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A Mid-year Economic Forecast for 1989

Macroeconomic Policy Program*

THE YEAR-END FORECAST

During the 1988 TDRl Year-end conference, the Macroeconomic Policy Program presented its traditional economic forecast for the rest of the Sixth Plan period which ends in 1991. The forecast was based on the various assumptions that were considered most likely at that time. The essence of that forecast is briefly described below:

- Thailand's average economic growth is expected to be at around 8.1 percent for the entire Sixth Plan period.
- Along with this satisfactorily high growth rate, Thailand is expected to face resource-gap problems stemming from its enlarging trade deficit, which will amount to nearly 200 billion baht in 1991.
- Net service receipts will remain at high levels until 1991 and thus help mitigate the country's resource shortages. Nevertheless, foreign exchange earnings from services will not be enough to prevent the current account deficit from rising to nearly 140 billion baht in 1991.
- Inflation rates are expected to be around 3.5-4.5 percent per year during the 1989-91 period.
- World petroleum product prices will increase only slightly from 1988 levels. The crude oil price is predicted to be 16, 17, and 18 dollars per barrel in 1989, 1990, and 1991.
- Although the current account deficit will increase, the total external debt outstanding as a percent of GDP is still expected to be fairly stable – at around 31-32 percent during the 1988-1991 period. Two factors will help maintain this external debt stability – rapid increases in direct foreign investment and rising national income (GDP).

Some major aspects of the forecast for the Thai economy from 1989-91 are shown in Table 1 below.

It is the tradition of the TDRl Macroeconomic Policy Program to revise its Year-end forecast every mid-year. The revised forecast takes into account the most updated information and reviews the validity of all assumptions.

Table 1 The Year-end Forecast (1989-1991)

| | 1989 | 1990 | 1991 | G86-91 |
|---------------------------------|-----------|-----------|-----------|--------|
| 1. Economic Growth (%) | 8.00 | 7.60 | 7.65 | 8.12 |
| Agriculture | 1.89 | 2.60 | 1.86 | 2.46 |
| Industries | 9.68 | 9.36 | 9.46 | 10.09 |
| Services | 8.73 | 7.80 | 7.95 | 8.50 |
| 2. Inflation Rate (%) | 4.51 | 4.34 | 3.43 | 3.91 |
| 3. Trade Balance (Mill. Baht) | (135,297) | (182,225) | (196,956) | |
| - As % of GDP | -7.90 | -9.30 | -8.90 | |
| Exports | 503,246 | 604,483 | 708,301 | |
| - % growth | 25.73 | 20.12 | 17.17 | 25.30 |
| Imports | 638,543 | 786,707 | 905,257 | |
| - % growth | 29.47 | 23.20 | 15.07 | 29.82 |
| 4. Current Account (Mill. Baht) | (85,921) | (127,934) | (137,024) | |
| - As % of GDP | -5.00 | -6.51 | -6.21 | |

Note: G86-91 is average annual growth rate within the Sixth Plan period.

** The forecast results were prepared by Somchai Jitsuchon, Research Associate II of the MEP Program.

POST YEAR-END FORECAST EVENTS

Some important economic events took place after the Year-end forecast: some supported predictions and some exceeded expectations.

Events which support predictions

In general, world and domestic economic conditions did not differ significantly from expectations.

Indeed:

1. World economic growth is still on a slight downward trend. Many economic indicators announced by United States officials illustrate the first economic slow-down the U.S. has encountered in its period of economic growth. Also, increased interest rates in other leading economies, such as The Federal Republic of Germany and Japan, will retard the forces that stimulated the world economy in 1988.
2. In the first quarter of this year, Thailand's exports and imports grew somewhat slower than during the same period last year. This supports our 1988 Year-end forecast assumption that the growth rate of trade volume, despite its high value, will not increase as fast as it did in 1988.
3. Inflationary pressure in the first quarter of 1989 is rather strong. In comparison to the same period last year, the consumer price index has increased by 4.2 percent and the producer price index has increased by 3.8 percent. Price increases in food products, clothing, and raw construction materials are the major contributors to inflation.

Events which exceeded expectations

Some events have, however, exceeded last year's expectations.

1. Since the beginning of 1989 the world price of petroleum products, crude oil in particular, has increased substantially as a result of OPEC's success in reducing production levels. The world oil price increased from around 15 dollars/barrel in late 1988 to around 20 dollars/barrel during the first quarter of 1989.
2. The prices for major agricultural products did not experience the setbacks that the Year-end forecast assumed, and this price stability is providing strong incentives for farmers to expand production.
3. Income from tourism has continued to expand, despite the big boom already experienced in the last two years.
4. The huge capital inflow of the first three months of 1989, some of which was for portfolio purposes, has stimulated the domestic capital market much more than was expected.
5. Because service income is growing rapidly and there is large net capital movement from abroad, Thailand's balance of payments and foreign reserve

positions have improved since the beginning of 1989. This also affects the money supply and prevents interest rates from increasing further.

THE MID-YEAR FORECAST

Taking the recent economic situation into account, the economic outlook for Thailand must be altered, although they are only short-term predictions. The revised forecast indicates:

A higher economic growth rate

This year, agricultural production should increase slightly in response to the rising confidence that prices for most major crops will remain on high levels throughout the year. Industrial and service production are also growing somewhat faster than expected. This extra growth comes from the continuing export boom as well as increased domestic demand stimulated by strengthened personal income.

A better-than-expected balance in the current and payments accounts

The current account deficit should be better than expected because of rapidly rising income from tourism. And, as the value of total imports is now also expected to grow at a slightly lower rate than was anticipated, this will further lessen the current account deficit. The improved current account situation and increased inflow of capital will help the balance of payments maintain a better position than previously foreseen. The improvements in both the current and payments balances should not, however, be very large because imports might increase as a result of increased prices for petroleum products.

Higher inflation rate

The inflation rate is expected to be slightly higher than predicted. Three factors will be responsible for faster price changes: (1) domestic demand for both consumer products and raw materials is increasing faster than is production capacity; (2) the average price of imports is also expected to be higher as a result of world inflation; and (3) it is possible, although not certain, that in the second half of 1989 the domestic oil price might have to be increased when the "oil fund" can no longer pay the difference between the domestic and imported price of crude oil.

To quantify the revised forecast, the TDRI macro-economic model was used to incorporate changed economic conditions and additional assumptions. It was then run to generate results based on the macro-economic database for Thailand. The model has two advantages: (1) it takes into account the interrelationships between the way each subsector and economic agent functions; and (2) it produces consistent forecast results.

Table 2 Comparisons between the Year-end and the Revised Forecasts for 1989

| | Year-end | Mid-year |
|--|-----------|-----------|
| 1. Economic Growth | 8.00 | 9.21 |
| A. Agriculture | 1.89 | 3.17 |
| - Crop | 0.59 | 2.93 |
| - Noncrops | 3.87 | 3.55 |
| B. Industries | 9.68 | 11.77 |
| - Export Oriented | 12.36 | 13.99 |
| - Other Industries | 8.27 | 10.59 |
| C. Services | 8.73 | 9.24 |
| 2. Inflation Rate (%) | 4.51 | 5.01 |
| 3. Trade Balance (mill. baht) | (135,297) | (122,203) |
| - As % of GDP | -7.90 | -7.10 |
| Exports | 503,246 | 505,918 |
| - % growth | 25.73 | 25.34 |
| Imports | 638,543 | 628,120 |
| - % growth | 29.47 | 25.77 |
| 4. Net Service Account (mill. baht) | 43,561 | 57,053 |
| - As % of GDP | 2.50 | 3.30 |
| Receipts | 138,586 | 157,704 |
| Payments | (95,025) | (100,650) |
| 5. Current Account (mill. baht) | (85,921) | (59,335) |
| - As % of GDP | -5.00 | -3.46 |

Table 2 compares the Year-end forecast and the revised Mid-year forecast for 1989.

The Table shows that, overall, the economy is now expected to grow by about 9.2 percent instead of 8.0 percent as predicted at the end of 1988. Higher growth rates will be experienced by all economic sectors. Agricultural production growth will increase from 1.9 percent to 3.2 percent (mainly from crop production growth); industrial growth, from 9.7 percent to 11.8 percent; and service growth, from 8.7 percent to 9.2 percent. Price levels are also expected to be higher and the revised figures forecast an inflation rate of 5.0 percent instead of 4.5 percent.

The trade balance forecast improves only slightly, declining from a deficit of approximately 135.3 billion baht to 122.2 billion. This improvement of approximately 13.1 billion baht comes from a 2.7 billion baht increase in exports (from 503.2 to 505.9 billion baht) and a 10.4 billion baht reduction in imports (from 638.5 to 628.1 billion). The service account surplus, on the other hand, improves impressively—from 43.6 billion baht to 57.1

billion baht. The major change occurs in service receipts which jump from around 138.6 to 157.7 billion baht, while the service payment account is expected to increase only slightly—from 95.0 to 100.6 billion baht. This leads to a better-than-expected current account balance. The revised forecast predicts that Thailand's current account deficit will be around 59.3 billion baht (or 3.5% of the GDP) compared to 85.9 billion baht (or 5.0% of the GDP) as predicted by the Year-end forecast.

CONCLUSION

As mentioned at the outset, this revised Mid-year Forecast was achieved by taking current economic changes into account—most of which took place during the first three or four months of 1989. It must also be noted here that no predictions about future public policy changes were made. Should the government intervene in the market, the economic outlook will inevitably be affected.

Technological Capability of Selected Thai Industries

Kopr Kritayakirana
Panya Srichandr

The role of technology in industrial development – and indeed in the wider context of the general socioeconomic development of any country – is well-recognized and well-documented. Today's technology is one of the most crucial factors determining the survival and growth of industry in this age of severe competition – particularly from the global perspective. Virtually all countries – developing as well as developed ones – are therefore actively engaged in planning and formulating appropriate plans and strategies to make the most of accelerating scientific technological progress. Thailand is no exception.

Thailand's current focus is a response to the reality that (as has been demonstrated by many countries) well-conceived plans and well-thought-out strategies can indeed accelerate technological development. And one of the many steps in planning and formulating strategies is the assessment of the status of existing technological capability – the identification of problems, deficiencies, strengths, and relevant needs. This article is a summary of TDRI's recently completed 18-month project called "The Development of Thailand's Technological Capability in Industry" which attempted to address the above issues (1-5).

ASSESSING PRESENT CAPABILITIES

The research team selected three Thai industrial subsectors (biotechnology-based, materials-based, and electronics-based) for study. We surveyed a total of 119 producing firms and assessed their technological capability by categorizing technological capability into four types – acquisitive, operative, adaptive, and innovative. We divided each type into a number of components. Acquisitive capability includes the firms' ability to search, assess, negotiate, and procure relevant technologies as well as transfer operational know-how and install and start-up production facilities. Operative capability includes the efficient operation and control of machinery and other equipment as well as maintenance, skill development (training), general management, production planning, and quality control. Adaptive capability comprises knowledge acquisition, technology digestion, and minor product and process modifications.

