

Adopting the Market for Skill Formation: Two Contrasting Approaches

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Abstract

The aim of this paper is to explore some of the major differences in the ways in which governments influence the process of skill formation. In particular, we focus on the ways in which governments use the market as a means of delivering the skills required for economic growth. We argue that the exclusive reliance on the market to co-ordinate the supply and demand for skills works well for societies characterised by the Anglo-Saxon approach to skill formation. However, the market takes time to make adjustments. Therefore this approach may be more suited to societies where the process of industrialisation has been operating over a long period of time. The Tiger economies industrialised in a much shorter period of time. They therefore had to find ways of accelerating the process of skill formation and did this by using the agencies of the state to speed up the operation of the market. In conclusion, we argue that this experience of the Tiger provides a new set of options from which developing societies can draw lessons.

Introduction

This paper explores two contrasting approaches (the Anglo-Saxon and that of the Asian Tigers) to three main areas of skill formation: co-ordinating the demand and supply of skills, enhancing the skills base and rewarding the acquisition of skills. By skill formation we refer to the process whereby individuals acquire the skills necessary for everyday living and gainful employment. As a preamble we first outline the difference between the two models before we examine their respective approaches to the three issues.

The Anglo-Saxon approach is one where the principal mechanism for skill formation is the market. The role of government is kept to a minimum with the market being relied upon to adjust the demand and supply of skills, to determine the stock of skills in the economy and to determine the rewards that individuals receive for the acquisition of skills. The role of government is to support the market, remove barriers to its operation and intervene only in the case of market failures, such as those which occur through unemployment. The countries which follow this model include the USA, UK, Canada, Australia and New Zealand¹.

The Asian Tiger approach is one in which government action is used to help structure the operation of the labour market. This may be to help speed up adjustments in the labour market and to shift the basic equilibrium within which the market operates. It may also involve influencing the level of rewards individuals receive for their skills. Here government action is an integral component of the labour market. It can be used to ensure a rapid adjustment of demand and supply, to speed up the increases in the stock of skills in the labour market and to change the incentive structure for the acquisition of skills. The countries which epitomise this approach are Singapore, South Korea and Taiwan, although elements of it are found in Hong Kong (Ashton et al. 1999).

Both of these approaches represent very different ways of tackling the process of skill formation. Neither is viewed here as inherently superior to the other; rather each is seen as arising out of very different geo-political conditions. However, both represent different options from which governments currently seeking to

¹ Further details of this typology can be found in Ashton and Turbin (2000)

develop their economies may draw inspiration in their attempt to industrialise in the different context of the contemporary world.

Approaches to skill formation: co-ordinating the demand and supply of skills.

A. The Anglo-Saxon approach

In the Anglo-Saxon approach, the labour market has worked well in co-ordinating the demand and supply of skills. In an economy the size of the USA, characterised by a central (Federal) government with relatively weak internal political power and confronted by individual states which jealously guard their own autonomy, the market has provided an efficient means of co-ordinating the process of skill formation. The role of the state has been confined to ensuring the right conditions for the delivery of education, a “public good”. Work-related training has traditionally been seen as the responsibility of either the individual or the employer, with the government restricting its interventions to the provision of training for the unemployed through activation policies. These have, in general, been successful in facilitating the re-entry of the unemployed back into employment (Grubb, 1995) .

Although with a much smaller economy, we have witnessed the same approach in the UK. There the stronger central state, subject to pressures from the labour movement, has occasionally attempted to intervene both in the shaping of the capital base through nationalisation policies and in the process of employment based training, for example, through the use of Industrial Training Boards. Neither of these interventions proved of lasting significance with current policies tending to follow the US lead in leaving the process of skill formation to the market. There are still residues of the attempt to develop a national skills policy, initiated by the now defunct Manpower Services Commission, in the form of the Modern Apprenticeship scheme, but this remains only a weak form of intervention confined to the youth labour market. Apart from activation schemes for the unemployed, the training of adults is left to market forces which the government are currently attempting to reinforce through experiments with Individual Learning Accounts and more recently voluntary training levies (FT. 28/8/00).

