against the above objective setting, the global industrial and enterprise development policies, and trade and investment policy in general, are becoming increasingly protectionist, the lead role being played by the USA. While countries, primarily, seek to protect employment opportunities at home, productive employment itself is emerging as a casualty in many countries. New forms of self-employment, based on the benefits of the 'new economy', is an emerging phenomenon in Europe and the North America. The same experience is being repeated in the emerging economies, which has been reflected through their global record relating to Total Early Stage Entrepreneurship (TEA Rate).

The role of policy platforms and institutions have an important role to play in this historical setting. An articulated case for evidence based policy making is crucial. However, the experience shows that the public policy architecture in many countries remain weak. Strengthening the policy institutions is a challenge. But this can best be done by streamlining the economic governance system as a whole.

A discussion on the comparative experience of India and the United Kingdom on the SME front, is likely to be immensely illuminating and productive. The two countries have several things to share in relation to their public policy experience. While both countries have immensely focused on strengthening policy institutions and to put in place regulatory measures, the results so far remain rather distinct. While, the relatively low level of corruption is characteristic of both the countries, the best practices such as 'Second Chance', and 'Think SMEs First' are good examples for the emerging economies as a whole.

Irrespective of the historical track, as also the country-specific experiences, the road ahead on the public policy front, is by no means, smooth. At the global level, manufacturing profits are drastically coming down. This would, again, mean that the SMEs will have to resort to drastic measures for cost cutting. But the options available are not too many. Departing from their cultural milieu, the SMEs need to strive for wooing the new economy, as also to become increasingly outward oriented in their approach and strategies. Or else, they are likely to miss the bus.

5.0. Leading Issues in Public Policy Environment

The United Nations has rightly circumscribed the vital role of SMEs, in the emerging global environment. At the global level, the public policy environment relating to SMEs, need to address the more concrete issues. While, on the one hand, there are enormous opportunities of outward orientation of SMEs, in a context of the rapid growth of the 'new economy', an agenda of local economic development is central to all countries, where public policy seeks to meet the

rising aspirations of the local people. The opportunities as well as constraints at these two levels, need to be addressed in relation to five critical developments in the global economy: 1) new dimensions of Foreign Direct Investments; 2) the threat of a uni-polar world, dominated by the economic policies of the United States; 3) disruptive technologies, and their labour displacing impact; 4) migration and its implications on labour market and self employment; and 5) climate change.

A response to the above key issues have come from various countries and trade blocks. Such response, vary from country level action to international cooperation initiatives. In this regard, the experiments by BRICS countries stand out.

In developed countries, along with China and India, SMEs generate about a half of the GDP and jobs. According to global estimates, in other developing countries, their share in the economy is on an average of 33%. While, in Russia, SMEs constitute 20% of the GDP, employing just a quarter of its population, China has more than half of its exports coming through SMEs. According to the OECD, SMEs provide jobs to the tune of 60% to 70% of the employed population in developed countries, and to 80% in China.

The opportunities of international cooperation in the area of SMEs is significant, but it is more in the case of BRICS countries. The BRICS Business Council initiates significant work on development of trade, investment, infrastructure, and of SMEs in general in these countries. The Council also has matching priorities of trade and investment facilitation, promoting skill development, infrastructure development, e-commerce, and digital economy. The Business Council also plays a vital role in giving practical shape to the vision of BRICS partnership. The Council has also taken initiatives towards setting up a BRICS Rating Agency, energy cooperation, green finance, and digital economy.

More recently, the Government of India is drafting a framework for a joint growth strategy for Micro Small and Medium Enterprises in the BRICS region. The framework for cooperation among SMEs will identify the relative strengths of each country of possible areas of joint ventures. Brazil is highly successful in participating in government procurements. In fact, other countries of the block can draw lessons from Brazil's legislative framework and other policy initiatives to help their SMEs, also to get a good business. The BRICS group together account for a GDP of over US dollar 16 trillion, which is about half that of the seven major advanced economies. More than 40% of the BRICS economies are driven by the MSME sector.

In India, the Ministry of Commerce and Industry is also working on the idea of a BRICS Portal for addressing non-tariff measures (NTMs), that hamper trade between the BRICS countries. In fact, one of the biggest problems faced by exporters in the five countries is the lack of knowledge on these non-tariff measures, such as new standards or specifications. While, such awareness is often limited, and hence goods are rejected, there is need for such an awareness building. It will serve as a big incentive as an industry in the five nations to trade with each other.

The differences in the entrepreneurship ranking of various countries of BRICS, itself establishes the need for enhanced cooperation. According to the Global Entrepreneurship Monitor (GEM), Russia ranks last across its sixty member economies by number of individuals who intend to start a business. As against this, India's record is much advanced. And this itself offers considerable opportunities for cross-border exchanges of best practices.

On the export front also, there lies opportunities. The OECD estimates that, share at 25 to 35% of exports for the developed countries, adding that for certain economies, the number can be even higher: around 40% in South Korea, more than 40% in the US and Germany and over 50% in China.

