

Globalisation Challenges and Competitiveness: The Role of the State and Private Sector in Malaysia

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1. Introduction

This paper will examine the challenges of the globalisation process on the Malaysian economy and the role of the state and the private sector and their state of competitiveness in meeting the challenges. Issues relating to the enhancement of technological capability, the role of education, training and R&D will be examined in greater depth with respect to the country's quest for industrial nation status by the year 2020.*

The constraints imposed by the rapid globalisation process are externally induced, emanating largely from both the role of foreign direct investment (FDI) and multinational companies (MNCs) of the industrial countries. Being host to FDI and a substantial number of MNCs, Malaysia's industrial structure is thus largely influenced by their presence. This has imposed a number of constraints in policy-making of the state.

Finally, this paper will outline the future role of the state and issues and policy that are available to Malaysia, if it were to become more outward-looking and technologically competent in meeting the globalisation challenges.

2. The Globalisation Challenges

Since the mid-1980s, the world economy has witnessed new trends in international trade, investment and technology flows as a result of economic adjustments in the major industrial countries. These impinge on the patterns of investment flows globally. The formation of regional trading blocs worldwide (NAFTA, EU, AFTA, etc.) further accentuated this problem.

The globalisation of MNC and Asian NIEs activities in this region in general and Malaysia in particular is exerting significant repercussions on the country's development process, the pace of industrialisation and technology absorption. Further, the concluded GATT negotiations will also have important impact on Malaysia's trade performance in the future.

One such issue is the establishment of export-processing zones (EPZs) in many developing countries which is often seen as a policy instrument benefitting the MNCs rather than the host countries. The liberal policies of the developing countries encourage even small enterprises with more standardised products in the industrialised countries to relocate in low-cost countries. This will create inter-industry linkages with their larger counterparts overseas rather than with local enterprises. This tends to stifle the entry of local entrepreneurs into these activities.

Another disconcerting aspect of future globalisation challenge arises from the rapidity in the development of new emerging technologies. New innovations in micro-electronics and information technology (IT), robotics, biotechnology and new advanced materials have gradually entered into industrial production processes and are beginning to affect relative factor costs and the comparative advantage of production among countries.

3. Role of the State

There are many ways in which a state intervenes in the economy: through influence, regulation and mediation, distribution, production and planning. These different emphases go to show the nature of the economic problems and therefore the main reason for state intervention differ over time and between countries. [Biersteker, T.J. 1990:480].

Since the early 1970s, there is an increasingly conspicuous presence and direct involvement of the state not only in terms of identifying priorities in the country's development process but also in terms directly involved in economic activities. Since Malaysia has an open economy, the state must establish strong interactive relationships with the private sector to ensure that the export sector becomes more resilient in an increasingly competitive world.

Also as a result of the globalisation process the Malaysian economy will go through a period of profound changes in the years to come. This principally arises from the rise of Japan as a global economic superpower, the emergence of China and the increasing industrialisation of its ASEAN partners, and the higher degree of regional integration.

The failure of market mechanisms to activate any concerted effort towards this kind of change makes it all the more important that the state be involved in Malaysia. Here the government's role becomes crucial given that technological development requires substantial infrastructure support of all kinds, including education and training, technical extension services, development of public-private sector linkages, and a legal framework to enforce property rights (eg. patent law) and maintain secrecy. Indeed for a developing country like Malaysia it is even more difficult to manage this technological change in view of the increasing pace of technology development and innovations which requires shorter response time from product development to commercialization. There is also increasing specialisation and complexity of systems bringing with it the need for proper interfacing of manpower and disciplines and integrating critical skills from various sources.

The state's role in providing the leadership to enhance technological change must also be complemented by mechanisms to increase public sector and industry collaboration. We can learn a great deal from the collaborative experiences of Japan and South Korea in this matter. The public sector of Korea, for instance, is involved directly in industrial development and export growth. Korean industrialists and businessmen have easy access to the highest level of government. In Japan international competitiveness forms a central concern of the Japanese government. Public and private officials of the highest ranking cooperate extensively. In Hong Kong too, in recent years, government policy has shifted from non-involvement posture to increased intervention as the promotion of high-technology and skill-intensive industries. Even in the United States, state governments have

been taking an active part in promoting university research, by formulating long-range policies for the utilization of S&T resources, and fostering greater university, industry research interaction.

Therefore the state plays a role in a rather explicit way and have a task of both advancing and directing science and technology. Thus the state plays an important role in establishing an environment that stimulates firms and specialised technological agents such as engineering firms, intermediate goods producers and capital goods suppliers to engage in on-going technological efforts and to develop added technological capabilities.