The intellectual justification for the Anglo-Saxon approach takes the form of human capital theory (Becker,1964). Here substantial work has been done in documenting the extent of human capital endowment and the returns to investment for the individual in the form of higher income, the organisation in the form of improved performance and the society in the form of higher growth rates and annual output². At the theoretical level, it is fair to say that human capital theory dominates the debate. It provides an explanation for differences in income and a justification for the government restricting its actions to the provision of the “public good” element in the equation, namely general education, leaving the employers and the individual to struggle over the funding of general and specific skills (Ashton and Green, 1996).

One of the problems with the academic work in this area is that the identification of human capital has been restricted to readily available measures, such as the amount of education an individual achieves, their level of educational achievement and more recently the amount of work place training they have received (Felstead,1997: Betcherman, et al. 1998) all of which are indirect measures of the “amount” of skill achieved by an individual. It was therefore taken on trust that measures such as educational achievements and more recently days of training were an accurate index of the individual's skill. There were few direct measures of individual skill. In the absence of this there was always a nagging doubt that if such a measure was available, it would cast doubt on the ability of the market to make an accurate judgement of the value of individual skills (Ashton et al. 1999a).

In recent years attempts have been made to measure some skills directly, e.g. the International Adult Literacy Survey measured a limited range of skills such as "prose", "document" and "quantitative" skills, but attempts to link them to pay have been rare. Therefore, in an attempt to tackle this problem more directly we launched the UK Skills Survey in 1998. This provided a direct measure of 36 skills and was delivered to a sample of 2,500 adult workers in the UK. The results suggested that, in general, the market appeared to be working effectively in the UK. Thus the initial findings, using hedonic wage equations were that "The level of qualification required for a job is a general indicator of skills demand that remains a major pay determinant after allowing for the specific activities taking

² A summary of recent research on the three areas can be found in Skills for all: Research Report from the National Skills Task Force. (2000) London: DfEE.

place in the job." (Green, 1998 :p 27). Moreover, computer skills which were widely reported as being in short supply in the UK at that time, were found to be carrying a pay premium. Thus, when using computers at "moderate" levels of complexity, for example word processing packages, male workers earn an average premium of 21%, female workers 22%, compared to those who do not use computers at all. The authors conclude that "When many other personal and job characteristics are also controlled for, the premium for both sexes remains 13 per cent." (Ashton, et. al. 1999: 75). When there is a scarcity of supply the price paid for the skill increases.

There are, of course, a number of drawbacks with the use of the market mechanism. First, there are areas where the market is not working effectively. For example in the UK, the overall supply of qualifications appears to outstrip the demand by a comfortable margin. As we found through the UK Skills Survey, "One of the most notable features about these data is the fact that almost a third (32%) of Skills Survey respondents reported that their current jobs required no qualifications on entry, yet only around a fifth (19%) reported having no qualifications at all. The imbalance is evident for men, women full-timers, and for ethnic minorities, but is most striking in the case of women part-timers." (Ashton et. al. p 63). It appears that the UK education system is producing far more people with qualifications than are currently being demanded by the market. Of course there may be many reasons for this. As Becker (1964; 1975) noted, education performs a number of functions apart from preparing young people for the world of work. Education has the task of preparing the basis for future personal development as well as socialising the young people for their role as citizens. However, this only serves to remind us that there are limits to the effectiveness of the market to make the most "efficient" use of national educational resources.

A second area where the market does not appear to be performing effectively is in encouraging the acquisition of certain types of skills. As we have seen, while there is a general correspondence between the investment in skills and the rewards which are available in the labour market, there remain some skills which, while ostensibly valued by employers, are not rewarded by the market. Thus we found that planning skills, numerical skills and some communication skills which are seen as among the "core" skills required by employers (Dench et. al. 1998) do not

receive a pay premium (Ashton, et. al. 1999. p 75), which they should if the market was working effectively.

