



# Labor Shortages and Industrial Growth in Penang, Malaysia

Niels Fold and Arne Wangel

## Abstract

*During the last two decades, industrial growth in Penang has been rapid. In particular, production and employment in the labor-intensive segments of the electronics industry have increased tremendously due to investments by transnational companies from the USA and Japan. In the first decade, the demand for adequately skilled and disciplined labor from Malaysia's rural areas was covered without major bottlenecks. However, recent reorganization of production in the electronics industry and the general expansion of manufacturing production in the area imply a more complex and uncovered demand for skilled and flexible labor in combination with unskilled and low paid labor. On the basis of scattered statistical data and a series of interviews with representatives for private capital, labor, and state authorities in the Penang industrial complex, this paper illuminates the nature of the labor shortages and the forms of response by individual capital. The objective is to assess the ability of existing labor market institutions to deal with the labor demand and to promote localized learning capacity. We find that a*

*number of informal labor institutions have developed while the federal and local state have failed to establish adequate regulatory mechanisms. We conclude that the official preoccupation with the maintenance of low wages hampers the creation of new, productivity enhancing labor market institutions.*

## Keywords

*Third World industrialization, electronics industry, labor shortages, labor market regulation, Penang, Malaysia.*

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In a number of ways, the Penang industrial area reflects the structure and conjunctures of the Malaysian industrialization process: the export oriented nature of manufacturing activities, the presence of transnational companies, the dominance of the electronics industries (both components and consumer goods), and the establishment of new industrial estates and Free Trade Zones (FTZs). Penang also reflects the critical point, at which the Malaysian industrialization process now stands facing several challenges. The low-wage incentive has lost in value, as other countries in the region have become viable alternatives for labor-intensive production. The future inflow of foreign, direct investments is being questioned, as Penang is struggling to gain new competitive ground in a climate of upward wage pressures. Because domestic markets are too small to provide the engine of growth, industrial restructuring is targeted at making higher-end quality products for export.

The labor market in Penang reflects the success of the export-oriented industrialization since the early 1970s as well as the current limitations for future growth. Several other factors are vital in the economic development during the next decade, most importantly the policies on redistribution among ethnic communities, the management of the current inflationary pressures, the huge deficit on the balance of payments, and the development of advanced infrastructures for research and technological development. The labor shortages, however, are indicative of the point of crisis reached, and they shed light on one fundamental requirement for a competitive indigenous export base, i.e. high-level human skills and innovative potentials.

In this article, we focus on the labor market issue in its local Penang-context. We start out with an introduction to the driving forces behind the industrialization process in the Penang area, i.e., the spectacular growth of the electro-

electronics industry. Next, we map out the conditions on the local labor market and outline a number of different responses to the situation by individual companies. Subsequently, some of the central elements in the state government's new strategic plan, which addresses the labor problems as well as their wider context, is outlined. On the basis of our review on the labor market situation in Penang and the existing regulatory means to handle it, we finally question the ability of the local institutions to secure the sustainability of the economic dynamics in the industrial area.

The article is based on fieldwork carried out in Penang during June-August, 1994. Original data were collected through semi-structured interviews with respondents from 20 small and medium sized industries located in Penang's FTZs and industrial estates. Additional data were provided by informants related to large-scale transnational companies, trade unions, trade associations and local state institutions. Primary data in the form of official statistics and reports were identified during the fieldwork.

### **The industrialization of Penang: The role of the electronics industry**

Historically, Penang was one of the three major ports of shipment between Europe, India and China, the others being Melaka and Singapore. The importance of Penang in the entrepot trade gradually declined in the Straits Settlement period and during the British colonial rule as overseas trade gravitated towards the regional center in Singapore (Andaya & Andaya, 1982). With Malaysia's Independence and the formation of Singapore as an independent republic in 1965, commercial and administrative activities were primarily stimulated in the area around Kuala Lumpur. In particular, manufacturing production based on import substitution was concentrated in this area. The dominance of ethnic Chinese in the local Penang economy was presumably an important cause for the relative neglect of local economic problems by the Malay-dominated federal government.