Innovative capability involves carrying out in-house research and development, making radical product and process modifications, making radical or major changes, and inventing new products and/or processes. Each component was then rated between 0 (zero) and 5 and the rating of each capability type was obtained by averaging the ratings of its component. Although each number represents specific activities performed and abilities possessed by the firm, these numbers may be roughly interpreted as follows:

- 5 : excellent capability, comparable to leading firms in the world
- 4 : very good capability, industrialized countries' average
- 3 : good capability, leading Thai firms
- 2 : fair capability, local average
- 1 : poor capability, below local average
- 0 : no capability

Overall capability

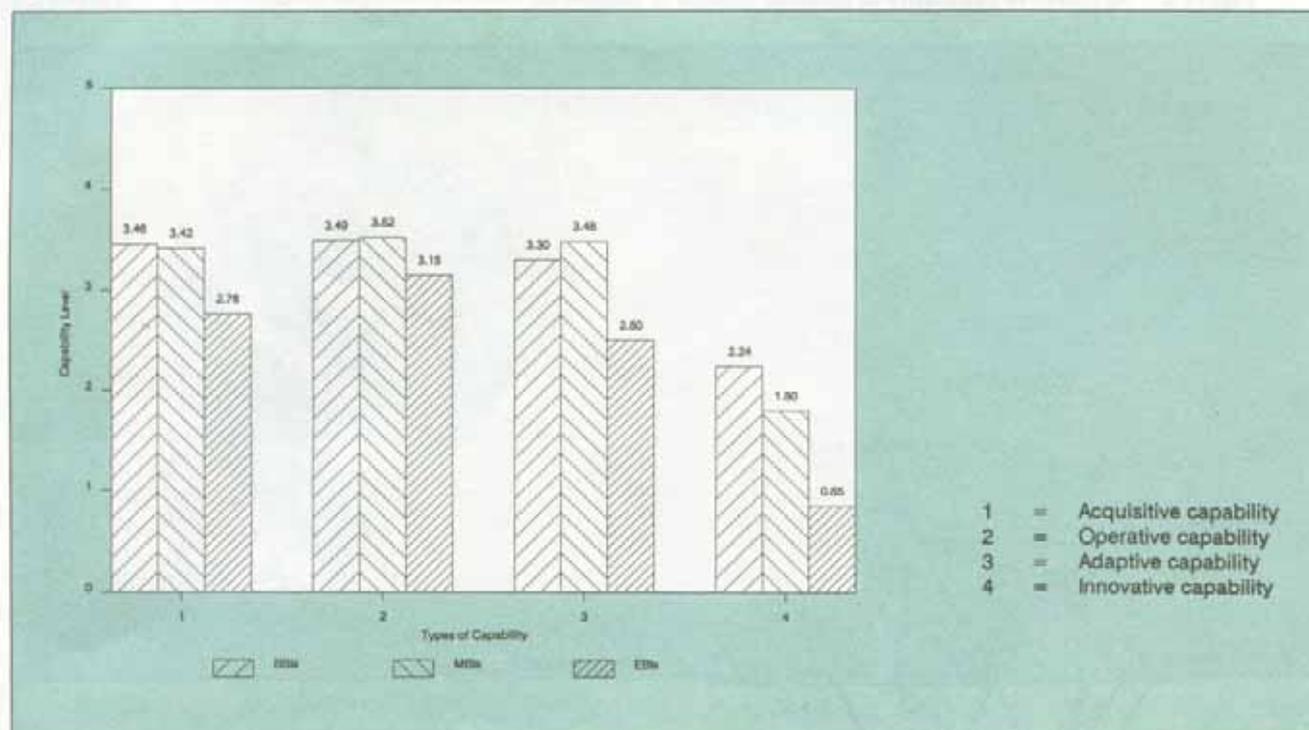
The overall capability of each of the three subsectors is shown graphically in Figure 1.

In general, it can be seen that operative capability is the highest among the four types; it is followed by slightly lower acquisitive and adaptive capabilities. Innovative capability is the lowest. However, there are differences in technological capability among the various types of firms.

Acquisitive capability

The methods by which relevant technologies are acquired differ considerably from firm to firm. Large Thai firms, with their substantial financial and human resources, have high acquisitive capability. The search for and the assessment of technologies are accomplished by competent technical personnel. The negotiation for and procurement of technology are also conducted properly. Pre-start-up and on-the-job training of personnel is normally part of the agreement with the technology owners. The transfer of operational know-how and the actual installation and start-up of production facilities normally require considerable assistance from foreign

Figure 1 Overall capability



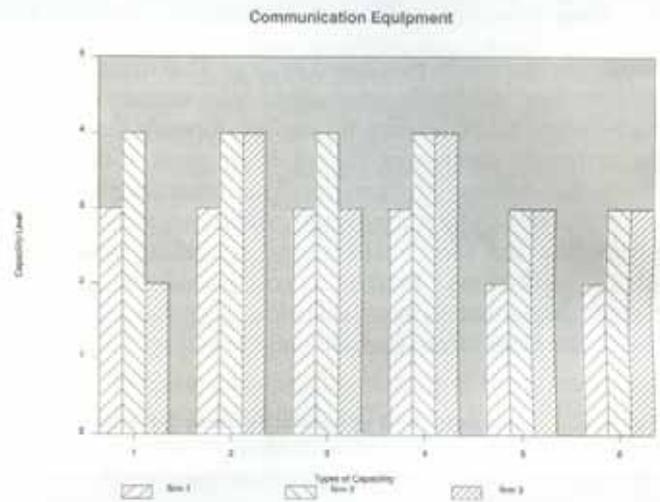
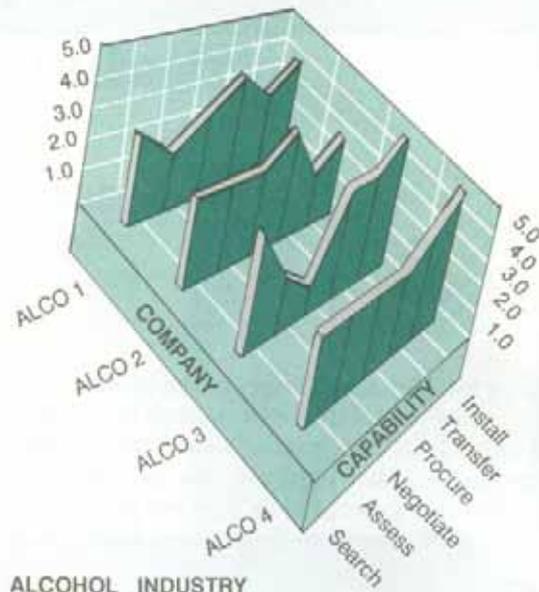
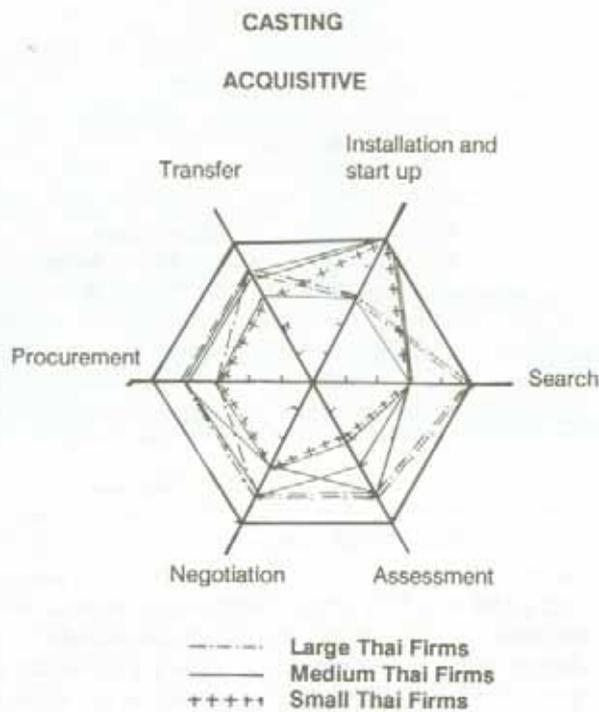
experts. The hardware purchased by large Thai firms is mostly turnkey and highly automated. Joint-venture or foreign-owned firms acquire technology through their sister or parent companies abroad where most of the decisions are made. Medium-size Thai firms acquire relevant technology by visiting trade exhibitions, attending seminars and short courses, and consulting with academic institutions. Further, as cost considerations are more important in their selection of technology, medium-size firms often purchase only the essential ele-

ments of the technology and need some outside assistance for installation, start-up and the transfer of operational know-how. Cost rather than technology is the main consideration for small firms and personal contact is the major way they acquire technology; indeed, little assessment, if any, is made. The acquisitive capability of selected groups of industries is shown graphically in Figure 2. The influence of other factors on the acquisitive (and other types of) capability of BBIs, MBIs, and EBIs is shown in Tables 1, 2 and 3.

Table 1 Technological capability scores for BBIs

| Characteristics (no. of firms) | Capability | | | |
|-----------------------------------|-------------|-----------|----------|------------|
| | Acquisitive | Operative | Adaptive | Innovative |
| SIZE | | | | |
| Large (23) | 3.57 | 3.58 | 3.43 | 2.23 |
| Medium/Small (9) | 3.17 | 3.27 | 2.97 | 2.27 |
| OWNERSHIP | | | | |
| Thai (20) | 3.34 | 3.20 | 3.18 | 2.16 |
| Joint-Venture/Foreign Owned (12) | 3.65 | 3.98 | 3.52 | 2.38 |
| MARKET ORIENTATION | | | | |
| Export (9) | 3.55 | 3.42 | 3.22 | 2.58 |
| Domestic (14) | 3.39 | 3.36 | 3.04 | 1.95 |
| Both (9) | 3.45 | 3.77 | 3.81 | 2.47 |
| PROMOTION STATUS | | | | |
| With BOI Promotion (17) | 3.46 | 3.65 | 3.22 | 2.29 |
| Without (15) | 3.45 | 3.31 | 3.40 | 2.19 |

Figure 2 Acquisitive capability of selected groups of industries



Operative capability

Joint-venture, foreign-owned, and large Thai firms generally have very high operative capability. Indeed, most of the firms surveyed operate and control production facilities efficiently and effectively. The two weakest components are: (1) maintenance of machinery and equipment; and (2) the training and development of technical personnel. (This is particularly true for small- and medium-size Thai firms.) Joint-venture and foreign-owned firms place great emphasis on human resource training and quality control with the help of their foreign counterparts. Employee involvement in

quality control circle (QCC) activities could be more strongly encouraged and plant layout and working conditions in some older factories could be very much improved. However, that the overall operative capability of most of the firms surveyed is acceptable is evident in the quality of their products, a great number of which are exported throughout the world. It should be noted, however, that capability levels (operative and others) depend very much upon the level of sophistication of and the type of technology being used. The influence of other variables on operative capability is shown in Tables 1,2 and 3. Figure 3 shows some details on the operative capability of selected groups of industries.

Table 2 Technological capability scores for MBIS

| Characteristics (no. of firms) | Capability | | | |
|-----------------------------------|-------------|-----------|----------|------------|
| | Acquisitive | Operative | Adaptive | Innovative |
| SIZE | | | | |
| Large (21) | 3.40 | 3.98 | 3.74 | 1.81 |
| Medium/Small (34) | 3.44 | 2.78 | 3.07 | 1.78 |
| OWNERSHIP | | | | |
| Thai (45) | 3.40 | 3.29 | 3.31 | 1.71 |
| Joint-Venture/Thai Manager (6) | 3.63 | 3.93 | 4.45 | 2.37 |
| Joint-Venture/Foreign Manager (4) | 3.21 | 3.93 | 4.00 | 1.55 |
| MARKET ORIENTATION | | | | |
| Export (8) | 3.71 | 3.60 | 3.34 | 1.68 |
| Domestic (8) | 3.15 | 3.94 | 3.84 | 2.18 |
| Both (39) | 3.33 | 3.42 | 3.44 | 1.69 |
| PROMOTION STATUS | | | | |
| With BOI Promotion (28) | 3.53 | 4.23 | 3.76 | 1.98 |
| Without (27) | 3.29 | 2.79 | 3.03 | 1.61 |

Adaptive and innovative capabilities

Tables 1, 2, and 3 show ratings for these two related capabilities according to firm characteristics. Considerable adaptive activities exist in all three subsectors but are mainly limited to minor product modifications. Industry type is the main factor which determines the level of adaptive capability. Some industries (such as the computer software, agricultural and industrial machinery, plastic and ceramic products, flower and seed, and aquaculture industries), possess comparatively high adaptive capability levels. The nature of these industries is such that product modification is necessary and minor modifications are not that difficult to accomplish. However, process modification is rare. In view of the importance of technology adaptation, it is imperative that this capability be raised to higher levels so that these industries are able to modify their products as well as their production processes. It is also apparent that innovative capability is very low—regardless of the type of industry and characteristics of the firm. Indeed, there is virtually no real R&D activity going on in any of the firms surveyed; further, major product or process modifications are also virtually absent. However, one ceramic firm claims to be the first in the world to have invented a fast-firing kiln which considerably shortens the production cycle and cuts down energy costs.

Figures 4 and 5 show the scores of the various components of adaptive and innovative capability for selected groups of industries.

CONCLUSIONS AND IMPLICATIONS

1. The technological capability of the producing firms studied follows a similar pattern: operative capability is the highest and innovative capability is the lowest. More detailed examination reveals, however, that this high operative capability results from substantial contributions by foreign-owned and joint-venture firms which are, in the main, essentially production outposts for multinational companies. Most Thai firms (except the largest ones) still have low operative capability. In view of the fact that small- and medium-sized firms are highly significant in the Thai economy (in terms of number and employment generation), serious attention must be paid to upgrading their operative capability levels. Increased international competition and rapid technological advances demand that the operative capability of these firms be much higher, not only for their survival, but for their long-term growth. Effective technology transfer and diffusion mechanisms need to be devised in order to localize technology.
2. Certain industries (particularly electronics-based, export-oriented firms) have higher operative capability than firms which are primarily aimed at the domestic market. A firm's exposure to international competition seems to be one of the most effective means of raising its operative capability. Protection measures therefore have to be carefully planned and implemented. BOI-promoted firms

also have higher operative capabilities than those not being promoted. This suggests that having up-to-date technology hardware (i.e., production facilities), affordable by promoted firms, does play a significant role in increasing operative capability of that industry. The capability to design, modify, build/construct modern production machinery and equipment is therefore critical for long-term competitiveness.