5.0. Limited Options for SMEs

In the global space, as also in the individual countries, there is a complex scenario of opportunities and threats for SMEs today. The options available are, in fact, limited. It is important to have an overview on these from the point of view of business strategies by enterprises, as also from the angle of public policy at the regional and national levels.

Regulatory policies, and economic governance in general, relating to SMEs, are specific to the general macro-economic framework, institutional legacy and structure, as well as the sectoral make-up of the economy (OECD, 2018). The OECD Council on Regulatory Policy and Governance (2012), has made some recommendations, which are relevant to most countries today. In the area of economic development, the SME role has been increasingly reaffirmed. However, at the operational level, the SME road remains marginalized. While, this reality remains in most countries, what is required is an attitudinal change, that would help to streamline the economic governance system, taking into account the need for 'inclusive growth'. Improving the efficiency of bankruptcy procedures, and an effective implementation of a principle of 'second chance' for honest entrepreneurs, can go a long way in precipitating a culture of entrepreneurship and small business development. Facilitating tax compliance is another important area. There is need to cultivate a compliance culture, which again has to be grounded on a principle of low transaction costs. Cutting red-tape for businesses is an important area that is relevant in many countries. Strengthening public sector is another area. Integrating and ensuring transparency and conducting regulatory impact analysis to enhance the effectiveness of regulation and assess its implication for SMEs is another important area. In the European Union, the SME TEST implement the 'think small principle' by analyzing possible effects of EU legislative proposals on SMEs.

5.1. Outward Orientation

SMEs are characterized by their basic 'atomism'. This implies that, the very concept of an 'SME' is implicit in the peculiar behaviour of an individual entrepreneur who practices thrift, saving, and maximum use of one's individual capacities, as against what is offered by the market. Naturally, these enterprises are structurally inward-oriented, operating largely on personal savings, rather than market borrowings, household level operation, and confining to the immediate local market. Working on this basic natural trait, is easier for public policy and

for promotional programmes. Therefore, in many countries, public programmes for MSMEs are not keen on altering this beaten track.

While inward orientation is often a structural trait, and public policy often does not effectively attend at changing this natural order, the emerging global paradigm of business demands, enhanced opportunities through outward orientation, in terms of seeking of new market opportunities, new investments, and new technologies. The conflict, as outlined above, need to be overcome by the initiatives of the SMEs themselves. In fact, SME associations and the global platforms like that of the United Nations can play a meaningful role in this regard.

5.2. Strong sub-sectoral policy approach at home

Gone are the days when SMEs were considered as stand-alone entities. Their position in the global value chains, today, are decisive in explaining their prospects. The value chains are specific to sub-sectors, and therefore, a sub-sectoral approach to SME development is crucial in the development policy of any country today. Though there has been an enhanced realization of this imperative by countries, action for SME development is still guided by the arithmetic of numbers. It is now time to change it.

5.3. Selective Promotion of Sub-sectors

It is important that, having understood the importance of sub-sectors, there need to be a selective approach to their promotion. While, some sub-sectors may offer substantial employment opportunities, others may contribute to value addition in a more significant manner. Considering the basic parameters of public policy, there is need for a careful approach in this regard.

5.4. Serious Focus on Cost reduction

The emerging feature of global production today, is the tendency towards falling profits. This would require that, in an effort to enhance profitability, there need to be an all-out effort by SMEs to reduce cost of production. However, in most discussions on SME competitiveness, the discussions proceed largely in terms of the need for innovation, which again, is grounded on new technologies. But new technology, by itself, need not lead to lower cost of production, unless a culture of low-cost production is not cultivated among SMEs.

5.5. Full Use of Technology and Applications

A significant feature of global experience in the new millennium, is the digital divide. While, digital capability is a decisive factor in the process of social and economic inclusion, SMEs still remain a constituency bereft of the benefits of the digital world. While governments have generally underscored importance of the digital world, the culture and practice of digital economy is not integrated into the constituency of SMEs in a significant manner. The problem essentially is with the weak economic governance system that prevails in many of these economies. Therefore, streamlining the economic governance system would naturally contribute to protecting the interests of SMEs.

5.6. Plan for Labour and Employment

SME policy was traditionally considered largely as an employment policy. The new perception of SMEs as a labour market issue has important implications for planning, employment and entrepreneurship. In fact, planning for SMEs demands a sound labour market policy.

The emerging developments indicate that, 'enterprise security' need to emerge as a new policy agenda, both in the developed and emerging economies. This essentially means, striking a balance between the social and economic objectives of enterprise development. Analysis and articulation on those lines is vital for SMEs to play their role in an effective and meaningful manner. Unless the social reality of individual countries is addressed, and SMEs are mainstreamed, the road ahead, especially against the goals outlined by the United Nations, is not likely to be reached easily.

6.0. Conclusion

Public policy, obviously, has a major role in providing the direction, and in determining the tempo of development of enterprise and entrepreneurship. But, it need to be comprehensive, and be, at a time, based on best practices at the global level, and ground realities at the local level. Comparative learning, obviously, has a leading role in this regard. While the 20th century witnessed the laying down of the foundation of an SME constituency globally, the new millennium has brought it to the global development agenda, thanks to the initiatives of the United Nations. It is now an opportunity as well as challenge for the global community to take these experiences and debate forward to higher levels.