The removal of Penang's free port status in 1969 induced an urgency on local economic actors to consider commercial activities other than trade. The local state government was facing an urban unemployment rate of about 15 % (ISIS & PDC, 1991) as well as smoldering social unrest. As a consequence, the state decided to embark on a labor-intensive industrialization as a measure to create job op-

portunities for the largely unskilled labor force. This strategy was a local variant of what came to be the official industrialization strategy, launched in the early 1970s as the major economic backbone of the New Economic Policy (NEP). NEP was a policy package with the twin objectives of eradicating poverty and eliminating the identification of race with economic function and status; it was promoted as the necessary means for fulfillment of a grand nationalist project of societal prosperity with ethnic peace (see for instance Lim, 1983; Tan Tat Wai, 1982).

The national strategy was based on generous fiscal incentives such as a large number of possibilities for tax exemptions and deductions from corporate income (for export promotion, in-house research and development, training, etc.) (Jesudason, 1990). Moreover, foreign companies in FTZs could operate as wholly owned subsidiaries, and input as well as output of production were free of duties and excise taxes.

In 1972, following the recommendations of a consultancy study, the state Government of Penang established the first FTZ in Malaysia. The FTZ, Bayan Lepas, was managed by the Penang Development Corporation (PDC), a semi-government agency that was established in order to plan and implement industrial development. Bayan Lepas was later followed by another FTZ and a number of "traditional" industrial parks, catering for other parts of industry's need for physical and functional infrastructure (see fig. 1).

In the years before, the PDC had carried out a vigorous promotion campaign to attract foreign manufacturing capital. The semiconductor and consumer electronics industries joined by textile and garment industries became the prime movers in the economic growth that followed. We shall briefly outline the major phases in the development of the electronics industry as this sector was and continue to be integral to the industrial dynamics in the Penang area (for details, see Nesadurai, 1991; Rajah Rasiah, 1991a, 1991b, 1993; Singh, 1995).

The first phase, which covers the period up to the early 1980s, was characterized by the labor intensive nature of the semi-conductor production process and the demand for cheap, unskilled female labor. Due to the economic development in the existing export platforms of US-companies (primarily the East Asian NICs and Singapore), wages in these countries increased to a level that reduced international competitiveness. Moreover, all the four "tiger"-countries were deliberately trying to move towards higher