3. Although there is evidence of some adaptation activity in all three of the industrial subsectors studied, these activities are mostly limited to minor product modifications which are relatively simple to accomplish. Indeed, technology digestion and process modifications are few. As technologies are becoming increasingly more sophisticated (and hence more difficult to adapt) and because technol-

ogy adaptation is essential to any industry, it is imperative that the adaptive capability level of Thai industry be raised. The need to raise adaptive capability applies to all types of firms—including joint-venture and foreign-owned ones—as the “Thai environment” is not identical to the environment of any other country. Effective adaptation will only be accomplished through organized efforts, either in terms of R&D teams or equivalent groups of qualified persons who thoroughly understand the technology. Small- and medium-sized firms will, due to limited financial and human resources, face a considerable number of problems and will need some sort of assistance to be provided.

4. That the innovative capability of producing firms in all three subsectors is very low is understandable considering the country's stage of industrial

Figure 3 Operative capability of selected groups of industries

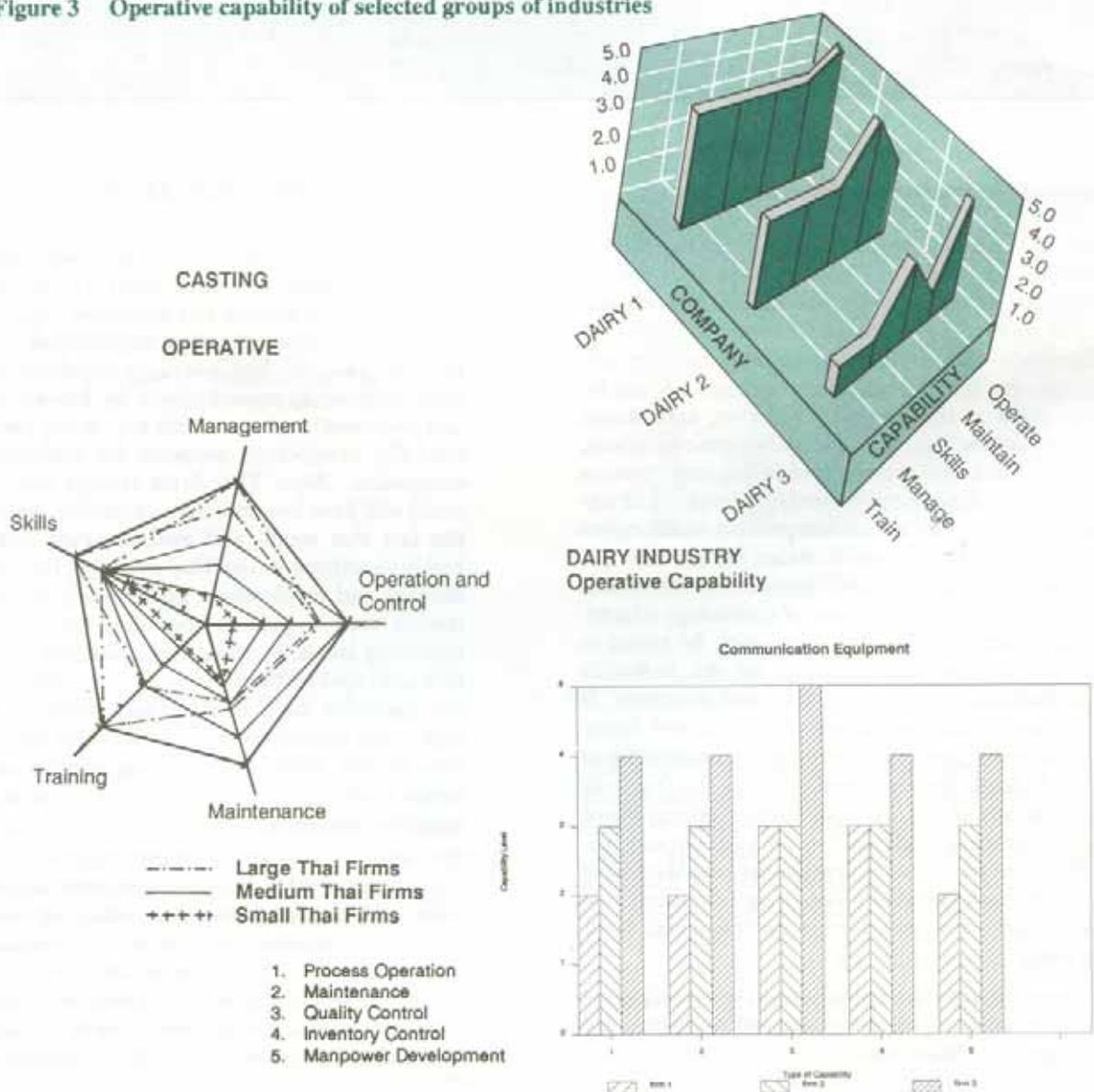


Table 3 Technological capability scores for EBIS

| Characteristics (no. of firms) | Capability | | | |
|-----------------------------------|-------------|-----------|----------|------------|
| | Acquisitive | Operative | Adaptive | Innovative |
| SIZE | | | | |
| Large (15) | 2.80 | 3.84 | 2.42 | 0.72 |
| Medium/Small (17) | 2.74 | 2.55 | 2.51 | 0.94 |
| OWNERSHIP | | | | |
| Thai (17) | 2.89 | 2.49 | 2.55 | 1.06 |
| Joint-Venture/Thai Manager (6) | 2.78 | 3.37 | 2.89 | 0.50 |
| Joint-Venture/Foreign Manager (9) | 2.53 | 4.27 | 2.04 | 0.64 |
| MARKET ORIENTATION | | | | |
| Export (14) | 2.70 | 3.86 | 2.21 | 0.45 |
| Export & Domestic (18) | 2.82 | 2.61 | 2.67 | 1.14 |
| PROMOTION STATUS | | | | |
| With BOI Promotion (19) | 2.81 | 3.56 | 2.33 | 0.59 |
| Without (13) | 2.71 | 2.57 | 2.67 | 1.21 |

development. Technological innovation is, however, an essential element if Thai industry is to compete successfully in the international market over the long-term. Thailand cannot continue to rely on its inexpensive labor and the availability of its natural resources to provide its major competitive advantage for too much longer. Appropriate means must be devised and measures taken to improve the level of innovative capability of Thai industry. As research and development is the main, if not the only, source of technological innovation, it must be encouraged and promoted – and even coerced in certain circumstances – both in the public and private sectors.

- The acquisitive capability of Thai industry is also low and needs to be upgraded. Technology acquisition is very important to any enterprise, particularly initially. The improper initial selection of a given technology could lead to prolonged problems or even have disastrous effects. However, the proper evaluation and selection of technology requires a wealth of information and the availability of competent technical personnel. Thus, an adequate technological information system and a pool of technical personnel should be provided to assist producing firms, particularly small- and medium-sized ones.

MAJOR PROBLEMS AND OBSTACLES

1. Human resource shortages

The lack of personnel is a very serious problem at present, particularly the shortage of engineers. It is estimated that the annual demand for engineers is around 7,000 and that the present supply is about 2,800. Scientists in the fields of materials, biotechnology, and com-

puter science are also in short supply. The technical human-resource-shortage problem is pervasive throughout all of the industrial sectors as well as in public organizations, including universities. Without an adequate number of properly trained technical personnel, it will be difficult, if not impossible, to raise the level of technological capability of any kind.

2. Inadequate technical information services

There is both an inadequate amount of information available and problems of accessibility to the information that is available. Further, two facts: (1) most technical information is in English; and (2) it is scattered. The fact that it has not been collected at one central location makes it quite difficult to access. The recent explosive growth in the amount of technological information demands that a proper system for its collection and dissemination is necessary. Technological development in modern times cannot be effectively accomplished without supplying of up-to-date information.

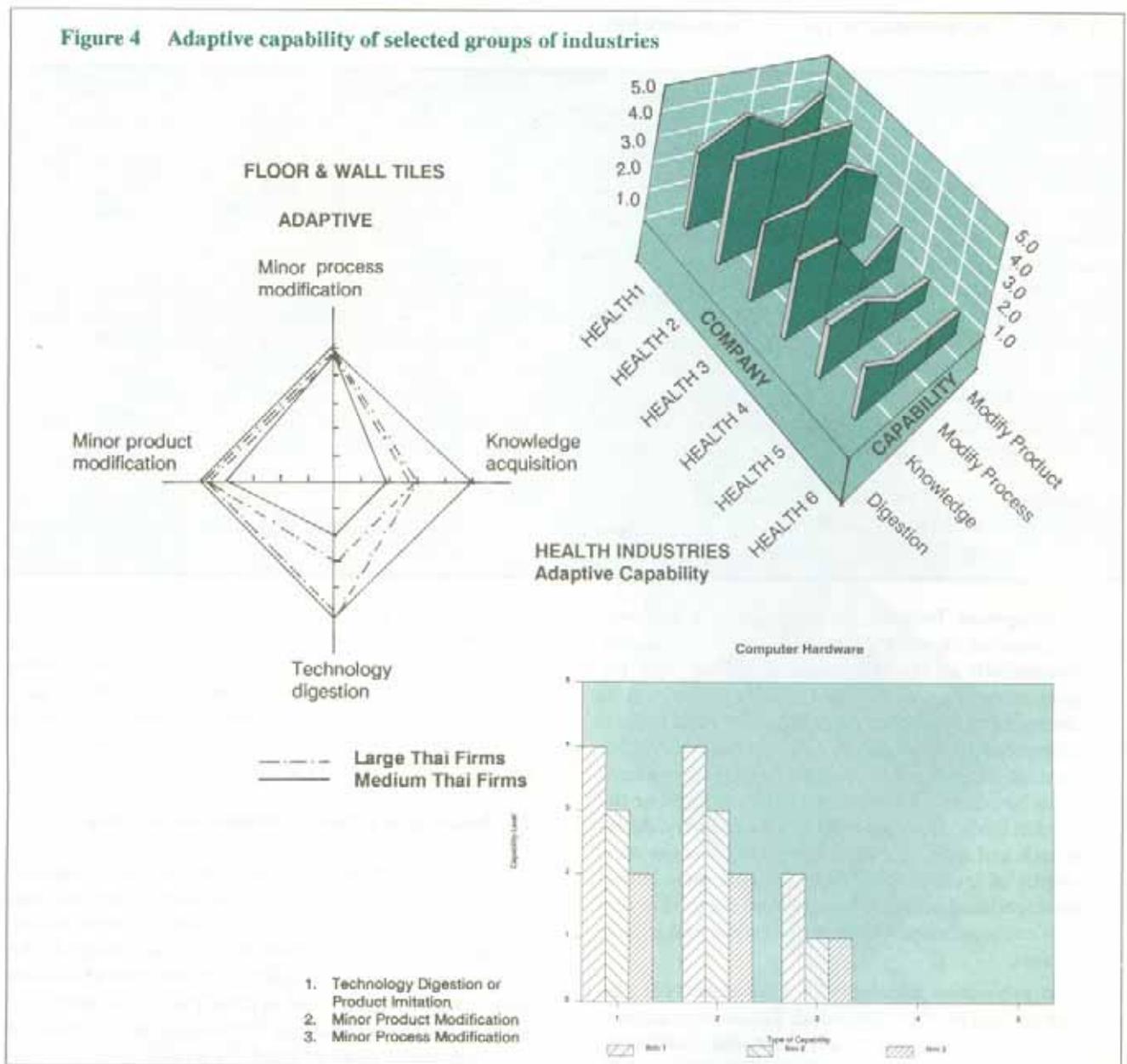
3. Inadequate technical services

The current level of domestic testing, analysis, product certification, calibration, and consulting services is inadequate as, by international standards, most Thai firms are medium- to small-scale and normally require outside technical services. At present the services available are of inadequate quality and quantity, which often leads to delays and sometimes to inaccurate results.

4. Lack of specialized technology centers

Most existing organizations (research institutions, universities) attempt to do too many tasks at one time

Figure 4 Adaptive capability of selected groups of industries



with limited resources. This lack of focused effort leads to resources being spread too thinly and results in ineffective operations. The creation of specialized centers (or centers of excellence) would enable such organizations to focus on certain specific areas which could be of genuine commercial use.

