Thailand Development Research Institute

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Inquires on particular research projects should be addressed to the individuals or programs cited. Other inquiries, comments and suggestions for future issues will be welcomed and should be addressed to the Editor.

Photo on front cover shows Dr. Anat Arbhabhirama, TDRI President, Dr. Snoh Unakul, Chairman of the Board and Council at TDRI, Dr. Phaichitr Uathavikul and Dr. Thinnapan Nakata who have recently joined the TDRI research team, and Dr. Ammar Siamwalla, Program Director of the Agriculture & Rural Development Program at TDRI. *Related story on page 13.*

Assistant Editor: *Adis Israngkura* ***Assistant:*** *Sunee Yingpaiboonwong* ***Photographer:*** *Thawatchai Hataiprach*
Editor: *Lana Larsen*

ECONOMIC TRENDS

Hesitant Recovery and Prospects for Sustained Growth

A Comment on the World Development Report 1986

by Dr. Chaiyawat Wibulsawasdi

On the analysis of the economic trends of the 1986 World Development Report, I generally agree that several favorable developments in the past half-year, particularly the sharp decline in oil prices, the downward trend in interest rates and the more stable exchange rates, should provide an opportunity for sustained growth for the global economy in the coming years. However, the current short-term situation will be very crucial for the realization of such an optimistic outlook. I find the term "hesitant recovery" very fitting in describing the current pace of economic expansion in major industrial countries. In the US and Japan in particular, growth rates this year appear to be substantially lower than expected. This is definitely undesirable from the point of view of global economics. Some analysts even go as far as giving a warning of the possibility of a renewal of recession if appropriate actions by key industrial countries are not taken in time.

The Report's simulation showing the differences in the world economic performances during 1985-1995 between the Low case and the High case is revealing. No one can deny the desirability of raising GDP growth in industrial countries from the average of 2.5% in the Low case to 4.3% in the High case, and the corresponding export growth in developing countries from 3.2% to 7.5% with the subsequent increase of GDP growth in these countries from 4% to 5.9%.

To achieve the High case scenario a set of appropriate policy measures adopted by various countries is a prerequisite. Among others, I believe that policies leading to a close coordination and cooperation among countries, especially industrial countries, deserve urgent attention. Only if these actions are implemented at an early stage, can the High case scenario be more feasible.

First, I agree with the Report that industrial countries as a group should try to reduce the level of budget deficit in the long-run, hence provide a basis for sustained growth for the world. However, the short-term actions in key countries have to be complementary in order to allow for desirable effects on world economic expansion, i.e., the US has to cut down on its budget deficit. A successful implementation of this policy, however, will have a deflationary impact on the world economy. To compensate for this contractionary impact, it is essential that other major countries, such as Japan and W.Germany, which currently registered substantial surpluses in the current account and relatively small budget deficits, pursue more expansionary fiscal policies, at least in the short-run. Unfortunately, both Japan and W.Germany are still reluctant to adopt such a policy stance for fear of the repercussion on their domestic economies.

Dr. Chaiyawat Wibulswasdi

This presentation was originally given in Thai at the seminar on World Development Report 1986, organized by the World Bank in Bangkok, August 1986. Dr. Chaiyawat Wibulswasdi, is the Director of the Department of Economic Research, Bank of Thailand, and also a member of the TDRI Board of Directors and Council of Trustees.

This is the first area of coordinated policy actions for the benefit where the global economy can be put to test.

Secondly, on trade restrictions, the Report recommends an increasing reliance on world trade as a strategy for developing countries. The Report shows that trade restrictive practices in industrial countries affect developing countries more than other industrial partners. More importantly, agricultural trade is observed to face an increasing protection. The Report forecasted that the commodities prices in constant terms will continue to be depressed throughout the remainder of this decade and will rise only moderately between 1990 and 1995. This together with escalated protectionism in agricultural trade will be increasingly detrimental to developing countries, particularly those with serious debt problems.

While the Report supports the multilateral negotiation for trade liberalization in the GATT framework with participation from developing countries, it also admits that the process will be slow and significant trade liberalization is unlikely to be achieved before the end of this decade. We cannot wait that long. Actions have to be taken now by major industrial countries to roll back on existing trade restrictive measures, particularly by the US. This is another test of real willingness to have a coordinated policy for the sake of the global welfare.