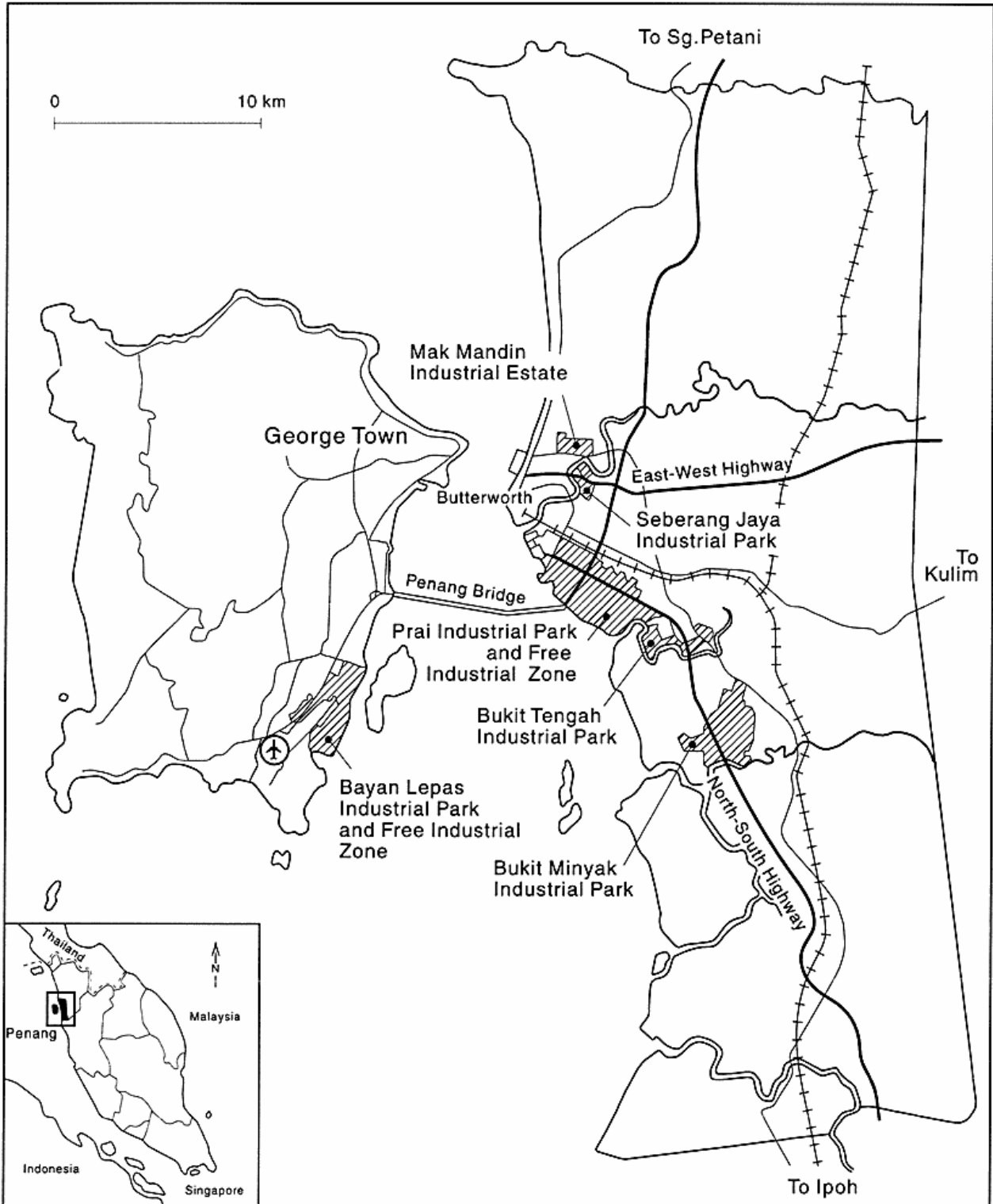


Figure 1: Free industrial zones and industrial parks established by the PDC in the state of Penang.

value added manufacturing activities. As a consequence, new assembling operations were established and existing operations were moved to other Southeast Asian countries, primarily Malaysia. Penang was the first state to receive the US-transnationals, starting with National Semiconductor in 1972. Later in the 1970s all of the major US-companies, and some of the transnational electronics companies from Japan and EU, established subsidiaries in Malaysia, primarily in Penang. However, Penang did not escape the general slump that hit Malaysia in the early 1980s due to decreasing demand on the world market and low prices on the main export commodities. Further, the global recession in the electronics industry that took place at the same time had particularly severe effects on Penang as this industry had gradually become the single most important industry in terms of employment. Large numbers of electronic-workers were terminated as companies reduced production and started a restructuring process.

In the mid-1980s, the federal government eased the rules for foreign manufacturing companies in order to revive the flow of foreign investments. This coincided with the second phase of the electronics industry's expansion which gradually took off during this period. As a response to increased competition on the global market in the early and mid-1980s, the US-semiconductor companies started to automate production facilities in Penang - and other parts of Malaysia. Technological development in capital equipment and work organization, and the pool of trained labor in the electronic enclaves of Malaysia made this upgrading of production processes possible. The relatively strict vertical intra-firm division of labor was giving way to more flexible and locally related networks between branches of transnational companies and local suppliers. As a partial move towards more flexible organization of production, the transnational companies, particularly in the consumer electronics industry, shifted some of their purchases of various types of packaging materials, plastic components, stamped metal parts, etc. to local suppliers. A few of these local companies also managed to venture into export markets on the basis of their experience with manufacturing of customized products under specified requirements in terms of quality and delivery time.

Moreover, in the late 1980s the appreciation of the Yen was reflected in a massive inflow of Japanese manufacturing investments to Malaysia, of which a considerable share located in Penang. The Japanese companies were followed by their Taiwanese and South Korean sub-contractors

and other companies from these countries that were hard hit by the loss of GSP-privileges at the US-market and the appreciation of local currencies in the late 1980s. The new tide of investments from East Asia included producers of both components and consumer electronics. As a result, the electronics and electrical industry in Penang was significantly diversified and expanded about 1990. At that time the electronics and electrical industry provided about 55% of total employment in the PDC industrial areas while the manufacturing sector contributed 46% of the GDP in the state of Penang (PDC, n.d.).