I. Public Policy and Change Management in Small and Medium Enterprises

1.0. Introduction

The importance of small and medium enterprises(SMEs) is well recognized both in developing and emerging economies today. The rationale is built upon three major pillars of development policy: 1) employment promotion; 2) balanced regional development; and 3) promotion of income and livelihood opportunities. Under democracy, where numbers matter greater than anything else, this rationale has strong political foundations as well. Against the above picture, the emerging trend is towards globalization of production and accelerated enhancement of scale. How do the SMEs perform against the rapid changes in the economy? The sum total of these two sets of questions, form the compass of public policy. It is the content of such a policy framework that drive the actions or not, of the government in power. The purpose of this study is to examine and analyse change management strategies in the sphere of MSMEs, with public policy as a key instrument and central force. Besides a discussion on the comparative experience of UK and India, it spells out the learning for India. Such a learning, on an international plane, is important for India to shape its MSME policy, in correspondence with the challenges and opportunities brought in by the emerging global economic order.

2.0. The Emergence of Small Enterprises and their Policy Space

From the days in the industrial revolution, the large firm has been considered as the corner stone of manufacturing. Adam Smith (1776), conceptualized the scale of production as the driving force of capitalist manufacture. In the scheme of Karl Marx also such a paradigm is implicit, wherein, the ultimate state is one in which "the entire social capital would be united, either in the hands of a single capitalist, or in those of one single corporation (Marx, 1912).

The perception that in the manufacturing sector, large and even giant firms will dominate, existed in Western economies throughout most of the twentieth century. In fact, Galbraith (1956), wished away the role of small firms, as essentially on a diminishing mode. Hence, the preference for large scale production was shared both by market and planned economies, for the better part of two centuries (Acs, 2003).

The publication of the wealth of nations by Adam Smith (1776) corresponded broadly with the onset of the industrial revolution in England. During this period, subcontracting was widespread. In the then prominent putting out system, the manufactories were dependant on cottage workers and their families. The production units were essentially small workshops. However, the initial technological interventions such as the spinning jenny, the mechanical loom, and subsequently development of steam power in the late eighteenth and early nineteenth centuries, gradually led to the factory form of organization (Acs, 2003). By the middle of the nineteenth century, most of the industrial employment came under factories, generally in the owner-managed form.

By 1870, Britain emerged in its role as a supreme industrial power, under its colonial regiment. On the other hand, other leading countries, especially Germany, the USA and Japan, were starting on a period of even more rapid expansion. Such expansion however, soon eclipsed Britain.

By the early twentieth century, armed with the abundant natural resources base, and immigrant labour, there took place a booming of industry in the continental United States. This huge market size was exploited by the early entrepreneurs like Rockefeller, Morgan, and Carnegie. The process of merger was set in motion, leading to a wave of the world's largest 'corporations' or 'trusts', which began to dominate the US economy. By 1902, this hegemony of the US corporations got into the development of a global model of production organization, wherein, mass production was tuned on lines of the vision of Henry Ford, and the principles of 'scientific management' on lines of the thinking of Frederic Taylor, an engineer by training.

In Europe, the ascendancy of the German Empire, overtook great Britain in most branches of industry and technology. The track of capitalist production in Germany was different. The craft traditions inherited from the pre-industrial era were significantly adapted to the needs of industry, wherein human resources acted as a focal point. Vocational training and apprenticeship system of Germany was one of the best in the world. It brought in an unusual convergence system of the skills of the blue collar workers that complemented the abilities of scientists and engineers. This led to the manufacture of high quality, technically advanced products. The new lead and leap happened essentially in new growth industries such as chemicals and electrical engineering. Complementing such a leap, was the growth of *universal banks* in the organization of industry.

In the global manufacture and exports, Germany and its share grew from one-third of Britain in 1880, to two-thirds in 1930, and is more than double today. The cartelization of business was a characteristic feature of Germany which helped to reduce costs, enhancement of profits, and an higher rate of investments. A characteristic feature of Germany even today, is a relatively few publicly quartered companies, unlike UK or the USA. Germany is the haven of family business, not only in manufacturing but in banking as well. This also helps to promote long term investment strategies in some unique lines.

2.1. The Challenge of the Mass Production Era

For nearly more than a century, the productivity of a US manufacturing worker has been around twice the level of a UK counterpart. In Europe, on the other hand, small national markets, coexisting with a much stronger craft tradition, delayed the adoption of mass production and scientific management (Acs, 2003). Skill development became a focal area for most of these countries. Going beyond, after the Second World War, the mass production model of US was embraced by UK, thereby leading to a relatively lower priority for the tradition on skill development and craft production. From 1950 to 1973, the share of UK in manufacturing exports dropped from 25 to 9%, while the share of Germany tripled to 22%, Japan quadrupled to 13%, and the US declined from 27 to 15% (Broadberry, 1994).

The remarkable success of Germany has been explained by the country's success in combining the craft tradition with modern technology. Germany could establish a lead in the export of industrial products through remarkable reputation in quality and design, custom-made and small batch