Thirdly, on the debt problem of developing countries, the effective solution will require efforts of all parties concerned. Debtor countries have to pursue sound adjustment policies but with more growth orientation. Industrial countries should create a more favorable world trade environment for debtor countries to earn foreign exchanges as well as to stimulate their domestic growth. Additional financing must be provided by commercial banks, creditor countries, and international financial organizations. There is an urgen need to accelerate the efforts of all concerned which include, among others, finding an effective way to quickly implement the debt strategy based on co-responsibility initiated by the US since last year (The Banker Initiative)

In all three cases mentioned above, it is evident that policy actions by major industrial countries will be a key determinant of sustained growth for the world, particularly for the developing countries. The Report has pointed out that the World Bank in recent years has broadened its role in helping the world economy achieve a desirable growth pattern, particularly through appropriate policy design for developing countries. It is unfortunate that the World Bank does not have such influence in the critical policy actions of major industrial countries. Otherwise, the prospects for sustained growth would be brighter indeed.

Finally, the implications of the world economic scenarios to Thailand are as follows. Hitherto, Thailand has seemed to manage the unfavorable external environment. Both stabilization and structural adjustment policies over the past few years have yielded desirable results. Presently, the domestic inflation rate is at a low rate of about 2%. External balances are sustainable with the current account this year expected to register only a small deficit, not more than 1% of GDP. Growth performance, which will slow down to about 4%, can still be considered as adequate. As for the coming decade, the prospects for the world economy as outlined in the Report should provide an opportunity for Thailand to achieve a stable economic growth at a sustained rate of slightly more than 5%. Such a performance, however, requires the continuity of policy actions in certain areas and modification and initiation of some policy measures in others. The stance of a macroeconomic policy should still be on the cautious side but with more growth orientation. Reforms have to be made further in at least three key areas. First, in the production structure in order to allow for more absorption of the labor force and better distribution of income. Second, in the foreign trade structure in order to allow the country to cope with uncertainty and unfavorable elements in the world trade. Third, a proper mix between the role of public and private sectors in order to allow for the most efficient utilization of physical and financial resources of the country. This framework of policy management, I believe, is quite in line with the thrust of this year's World Development Report.

The New Keynesian Economics

For the past two decades, Keynesian economics has been under attack. A major source of the dissatisfaction has been the apparent discrepancy between Keynesian macro-economics and traditional micro-economic theory. While the central thrust of traditional micro-economic analysis was to establish that market economies are efficient, macro-economics was concerned with unemployment and inflation, with the seemingly persistent recurring malfunctions of market economies.

Recent attempts to reconcile micro-economics with macro-economics have taken on two forms. On the one hand, a school of thought which came to be called the New Classical School, sought to adapt macro-economics to the well-worn principles of micro-economics. They simply assumed that wages were flexible, that markets cleared. They "solved" the unemployment problem by assuming it away. The unemployment of the Great Depression became (to slightly caricature their findings) a temporary "fad for leisure"; changes in employment were all voluntary.

The New Keynesian view began with the premise that it was traditional micro-economic analysis that had to be reformulated, that the assumptions of perfect markets, perfect information, no transactions cost, etc., which underlay that theory were wrong, and seriously so. It began with the presumption that unemployment and credit rationing actually occurred, and it was the objective of macro-economics to explain these phenomena, not to assume them away.

At a recent TDRI in-house seminar sponsored by the Agriculture & Rural Development Program & HIID - Prof. J.E. Stiglitz of Princeton University and Consultant to HIID discussed three aspects of the New Keynesian economics: its analysis of labor markets, investment, and the role of monetary authorities.

Traditional Keynesian analysis simply assumed that wages were rigid. In fact, wages fell by a third in the Great Depression, and unemployment occurs in economies experiencing inflation, where the constraint on the downward rigidity of wages would not seem to be binding. The New Keynesian analysis argues that wages are partially rigid,

Dr. J.E. Stiglitz

that they change in response to economic circumstances, but that they may not fall to market clearing levels. Their theory is based on the hypothesis that workers' productivity depends on the wage paid. If this is the case, firms may be reluctant to hire unemployed workers, even if they offer to work at a lower wage, for to do so may actually increase the firm's total labor costs. (By contrast, the assumption that productivity would not be affected by lowering wages has played a central role in the traditional theory of demand and supply: if there was an excess supply of laborers, the unemployed were assumed to offer their labor services at a lower wage. The firm would hire these cheaper workers; as wages were thus lowered, the demand for labor increased, the supply decreased, until equilibrium was attained with the equality of demand and supply.)