4. Issues in Globalisation

(i) Developing Human Resources through Education and Training

The rapid process of industrialisation of Malaysia has been contributed by imported technologies of the industrial countries through direct agency participation of FDI or foreign MNCs and through purchases of licensing of technologies. However, nothing substantial can be expected from imported technologies in the absence of a strong indigenous capability to modify and improve such technologies for local utilization.

This has to depend on human resource development (HRD) ie. the upgrading of engineering and technical skills through the formal education system especially in the long run. It is through HRD that Malaysia should be able to nurture domestic industries that are able to compete in the international market.

As a matter of fact at the present stage of Malaysia's industrial development, manpower training must be reviewed as an integral part of the technology transfer process. Except for a few cases, most Malaysian subsidiaries of MNCs are at the "learning stage" to absorb the transferred technology rather than at the stage of product improvement or innovation. So, any integral programme of manpower training is critical to enable local engineers and technicians to assimilate the skills to exploit fully the transferred technology. In this regard, the government should seriously consider incorporating manpower training provision as a criterion for evaluating and approving FDI in the future. This training can be in the form of formal training programmes at overseas offices belonging to the MNC's group, through in-house training, or through setting up of a full-fledge training institute that can offer training for both employees of the firms as well as other workers. [Ali, A. and Adnan, M.A. 1990:167].

To sustain Malaysia's export competitiveness, it is critical that the country acquires trained and skilled workers and R&D personnel. For this purpose, quantitative expansion and qualitative improvement of vocational educational system needs to be emphasised in the 1990s and beyond. In plant training programs by industries with support incentives by the Government should be institutionalised. A feature of this program would be the encouragement of joint-efforts between industry, public R&D institutions, universities and the Government. [M. Yusof Ismail, 1990:113]

And related to this, the critical areas of human resource development in science and technology (S&T) development can no longer be ignored. To improve our technical and engineering skills would require an assessment of existing educational and vocational training systems both in the public sector and on the factory floor. For S&T development, the country has to set its priorities in terms of target industries and R&D activities in all sectors.

Since investing in human capital is very critical in attempts to improve technological capability, much more attention should be given on how to increase Malaysia's investments in fields which Malaysian interests do control a great deal, ie. in Small Medium Enterprises (SMEs).

Currently, there are three categories of programmes available in this field which include (i) entrepreneurial developments and business management training, (ii) technical skills training, and (iii) private sector training, [Ali, S. and Adnan, M.A., 1994:5]

Entrepreneurial skill training is currently run by two government institutions namely National Productivity Centre (NPC) and Malaysian Entrepreneurial Development Centre (MEDEC). NPC caters for those who have already established small firms but also are willing to expand further. MEDEC caters for those who intend to open tiny to small scale firms. They offer only short courses.

On the other hand, there are a host of public institutions which cater for skill training such as Standards and Industrial Research Institute of Malaysia (SIRIM), Forest Research Institute of Malaysia (FRIM), Malaysian Agricultural Research Development Institute (MARDI), Centre for Instructor and Advanced Skill Training (CIAST), Industrial Training Institute (ITI), MARA Vocational Institutes and so on. However, such readiness to train is not met by equal readiness to take up the courses by suitable trainees, only a few enrolled and succeeded. However, graduates of these institutes are not always promising - retraining is a norm and can be expensive to potential employers. Perhaps the financial incentives given by the government to firms to institute their own in-house training failed to take off are not attractive enough.

Despite this, there is no lack of effort to bring technology - oriented training to Malaysian manufactures. Attempts were made to improve their technology, product design and techniques by a diversity of agencies such as SIRIM, FRIM and MARDI. However, the rate of participation in these trainings has been low. One hopes that potential exporters would behave otherwise.

The role of Ministry of International Trade and Industry (MITI) in identifying viable trading partners overseas and shorter legal procedures involved is a step in the right direction since medium scale enterprises lack practical knowledge of overseas markets let alone well-versed in foreign legal procedures. Perhaps the Malaysian External Trade Development Agency (MATRADE) will bring Malaysian exporters greater involvement in world markets where its predecessor, the Malaysian Export Trade Centre (MRTC), which has limited resources, failed to do so.