Finally, it should be noted that countries such as the UK are almost invariably confronted by skill shortages at the peak of the business cycle, which are then seen as forming a bottleneck in the labour market, thereby restricting the process of economic growth (Skills Task Force, 1999). The UK Skills Task Force, set up to find an answer to this problem, and following the work of Green and Ashton (1992), makes a distinction between internal and external skill deficiencies. External deficiencies refer to failures in supply, especially prevalent in the case of practical and technical skills, while internal deficiencies refer to the divergence between the organisation's current skill levels and those required to meet business objectives. External skill deficiencies have been especially prevalent in the skilled trades and associate professional occupations while internal skill deficiencies are associated with the need for generic skills such as teamworking and problem solving among lower skilled employees in sales, personal service and assembly occupations (Skills Task Force, 2000). It is the persistence of this periodic problem of skill shortages, a market failure, which was used as the justification of the UK government's attempt to raise the level and quality of training through the Industrial Training Boards introduced in the 1960s and the Manpower Services Commission introduced in the 1980s (Ainley and Corney, 1990).

The existence of periodic skills shortages is symptomatic of the slow adjustment process associated with the exclusive reliance on the market as a means of matching demand and supply. When employers experience skill shortages they usually respond, as we have seen, by raising the price of labour. However, these signals have then to be picked up by young people and their parents who then have to put pressure on the education and training institutions to change the curriculum and deliver the appropriate skills. This can take years to occur as teachers skills are changed and a new curriculum put in place. Only then can the new skills be transmitted to young people. It is not surprising, therefore, that these societies should experience periodic skills shortages as the supply side catches up with changes in demand.

B. The Asian Tiger approach.

In the Asian Tiger approach, the operation of the labour market is supplemented by government co-ordination. The government actions are used to influence both the demand and the supply of skills. This ensures that changes in the demand for skills can be anticipated by changes in supply so as to minimise any delays in the adjustment process, thereby avoiding bottlenecks to economic growth created by acute skill shortages.

Skill demand is influenced through the trade and industry policy. These policies were developed in an attempt to "kick start" the process of industrialisation in Singapore, Taiwan and S. Korea. In the geo-political conditions which prevailed in the 1950s, all three faced threats to their national security and had to industrialise rapidly if they were to maintain their national independence (Castells, 1992). Meanwhile, the experience of Japan had demonstrated that this could be achieved through the use of an industrial policy which would enable the political leaders to speed-up the process of economic growth. These circumstances led the three Tigers to develop innovative ways to manage the process of skill formation at a national level: what we have referred to elsewhere as the developmental model of skill formation (Ashton, et al, 1999).

Each developed a clear industrial policy which spearheaded the drive toward this goal. However, the content of those policies, namely the types of industries they sought to develop and the means by which this was done, the way in which capital was raised and production organised, varied between the countries. These differences had important implications for the type of skills demanded by employers and subsequently for the ways in which the process of skill formation was structured in the three societies. The Singapore government developed a reliance on Multi-National Corporations (MNCs); S. Korea developed its own indigenous form of industrial organisation, the Chaebol, while Taiwan used a combination of state sponsored organisations which were subsequently privatised and indigenous small and medium sized enterprises (SMEs) in the form of family businesses. Each in their own way were equally successful in initiating industrialisation, achieving full employment and producing an unparalleled period of economic growth (World Bank, 1993), all this without any of them experiencing acute skill shortages, a remarkable achievement in an era of such enormous and rapid change (Ashton, et. al.1999). Moreover, from our point of view, each of the

governments were making themselves effective agents in influencing the demand for labour and the type of skills required from the education and training system. In the early stages of industrialisation, these were primarily the skills of industrial discipline, literacy and basic numeracy. However, as economic growth continued, to these were added the technical skills required for more advanced forms of higher value-added production, and finally the soft skills required by today's employers.