When productivity depends on wages, there is a wage which minimizes labor costs per efficiency unit. This is called the efficiency wage, and accordingly these theories have come to be referred to as efficiency wage theories. If, at the efficiency wage, there is an excess supply of labor, the efficiency wage is still the market equilibrium wage, for it would not pay any firm to lower its wage. Several reasons were presented for the dependence of productivity

on wages: if firms pay higher wages, they obtain a higher quality labor force, their workers work harder, and there is less labor turnover.

In his analysis of investment behavior, Prof. Stiglitz emphasized the role of credit rationing and equity rationing, as opposed to interest rates, as affecting the level of investment. He argued that there had been insufficiency variability in real interest rates prior to 1980 to make these variations play an important role in economic analysis. Moreover, firms themselves claim that interest rate variations play relatively little role in their investment calculations. This is not surprising, given that they normally require a 20 to 25% return on their investment, and real interest rates have been in the order of 2 to 3%. Finally, Prof. Stiglitz noted that traditional neoclassical theory would argue that inventories should serve to smooth out economic fluctuations, while the evidence suggests that they tend to exacerbate them.

His analysis of credit rationing paralleled that of his analysis of efficiency wages: he argued that because default probabilities may increase with an increase in the interest rate charged (either because at higher interest rates, the pool of applicants is of lower "quality" or because higher interest rates induce more risk taking) lenders (banks) might not increase interest rates, even in the presence of an excess demand for credit. Moreover, he argued that in certain phases of the business cycle, firms could not raise additional capital on the equity market, or could do so only at a high cost; in effect, equity was rationed. The consequence of this, combined with the absence of futures markets and risk averse managers, is that any production decision imposes a risk upon the firm, and that when the working capital of the firm is reduced, firms' willingness to produce will be reduced.

Finally, Prof. Stiglitz argued that the way that monetary authorities affect the level of economic activity was through their effect on credit availability, rather than through interest rates. The New Keynesian theories also explain why monetary policies may be more effective in reducing demand in boom periods than in stimulating demand in recessions.

Technology Development for Infant Industry Protection

The validity of infant industry protection has long been a subject of intense debate. The argument in favor starts from the notion that infant industries must endure a period of technological learning during which they can not be internationally competitive. It goes on to assert that they will therefore not develop without direct government support to offset the initial lack of international competitiveness. Neoclassical economics offers the strongest counter-argument, which questions the inference that the appropriate offsetting policy is support for particular industries rather than some more general form of intervention.

The argument here starts by noting that only those infant industries which can eventually become internationally competitive should be developed. Indeed, only those that can become sufficiently competitive to earn enough profits to offset the initial costs of learning should be established. This being so, private investors would develop such industries if capital markets functioned perfectly, so as to enable investors to obtain the financing needed to cover the initial losses. Hence the problem, if any, may lie in capital markets. Alternatively, initial investors in infant industries may not be able to appropriate the full fruits of their investments, as would occur if labor trained at their expense leaves to work in other firms. But here the problem lies in the labor market. Similar reasoning with respect to other possible "externalities" leads neoclassical economics to conclude that the problems are best attacked by measures that do not target specific industries. In other words, infant industry protection deals with the symptoms instead of the causes.

Based on a paper co-authored with Dr. Howard Pack, Dr. Larry E. Westphal of Swarthmore College and consultant to HIID developed a case against this assertion. First, believing that analysts must be pragmatic in addressing policy issues, Westphal proposed that it was highly significant that countries like Korea had obviously used in-

fant industry protection with highly successful results, judged by the rapid attainment of international competitiveness. This shows the potency of infant industry protection when policy making and implementation are unstintingly directed toward the rapid attainment of international competitiveness.

The sad fact is that most governments are unable to pursue this objective with unbending resolve. Westphal went on to surmise that Korea's commitment to aggressive export-led growth, which has involved far more than mere export incentives, has been fundamental to the successful management of infant industry protection.