### **The nature of the labor shortage in Penang**

In this way, the development of Penang epitomizes the successive waves of what have been termed global Fordism in the early 1970s, followed by new global Fordism in the early 1980s and global Toyotaism in the second half of the 1980s (Fujita & Hill, 1995). Roughly, these three concepts refer to the three forms of foreign, globally-oriented investments (primarily from the US and Japan) entering the Penang area during the recent two decades. However, more empirical research is needed to establish the exact kind of work organizations being formed, as local labor market conditions in Penang are confronted by such production concepts. During the 1990s, the growth of manufacturing production has been increasingly hampered by different kinds of bottlenecks on the labor market. Large flyers outside transnational company factory gates announcing 'walk-in interviews' for job-seekers and recruitment campaigns in local media reflect the general demand for labor power.

This is a new and emerging barrier for capital accumulation in the area. Previously, a more or less continuous supply of unskilled, primarily female, workers from the labor reservoir in Malaysia's rural hinterland has covered demand. Strong pull-factors in the industrial growth area have stimulated the migration of labor and made strong interference by state regulation redundant. However, the recent type of labor demand, i.e. the combination of demand for unskilled low-wage labor and skilled flexible workers, is difficult to meet.

There is a general lack of transparency of the local labor market in Penang. A recent study by the Human Resources Development Council (HRDC, 1994) has tried to illuminate the constraints but inadequate statistics still blurs the

picture of the current problems. Only 27 per cent of the manufacturing companies in Penang responded to the survey on labor shortage. The responding companies employ about half of the total work force and they are primarily made up by major transnational companies. Nevertheless, we use some of the study's scattered information to illuminate the high flux of the industrial labor market in Penang. The Human Resource Development Council has recently been established by the State government. The council combines representatives from the Association of Human Resource Managers (FREPENCA) and the Federation of Malaysian Manufacturers Northern Branch and officers of the relevant authorities. The former association is primarily constituted by transnational companies while the latter is made up by a broader constituency of local as well as foreign medium and large scale manufacturing companies.

The new jobs created in Penang are expected to amount to 32.134 during 1994-95, which include 7.165 positions for skilled workers; the dominant electrical/electronic sector alone opens 15.549 positions. In terms of job category, the demand for 5.206 technicians (1993) represents the largest single group, and this particular need is expected to increase drastically in 1995 and 1996. It is estimated that Penang needs at least 700 engineers and 1.200 technicians per year, which equals the current total of all universities and polytechnics in Malaysia (Dr. Kang Ching Seng, chairman of Human Resources Development Council, Penang, in the Star 5/12/94).

Thus, labor migration will continue to be vital for Penang's economy. In 1993, 22.3 per cent of the total work force originated from out-of-state. There was 10.369 foreign workers constituting 24.3 per cent of total out-of-state workers; 12.763 outstation workers who commute daily; and 19.622 workers from other states residing in Penang. In the States of Northern Malaysia there is an estimated total of 200.000 legal and illegal foreign workers making up about 11 per cent of the current labor force.

The pressure in Penang seems to be building up, as increased industrialization in the mainland states has constrained the labor supply to Penang. Exorbitant turnover rates have developed in this process. In Penang state, the turnover reached 48 per cent in 1992; in the Prai Industrial Estate alone the rate touched 54.6 per cent. There is a significant difference between general workers, who had a turnover rate of 68.8 per cent, and skilled workers with "only" 37.7 per cent in 1993.

The frenzied labor market is mainly caused by younger

workers, who "would jump next door for a 50 sen salary difference", as one employer explains (The Star 29/3/95). The overall salary growth in Penang was 9.5 per cent in 1993, rising to 10.3 per cent in 1994. Technicians and engineers manage to achieve about 15 per cent annual wage increase (The Star 5/1/95). However, decrease was registered in clerical/sales, and among general workers and unskilled workers.