In order to ensure that the requisite skills were in place, all three governments assumed centralised control over their education systems. Initially this was used to develop a strong sense of national unity or nation-building (A. Green, 1990). It was this function of the education system which drove initial public investment in education (A. Green, 1999) and explains the highly centralised control over the curriculum and the emphasis placed on moral education which is a feature of the education systems in all three societies (Cummings, 1995). Once these controls were in place they could be used to deliver the appropriate level and type of skill required for industry.

In Singapore, the educational system was reformed on a number of occasions. The Goh report (1979) saw the introduction of streaming as the means by which the demand for education would be managed, with the schools providing general and academic education, and vocational institutes providing vocational education for those who did not progress along the academic route. However, these initial attempts to incorporate vocational and technical education into the curriculum had to be revised because of the low status attached to vocational education. Further reforms were therefore introduced in 1990 to increase the minimum period of education to 10 years and upgrade technical education, establishing the Institute of Technical Education. Higher education has been expanded but access is strictly controlled with the state retaining a clear distinction between the technical and technological orientation of the polytechnics and the academic orientation of the universities (Ashton and Sung, 1996).

In S. Korea, during the initial stages of growth in the 1960s, the government introduced vocational high schools and limited access to higher education (Adams and Gottlieb, 1993) to provide the craftsmen required for the new labour-intensive light industries which formed the backbone of the export orientation

push. This was followed by further expansion of technical and scientific education. Again in the 1970s vocational and technical education was expanded at the secondary level to provide the semi-skilled and unskilled labour for the push toward heavy and chemical industries. This policy of expanding vocational education encountered strong resistance from parents and the government's goal of two-thirds of pupils in vocational high schools was never reached. Nevertheless it was successful in ensuring that during the push toward forms of higher value-added production, the educational system did produce a significant proportion of vocationally and technically trained personnel for the growing Chaebol and the SMEs. However, during the 1980s, government control over the system came under increasing pressure. Although attempts were still made to increase the ratio of vocational to academic high school enrolment (Gill and Ihm, 1996), the government did open up the flood gates to university entrance, but still sought to control the output from them by establishing new technological universities.

In Taiwan, the government has been more successful in upgrading the educational levels of the labour force through the use of vocational schools. During the decade of the 1960s, while the period of compulsory education was extended to nine years, the proportions in vocational schools increased from 40% in 1960 to 57% in 1970, and by 1990 the proportion in vocational high schools had increased to 72%. This was achieved against a background of popular demand for academic education. However, as the economy was moving into higher value-added forms of production, the government sought to increase the supply of those with more academically oriented, intellectual and problem solving skills, and by 1995 had reduced the proportion in vocational high schools to 70% with a further reduction to 60% planned for the year 2000 (Chang, 1996). In the field of tertiary education the government remained in control through its "narrow gate" policy which restricted access to higher education, but over time this was relaxed, although strict control was still exercised over the proportion of science and engineering/technically educated graduates it produced. In 1984, some 47% of undergraduates, 70% of masters students and 74% of Doctoral students were either scientists or engineers (CEPD, 1986).

In this way, the government's knowledge of future skill demands, derived from information it had on investment patterns as well as the knowledge available

through the experience of the older industrial societies, was used to structure the output from the education and training system to ensure an adequate supply of more highly skilled and vocationally trained labour to meet the demands of employers as they moved into higher value-added forms of production. However, the task facing these governments was more complex than just increasing the general stock of skills. Each had specific skill requirements associated with both the type of industries they sought to develop and the form in which capital and labour was organised. Therefore, in order to fine tune the system all three governments had what we term “super-ministries” which ensured that the specific demands of the country's industries informed all the decisions about the numbers of young people who left the educational system at each level, as well as the types of skill they had acquired. In Singapore this function was performed by the Ministry for Trade and Industry. The agent of the Ministry, the Economic Development Board, identified the types of skills required to meet the needs of companies they attracted to invest in Singapore. This knowledge was then fed into the Council for Professional and Technical Education which also had information from employers about their current skill demands. The Council for Professional and Technical Education then matched that information against its knowledge of the current capacity of the education and training system, and then made appropriate decisions to ensure that supply met demand. In S. Korea, the Economic Planning Board performed the same function, as did the Council for Economic Planning and Development in Taiwan. This ensured that when the demand for skills changed the appropriate supply was in place.