5. Other problems

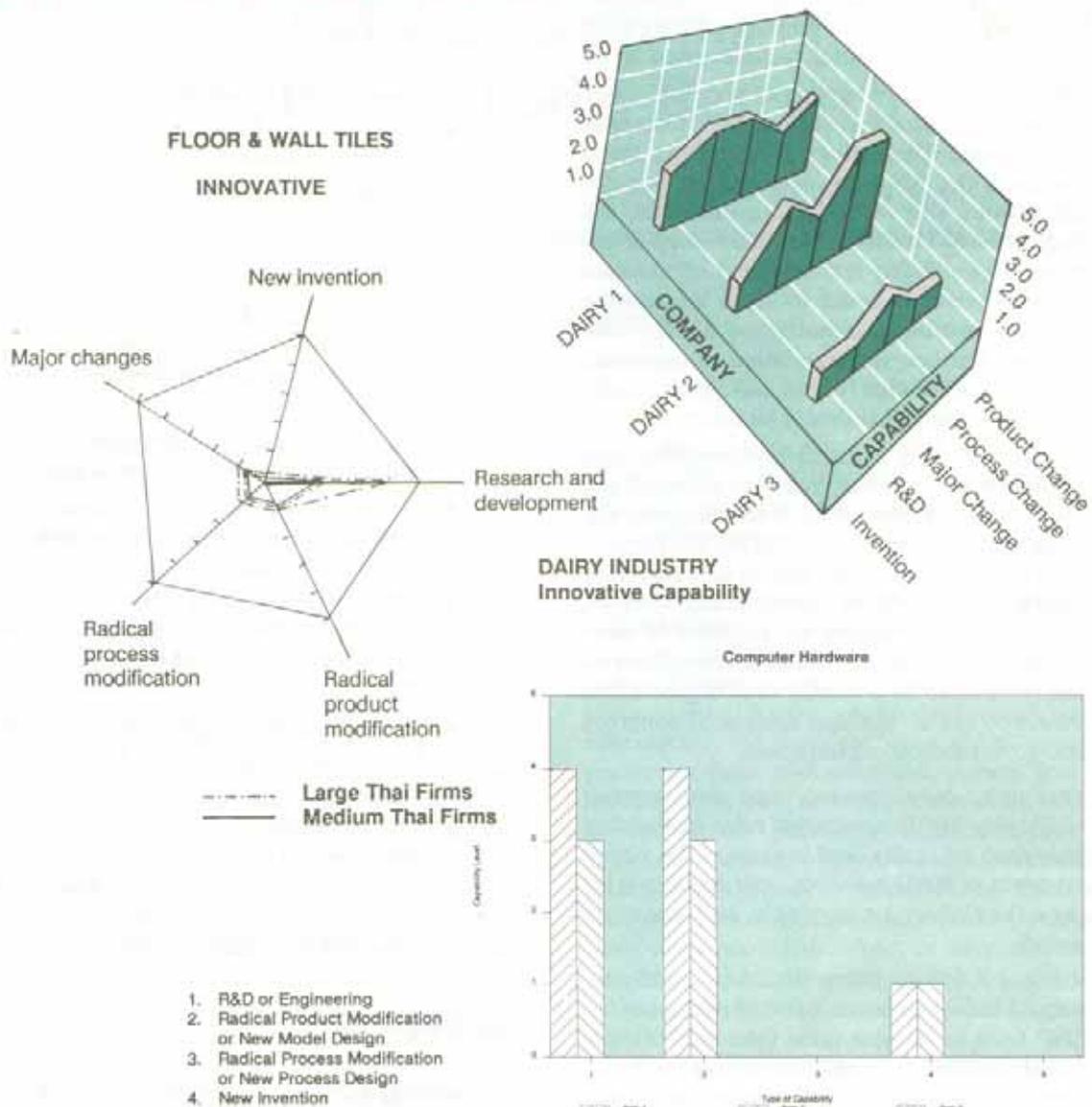
Other constraints include a dearth of support industries (particularly high-quality, precision-part industries); the inappropriate tax system (the VAT system will be introduced in early 1990, however); the attitudes of entrepreneurs toward technology (who seek short-term profits rather than long-term growth); the lack of definite and explicit technological and industrial policy; and the reinforcement of the intellectual property rights

law. However, these problems have been recognized and measures are being/have been taken to ameliorate them.

RECOMMENDATIONS

1. It must be appreciated that the development and flourishing of technological capability is a long-term complicated process requiring a fertile environment, political commitment, and considerable effort from various public and private quarters. Further, proper timing is one of the most critical factors in the success of such an endeavour. And now is perhaps the most appropriate time for Thailand to seriously embark upon this monumental task of technological capability development. Government and industry must be prepared to increase their in-

Figure 5 Innovative capability of selected groups of industries



vestment of resources to this undertaking and they must start immediately – before it is too late.

2. Undoubtedly one of the most essential (if not the most important) ingredients for capability building is human resource development. The development of properly qualified technical personnel at all levels must be accomplished urgently. This could be done by:

- Expanding the formal educational system in selected high priority areas such as engineering, the physical and biological sciences, materials, computers, and electronics. The number of graduate scientists and engineers must be doubled to meet the present and future demand.
- Expanding graduate programs in high priority areas to develop high-level research scientists and engineers.

- Sending a number of Thai students (about 800) abroad for further education and training in selected, high priority areas.
- Continually modifying university and college curricula to lean more toward practical and professional training. More strongly encouraging increased academic collaboration with local industry.
- Having industry play its role in the training and development of technical personnel. Specific process and product technologies and special skills can only be learned and gained through industry-specific training.

3. Equally important to the development of Thai industry are technical and information services. Because the structure of Thai industry is mainly

composed of small- and medium-size firms which do not have: (1) the capacity to maintain expensive analytical and testing facilities; and (2) to gather relevant information, central facilities need to be provided.

- Relevant organizations such as the Ministry of Science and Technology (through its three centers), the Ministry of Industry, various universities and research organizations, the Federation of Thai Industries must set up or improve their existing technological information service systems in order to make information readily accessible to industry and to the public at large. Further, the translation of important technical information (books, handbooks, codes of practice) into Thai should be effected.
 - At present from both the quantitative and qualitative perspectives, available technical and consultancy services are far from adequate. Existing organizations such as MIDI, the Department of Science Services, and various university laboratories should be strengthened. Further, additional organizations are required to meet the increasing demand of such services from industry. And, to be effective, such organizations should be run as business units or as nonprofit non-governmental organizations.
4. As research, development, and engineering (RD&E) play highly significant roles in building technological capability, and in view of the virtual nonexistence of R&D activities—particularly in industry—they must be strongly and urgently promoted.
- National R&D spending should be rapidly increased as soon as possible to 0.75 percent of the GNP from its present value (about 0.2%). Although the 0.75 percent figure is very low by international standards (industrialized and newly industrialized countries spend between 2 and 3%). Thailand must start low and then increase spending gradually due to limited absorptive capacity of R&D organizations.
 - It is often claimed, and rightly so, that the ineffectiveness of existing research organizations (including universities) is due at least in part to lack of focus on R&D activities which results in resources being spread too thinly over many areas. The creation of specialized R&D centers or centers of excellence would ameliorate this problem.
 - Financial incentives in terms of tax exemptions for R&D equipment and accelerated depreciation on R&D facilities would encourage producing firms to carry out R&D work.
 - Cooperative R&D would enable small- and medium-sized firms and academic institutions to perform R&D work to learn more about industrial problems. This should therefore be strongly encouraged.
- More soft loans for R&D investment should be made available to encourage private firms to engage in R&D activities.
 - Research and development personnel must be properly rewarded, in terms of remuneration and status, in order to attract and retain high calibre scientists and engineers. The quality of the research product is, at best, as good as that of those who create it—the researchers.
5. Conducive policy—laws as well as that policy necessary to support a competitive business environment is also very important in fostering technological capability development.
- Explicit political commitment toward science and technology development is essential.
 - Promotion and protection measures must have time frames in order to expose industry to the competitive environment.
 - BOI-promoted firms, particularly large-scale ones, should be required to carry out extensive technology transfer and set up R&D facilities in Thailand.
 - The intellectual property rights law should be strictly enforced in order to encourage technological innovation.
 - The introduction of the value-added tax (VAT) system would promote subcontracting which, in turn, would lead to specialization, an effect that is highly desirable from the technological capability development point of view.

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Trade and Industry Reforms in Thailand: the Role of Policy Research

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Narongchai Akrasanee

POLICY REFORM: THE ECONOMIC POLICY FRAMEWORK

The economic policy framework discussed here focuses on macroeconomic trade and industrial policy; however only those macroeconomic policies which have an impact on production and trade of industrial goods are addressed.

A macroeconomic policy framework begins with establishing overall objectives for economic development in terms of economic growth, financial stability, and social equity, the emphasis on which may vary at different periods of time. Then these objectives are translated into policy variables in the form of fiscal and monetary policies, which include government expenditures and taxes, the money supply and interest rate, the balance of payments, and the foreign debt. Thailand's macroeconomic policies are outlined in National Economic and Social Development Plans which were initiated in 1960. Each Plan covers a period of five years and, at present, Thailand is in the midst of the Sixth Plan, 1987-1991.

Macroeconomic policy on production and trade of industrial goods covers:

- investment promotional incentives;
- production permits and local content requirements;
- tariff protection;
- credit subsidies;
- import and export control; and
- trade promotion and negotiations.

THE CONTENT AND SEQUENCING OF REFORM

Since 1960 macroeconomic, trade, and industrial policy have undergone a series of changes. Throughout most of the last three decades these changes only in-

involved minor policy adjustments. During the second half of the 1980s policy change approached reform magnitude, but even then major changes were more in terms of macroeconomic policy than trade and industrial policy.

The performance of the Thai economy since 1960 has corresponded rather well to the macroeconomic policy of different periods of time. During the first and second Plans, (covering the period 1961-1972), overall policy promoted economic growth through government expenditure. At that time the world economy was experiencing both high economic growth and financial stability. The Thai economy registered a high average growth rate of 7 percent, with practically no inflation. Industrial and trade policy at that time were designed to promote high growth in production for domestic sales. Tariff protection and investment-promotional tax incentives were provided. And, in response to macroeconomic stimulation and protection, the industrial sector grew rapidly, mainly producing products to replace imports.

The industrial strategy initiated in the 1960s was continued into the 1970s. But the economy was very much disrupted by the first oil shock of 1972, creating economic instability. Fortunately, however, the oil crisis was followed by a period of commodity boom. There was, therefore, no real need to restrict imports and boost exports. Nevertheless, a number of measures were introduced to also promote manufactured exports, such as tax rebates and refunds. Thus, at this time, industrial policy was becoming neutralized, although it still favored domestic sales.¹ Furthermore, macroeconomic policy measures (especially the exchange rate policy) was not designed to promote exports.

The second oil shock of 1979 and 1980 brought to Thailand a series of economic crises which eventually led to the major economic policy reforms of the mid 1980s –

1 A study by Narongchai Akrasanee, for example, shows that during 1974 to 1978, tariff protection given to domestic industries had increased. See Narongchai Akrasanee, *Industrial Development in Thailand* (in Thai), Report of the Research and Planning Department, Industrial Finance Corporation of Thailand, 1980.

reform which so drastically affected the country's pattern of trade and industrial production.

The second oil shock resulted in a phenomenal increase in the oil import bill—which at one time (1982) amounted to about 40 percent of the total import bill. The government had to borrow heavily from abroad to meet this import higher cost. This occurred when the value of the U.S.\$ was very high, and as the Thai baht was essentially fixed with the U.S.\$, there was more incentive to import. So in 1983, the current account deficit and the debt service ratio were both rising at alarming rates. And, as discussed before, the situation forced the Thai government to devalue the baht by about 15 percent in November, 1984 and to end the fixed exchange rate between the Thai baht and the U.S.\$, adopting a basket-of-currency system instead. And since that time, Thailand's exchange rate policy intentionally favored exports over imports. And when the U.S.\$ started to drop in exchange value with respect to other major currencies (especially the Japanese Yen and the Deutsch mark), the baht was allowed to fall with the U.S.\$ for almost two years. Therefore, since November 1984, Thailand's exchange rate policy has been increasingly more favorable to exports.

The economic crisis of the early 1980s led to two other major policy changes. First, the private sector was given much more recognition as an engine of economic recovery. In fact, the government encouraged the private sector to play a leading role in investment, arguing that the public sector was too financially restricted. Business practices were liberalized to allow the private sector to take full advantage of market opportunities. Second, industrial policy was changed to increase its emphasis on export production through investment promotion schemes and activities designed especially to encourage production for export; there was also a stepped-up effort at export promotion by the Ministry of Commerce; and the Ministry of Finance managed to substantially streamline tax rebate and refund schemes and make some changes in the tariff structure.²

The result of these policy changes and the changes in world economic events during the same period is that Thailand's economic performance has exceeded expectations. Private investment from domestic and foreign sources (especially in manufactured exports) started to pick up in 1986 and has accelerated rapidly since then. The pattern of exports has drastically changed and is now much more concentrated in manufactured goods. Indeed, the results of these changes in Thailand have been considered by the world economic community to be most impressive, and much credit has been given to the policy reforms introduced in the mid-1980s.