The individual companies resort to various short-term solutions, especially the smaller companies that have most difficulties in recruiting and retaining workers. In particular, some of the small and medium-scale companies, which have successfully established themselves as subcontractors to transnational companies, are having a hard time as they have to compete in the labor market segment of the electronic industries. A series of interviews among twenty small and medium-sized industries revealed a number of different ways to deal with the labor shortage:

- foreign labor: Own import of foreign labor implies fixed and lower wage payments (about 80 per cent of the local wage level with no extra benefits). However, extra cost of accommodation and a levy - imposed in 1992 and payable to the federal authorities - must be added to the risk of declining productivity. The advantage of foreign workers is the fact that they are employed on a fixed two-year contract; those with legal status carry a machine-readable card indicating their employer. Foreign labor is employed in production areas with an unattractive working environment, typically in old premises in which it is impossible to install air-conditioning. For instance, wood-based industries are manned with close to 100 per cent foreign workers. The cumbersome and slow processing of applications to Immigration authorities has not been corrected, leaving the way open for "unscrupulous middlemen or agents who charge exorbitant fees and often leave the immigrant open to detection and exploitation" (IMT-GT, 1994, p.22).

- use of marginal groups on the labor market: Some companies are also beginning to request supply from the authorities taking care of the approximately 180.000 disabled people in Malaysia. Another stop-gap measure is to employ school children during their holidays.

- organizational changes: Various combinations of automation, relocation and putting out simple operations (e.g. cutting of soles) to rural households are pursued. One company had chosen to replace its old plant and invest in a fully automated line in association with a foreign partner. Ten

experienced workers were transferred from the original operation to the relocated new factory, which is able to supply the entire domestic market in Malaysia. Several companies had a branch or was planning to move production to rural areas in neighboring states with lower labor cost.

- fringe benefits: Major transnational companies manage to retain more workers with a variety of extra benefits, facilities and a comfortable environment in the workplace. An American semi-conductor company has a monthly turnover of only one per cent while a Japanese manufacturer of consumer electronics must cope with 9-12 per cent monthly. Although efforts to retain workers imply upward adjustments of the basic monthly salary up to several times in a year, small and medium industries are now also focusing on various additional benefits such as personal accident coverage. On the whole, some of these companies incur higher overheads in the competition to provide better hostels, transport or meal allowances to attract workers. One of the SMIs had tried to copy the kind of social activities, which the transnationals use to retain workers. However, the badminton was no success.....

-Labor pinching: Labor-pinching syndicates operate at night markets, as they approach factory workers, especially foreigners, with better offers (The Star 17/10/94). Pinching of workers from other companies is a strategy not only to secure sufficient work force, but also to avoid training costs. Newly established companies are blamed by those companies that have been around for a long time and spent substantial resources on training. The start-up of new operations creates a wave of job shifts, by which experienced and skilled staff are drained from their original company. The newcomers save on training, while those who have invested in skills development must start all over again. Labor pinching also operates at a inter-regional level between companies in Penang and those located in neighboring states. As an example, when several factories in the Kamunting Industrial Estate, Taiping, complained of being robbed of workers by Penang factories, the chairman of FMM Northern Branch, O.K. Lee responded that their recruitment drives are carried out according to the "free enterprise system" (The Star 6/7/94).

### **The challenge to labor market regulation**

In Malaysia, federal and state interventions concerning the general parameters of private sector activities and capital-

labor relations are pervasive and in favor of business interests, in particular those of transnational companies. This reflects a long-term trend of accommodating the needs of foreign investors, i.e., providing the instruments to ensure the international competitiveness of foreign capital if it chooses to locate manufacturing activities in Malaysia's sub-regional spaces such as Penang, Selangor, and Johore Bahru (Singh, 1992, p. 101). Investment projects are approved at federal level by the Malaysian Industrial Development Authority (MIDA) but planning, implementation, and management of the local free trade zones and industrial estates are the responsibility of local state authorities.

The Penang State Government via the PDC has been very precise in adopting and implementing this conception of a regulatory role. In early 1990, due to the emerging structural problems for the territorial growth complex, the state Government of Penang took the initiative to prepare a new strategic plan entitled "Penang: Into the 21st Century" (Government of Penang, n.d.). The subtitle of the official document - "A strategic plan to build a fully-developed, post-industrial society" - signals the similarity in content to the next grand vision of Malaysia's political elite as formulated in the Prime Minister's Vision 2020 (see Teh Hoe Yoke & Goh Kim Leng, 1992; Jomo K.S., 1994).

The ambitious objective of the state government's strategy is reflected in the number and scope of issues that are included. We shall briefly focus on the elements that indicate the understanding and response of the local state towards what is officially considered as the most serious structural problems on the labor market in Penang (see also a number of contributions with a similar content in Asian Strategy & Leadership Institute, 1995).