Private sector training facilities are varied and widespread throughout the country with minimal supervision by the public sector. The interface between public and private sector skill training has been recognised a long time ago. Yet it was only in the 1987 Budget that it was officially admitted that the private sector could not do it alone without a financial boost from the government. There is the double deduction incentive scheme which is to encourage firms to introduce new technology or new product and in the process enhance employee training programmes at all levels from general workers to advanced technical skilled workers. However, the private sector soon after discovered it was hedged by so many red tapes. Manufacturers now viewed it as restrictive and more often would benefit those largescale industries whose technology system are forever improving. Local SMEs are thus at a disadvantage, although they are the targetted beneficiaries.

To increase this local technological manpower involves massive reordering of the existing education and training system. The 1955 Government Budget made an allocation in education of RM10 billion representing 20.6% of total allocation.

Under the allocation, all training under the supervision of departments and agencies are required to utilise fully their capacity and with a new emphasis; the capacity of industrial training institutes will be expanded and upgraded including the construction of additional hostels, build and upgrade polytechnics; upgrade existing vocational schools into technical schools for skilled courses; recycle rural school drop-outs into special skilled workers by intensive training; newly privatised government bodies will spearhead hi-tech engineering training with twinning courses overseas and so on.

(ii) R&D Efforts

Despite the significant amount of new technologies that are continuously introduced into the manufacturing sector, there has been very little effort by local R&D institutions - the universities and the various government R&D centers - to work with these MNCs to accelerate further the pace of technology acquisition and adaptation.

In view of the global corporate policies of many of these MNCs to limit their R&D allocations in countries like Malaysia [more so because of the smallness of the market], it is up to the domestic R&D institutions to take greater initiatives to offer their services to the MNCs. In this regard, the government should look into ways and means to encourage and promote greater university or R&D institution linkage with the MNCs in the immediate future such as the collaboration between INTEL, Penang and the Universiti Sains Malaysia and the semiconductor industry [Ali, A. and Adnan, M.A., 1990:170].

It certainly needs a long time span in which to develop our local capability in innovations and technical creativity. Here R&D activities will have to be increased five to ten fold for decades in the future. The constraint here is Malaysia's expenditure record on R&D is not impressive. In 1986, Malaysia's R&D/GNP ratio stood at only about 0.4% - very much behind South Korea (1.8%), and Japan (2.8%). Although it has increased to around 0.5% by 1988, almost 90% of the total R&D expenditure came from the public sector. (UNESCO, 1989).

The thrust of R&D in the public sector in the future should be on high technology and benefitting allied industries. As it is, 70-80% of Malaysia's total R&D expenditure are related to the agriculture sector. [Asian Development Bank, 1990]. The role of MIMOS, Technology Park and the newly created Malaysian Technology Development Corporation (MTDC) will be able to usher in this high technology R&D much more quickly.

Left to itself, private sector R&D could concentrate mainly on chemical products, rubber and plastic subsectors, followed by food and tobacco. R&D in manufacturing was minimal and dealt mainly on improvement of existing, not future, products and processes.

With few exceptions, locally owned firms are left behind in relevant technology development due to our over dependence on foreign direct investment [FDI] and thus foreign technology from our strategies of import-substitution and export - led industrialisation. Such R&D returns may not be immediate and thus discouraged participation from local firms. Perhaps what is more wanting is more fiscal incentives must be given by the government to allow domestic industries to be more competitive especially in the world markets. SMEs especially do need technical know-how, finance, and marketing outlets - facilities which are actually dominated by non-locals.

MTDC was established by the Ministry of International Trade and Industry (MITI) with the main objectives of commercialisation of research results and encouraging the growth of technology-based companies in Malaysia. It is a joint-venture between the Government and fourteen leading companies from the private sector. MTDC was incorporated as a venture capital company to enable it to provide financing and to invest in the technology based companies, to support investors, innovators and researchers to venture into business and to encourage investment in new technologies. And since starting operation in October 1992, it has actively pursued commercialisation of research results with various universities and research institutions in Malaysia and have invested in seven different technology-based companies.

MTDC will also create linkages between technology-based companies in the US with the research community in Malaysia. With these linkages local technology researchers can benefit through the extensive network of scientists, technologists and companies from a much more advanced setting, ie. the US. Local research findings can also be promoted and commercialised by US venture capital firms. This would enable MTDC to form links with technology-based firms financed by the joint partner Hambrecht and Quist (H&Q), so that local researchers could benefit from this extensive network. In the long term, MTDC hopes to invest directly in foreign technological-based companies which subsequently collaborate with local universities and research institutions in commercialisation of local research findings. In that way MTDC will bring university researchers to the forefront of development as in Japan, South Korea and Germany.