POLICY DECISIONS AND THE ROLE OF POLICY RESEARCH

The decision-making process

Until 1988 Thailand was governed by civilian and military bureaucrats, with civilian technocrats playing a very important role in shaping the content of economic policy. In its most common form, government consists of military leadership at the top, which is supported by a civilian technocracy and bureaucracy. There has been only one brief period in which an elected government has run the country—in the 1970s; however, from 1980-1988 elected politicians played a more important role in the power structure. And since the election of August 1988, Thailand has been run by an almost entirely elected government.

During the 1960s the Prime Minister and his Cabinet made all major economic decisions. However, the National Economic and Social Development Board, the Bank of Thailand, and the Fiscal Policy Office of the Ministry of Finance played important roles as far as macroeconomic issues were concerned. Sectoral policy mainly involved line ministries which usually submitted proposals to the Cabinet for approval. The decision-making process was not open, and there was no coordination among government agencies.

In the 1970s the economic management of Thailand went through several changes. In 1974 and 1975, a group of advisers—mainly academics led by the prominent technocrat, Dr. Puey Ungphakorn—were very influential in the decision-making process. This group, in fact, prepared decisions for the Cabinet. But then the political turbulence of the second half of the 1970s confused the entire economic decision-making process, and the process was not restored and improved until 1981 when the first government of Prime Minister Prem Tinnasulanonda took office.

Although Prime Minister Prem had five Cabinets during the eight years he was in power, and these Cabinets went through a series of combinational changes, the decision-making process did not change very much. Prime Minister Prem appointed a number of technocrats to the Cabinet, set up the Economic Cabinet, strengthened the Office of the Secretariat of the Prime Minister, and appointed a few prominent academics as his advisers. These people made the economic decisions; they were open to advice from outsiders—domestic and foreign—and members of the media. They also coordinated the many line ministries. Thus, the economic policy decision-making process during this period was most stable and predictable.

2 Recent estimates of the effective rate of protection reveal that the bias in the tariff structure in favor of import-competing industries and against exporting industries existed until 1984. See Industrial Management Corporation, *Industrial Restructuring Study for the NESDB*, 1985.

Since August 1988 the economic decision-making process has become less centralized and less coordinated. The Prime Minister still holds the supreme influence. But individual line ministers are influential in their area of responsibility. The Prime Minister relies on independent advisers, and in some cases has overruled line ministry proposals. But there is no longer a central body. The NESDB's role is to formulate long-term policy and the Prime Minister Secretariat is serving more like a secretary rather than a secretariat to the Prime Minister.

THE SOURCES OF POLICY INFORMATION UNDER THE PREM ADMINISTRATIONS

Internal government agency sources

Since 1981, many policy reforms have been implemented. And the three agencies which most influenced policy reform were the Bank of Thailand, the Fiscal Policy Office of the Ministry of Finance (involved mainly in macroeconomic policy), and the NESDB (which was active in both macroeconomic and sectoral policy). The Fiscal Policy Office, of course, was responsible for the work on tariff policy. In addition, the BOI was active in investment promotion policy and gave input to the government. All of these agencies have some policy research capability—especially the Bank of Thailand and the NESDB—and have research units. None, however, has a separate research institute.

External sources

When policy changes were contemplated, the NESDB, the Fiscal Policy Office, and the BOI made use of local consultants provided by outside organizations. The Industrial Management Company (the management consultant subsidiary of the Industrial Finance Corporation of Thailand) was the most prominent of these and was commissioned to carry out studies on structural adjustment of the industrial sector, investment incentive reform, and energy conservation. In addition, UNIDO and the World Bank commissioned the company to carry out a number of other policy studies in connection with industry and trade policy reform that would benefit the government.

When the Industrial Management Company was conducting this series of policy studies, the company also collaborated with foreign consultants, including one from Australia and one from Canada. In addition, government agencies benefited from a number of foreign consultants and foreign policy researchers commissioned or sent by the World Bank. As for independent research institutions, only the Thailand Development Research Institute played a significant role, but mainly in the area of macroeconomic policy. Finally, certain individual academics who served as advisers to the Prime Minister had strong input in the decision-making process.

The transmission system

Transmission of information occurred through confidential relationships between researchers and officials of government agencies concerned rather than through open, public debate. Because the research was mainly commissioned by policy agencies, the initial transmission step was the submission of reports by the researchers to the contracting agency. The agency then prepared policy proposals for further submission to the Cabinet, especially to the Prime Minister. At that time the usual forum for discussion was the Council of Economic Ministers, known as the Economic Cabinet, to which the NESDB was the Secretariat. At times, researchers were invited to make oral presentations at Economic Cabinet meetings or at a meeting of a special subcommittee created by the government.

During the Prem administrations the atmosphere was conducive to free policy debate (which took place at various forums and conferences) and open media coverage. The government was very open to public debate on policy issues; and indeed the public responded by participating actively in policy discussion. A "media of economics" was actually born at this time, and has since produced a number of high quality newspapers, magazines, and television programs. In general, the public was in favor of a more liberal and competitive economic system and in support of the government's export-oriented policy and promotion of foreign investment.

Policy research in public decision making

It is not possible to say to what extent policy research was used in public decision making on macroeconomic policy, trade, and industry reform at that time. The role policy research had in this process was through certain key individuals involved in policy decisions. Some of these individuals were involved in policy research, some had access to this research, while others are known to have never paid attention to research results. The decisions made were based more on the memoranda and papers prepared by the officials with direct responsibility, who may have consulted the research findings.

As mentioned at the beginning of this article, the main thrust of trade and industrial reform was more in the area of macroeconomic policy rather than in sectoral policy. And, macroeconomic policy research was carried out by the Bank of Thailand, the Fiscal Policy Office of the Ministry of Finance, the NESDB, and TDRI, which also made use of university researchers. Among these agencies, the work of the government agencies had more influence. However, in the case of the sectoral work, i.e. research on trade and industry, there was more reliance on research work done outside of government agencies. Perhaps this is part of the reason why sectoral research results did not influence as much change as the work on macroeconomic policy.

(continued on page 27)

Trade and Industry Reforms in Thailand: the Role of Policy Research

(Continued from page 17)

In order to enhance the role of policy research in a country like Thailand it is necessary to ensure that high quality research work is carried out and that the results are transmitted through practical transmission mechanisms. This will require the following:

- strong and independent research institutes;
- strong government research agencies; and
- close collaboration between government and independent research agencies.

Independent research institutes can mobilize expertise from domestic and foreign sources. They can organize public debate on policy issues to influence and

create public opinion. The collaboration between independent research institutes and government research agencies will ensure that policy implications and recommendations have taken practicalities into consideration. Furthermore, in a country like Thailand, policy makers, if they use research results, will rely on the work of government agencies. This situation may be changing slightly at present as more policy makers are becoming somewhat suspicious of the work of government agencies, and may want to have input from independent research agencies. In any case, the desirability and the practicality of collaboration between government and independent agencies remain key to the process of formulating economic policy in Thailand.

Transportation, Telecommunications, and Tourism for the Pacific Region: ASEAN Paper

Narongchai Akrasanee
Deunden Nikomborirak

This article is a summary of a paper written for the Pacific Economic Cooperation Conference (PECC) on Transportation, Telecommunications and Tourism held in Bangkok in May 1989. Its purpose is to identify obstacles to the development of the three major service-sector industries in order to determine possible areas of cooperation among ASEAN countries and among ASEAN and other Pacific Rim countries.

INTRODUCTION

Rapidly growing ASEAN economies are gradually industrializing and, as expected, the service-sector role in these economies has increased. Indeed, in 1986,¹ service-sector contributions to GDPs in ASEAN countries ranged from a high 63.7 percent (for Singapore) to a low 38.7 percent (for Indonesia).

The three service industries which make up the major components of the service sector (transportation, telecommunications, and tourism) have one important common characteristic—all three are experiencing a boom in demand. The first two industries provide infrastructural services which, in the midst of rapid economic expansion, have become increasingly inadequate—especially in developing countries. Unless appropriate measures are taken to increase the availability and efficiency of these services, overtaxed transportation and telecommunications could curb and severely threaten present, healthy economic growth. Already in Thailand we see traffic jams and clogged ports. And there is a shortage of seat-capacity on many major airlines in the region.

Telecommunications growth is also constrained. The existing telephone network is extremely overburdened as the government is unable to keep up with the surging demand. It may now take up to three years to install a basic telephone service in highly populated urban areas and, in rural areas, the service itself is very limited.

The prospects for growth in tourism (especially for those ASEAN developing economies well-endowed with tourist attractions) are bright. Indeed, world tourism has been and remains a booming industry and for many economies has become an important source of foreign exchange earnings and employment creation. However, the expansion of the demand for tourism has so exceeded expectations that air transportation seat-capacity shortages have caused frequent delays and flight cancellations.

TOURISM

According to the World Tourism Organization, worldwide tourism increased to an estimated 35.5 million international tourists in 1987, a 4 percent increase over 1986, or an increase of 16.1 percent in terms of spending.

ASEAN, as a region (excluding Brunei), is a net exporter of tourism; however, tourism makes widely different contributions to individual member states. In fact, in 1987, Singapore and Thailand combined made up 58.93 percent of all ASEAN visitor arrivals and 68.94 percent in terms of receipts. The region achieved a satisfactory per annum growth rate of 5.5 percent in the number of tourist arrivals. In 1981 8,728,274 tourists visited ASEAN. By 1987 the figure had risen to 12,495,849 (see Figure 1).

Tourism in ASEAN countries seems to be an industry with very bright prospects for four major reasons:

1. Tourism is a booming sector in the world economy. Although Europe remains the principal destination, Asia and the Pacific continue to be areas of growth for tourists.
2. The appreciation of the Yen and conscious efforts by the Japanese government to boost overseas Japanese travelers to 10 million by 1992 (as a part of the country's policy to recirculate its trade surplus) have led to an exodus of Japanese travelers to

ASEAN. Since approximately 20 percent of all visitors to ASEAN are Japanese, it is expected that the impact will be significant.

3. Recently, there has been increased awareness of tourism as a potential major foreign exchange generator. This trend is evident in a number of recent grand promotional efforts by ASEAN governments beginning with the "Visit Thailand Year" in 1987—a year-round tourism promotion effort which has become a model for other member countries. 1989 will mark "Philippine Fiesta Island Year." The campaign aims to erase the world perception of the Philippines as unsafe or troubled. Singapore and Malaysia are also considering such promotional efforts.
4. Overseas travel policy has been liberalized particularly by the Republic of Korea and Taiwan. The growing wealth of these two countries has led to their relaxing many restrictions inhibiting potential travel; further, the opening up the People's Republic of China has increased its outbound visitors who mostly travel in the Pacific region.

Having seen the bright side of tourism, it must be noted that the industry is not without problems. The recent rapid expansion of national fleets by both the purchasing and leasing of aircraft is a response to mitigate the present shortage of air seats. For a long-run solution, however, airport development to handle the prospective influx of tourists is essential. The shortage of airline seats is causing frequent delays, flight cancellations, and hotel room shortages. And the lack of rooms has inched up hotel rates in many popular tourist spots such as Bangkok, Bali, and Jakarta, but the room-glut experience of the early 1980s (especially in Singapore and Malaysia) prevented a sharp rise in hotel rates. However, expanding hotel and airline seat capacity is not the only solution to the problem. The region faces wide seasonal fluctuation in the number of tourist arrivals which leads to excess capacity in the low season. Efforts to lessen this fluctuation (such as year-round tourism promotion schemes, reduced hotel rates, and discounted airfares) will greatly reduce the waste of resources in the tourism service industry.

ASEAN COOPERATION: IN TOURISM

An institutional structure for regional cooperation has long been established in ASEAN. Promoting tourism within ASEAN has been carried out principally by the respective National Tourist Organizations (NTOs) of member countries who divide activities into two categories—marketing and research development.

Despite all of the effort put into establishing various institutions, the effectiveness of regional tourism promotion is still very limited because of the lack of private-sector participation resulting from organizational and

financial limitations. Competition among members is another major obstacle. It is inevitable that ASEAN countries offering relatively similar tourist attractions—shopping, oceanic resorts, and unique far-eastern culture—will continue to face situations in which national and regional interests conflict. Notwithstanding these conflicts, the members did manage to establish an "ASEAN fare" in the early 80s which is still in effect today. Multi-destination ASEAN region tickets are priced lower than usual in order to promote regional tourism. Also, 1992 will mark the "Visit ASEAN Year," commemorating the 25th anniversary of the founding of ASEAN—another major effort to promote regional tourism.

Since tourists to ASEAN originating in Pacific countries represented 68.8 percent of all tourist arrivals in 1987, increased cooperation in tourism between ASEAN and the Pacific Economic Cooperation Conference will further boost the present regional tourism boom.