The plan emphasizes the attractiveness of investments with high capital and skills intensity and with potential linkages to local supporting industry. In the future, a more selective approach to new manufacturing investments in the state will be taken. The ambition is to reestablish Penang as a regional center for trade, finance, transportation, communication and tourism. Foreign and local investments in labor intensive industries should be directed towards the lesser industrialized neighboring states (Perlis, Kedah and Perak) or to Sumatra/Southern Thailand. Penang and the other Northern states in Malaysia have recently started to institutionalize their inter-state economic cooperation (see for instance Euromoney (special supplement), July 1993). The new inter-regional, cross-country

cooperation within manufacturing production is taking place within the emerging 'Northern Growth Triangle' between Indonesia, Malaysia and Thailand; apparently the concept of growth triangles is very popular in East and South East Asia (Rimmer, 1994).

By gradually developing institutional mechanisms for the regional cooperation schemes, highly wage sensitive transnational companies could move parts of their production to other areas in the triangle while maintaining their regional headquarters and R & D facilities in the Penang area, where the necessary facilities supposedly are of a higher standard. More emphasis on skills and human resource development through the establishment of formal training institutions in the Penang area would fill up the vacuum presently harnessing the technological up-grading of manufacturing industry in the regional "core": the lack of skilled, flexible workers.

It is, however, a question whether a momentum remains, or the effects of the labor shortage have already prohibited such transition, i.e. whether the shortage may "force" transnational corporations to relocate their operations to China, Vietnam or India where wage costs are lower. Furthermore, it is not only - as recognized by the state government - a question of wage level. At this juncture Penang (and Malaysia) is facing new qualitative demands imposed on its human resources. The challenge ahead was defined in a recent book on strategies in skills development:

".. the country is poised to move to a higher level of productivity - a level that can support a higher wage structure and yet be able to maintain a competitive edge in the global market. This interim adjustment period is not an easy one and demands concerted actions from both the public and private sectors" (Pillai 1994, p. 1).

It is the institutions of vocational training which will have to enable the local labor force with the skills to adapt to technological changes in the workplace. The employers' organizations articulate two main complaints related to the skills shortage.

First, they point out the lack of coordination and possible duplication of efforts between the four federal ministries conducting industrial and vocational training. Secondly, they criticize the outdated curriculum in the under-equipped and under-staffed public training institutions.

Curriculum wise, the present education system seems to be exam-oriented in a quite rigid sense. It does not encourage students to be critical and creative. Thus, observers emphasize that new curriculums will have to be designed to encourage creative, problem-solving and multiple skills, in order to avoid producing conformists for the workplaces. Currently, public institutions in vocational training fail to supply the appropriate qualifications, as they have been established as supply driven organizations governed by bureaucratic rules, rather than demand-driven institutions working with and for the private sector (Pillai 1994, xii).

The federal government plans to encourage large private corporations to establish technical colleges, polytechnics and skills development centers, and to sponsor their employees as participants. New tax incentives and a system for recognition of certificates are scheduled. The Human Resource Development Fund was implemented in January 1993 as a Federal initiative to support training in the manufacturing sector. Firms with more than 50 workers must contribute one per cent of total wages paid; the contributors are then eligible to claim up to 80 per cent of costs incurred by approved training programs. So far, the results have been modest. In particular, smaller companies are reluctant to release personnel for training due to the labor shortage (The Star 30/11/94). In Penang, the industry-led Penang Skills Development Center (PSDC) has had more than 5,000 participants in 370 short courses since it was established in 1989. Penang Development Corporation (PDC) was instrumental in this pooling of training resources among the major transnational companies in Penang. However, the PSDC only caters for the need of these companies and the courses are of limited relevance except for companies in a few industries.

The highly ideological content of the official discourse on labor shortages and the problems of increasing wage levels is revealed when local labor organizations define their position. According to the trade union movement, a general improvement of wages and working conditions is needed to motivate labor reserves to enter the labor market and to achieve more stable employment patterns, which would be conducive for a systematic upgrading of skills. Welfare standards would be improved, as real purchasing power catches up with the inflationary trend. Unions argue that, while the economy has been growing, benefits are unevenly distributed, and the income gap between various groups is widening.