Success in this area meant that economic growth would not be held back through the kind of skill shortages witnessed in the UK. In particular, it helped ensure that the speed of economic growth could be accelerated without being ground to a halt through skill shortages. What this suggests is that while the market is efficient in delivering education and skills in a fairly stable environment or equilibrium, it does take time to respond to change. In the case of the Tiger economies, as the government had knowledge which parents do not have access to, and was aware that in the next ten to fifteen years there would be a shortage of specific skills, then it made sense for the government to instigate the requisite changes in the education system to ensure delivery of those skills. This is what we witnessed in the Tiger economies. In this way they have been able to achieve levels of GDP in the space

of thirty years which it took the older industrialised economies three generations to achieve.

There are, of course, certain drawbacks to this approach. First, there is the problem of picking winners. If the government makes a mistake in the type of industries it seeks to develop or in the type of education and training it provides, this approach fails. As we have seen, on the education side the government of Singapore first tried to introduce vocational education into existing academic schools, but this failed. They therefore had to change track and introduce a separate Institute of Technical Education. Moreover, on the demand side, it is easier to pick winners when you have the experience of the older industrial nations to learn from, it is more difficult when you are yourself at the leading edge of world markets. Second, this approach means that parental choice is restricted as the government decides what is available. In all three countries this meant that the state had to contain the parents' desire for a classical academic education and "push" many young people into forms of vocational education which would produce the requisite skills demanded by the labour market. This in turn means that the educational institutions themselves have little autonomy, with the major decisions about the form, delivery and content of education at all levels from primary to higher education, being made by the political masters.

2. Approaches to skill formation: enhancing the skill base of the economy

A. The Anglo-Saxon approach.

In this approach the exclusive reliance on employers and individuals to enhance skills leaves governments little scope for action. The education system determines the flow of skilled people into the labour market, but beyond that the government has to rely on measures which encourage both employers and individuals to voluntarily enhance skills. This form of voluntarism has been characteristic of the US and UK government's approaches over the last two decades. In the US there is a culture of individuals investing in the development of their skills through further education, facilitated by a higher education system which encourages the re-entry of older people into the system to top-up their education. In the UK there has been no such tradition. There, governments have recently introduced the Individual Learning Accounts to encourage those in the labour market to take

advantage of further education and training. Employers have been exhorted to train more but the government had little effective impact in this area until the launch of the Investors in People Programme (IiP). This provides a Kite mark for good HRD practices which meet the requisite standards and has been effective in both improving employers' HRD practices and in improving the skills of all their employees. IiP has been associated with an improvement in the generic or soft skills required by employers. These soft skills are very much in demand by employers seeking to move up-market in their product strategies (Task Force, 2000).

Reliance on the market has proved effective in enhancing the skills of the labour force in the UK. Research over the last decade has confirmed a continuous increase in the skill levels of the labour force, leading some analysts to speak of a skills revolution (Gallie, 1991; Gallie and White, 1993). Using both subjective measures of self-assessed skill and more objective measures of skills in use, there has undoubtedly been a significant rise in the skills of the UK labour force, although much of this is accounted for by the increased demand for and spread of computing and IT skills (Green et. al. 2000).

The main drawback of this approach is that it severely restricts the range of options open to governments in enhancing the skills base of those in employment. While some initiatives such as IiP are undoubtedly effective in improving skills, the UK government is facing difficulties in extending participation in this scheme to more than one third of the labour force.