There are several possible areas for further cooperation. Two among these are aviation policy, and the promotion of regional tourism. Cooperation in aviation may include preference for PECC member countries in bilateral or multilateral international flight negotiations. Cooperation in the promotion of tourism could be established using a framework similar to intra-ASEAN cooperation, but should emphasize private participation.

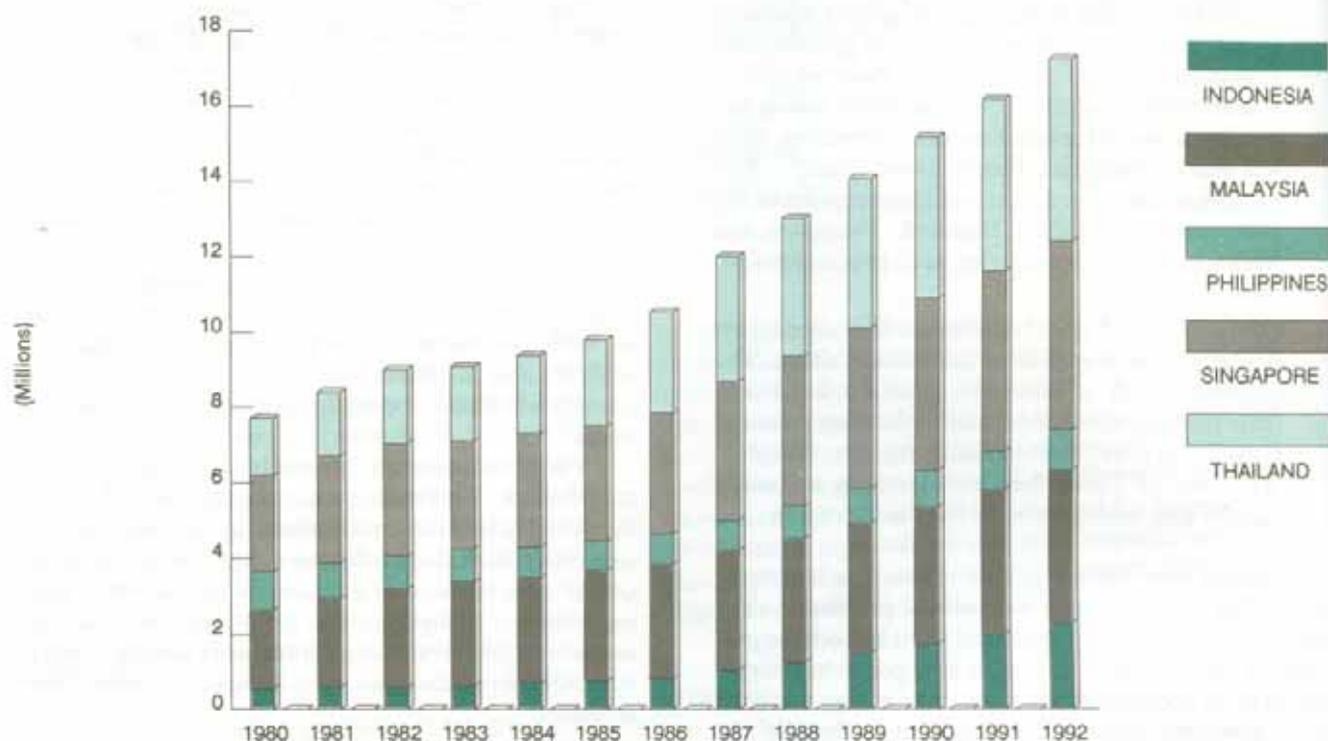
TRANSPORTATION

Shipping

The above average expansion in the ASEAN shipping industry over the last decade is a result of rapidly growing regional exports and reflect the change from import substitution to export promotion policy. Since 80 percent of ASEAN trade depends on ocean transportation, there has been a major effort to build up national fleets despite the sluggishness of the world's shipping economy.

In terms of tonnage, the ASEAN fleet grew at an annual rate of 7.9 percent during 1980-1987, a rate which was much higher than the world rate of 0.9 percent. As a result, ASEAN's share of world shipping capacity increased from 2.2 percent to 4.3 percent during the same period. A large proportion of the growth occurred in bulk carriers and container ships out of the Philippines and Singapore. Further, according to Lloyd's statistical tables, the region claimed a total of 17.6 million gross registered tonnage (GRT).

The distribution of shipping capacity among ASEAN member countries is highly skewed. In descending order of volume of GRT, the Philippines registered 6,922,500 GRT; Singapore, 6,267,600 GRT; Indonesia, 2,088,600 GRT; Malaysia 1,743,600 GRT and Thailand 533,100 GRT. Thailand and Malaysia are very

Figure 1 Projected Tourist Arrivals to ASEAN (1980-1992)

highly dependent on foreign shipping services. Ninety-five percent of Thailand's trade depends on foreign shipping, while the figure is approximately 92 percent for Malaysia.

As a consequence of the recent regional tourism boom, seating capacity of commercial airlines is rising. Thailand among all other ASEAN members faced the most serious constraints with its 25 percent increase in the number of tourist arrivals in 1987 and the 12 percent rise in 1988.

Air cargo transportation

The volume of exports shipped by air is growing in significance. ASEAN is promoting the air export of fresh flowers, tropical fruit, and manufactured goods—mainly to Europe and Japan. Shipping horticultural produce by air was developed first by ASEAN countries—in particular Thailand, Singapore, and Malaysia. Indeed, horticultural produce represents approximately one-third of Thailand's export air cargo of which tropical orchids and cut flowers form an important category. Orchids are exported by Thailand, Sin-

gapore, and Malaysia mainly to the Federal Republic of Germany. The markets for exotic tropical fruit (rambutan, longan, mango, lichee) are also expanding very rapidly. ASEAN is a major exporter to points throughout the world. The main regional market suppliers are Thailand and Malaysia, whereas Singapore has emerged in recent years as a major market for a variety of fruits and vegetables, including unusual items such as cut potatoes for use in fast-food restaurants. Air-freight traffic is on the rise due to the increased demand for fresh vegetables, fruit, orchids, and fresh and frozen meat.

In addition to increased air shipments of traditional agricultural products, light-weight manufactured products such as textiles, and electrical and telecommunications equipment are increasingly being shipped by air. The region has experienced a remarkable growth in the volume of air cargo traffic. During the period 1983-1986, air cargo traffic in Malaysia grew at approximately 21 percent per annum. In Singapore and Thailand the rates were 11 and 18.5 percent. However, the Philippines and Indonesia experienced insignificant growth rates since their exports do not include products that are usually shipped by air.

Except for Thailand, there seems to be no major difficulty with ASEAN's port infrastructure and physical capacity, although data show that there has been a decline in the average availability of port equipment while the occupancy rate of berths and container storage units has soared. The Port of Singapore is probably the only port which boasts an increase in the percentage of port equipment available despite a 30 percent increase in the volume of traffic in 1987 over the previous year.

There is no question that Klong Toey, Thailand's main international deep-sea port, is seriously congested. Port facilities were designed to handle 500,000 TEUs (twenty-foot equivalent units) a year, but, in 1987, Klong Toey was handling 609,182 TEUs. By 1991, when the new deep-sea port opens, it is predicted that Klong Toey will be handling a million TEUs a year.

The decade of the 1980s seems to have been a time for airport construction. Bangkok's Don Muang Airport was expanded in 1985, the new Suharno Hatta International Airport in Indonesia was constructed, and a second passenger terminal was constructed at Changi Airport in Singapore.

LEGAL AND INSTITUTIONAL ASPECTS

As a consequence of ASEAN's rapid economic growth its infrastructure is overburdened and continued, rapid economic growth is threatened. The urgent need to meet current excess demand for transportation services has been a major force pushing toward privatization and deregulation. Indeed, because of limited financial and human resources within most state-run transportation organizations, privatization and deregulation are seen as two ways to induce private and foreign investment to fill the supply-demand gap. Complementary to policy changes, incentives in various forms have been incorporated to promote investment.

Shipping

The period of the early to mid 80s was difficult for the shipping industry. With an excess capacity, the level that could be earned in the bulk and oil sectors deteriorated; however, the recently improved world economy has resulted in the modest growth of freight rate levels.

Regulations favor national shipping lines in ASEAN. In the Philippines and Indonesia these include requirements that national flag vessels and shipping lines carry government-sponsored imports and exports. In Thailand and Indonesia foreign air carriers are taxed on gross income and national carriers are taxed on net profit. Also in Singapore, majority foreign ownership in shipping is discouraged and smaller foreign vessels are taxed to protect domestic industry.

The country which is undergoing the most marked deregulation is Indonesia. In 1985 deregulation measures allowed foreign ships to lift cargo directly from ports near export manufacturing areas instead of from the five major ports used as export gateways. The package was designed to promote nonoil exports in the wake of the collapse of the oil price. In 1988, the Indonesian government was forced to allow the importation of foreign-made, specialized second-hand ships to handle trade.

In Thailand, the monopoly of container-crane services—introduced in early 1986—is an example of Thai bureaucratic red-tape. Shipboard crane operations were then banned because these monopolistic practices instantly led to deteriorated port congestion. Not until the International Shipping Conference threatened to impose a port congestion surcharge on Thai exporters was permission for the use of on-board cranes reintroduced. And quite recently, the government has introduced private container storage and stuffing facilities outside the port area as an immediate solution to the problem of ground congestion.

Aviation

Although it is obvious that the recent expansion of the aviation industry falls short of the demand (mainly because of financial limitations and the inefficiency of state-run national airlines), privatization in ASEAN is, to date, still very limited. National flag carriers (except for Singapore's and, until recently, Malaysia's) are monopolies and wholly state-owned. The much touted privatization plan for Philippines Airlines (PAL) has been put on the back burner. A similar plan for THAI (Thai Airways International) has also been suggested but has not yet materialized.

With respect to deregulation, again, Indonesia now allows the private importation of foreign aircraft—a move congruent with its importing of shipping vessels. The purchasing of aircraft was essential to meet the recent growing demand for airline seats.

In short, there are regional trends toward deregulating and privatizing the shipping and aviation industries as there is an urgent need to improve the quality and efficiency of shipping. However, efforts are likely to be dogged by politicking and inherent bureaucratic bottlenecks leading to indecision and implementation delays.

ASEAN COOPERATION: TRANSPORTATION

There are two major factors which impede effective cooperation of most other ASEAN committees: (1) the lack of private-sector participation; and (2) the lack of committee awareness of subcommittee findings which have bearing on committee decisions. C.O.T.A.C. (Committee on Transportation and Communication) meetings are usually attended by senior officials who

draw up policy guidelines. Since these officials are usually not technically trained, projects fall on those subcommittees and Non-Government Organizations (NGOs) which actually implement and directly benefit from them.

Nevertheless, cooperation in the aviation industry resulted in "The ASEAN fare," the discounted air-fare for multi-destinations in the ASEAN region. However, cooperation in shipping will be dogged by the sluggishness of the shipping business, resulting from the excess tonnage of the past few years.

In recognition of the rising significance of intra-PECC travel, it would be both realistic and economically advantageous for all in the air business to cooperate. Preference for PECC airlines in bilateral flight negotiations (or even in multilateral negotiations) should be encouraged.