Having established that infant industry protection can "work," Westphal went on to examine the underlying assumptions of the neoclassical argument. He focused on the misperception of technology that underlies it. Research on technological development in a number of less developed countries shows that technology is not perfectly tradeable, even though there is ample trade in the elements of technology. It is not perfectly tradeable because the understanding, or capability, required to employ technology is tacit and can only be acquired through experience using it. Moreover, the understanding of local circumstances needed to tailor technology to use it effectively is equally tacit. In addition, there are obvious costs in transferring information across large physical and social distances. It follows that indigenous technological capability can be a source of international competitiveness, not only in terms of cost but also in terms of innovations involving advantageously differentiated processes and products. Indeed, the latter are simply not tradeable insofar as they are based on combining highly tacit understanding of technology and of the circumstances surrounding its use. Reasoning along these lines, Westphal concluded that technological development generates extensive external economies in local markets for technology. Noting that these externalities are associated with investments characterized by indivisibility, he went on to show that they are easily seen to be important sources of market failure in the development of infant industries. Thus the problems associated with infant industries are industry specific and are more serious than generally conceded by neoclassical economics.

Dr. Larry E. Westphal

In sum, the rationale for infant industry promotion rests importantly on failures associated with markets for technology. Thus, the promotion, if not protection, of specific infant industries has ample theoretical justification. But the emphasis must be put on technological development, not simply on developing production. As to which infants to promote, Westphal's parting comment indicated there is undoubtedly more scope for choice than implied by conventional understandings of comparative advantage. After all, the thrust of his discussion was that comparative advantage is, to a large extent, man-made (if not easily attained, but therein lies another discussion).

This article is based on the paper "Industrial Strategy and Technological Change: Theory versus Reality" by Howard Pack and Larry E. Westphal and was written by Dr. Westphal for the TDRI Quarterly Newsletter. Dr. Westphal presented the paper at a TDRI in-house seminar sponsored by the Industry, Trade & International Economic Relations Program at TDRI and the Harvard Institute for International Development (HIID).

The Horn – Drums are Coming

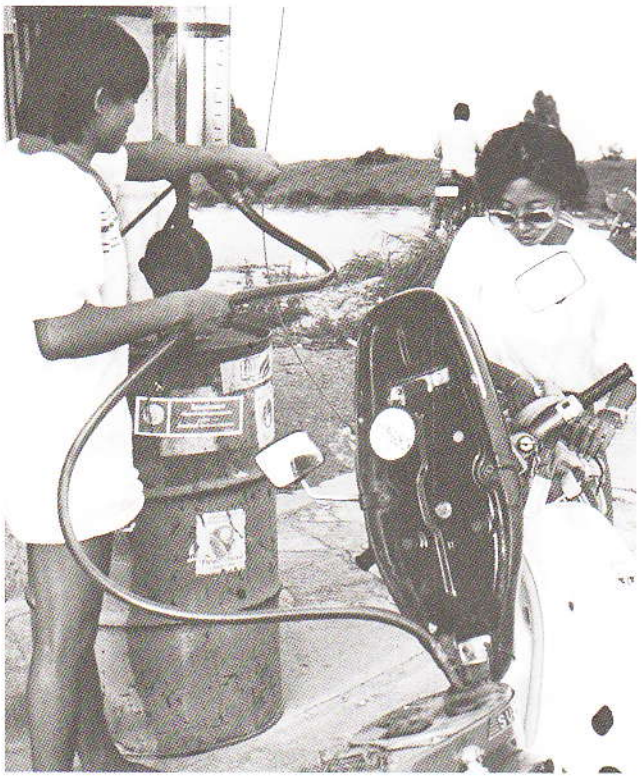
Where do you think most people go to buy their regular gasoline? A logical answer would be at retail gasoline stations of course, as it seems quite natural for people to fill-up their vehicles at the stations which are conveniently located along major streets throughout the country. That's a logical answer, but not a practical one, at least in Thailand where between 80-90% of the total regular gasoline consumed is by motorcycles.

If you have had a chance to travel on rural roads, you may have noticed a relatively significant number of motorcycles and pick-up trucks. You may have also noticed many shacks dotting the roadsides, each having one or two 200-litre gasoline drums. These shacks, numbering in the tens of thousands throughout Thailand, are in fact true "retail outlets" for regular gasoline. A surprising fact is that, according to a leading oil company estimate, at least 70% (850 million litres) of total regular gasoline in this country was sold at these shacks last year.