The main efforts of governments following this approach are directed at instances of market failures, namely the unemployed and the disadvantaged groups in the labour market. Here the US and UK governments have been effective in devising schemes and other activation measures which have improved the basic skills of the unemployed and encouraged them to return to the labour market, aided by an expanding economy. However, such schemes tend to be confined to those employed in the lower segments of the labour market where they function as a "revolving door" to facilitate re-entry to jobs which are low skilled and characterised by high turnover rates, leaving them exposed to further unemployment. They are not effective in helping the unemployed acquire the

higher level skills required for participation in the middle and higher level segments of the labour market (Grubb, 1995).

Once again, we can see that while the market can deliver an increase in the stock of skills, it does take time. Essentially, the only mechanism open to the government is to increase the flow of higher levels skills into the labour market. Apart from that it is dependant on the voluntary action of individuals and employers.

B. The Asian Tiger approach.

Here the labour market mechanism is again supplemented by government action. Government actions are more wide-ranging and not just confined to voluntaristic schemes or activation measure. Thus the Asian Tigers use a variety of means to influence skill development within firms/organisations. In S. Korea, the government encourages the use of internal labour markets by the Chaebol to upskill the labour force. Initially sponsored by the government, these companies soon came to dominate the labour market (Amsden, 1989). Modelled as they were on the large Japanese conglomerates, the Chaebol offered the same prospect of lifetime employment. This in turn provided the sheltered context in which individuals could enhance their skills, while senior management could be certain that the returns from any investment in skill acquisition would be captured by the company. While this has proved effective in enhancing the skills of those employed by the Chaebol it did not stop the government experimenting with other forms of intervention. In particular they introduced a levy in the mid 1970s, which after initial success, lost some of its effectiveness, followed later by an abortive attempt to introduce a variant of the German dual apprenticeship system (Jeong, 1995). However, none of these interventions have prevented the emergence of a duality within the labour market between the skills of those employed by the Chaebol which have increased through time and those employed by the SMEs which cannot offer lifetime employment or the same level of rewards as the Chaebol, and whose skills have remained static (Lauder, 1999). The best the government have been able to offer so far has been the use of public training centres to upskill those in the labour force.

In Singapore, the government faced a different problem and adopted a different solution. First the government used MNCs to drive the process of industrial and economic growth, which meant that they had little direct influence over how the companies managed their labour forces. Second, they had a labour force with lower levels of educational achievement than those of the Koreans. If they were to upskill the labour force, the government faced two problems: one was how to encourage employers to take training seriously, and the other was how to deliver higher skills to those workers who had entered the labour force three decades earlier and who lacked the requisite skills for modern forms of production. The first was tackled through a whole series of programmes and incentives which were directed at employers. These aimed to lower the cost of training through the provision of subsidies. They also aimed to provide help for employers in assessing training needs and delivering quality programmes. This was done through the use of formal programmes targeted at employers; for example, structured on-the-job training tailored to the requirement of each of the major industry groups. Another technique was to provide advice to employers on training matters through the services of consultants subsidised by the government. Together these initiatives proved effective, and the government was successful in raising the average level of investment in training among employers to 4% of total labour costs in 1999, a level comparable to that of the best employers in the US and UK. In its latest initiative (Work Redesign programme), the government is attempting to help employers redesign the workplace through the use of high performance work practices to generate higher levels of productivity and encourage the development of a culture of workplace learning (SPSB, 2000).

The older workers with low level of basic skills were targeted through a series of government programmes, for example, the Basic Education for Skills Training programme (BEST) and for the semi-skilled workers in manufacturing the Modular Skills Training programme (MOST) delivered through the employer, which aimed to raise the education level of those with primary education. By 1990, illiteracy rates had been reduced to 10% of the total population, and by 1992, 78% of the target population had participated in the BEST programme (Ashton, et al. 1999). More recently, in the late 1990s, the government used the same techniques to tackle the problem of enhancing the new soft skills for workers in all sectors of the economy, through the introduction of the Critical Enabling Skills Training programme (CREST). This is focused in enhancing learning-to-learn skills,

literacy, communication, problem-solving and creativity, personal and group effectiveness and leadership skills, those deemed essential for the knowledge economy. The objective is to have half the workforce trained in these skills by 2002 (SPSB, 2000a). The aim of these interventions has been to enhance the skills of those in employment in order that, as the economy moves in the direction of higher value-added forms of production, the workers will have the requisite skills to compete for the new jobs. This was intended to prevent the emergence of a group of unemployed who would be excluded from the labour market because they lacked the basic skills with which to compete for jobs in the new "knowledge" based economy. Thus, although the unemployment increased to 3% following the Asian Crisis, so far, structural unemployment has not been a major problem.