TELECOMMUNICATIONS

Past Trends

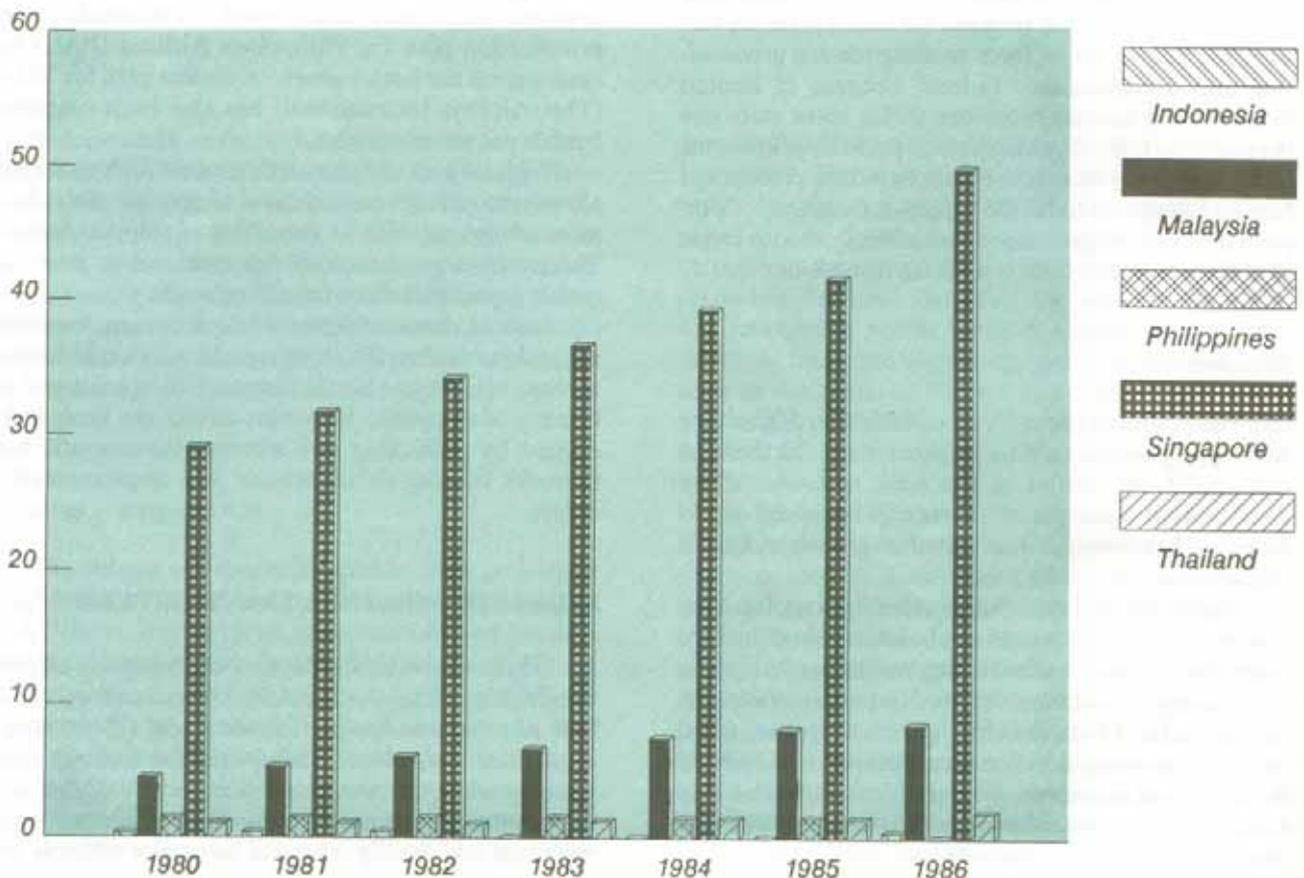
ASEAN (excluding Singapore) still lags behind most countries in telecommunications technology. However, trends indicate that the gap is narrowing. During 1980-86, there was an explosion of international telephone traffic. The growth in the volume of calls was

approximately 40 percent p.a. for Singapore and 35 percent for Thailand. Along with this, the rapid growth in international telephone traffic (the amount of international subscriber-dialed telephone traffic — as a percentage of total outgoing international telephone traffic) has also increased significantly. The figure for Malaysia rose from 7.13 percent in 1980 to 63.8 percent in 1986. In Singapore the penetration of international subscriber-dialed telephone traffic is almost complete, with 90.8 percent of all Singapore's international calls being made on privately leased circuits.

International telex traffic rose until 1984-85. Thereafter, it has constantly declined — a clear indication of the substitution of more efficient and less costly modes of communication — by direct phone calls or telefax. Also, that the telegram is becoming obsolete is indicated by the sharp decline in the volume of telegram traffic since the beginning of 1980 — the period under observation here. In fact, by 1986 telegram volume was essentially halved in Thailand and Malaysia, while in Singapore the decline was recorded at 65 percent.

Given healthy economic growth in ASEAN and the increasing importance of multinational companies, a continuous sharp rise in telecommunications traffic is expected. Along with the development of basic telecommunications networks, the widespread use of telefax and mobile cellular telephones and commercial satellites is also expected.

Figure 2 Density of telephone stations (SETS) per 100 inhabitants



GOVERNMENT POLICY

The expansion of the basic telephone network has been a major focus of ASEAN governments since the existing service is still highly inadequate. The density of telephone sets per 100 inhabitants in ASEAN is still much lower than in other countries in the Pacific region. The figure was 8.53 for Malaysia, 1.89 for Thailand, 1.51 for the Philippines (1985), and 0.46 for Indonesia in 1986. However, the development of the network is likely to be hampered by insufficient financial and human resources in state-run telecommunications organizations. Private participation has been limited to concession-type development. However, as an immediate solution to the present bottleneck, the government is encouraging private and foreign participation in development plans.

The government is also considering introducing a data processing zone (DPZ). The proposed DPZ involves plans for the duty free importing of equipment used in the zone. Foreign labor will also be allowed, offsetting the shortage of engineers and technicians.

The Philippine Long Distance Telephone (PLDT) system is also facing competition from Eastern Telecoms Philippines Inc. (ETP). PLDT has come under fire because of its dismal public service record, even though its near-monopoly status made it an immensely profitable public corporation.

ASEAN COOPERATION: TELECOMMUNICATIONS

The institution responsible for regional cooperation in the telecommunications area is C.O.T.A.C. (the Committee on Transportation and Communication). Much like other ASEAN Committees, it studies the feasibility of various regional projects. Its major project at present is the fibre-optics submarine-cable system linking all ASEAN countries. Should the Philippines-Malaysia-Thailand part of the project receive government approval, the system is expected to be in operation in 1992. The main obstacle to cooperation is the existing technological gap. While Singapore's telecommunication system is almost entirely digital, the rest of ASEAN is still trying to meet the demand for basic telephone services.

Since there is a wide technological gap between the ASEAN and PECC regions, cooperation will probably come from the more developed PECC countries to ASEAN in the form of technical and financial assistance. In the long run, such assistance will benefit not only ASEAN but also the entire PECC region. Indeed closing the development gap between both regions will facilitate closer economic cooperation and make prospective economic integration more realistic.

INTEGRATED ANALYSIS

In our integrated (as opposed to independent) analysis of transportation, telecommunications, and tourism (the "3Ts") we analyzed the dynamic structure of economic change which allowed us to understand the dynamism resulting from the links among them.

The development of the 3Ts can be viewed in four stages: (1) independent development; (2) start of interface; (3) dynamic interaction; and (4) integrated development.

During the first stage, which began some 100 years ago, basic 3T services were created. This includes the inauguration of a regular ocean liner service and an underwater cable. Tourism was then very much limited due to inadequate and costly transportation. The development of each T was then independent.

During the second stage, linkages among the 3Ts were created. Satellite communications facilitated the better flow of information for the transportation and tourism sectors. Meanwhile, improved transportation made speedier and less costly means of travel available (such as jumbo jets) which have facilitated the flow of people across borders (tourism). The ASEAN region saw the introduction of the Indonesian Palapa Satellite in 1986, an addition to the existing International Satellite Consortium (Intelsat) network which facilitates a better flow of information in Indonesia and to its ASEAN neighbours.

In the third stage, the synergetic effect of high-speed transportation and improved telecommunications systems (such as the fiber-optic sub-marine cable system and the digital-communication system) will strengthen the links among these three service industries by facilitating the greater flow of information at higher speeds. In ASEAN, Singapore has already entered this third stage, while the rest of the members are rapidly moving through various periods of transformation. For example, Singapore Airlines and Cathay Pacific have established the ABACUS Computer Reservation System (CRS), a system which directly links transportation, telecommunications, and tourism together. CRS is fast becoming an integral part of the air transportation business and tourism industry. Malaysia which has not yet joined the CRS, has systems such as Kommas II (which deals with computerized ticketing) and the Malaysian Airline System (MAS) Hotel Reservation System (HOREZ) launched in 1986, which enables instant hotel reservations to be made for participating hotels at the time one books one's tickets. Also, the widespread use of aeronautical telecommunication facilities and electronic aids has facilitated the speedy and orderly flow of air traffic in the region. For example, high-resolution cloud pictures from the Japanese geostationary meteorological satellite and the American polar-orbiting meteorological satellites (which cover a

large portion of the Asia-Pacific region) provide weather forecasts for air transportation control in Singapore.

While technological innovations represent a driving force toward the integration of the three service industries, the organizational structure of each of these industries poses the following barriers to integration:

- Separate and autonomous government agencies have been in charge of individual flows. For example, the flow of people is handled by immigration, product flow by customs, and information flow by the National Telecommunications Authority. The lack of coordination among these agencies is a major barrier to the dynamic development of the 3Ts.
- Each industry has a different set of objectives and constraints. Tourism policy is shaped in response to the critical importance of tourism to the nation as a source of revenue, but is controlled by immigration issues. Transportation policy is primarily based on industrial policy and controlled by trade issues. And, finally, telecommunications policy is formed by investment criteria, that is, how much can the government afford to develop the telecommunication system; meanwhile, the industry is controlled by public-sector issues.

The lack of an integrated framework which identifies the dynamic as well as the trade-off effects of each T on the other two Ts proves a major obstacle to prospective integration. For ASEAN to be able to move to the fourth stage where there is a significant overlap among the 3Ts, these barriers will have to be eliminated. When this happens, we will be approaching a "borderless economy" where there is a large flow of people, goods and information across our borders. Thus, as there will then be a greater need to coordinate these flows, our present planning should reflect this future vision of ASEAN.

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The Role of Services in the Development of the Thai Economy

Twatchai Yongkittikul
Paitoon Wiboonchutikula
Sorrayuth Meenaphan

This article briefly summarizes the major findings and conclusions of the TDRI study on "The Role of Services in the Development of the Thai Economy," which was part of the ESCAP/UNCTAD project on the service sector in the ESCAP region. The study concentrated on three issues: (1) the role of services in the economic growth and development of the Thai economy with emphasis on interlinkages and supply conditions; (2) international trade in both factor and nonfactor services; and (3) issues relating to regulations on services in international transactions.

The service sector is a major contributor to the gross domestic product and employs a sizable percentage of the Thai labor force. In the 1980s, the sector accounted for well over 50 percent of the GDP (between 200-300 billion baht) and approximately 30 percent of all international receipts (40-85 billion baht). Indeed, in 1985, service-sector labor employment accounted for about 23 percent of the total labor force and service-sector GDP and employment shares are expected to rise gradually over the long term. Also, GDP service-sector elasticity was estimated at 1.08 and service employment, now experiencing high growth at 5.6 percent a year, is likely to be higher in the next decade as the retail and wholesale trade industries are expanding rapidly and the number of self employed is rising.

In Thailand the domestic production of services is actively shared by the public and private sectors. The government, through its 61 public-enterprise operations, provides all electricity, water supply, and communications services. These services, by law, must be provided solely by the designated public enterprise. The private sector is, however, active in banking, insurance, business services, tourism, and personal services. Service activities undertaken by foreigners are also evident, though limited, in banking, tourism, and insurance. In fact, the available data on the foreign remittance structure of technology payments reveal that very few technologies imported into Thailand through contractual arrangements involve service activities. Rather, imported technologies mostly apply to manufacturing processes.

Our examination of the 1975 and 1980 input-output tables showed that the services which have the highest forward linkage effects are traded services. The size of traded services relative to the GDP grew particularly fast in the 1980s. When traded services are separated into receipts and payments, the receipts grew faster than the payments and thus resulted in increases in the service balance surplus, particularly after 1980.

Traded service receipts in Thailand have come from three major sources over the past thirty years: (1) military services to foreign governments; (2) labor remittances; and (3) receipts from tourism. Military services were provided to U.S. military bases in Thailand during the Vietnam War. The receipts from worker remittances were returns from labor services rendered—mostly in Middle Eastern oil-exporting countries (during favorable energy price periods) and in Singapore. However, the remittance figures could possibly be understated because some earnings may have by-passed official banking procedures. Besides, workers may carry back cash, household, and personal items upon completion of their contracts. Receipts from tourism have been steadily increasing since the late 1960s and since the mid-1980s growth has accelerated.

Other services with an increasing share of total receipts over time (and which exhibit good prospects) are freight and insurance and "other transportation." The rapid growth of the merchandise trade in Thailand could well support the expansion of the local shipping industry. Meanwhile, if local air carriers could further increase the efficiency of their services, their receipts would be able to grow in tandem with the booming tourist industry.

Traded service payments, on the other hand, came from three other major sources: freight costs, investment income, and travel. In the decades of the 1960s and 1970s, freight cost was the largest single payment; however, its share declined and was outgrown in the late 1980s by investment income payments. The declining share of freight-cost payments (in contrast to the increasing share of freight receipts) suggests the growth of shipping services in Thailand. The share of profits

and dividends in investment-income payments has grown as foreign firms continue to increase investment in various sectors. The share of travel payments, on the other hand, declined rapidly in the 1980s. But, following the country's current high GDP growth per capita, it is expected that expenditures on tourism, overseas education, and business travel will grow more rapidly.