One of the reasons for the increasing popularity of this business is its simplicity. The unit, dubbed "horn-drum" from its appearance, is manually operated. On each drum there is a hand pump with a cylinder-shaped sight glass on top. An operator pumps gasoline into sight glass for measurement, then fills the motorcycles by gravity-flow. Since the unit is manually operated, it can be located anywhere. When the drum is empty, the operator (usually also the owner of the outfit) simply puts the drum into the back of a pick-up truck to be refilled at the nearest retail gasoline station.

Rural motorcyclists prefer horn-drum outlets to retail stations because of their practicality. Firstly, horn-drum pumps are conveniently located along rural roads, at shop-houses, or even at off-the-road locations whereas retail stations are only built in cities, or by major highways. Secondly, horn-drum pumps are ideal for rural buyers making small purchases -- with 10 or 20 baht (US$ 0.3-0.7) being the most common amounts.

The horn-drum business appears to be quite profitable despite its small volume nature. One of the reasons is its low capital cost; a horn-drum set only costs about 1,200 baht (US$ 46). Another reason is its low operating costs since it is completely manually operated usually by the owner. Moreover, the sight glass is normally calibrated by the amount of purchase, so small amounts of profit can be assured.



The upcountry horn-drum business has now expanded to include high-speed diesel for pick-ups and "iron-buffalos" (locally assembled tractors), as well as lubricants. The number of pumps are also on a rapid increase since they are facing no direct competition from retail stations as it is unlikely that retail stations will be able to spread out sufficiently into remote areas. Therefore, it appears that horn-drum pumps are here to stay.

by Dr. Tienchai Chongpeerapien

The "horn-drum" phenomenon was discovered during the course of a study on "The Competitiveness in the Oil Industry" by Dr. Tienchai Chongpeerapien and Mr. William G. Matthews of the Energy, Infrastructure and Urban Development Program at TDRI. Attention has been focused on the horn-drum phenomenon as it accounts for up to 70% of total sales of regular gasoline in the country and the existence of horn-drums in remote areas could have an positive implication on the use of farm mechanization in the agricultural sector.

VIEWPOINT

Environmental Quality Management : A Crisis of Confidence

by Dr. Dhira Phantumvanit

When "pollution" became a household word in the early 1970's, some international gurus were saying that it was a symptom of affluence. However, for developing countries, the "pollution of poverty" deserved more attention; the alleviation of poverty demanded all the meager resources at their disposal. Smokestacks were synonymous with progress and pollution control could wait.

Fifteen years later, even in the classified "newly industrializing countries" like Thailand, such an attitude still prevails. We allow the "klongs" (canals) of Bangkok to become natural sewers, devoid of oxygen for most of the year. When it was learned that it would cost more than 36 billion baht for a proper sewerage system, the price tag was labelled as excessive and the Chao Phya River continues to degenerate at an increasing rate proportional to the burgeoning population of the capital city.

Now, pollution has been elevated to a higher degree. Pollutants are not only noxious, some of them are deadly. There are ample evidences -- the Bhopal accident in India where methyl isocyanate insecticide-compounds killed more than 2,000 men, women and children; the Mexico City tragedy where 452 people died in the inferno at a gas depot; and the recent Chernobyl accident which brought to life "the China Syndrome" resulting in the death of more than 30 persons. These successive events confirm that environmental disaster can strike anywhere, at any time.

This point was finally brought home by the tantalum riot in Phuket in which a newly constructed tantalum plant and a hotel were set on fire. By all accounts, this costly experience could have been avoided. When tens of thousands of ordinary citizens took to the street to defend their rights, their motives could not be challenged. The fear of pollutants and environmental hazards, albeit unfounded, had to be reckoned with.

What have we learned from this tragic episode? Unfortunately, nothing much has changed as far as governmental procedures in handling environmentally-controversial projects are concerned. The proposed cable car project of Doi Suthep has become another casualty. Investors again were helpless against the tide of discontent of the general public, resulting in a waste of both their time and money.

When issues become murky, it is the responsibility of the government to clarify them. The public can often be misinformed and confused, whereas investors are constrained by their limited financial objectives. It is the government who must take the lead in clarifying the technical details so that a consensus can be secured.