This approach has not been without its problems in Singapore. Government programmes have not always been welcomed with open arms by employers, the Productivity Board had to experiment with adapting the Japanese forms of OJT before they found a formula that was effective in Singapore. Similarly the German apprenticeship model was adapted to fit the Singaporean culture, although the principles of practical on-the-job training and theoretical classroom training have been applied to other programmes. The other difficulty has been in reaching the hearts and minds of the low skilled employees, the "untrainables" and here again experimentation has been the order of the day, requiring persistence and a willingness to learn on the part of government officials responsible for the programmes and the trainers who utilised them (Huam and Jewson 1995).

When we contrast this approach with that of the Anglo-Saxon economies, it is clear that the Tigers had two options to the one available to the governments of the Anglo-Saxon economies. Whereas the Anglo-Saxon governments had to rely on an increased flow into the market to improve the stock of skills, the governments of the Tiger economies had this option but also that of directly influencing both the individuals and employers to enhance the skill levels of those already in the labour market. Again the process of adjustment is speeded up.

3. Approaches to skill formation: rewarding the acquisition of skills

A. The Anglo-Saxon approach.

As we mentioned earlier, using the market as the central mechanism has worked well in the US and the UK, especially within the context of a specific skills equilibrium. As we saw above, skill levels in the UK are currently linked to differential rewards. However, there have been problems in the past, especially with the wages of apprentices and other trainees when union bargaining power increased the cost of young trainees relative to skilled adults, and thereby reduced the incentive for employers to invest in trainees (Marsden, 1997). With the reduction in union bargaining power as a result of the action of the Thatcher administration, many of these barriers to the effective operation of the market have been removed.

While the market may now be functioning more efficiently, as Finegold and others have demonstrated (Finegold and Soskice, 1988), there is a tendency for it to become locked into what they termed the low skills equilibrium. This is a situation in which the structure of incentives for both employers and employees functions to minimise their investment in skills. Employers adopting a low spec product market strategy seek out and utilise low skilled labour. Individuals confronted with an array of low paid jobs have no incentive to invest in their own training. Given the widespread availability of low wage, low skilled labour, employers, subject to shareholder pressures to maximise immediate returns, have no incentive to change their product market strategy and invest in higher value-added forms of production. Even if they did, the requisite labour would not be available - and so on. Given the reluctance of governments to intervene in the market there is a danger that a substantial part of economies such as that of the UK may become locked into low skills forms of production (Keep and Mayhew, 1999).

B. In the Asian Tiger approach.

The Asian Tigers confronted this dilemma of a low skills equilibrium in stark terms during the 1970s. They had successfully initiated the process of industrialisation and achieved full employment. Partly as a consequence of that, their wage costs were rising. At the same time other Asian societies were now industrialising, utilising low cost labour as their competitive advantage in world markets. Faced with this situation, the Asian Tiger economies had two options. They could continue with low value-added forms of production and seek to contain wage costs in order to compete more effectively with the new generation of developing countries, or they could change their strategy and attempt to move into higher value-added forms of production. The latter strategy offered the prospect of sustained wage advances for the labour force provided that there was associated improvements in their skills and productivity. After a period of some uncertainty they opted for the latter strategy. However, for this to be successful, not only did they need to develop new industries or move existing industries into higher value-added forms of production, they also needed to raise the skill levels of the labour force and shift the balance of incentives in the labour market.