Two other services whose total service payment shares were small but increased at particularly rapid rates in the 1980s were "repatriation of foreign worker remittance incomes" and "technology fees." Their shares will undoubtedly increase in the future as direct foreign investment increases and manufacturing- and service-sector production become more technology intensive. For the net balance in the service account, the net deficit in investment income after 1975 increased. This slowed shown the growth of traded service surpluses. Thus, while increased direct foreign investment may help increase the surplus in the capital account, it might increase the deficit in both merchandise and the net investment income balance. (See Figures 1 and 2.)

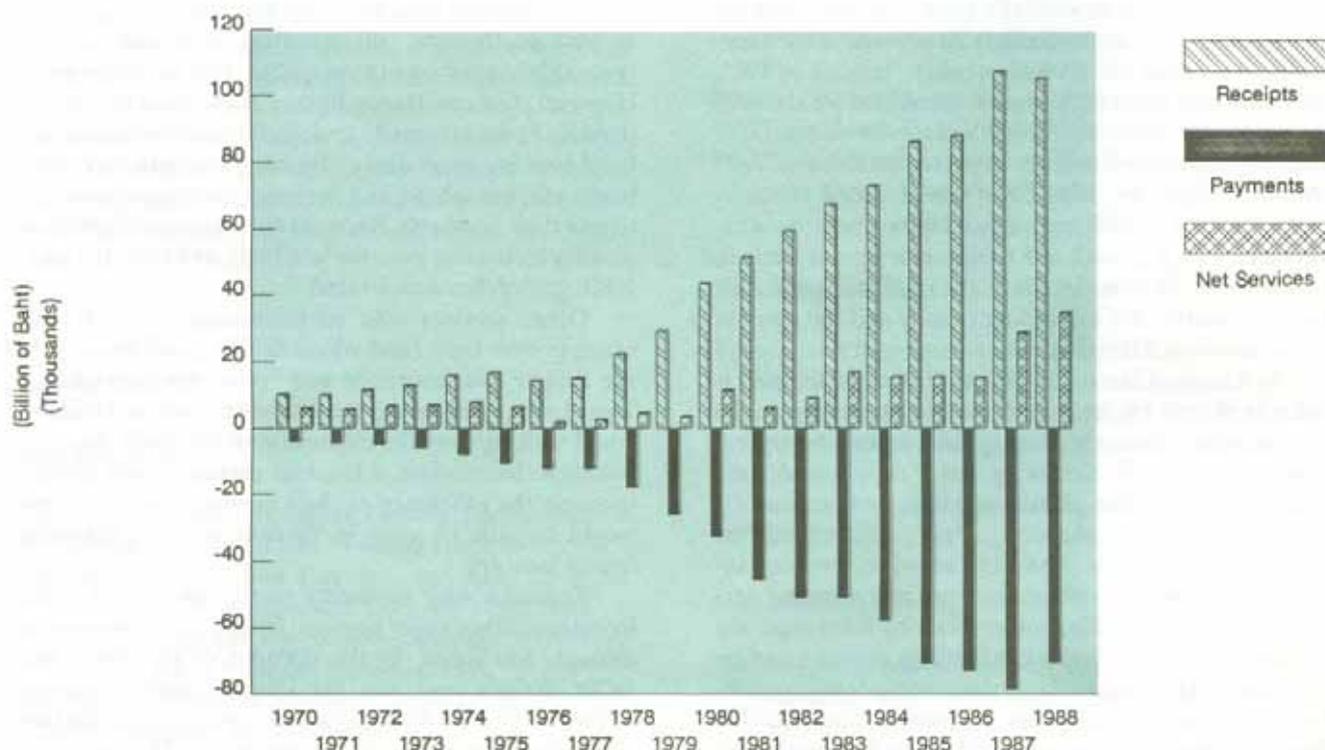
The largest importer of Thai services was the United States where the major traded items were labor income,

other services, and travel. Major traded-service payments (such as investment income and freight and insurance) went to the United States, Japan, and the Asian NICs who increased their direct investment in Thailand substantially after 1985. Meanwhile, more tourists came from an increasing number of countries.

Barriers to trade in services in Thailand are mostly nontariff in nature and obstruct either sales volume or the mobility of factors of production. Since some traded services are demander-location specific, barriers to the mobility of factors of production, either capital or labor, can also restrict or prohibit traded services. The barriers are as follows: (1) limitations on the right to establish a foreign affiliate; (2) limitations on the right for branch expansion; (3) limitations on sales; (4) preferential pricing treatment; (5) labor service limitations; and (6) foreign exchange controls.

These limitations constitute protection for domestic service industries and have an impact on traded-service receipts and payments mostly in the payment of investment income, freight and insurance, and other transportation. The rationales for the protection of domestic services primarily involve protecting infant industry, national security and sovereignty, and reserving

Figure 1 Balance of Trade in Services, 1970-1988*



Source: Bank of Thailand.

* Data in 1988 refer to the first three quarters of the year.

Figure 2 Net Traded Services by Item 1970-1988*



Source: Bank of Thailand

* Data in 1988 refer to the first three quarters of the year.

jobs for Thai nationals. The liberalization of rules and regulations on the rights of establishment would affect almost all service industries and the balance of trade in services. However, the net benefits of liberalization are

debatable and more data and microeconomic research on the service sector is needed to prepare for any international negotiations on trade in services.

Two Excerpts from "The Factbook on Rice"

Ammar Siamwalla

In July, TDRI will publish "The FactBook on Rice" (in Thai) which is aimed at the policy community. The following are excerpts taken from the book

SHOULD WE LIE OUR RICE STATISTICS?

Each year, the Office of Agricultural Economics at the Ministry of Agriculture and Agricultural Cooperatives comes out with Thai rice production estimates. These estimates are widely publicized and used by various government offices and by traders to plan activities and trading positions. The Internal Trade Department and Business Economics Department at the Ministry of Commerce also collect and provide data on internal prices at various locations, at both the wholesale and retail levels. Finally, the Rice Subcommittee of the Board of Trade (BOT) (which is composed of rice exporters) meets every Wednesday and announces export prices for various grades of Thai rice. At one time, these BOT announced prices were used by the Ministry of Commerce as minimum prices—any exporter selling rice below these prices would not be granted a license. This measure was easily circumvented by an offending exporter remitting illegal discounts through black-market, foreign-exchange transactions. In any case, this minimum-price measure is now moribund.

All the data thus made available have an impact on the income of many groups involved in the domestic rice trade. More importantly, they may affect Thai interests in the international economic arena. For example:

- In bumper crop years, to let the world know that Thailand has a lot of rice to unload on the world market may allow foreign buyers to depress the price they are willing to pay.
- If the export prices determined by the Rice Subcommittee of the Board of Trade in any way reflect reality, rival exporting-country governments could use them to set prices for their rice, and could use our prices to undersell Thai rice. Further, under its Food Security Act, the U.S. government must announce a "world price" every week; this price is then used to value the rice the government has in stock and that it wishes to unload. Any price reduction that Thailand may offer will be matched to the same extent (unless it can keep that reduction secret).

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WHERE DO ALL OUR RICE EXPORTS COME FROM?

During the triennium 1976-1978, Thailand exported an average of 2.2 million tons of rice. Only eight years later, in the period 1984-1986, the export volume almost doubled to an average of 4.3 million tons. In fact, in every year since 1984, rice exports never fell below 4 million tons. Such an export level is unprecedented in history. Where does all of this rice come from?

Since we are dealing with exports, we need to consider only nonglutinous rice. (Actually, Thailand does export some glutinous rice, but the annual export volume of 100,000 to 150,000 tons is quite small relative to the country's total production of about 3-4 million tons). Between 1976-78 to 1984-86, Thailand increased its export volume of nonglutinous rice by 2.26 million tons. The sources of this increase are a 2.36 million-ton increase in production, a 0.2 million-ton decrease in apparent consumption and a 0.3 million-ton increase in seed use (see Table 1).

At first glance, these figures appear to indicate that the key to increased exports is increased production. But Thai rice production increased steadily over the previous two decades without any such dramatic surge in exports. True, production growth between 1976-78 and 1984-86 was 3.6 percent per annum, higher than the 3.1 percent rate between 1961-63 and 1976-78, but inadequate to explain the export surge in the latter period.

The major change in the period since 1976-78 has been that the per capita consumption of rice has declined. Had the average Thai consumed rice at the same rate in 1984-86 as an eater did in 1976-78, the domestic demand for rice would be higher by 824,000 tons. Instead, between the two dates, rice consumption has fallen by as much as 20 percent. The increase in exports that has become possible is larger than the volume demanded by any single overseas market.

Interestingly, the per capita consumption of glutinous rice did not decline, but increased by 11 percent between 1976-78 and 1984-86. It is not clear why consumption of the two kinds of rice moved in opposite

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Should We Lie With Our Rice Statistics?

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Three alternative strategies may be used to release data:

- (1) Be completely honest and release the most accurate data possible;
- (2) Keep all information secret. Release whatever data there are only to a select few concerned officials; or
- (3) Issue misleading information to confuse foreign buyers and competitors.

Actually, strategies (2) and (3) are not that different. Thus, from about the beginning of 1985 to the beginning of 1989, the Rice Subcommittee provided very misleading information concerning export prices. This misinformation was not used at all by the U.S. in estimating the "world price." Thus, misleading information and ignorance are equivalent, a lesson taught us 2,000 years ago by Aesop in his fable of the shepherd.

The question still remains as to what the government should do about providing or not providing information. Let us first consider information on production levels. If decisions on export levels are made by the Foreign Trade Department of the Ministry of Commerce (as they were when export levels were set by quota), then the Department had to have the most accurate information on hand to make the best decisions. If, at that time, the Department could keep the information totally secret, it could possibly use that information to extract better prices from foreign buyers. If, however, some traders had the inside track on this information, they could have used it to exploit other traders or farmers who were not privy to the information. Furthermore, to enable the Foreign Trade Department to keep its information secret, departmental access must be confined to a very small number of personnel. Even if (in order to maximize the return to country) trading decisions were to be confined to a small number of very select and able personnel not subject to checks and balances, major errors could be made, as such decisions are ultimately subjective judgments.

In any case, the government gave up the quota system on rice exports in 1983. Consequently, it is now the exporters who decide upon the volume of rice to be exported. If this is so, they should be equipped with the best data possible in order to make the best decisions. "Best" decisions here imply not only that exporters' profits will be better—because they will trade more smartly. But, more importantly, these decisions should lead to more stable domestic prices because there will be less chance that exporters will end up exporting too much or too little rice.

Let us now turn to price information. As already pointed out, the information passed out by the Rice Subcommittee is now not much believed. This has not hurt Thailand (although it has made life difficult for researchers), but it has not helped the country either.

Competitors and would-be buyers now rely on information from buyers who have concluded deals with Thai exporters. Buyers have been forthcoming with that information, at least at times when prices are falling, because they can use the prices to bargain harder with suppliers and also because they can create an atmosphere for a further fall in prices. Some buyers buy on tender, and information on the winning bids is, in any case, public. Indeed, information from the buyers has been the main source of data for the U.S. government in its determination of the "world price."

Where Do All Our Rice Exports Come From?

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directions. A tentative reason is that glutinous rice consumption has been confined to the rural people of the North and Northeast (they are among the poorer groups in the country and their incomes may have fallen during the period) while nonglutinous rice eaters are among the more prosperous in the Kingdom whose incomes have generally increased. As the Thai rice consumption rate is already very high, one would expect income increases to lead to diet diversification away from rice and income declines to lead to increased dependence on rice.

Table 1 Decomposition of changes in export, production, and consumption of non-glutinous and glutinous rice in Thailand from average 1976-78 to average 1984-86

| | (000 ton rice) | |
|---|-------------------|----------------|
| | Nonglutinous Rice | Glutinous Rice |
| Export Quantity average 1984-86 | 4,333.6 | 142.0 |
| Export Quantity average 1976-78 | 2,075.6 | 114.1 |
| Export Quantity Increase | 2,258.0 | 27.9 |
| Distribution of incremental rice production | 2,355.0 | 874.3 |
| Increase (decrease) in Seeding (rice equivalent) | 334.0 | (7.7) |
| Increase (decrease) in Consumption | (237.0) | 854.1 |
| Increase in Export | 2,258.0 | 27.9 |
| Factors accounting for change in domestic consumption | (237.0) | 854.1 |
| Population increase | 797.8 | 543.2 |
| Increase (decrease) in per capita consumption | (1,034.8) | 310.9 |

Sources: - Export data are quoted from Department of Customs, Ministry of Finance. Production data are from the Office of Agricultural Economics, MOAC. Domestic consumption is the residual of Production-Export-Paddy reserve for seeding (equivalent to rice basis).
 - Quantity of paddy reserved for seeding is estimated by multiplying the next three years average of cultivated area by 12 kilograms of paddy.
 - Population data are the estimated figures released by the NESDB.