(iii) Strengthening Industry's Role

Market forces alone are not sufficient to generate technological advancement and industrial growth as evidenced in countries such as Japan and South Korea earlier. In these

countries, the state interventionist policies have largely influenced their respective industrial and technological developments. In Malaysia too, the state must take the lead in promoting R&D by the private sector using inducements such as fiscal incentives, establishing an effective delivery and information system and creating special R&D funds.

Research institutes are not the only source of new emerging technologies about production processes and products. In fact, industry itself must play a leading role in fundamental research as well as developing applications of such technologies. This is because resources required for effective R&D activities are often substantial and beyond the reach of affordability of individual research institutes or universities. Furthermore, the gestation period from basic research to commercialisation has become shorter. All these imply that advances in S&T ought to be driven by industrial requirements and should be incorporated into business strategies.

Thomas P. Hughes argues, in *American Genesis: A Century of Invention and Technological Enthusiasm*, that "inventors, industrial scientists, engineers and systems builders have been the makers of modern America." The most important single factor in the industrial success of the US in this century has been the systematic exploitation of science and technology. [FW, 1994:66].

However, according to him, during the past couple of decades, some have been disillusioned by what they see as the failure of research and development to live up to its expectations. Perhaps, even more ominously, the public's faith in technological advance and progress has been eroded by concern over the environmental consequences of unlimited material growth.

However, one recent study calculates that only about 5% of R&D spending yields successful new products. So during the 1960s and 1970s, many companies shifted the emphasis toward more mundane product development. Others were so soured on R&D results that they slashed their budgets. [FW, 1994:67].

(iv) Managing Technological Change

Perhaps another critical issue that Malaysia faces in the light of the current globalisation process is its ability to manage technological change. The international adjustments to the globalisation trends will pose a great problem for Malaysia because of its relatively nascent industrial base and FDI influencing its industrial structure.

The ability to choose and assimilate imported technology to countries like Malaysia has been hampered because of the lack of indigenous technological capability. Given their small pool of highly-skilled personnel, manufacturers often lack sufficient knowledge and information about the technology they hope to acquire and their potential suppliers. Furthermore, a technology purchase is often "packaged" with foreign technical expertise and capital equipment. This arises because MNCs assert that technology can be transferred successfully only through a whole "technology package" covering many stages of an investment project and integrating the technology with management, marketing and

financial skills. Thus where buyers have less than sufficient information and knowledge about the technology, the suppliers would be in a position to capture a greater share of the potential economic "rents" from the ultimate use of the technology.

The situation is reinforced by the fact that technology importers lacked any significant expertise in acquiring technology and thus have to bear substantial costs for acquiring and managing the advanced technology. Over time, the relationship between the technology supplier and the recipient usually changes. The bargaining strengths of the technology supplier are greater at the beginning when the need of its resources and expertise is greatest. Once the facilities are operational, the supplier's services then become less indispensable and over time there could be a shift in the relationship favouring the technology recipient. However, in recent years developing countries' (including Malaysia's) bargaining position against the MNCs and foreign technology suppliers in relation to technology transfer have tended to weaken because of the immense competition amongst neighbouring countries for direct foreign investment [DFI] in general and "high-tech" investments in particular. They lack the ability to catch up especially in those "sun-rise" industries marked by very rapid pace of technological change and as such are more vulnerable and dependent upon the technology suppliers especially the MNCs to provide them with the latest improvements regularly. [Ali, A. and Adnan, M.A., 1990:156].

Fewer foreign-controlled companies appear willing to adapt their products than to modify their processes and products to suit host country circumstances. Product adaptation is greatest among manufacturers of import-substitution goods, especially consumer goods.

Even if there is a willingness on the part of MNCs to accommodate local needs and desires for technology transfer and adaptation, a country's ability to acquire and adapt new technology also depends on its capacity to absorb new information as defined by local manpower skills, and domestic policies toward technology transfer and information generation and dissemination. [Ali, A. and Adnan, M.A., 1990:158].

It may prove futile just simply to import current technologies from the industrial countries, for by the time such technologies are adopted and assimilated the industrial countries have progressed further and the relative position of Malaysia may not have improved very much.

Therefore, it is imperative that the state intervenes to affect the necessary technology changes.

5. The Emergence of Malaysian Multinational Companies (MMC)

The Malaysian government is particularly keen to encourage the export of services by Malaysian companies abroad. The government is drawing up a range of package program (packages and support services) aimed at supporting those members of the private sector who want to get into new markets abroad. For example, the Malaysian construction industry is quite capable of taking on projects outside the country. However, companies

need to be backed up with a financial package, a consultancy package and other forms of assistance which can be supplied by the government or other members of the private sector.