The tantalum incident has confirmed that people at large are willing to take environmental matters into their own hands. It is the government who must be more receptive to the changing tunes. Governmental procedures for granting operating licenses should be more sensitive to the public concern. Environmental impact assessment should be more open, serving as a safety-valve for heated public debate before it reaches the boiling point.

Thailand always takes pride in being a country of consensus. Harmony has always been the key word in running our society. The tripartite partners -- the public, investors, and government--can continue to prosper together. To be able to do so, the government must serve as the manager to resolve environmental crises. The confidence in its management must be restored.

Dr. Dhira Phantumvanit is the Associate Director of the Natural Resources and Environment Program at TDRI.

Rural Land Use Project

Thailand's past National Development Plans have generally stressed the expansion of agricultural production, land productivity and agricultural exports. The emphasis on growth has resulted in the expansion of agricultural activities on to more marginal lands; with minimal regard for productivity or suitability of those lands. Competition for land and encroachment into underdeveloped forest areas have deteriorated land, forests, water and other natural resources to the point of setting the stage for ecological disaster in some areas.

The Sixth National Development Plan recognized the need to formulate a coherent national policy on natural resources development. The Rural Land Use Project will serve as a mechanism through which plans and policies can be rendered into action programs in the land and forest section of the Sixth Plan.

The Prime objective of the Rural Land Use Project is to stimulate land resource based economic activities in such a way as to ensure maximum value added consistent with sustained yield. The Project will assist the Royal Thai Government (RTG) in developing policies and administering land resources to provide intensive and sustained crop and forest production, and to rationalize land requirements for other rural activities.

In this connection, the Thailand Development Research Institute (TDRI) has been chosen by the National Economic and Social Development Board (NESDB) to conduct studies for the Rural Land Use Project in order to provide the NESDB with:

a) Feasibility studies of the many activities as proposed in the Rural Land Use Project and

b) Proposal background papers in the cases where additional funding is required.

The research team was composed of Mr. A.M. Zola, who served as the Project Director; Dr. Thongroj Onchan, as Deputy Director; and Mr. Sophon Chomchan, Project Coordinator. Besides the main report, six sub-reports, covering detailed descriptions of each component of the Rural Land Use Project were produced. A report on the financial and economic analysis of the Project was also prepared.

Through field surveys and data collection, the TDRI research team conducted an analysis to point out priority projects which would satisfy the needs of related government agencies, the objectives of Sixth National Economic and Social Development Plan, and the available budget.

The Rural Land Use Project consists of five components operating through three RTG agencies -- the Land Development Department, the Royal Forestry Department and the NESDB -- over a five year period (FY 1988-1993). The following table lists the components, the related activities and management areas.

The total Project costs, using 1986 prices, are estimated to be 1,232 million baht ($US 46 million). The Economic Rates of Return of the Project have been calculated to be 21% for the STK component, 14% for Highland Watershed and 15% for Land Management.

Components, Activities and Management Areas of the Rural Land Use Project

Components	Activities	Management Areas
1) Highland Watershed Development	- watershed plantation	125,000 rai
	- plantation maintenance	125,000 rai
	- fireline construction	1,556 km.
	- fireline maintenance	2,179 km
	- forest road construction	600 km
	- forest road maintenance	2,102 km
2) Land Reclassification	- identify encroached areas	136 million rai
	- land reclassification and land use plans	30 million rai
3) STK	- issuance of STK documents	489 forest reserve 26.3 million rai
4) Land Management	- soil and water conservation demonstrations villages	61 villages
5) Land Policy and Management Center (LPMC)	- establishment of a Land Policy and Management Center	1 center

Vegetable Oil and Animal Feed Model for Thailand

Feed grain, vegetable oil, animal feed, and meat are a closely knitted industrial complex.

The objectives of the government policy in these industries are to protect the consumers from the higher price of meats, vegetable oils and lard on the one hand, and to keep a high price for agricultural products to protect the farmer on the other. The government will have to be very careful because a change in one industry will have a repercussion on all other industries.

In order to arrive at the appropriate policy, TDRI Research Fellow Dr. Suthad Sethboonsarng in collaboration with Dr. Piyaswasdi Amaranand at the NESDB, constructed a model to quantify the linkage among these industries and the rest of the economy. The vegetable oil and animal feed model is an economy-wide general equilibrium model which highlights linkages among feed grain, vegetable oil, animal feed and meat industries. This model can trace the impact of government policy on each sector and the rest of the economy.