In the case of Singapore, this meant that in order to discourage employers from utilising low cost labour as part of their product market strategy, the government sought to increase the price of labour. This was done in two ways, first they introduced a levy on low paid labour and used the proceeds of that to fund the skills upgrading programme, financed by the Skills Development Fund. This pushed the cost of upskilling the labour force onto employers who sought to continue to use low paid labour. Second they encouraged the trade unions to submit substantial wage claims. This latter tactic was later revised because it proved too much for the market, although wages did continue to rise. The second way was to enhance the skills of the existing labour force, this they did through the various programmes outlined above. This attempt to change the supply side of the labour market was complimented by other actions to help shape the demand for skilled labour. Here, they encouraged employers in low value-added product markets to re-locate abroad, while at the same time seeking to attract new companies which would invest in higher value-added forms of production. The result was a substantial shift in the direction of higher value-added forms of production (Cheah, 1997). In this way the government sought to manage the labour market, using its own influence to shift the incentive structure for both

employers and employees. Yet again, government action in structuring the labour market was instrumental in speeding up the process of adjustment.

Conclusions

This paper has sought to further our understanding of the process of skill formation. It has focused on that aspect of the process associated with generating and sustaining the skills required for efficient functioning of a modern economy. We have argued that while the Anglo-Saxon approach, with its reliance on the market has proved effective for some societies, other have chosen to supplement and/or manage the market in order to speed up the process of growth. While the exclusive reliance on the use of the market proved the most efficient method for the Anglo-Saxon countries, this has not proven to be the case for the Tiger economies. They industrialised under very different geo-political world conditions, and they had the experience of the older Anglo-Saxon economies as well as the Japanese to learn from. It is not surprising therefore, that they should adopt a different strategy, using what was best about the market but supplementing and managing market forces in order to achieve their objectives.

For countries industrialising in the contemporary geo-political conditions, the situation is different again. What was tried and tested in the Asian Tiger economies in the last three decades of the twentieth century may no longer be practical in the present context. Indeed the model we have described is no longer as effective in Korea as it was. There, the increasing power of the Chaebol and the decentralisation of the education system has meant that the government no longer has the same degree of control over either the demand or supply side that it once had (Ashton, et al. 1999). The forces of globalisation have, to some extent, also reduced the degree of discretion available to governments seeking to develop at the beginning twenty first century. Thus countries such as South Africa can no longer protect their domestic markets while pursuing an export oriented industrial policy, as S. Korea did; neither, given its wage levels, is it in a favourable position to compete against the new wave of low cost labour economies in the way in which Singapore did. Finally, given the internal democratic pressures in South Africa, the state is not in a position to achieve the degree of autonomy possessed by the Tiger governments. On the positive side however, governments such as

those of South Africa, now have the added knowledge to be derived from the lessons learnt by the Tiger economies, they have a greater spread of ideas to choose from. What we have tried to do in this paper is to indicate the range of choices that are now available.

What the experience of the Tiger economies have also taught us is that transferability of policy initiatives is not a straightforward matter. This is perhaps most evident in the case of attempts to transfer the much acclaimed German apprenticeship system. This failed in S. Korea but succeeded in Singapore, where the main principles used to inform the German system were then adopted to guide the development of a variant adapted to Singaporean conditions. Other initiatives have proved easier to transfer, thus the Singapore People Developer Programme was modelled on the highly effective UK Investors in People programme. In Singapore the transfer did not require such extensive modifications as were required in the case of the German apprenticeship model.

Finally, it is important to note that each nation has its own distinctive problems and its own objectives. Moreover, the choices it faces are shaped by its history and institutional structures, as well as the geo-political conditions on the world stage. History has also demonstrated that there is a range of pathways which have been forged to the status of an industrial nation. Yet, no matter which pathway is followed, all have to tackle the problems of skill formation. From that wealth of experience, there are a number of lessons to be learnt. All we have tried to do here is to point to some of the lessons which can be learnt from two such pathways.

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