Malaysia is an important market but also a relatively small one. By investing beyond their immediate needs these companies can play a significant role in the development of the country and also become a player in the world market.

Technology Resources Industries (TRI) is one such example of MMN that has sought the help of the government to venture overseas. It is a specialist in the leading edge telecommunications that has been making waves in the industry, both at home and in the world's developing countries. Its core Malaysian operations, CELCOM, which operates the country's most technologically advanced mobilephone system, has already demonstrated its ability to successfully transport its skills and resources to develop telecommunication services in other developing nations as evidenced in Cambodia. TRI has started up operations to develop a nation wide telecommunications network through TRICELCOM, its joint-venture company with the Cambodian Ministry of Post and Telecommunications. And elsewhere TRI has made inroads in the Middle East, the African continent and the Republic of China. In Iran, TRI has entered into a joint-venture agreement with the Queshm Free Area Authority to develop and operate telecommunication services. And to increase its global competitiveness, TRI is to continually upgrade its technological capabilities and manpower skills to lead in this rapidly advancing industry. [NST, 1994].

Recently the US Navy gave another Malaysian telecommunication giant, Sapura Telecommunications Berhad to instal and manage the telephone network at its base in San Diego in California ahead of other international competition. The giant Telekom Malaysia [76% government owned] is also looking to overseas market. With Bell Canada International, Telekom is finalising a project in Hong Kong and pursuing new opportunities in Thailand and Australia.

Proton, Malaysia's national car company (a joint venture between state-owned Heavy Industries Corporation of Malaysia [HICOM] and Japan's Mitsubishi Corporation in 1985) was conceived about nine years ago to rev up the nation's development of heavy industry. Now it is shifting gears to boost Malaysia's export drive in cars worldwide. To this end it is investing in neighbouring countries as its long-term corporate growth strategy. It has joined a new venture with Mitsubishi Motors Corporation, Mitsubishi Corporation and the Vietnam Transportation and Communication Export-Import Corporation to import completely knocked down vehicles for assembly and sale in Vietnam. After building its share of the Malaysian car market up to 73 percent, it has secured exports niche in 17 countries including Great Britain, where some 50,000 of its cars have been sold over the past five years in the most competitive car market in the world.

PETRONAS, the national oil corporation of Malaysia, has now matured into a fully integrated oil company - engaged in the full range of petroleum activities in the upstream and downstream sectors. Some twenty-three wholly owned subsidiaries, fourteen joint-venture companies and six associate companies make up the PETRONAS Group. They

are engaged together in activities ranging from exploration and production to refining, marketing of crudes and petroleum products, processing and distribution of gas, natural gas liquification, and manufacture of fertilisers and petrochemicals. In the process, it ensures Malaysia acquires the necessary skills and know-how in the petroleum industry through active participation and transfer of technology. This too has enabled PETRONAS to be competitive and to venture beyond the Malaysian shores recently in Vietnam and Uzbekistan (CIS). In Vietnam a petroleum sharing contract [PSC] was signed between petro Vietnam (state oil company of Vietnam), Australia's Broken Hill Pty (BHP) Petroleum International, PETRONAS, TOTAL and Sumitomo Corporation of Japan to explore petroleum offshore southern Vietnam. In essence PETRONAS involvement in the Vietnam and Uzbek projects give it opportunities for participation in petroleum exploration and production overseas.

6. Conclusion

There is no doubt that the economic resilience of Malaysia has to be strengthened if it were to enhance its share in the international market. Certainly future investments by foreign companies must be viewed in terms of their impacts on the development of the country's technological capabilities and inter-industry linkages that could be developed. To become more competitive globally we must ensure that not only ever increasing supply of highly-skilled labour but also a substantial increase in R&D and technical training expenditure be pursued. Therefore, we need a quantum leap in education, training, R&D in S&T in order to be abreast with the others globally.

In all these activities, the appropriate role of the government must be duly emphasised so that the economy will benefit from the correct mix of incentives and price signals, infrastructures for human resource development and institutional framework for S&T enhancement.

*According to the Prime Minister, Dr. M. Mahathis, who is the proponent of vision 2020, "Malaysia should be a fully developed country ... should not be developed only in the economic sense ... but must be a nation that is fully developed along all the dimensions: economically, politically, socially, spiritually, psychologically and culturally. We must be fully developed in terms of national unity and social cohesion, in terms of our economy, in terms of social justice, political stability, system of government, quality of life, social and spiritual values, national pride and confidence."

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