Furthermore, wage differentials between regions and the highly segmented nature of the labor market as a whole imply that pockets of workers continue to be exploited at low wage rates. The unions intend to define and secure a minimum wage on their own through collective bargaining. A minimum wage would create a stronger incentive for transition to capital-intensive operations, and motivate a larger part of the labor reserve (particularly women) to seek employment.

This, in turn, would reduce the import of foreign labor, which only increases extroverted dependencies in manufacturing and causes social problems in the longer term. If short-term solutions such as labor import develop into a long-term trend, the risks of destroying the incentive to automate and of locking Malaysia's production structure into low-end, labor-intensive manufacturing are aggravated. Dependence on low-wage foreign workers contributes to economic inefficiency and postpones restructuring and upgrading in certain sectors. Thus, according to this view, policies to fix a ceiling on labor import, a deadline for factor adjustments, and introduction of tax incentives for relocation of selected industries should be implemented.

## Conclusion

The economic dynamics of the Penang industrial area is heavily influenced by the development of the manufacturing industry, particularly the transnational companies in the electronics industry. Literally, Penang has been a melting pot for successive forms of internationalization of capital. The superposition in space of different forms of global investment waves have resulted in a complex structure of demand for labor.

National and local means and institutions for regulation of the labor market are not geared to the new situation. The profound interference by state institutions in the national industrial development has mostly dealt with the ethnic ownership and structural transformation of the sector, as well as improvement of general infrastructure and financial conditions for capital accumulation. More comprehensive and diversified requirements concerning the qualifications of the labor force are new challenges for state institutions and their regulatory capacity.

Existing labor market institutions in Penang (and Malaysia) are short of capacity to rapidly address specific

needs. In tune with the privatization drive, persuasion and tax incentives to motivate private sector initiatives are the basic instruments of regulation. Accordingly, urgent problems have to be solved ad hoc by the affected parties themselves. The actors in capital-labor relations are left with their own incomplete information and fragmentary bargaining, and policy making processes of combining individual concerns into concerted action are hampered. The employers' frantic competition for labor and the corresponding restless circulation of workers among companies continue, and long-term labor institutions do not develop. The informal labor institutions thus created only add to the obscurity of the movements on the labor market.

Without a suitable institutional basis - adequate institutions for vocational training and wage systems for productivity enhancement - it is difficult to see how the ability to generate and control knowledge about prevailing skills and wages on the labor market should be created, contained and commercially exploited in the Penang area as part of a deliberate strategy. According to Amin & Thrift (1995, p. 11) this process - "building learning capability" - is of primary importance for national and local efforts to establish competitiveness and secure sustained and self-reinforcing growth.

In practice, both the federal and state governments continue to concentrate on efforts to keep a low wage level by allowing import of foreign labor and strictly regulate the labor relations. While prolonging the high growth trend in the short term, a thorough industrial restructuring is postponed. Risks are diversified in the context of changing investment strategies of transnational corporations and conditions on world markets. However, particularly when considering the limited regulatory capacity, fundamentals for long-term industrial development are not likely to emerge. So far Penang has failed to establish territorially contained innovation capacity and educational structures.

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## References

- Amin, A. & N. Thrift (1995): 'Territoriality in the Global Political Economy'. *Nordisk Samhällsgeografisk Tidskrift* 20: 3-16.
- Andaya, B.W. and Andaya, L.Y. (1982): *A History of Malaysia*. London and Basingstoke; Macmillan.
- Asian Strategy & Leadership Institute (1995): *Penang into the 21st Century. Outlook & Strategies of Malaysia's Growth Center towards Vision 2020*. Petaling Jaya; Pelanduk Publ.
- Euromoney*: various issues.
- Fujita, K. & R.C.Hill (1995): 'Global Toyotaism and Local Development'. *International Journal of Urban and Regional Research* 19,1: 7-22.
- Government of Penang (n.d.)*: *Penang. Into the 21st Century*.
- HRDC (Human Resources Development Council) (1994): *Annual Labor Market Survey 1994. Manpower Monitoring Committee*. Penang; Federation of Malaysian Manufacturers Northern Branch.
- IMT-GT (1994): *Human Resources/Labor. Interim report*, March 11.
- ISIS & PDC (1991): *Penang Strategic Development Plan 1991-2000*.
- Jesudason, J.V. (1990): *Ethnicity and the Economy. The State, Chinese Business, and Multinationals in Malaysia*. Singapore; Oxford University Press.
- Jomo K.S. (ed.) (1994): *Malaysia's Economy in the Nineties*. Petaling Jaya; Pelanduk Publications.
- Lim, D. (1983): 'The Political Economy of the New Economic Policy in Malaysia'. In: D. Lim (ed.) *Further Readings on Malaysian Economic Development*: 3-22. Kuala Lumpur; Oxford University Press.
- Nesadurai, H.E.S. (1991): 'The Free Trade Zone in Penang, Malaysia: Performance and Prospects'. *Southeast Asian Journal of Social Science* 19, 1-2: 103-137).
- PDC (n.d.): *Statistics*. Penang, Malaysia.
- Pillai, P. (1994): *Industrial training in Malaysia. Challenge and response*. Kuala Lumpur; Institute of Strategic and International Studies.
- Rajah Rasiah (1991a): 'Reorganization of Production in the Semi-Conductor Industry and Its Impact on Penang's Position in East Asia'. In: Muhammad Ikmal Said & Johan Saravannamuttu (eds.) *Images of Malaysia*: 203-223. Kuala Lumpur; Persatuan Sains Social Malaysia.
- Rajah Rasiah (1991b): 'Foreign Firms in Penang's Industrial Transformation'. *Jurnal Ekonomi Malaysia* 23: 91-117.
- Rajah Rasiah (1993): 'Competition and governance: Work in Malaysia's Textile and Garment Industries'. *Journal of Contemporary Asia* 23,1: 3-23.
- Rimmer, P.J. (1994): 'Regional Economic Integration in Pacific Asia'. *Environment and Planning A*, Vol. 26: 1731-1759.
- Singh, M.S. (1992): 'Malaysia's manufacturing corridor: industrial transformation and regional development through the internationalization of capital'. *Regional Development Dialogue* 13,2: 83-103.
- Singh, M.S. (1995): 'Formation of Local Skills Space Networking: the Experience of the Electronics and Electrical Sector in Penang'. In: B. van der Knaap & R. Le Heron (eds.) *Human Resources and Industrial Spaces*: 197-226. New York; John Wiley & Sons.
- Tan Tat Wai (1982): *Income Distribution and Determination in West Malaysia*. Kuala Lumpur; Oxford University Press.
- The Hoe Yoke & Goh Kim Leng (eds.) (1992): *Malaysia's Economic Vision. Issues and Challenges*. Petaling Jaya; Pelanduk Publications.
- The Star*: Various issues.

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Existing labor market institutions in Penang (and Malaysia) are short of capacity to rapidly address specific

needs. In tune with the privatization drive, persuasion and tax incentives to motivate private sector initiatives are the basic instruments of regulation. Accordingly, urgent problems have to be solved ad hoc by the affected parties themselves. The actors in capital-labor relations are left with their own incomplete information and fragmentary bargaining, and policy making processes of combining individual concerns into concerted action are hampered. The employers' frantic competition for labor and the corresponding restless circulation of workers among companies continue, and long-term labor institutions do not develop. The informal labor institutions thus created only add to the obscurity of the movements on the labor market.

Without a suitable institutional basis - adequate institutions for vocational training and wage systems for productivity enhancement - it is difficult to see how the ability to generate and control knowledge about prevailing skills and wages on the labor market should be created, contained and commercially exploited in the Penang area as part of a deliberate strategy. According to Amin & Thrift (1995, p. 11) this process - "building learning capability" - is of primary importance for national and local efforts to establish competitiveness and secure sustained and self-reinforcing growth.

In practice, both the federal and state governments continue to concentrate on efforts to keep a low wage level by allowing import of foreign labor and strictly regulate the labor relations. While prolonging the high growth trend in the short term, a thorough industrial restructuring is postponed. Risks are diversified in the context of changing investment strategies of transnational corporations and conditions on world markets. However, particularly when considering the limited regulatory capacity, fundamentals for long-term industrial development are not likely to emerge. So far Penang has failed to establish territorially contained innovation capacity and educational structures.

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