The simulation results of the model have shown that the government intervention in the import of soybean meal is an important policy in this industrial complex because it has a wide repercussion on all other sectors. The import tariff and quota system directly benefit the soybean meal producer. However, the abolition of this protection would lower the welfare in the economy because the lower price of imported soybean meal would suppress its domestic price and consequently the price of soybean itself. This would affect the income of the soybean grower.

Moreover, the lower price of soybean meal would lower the cost of chicken production which is relatively more soybean-intensive when compared with other meats, especially pork. The substitution of pork by chicken would reduce the demand for pig feed. The demand for rice bran, which is an imporant ingredient in pig feed, would be reduced. The lower price of rice bran would lower the price of rice and consequently the income of rice farmers in the rural areas.

Since the underlying objective of the government is to protect the soybean grower and maintain the price of final consumer products, it is proposed by the TDRI study that a variable levy system would be a more effective government policy. The variable levy aims to maintain the domestic price of soybean at the target level and the impact on the other sectors would be off-set by a package of tariff instruments.

Using 1982 as the base year, it was found that the farm-gate price for soybean should be maintained at 6.50 baht per kilogram. To maintain this price an import tariff of about 10% should be imposed. A 10% import tariff on soybean oil and all other vegetable oils will be needed to compensate for the increase in the cost of soybean. A 10% import tariff on soybean meal will be required based on the same argument. However, because of the impact on rice bran and the repercussion on rural income, it is found that the optimum import tariff on soybean meal that will maximize national income (given the import tariff on soybean) is about 12%.

The simulation result of the abolition of the protection on the import of palm oil shows little impact. However, an import policy is not relevant now because Thailand has become an exporter of vegetable oil. The relevant question is how to make vegetable oil competitive in the world market and how to ease the vegetable oil industry in this transition from an importer to an exporter of vegetable oil. In particular, the coconut grower who is suffering from the lower price of coconut oil will have to search for alternative crops. The government may assist the farmer by providing information about these alternatives. But protecting the coconut grower by subsidizing its price is not desirable because it will keep the coconut grower in this less efficient industry.

A summary report of the Vegetable Oil and animal feed model for Thailand by Dr. Suthad Sethboonsarng, Research Fellow in the Agriculture and Rural Development Program at TDRI, will be available to the general public soon.

Second Phase Import Substitution in Thailand

Thailand has gone through several stages of industrialization. During the 1960's government attention was toward import substituting industries while during the 1970's the government focused more on export oriented industries. Since late 1970's an attempt to promote a second phase of import substitution has been observed, especially in heavy industries, together with continuation in the promotion of export oriented industries. A recent TDRI study has focused on the import substitution industries which have recently been receiving promotion, namely, the small farm tractor, diesel engine and the petrochemical industries.

The tractor industry was able to substitute for imports without protection or assistance from the government for over a decade before 1980, because of its distinct characteristics and low price. However, due to the industry's slow productivity growth, it has suffered since the early 1980s from the competition of low-priced secondhand products imported from abroad. The industry needed protection from the government to continue its production, especially in the present difficult time of low farm prices and incomes.

The diesel engines for agricultural machinery industry started domestic production to substitute for imports in 1980. It is still at the infant stage and recently more protection has been granted for the industries to meet the requirements of appropriate technology and local content. There has still been no indication of how soon the industry will be able to outgrow its infant stage. Meanwhile, there are two more projects concerning import substitution to be started soon. They are the production of diesel engines for small motor vehicles and the production of petrochemical products. The growth of diesel engines for the small vehicles industry seems to depend on the price structure of diesel and gasoline fuels. More motor vehicles are mounted with diesel instead of gasoline engines, partly because the price of diesel has been set to be much lower than the price of gasoline. In order to ensure the growth of this industry, it is necessary that the present fuel price structure be maintained. The potential for the products to be exported is narrow because they cannot be exported to countries where the prices of fuels are closer to the world prices.

The petrochemical project is a large and capital intensive project which requires financing from abroad. Domestic production can certainly add value to the recently discovered natural gas in the Gulf of Thailand and it can also provide a regular supply of

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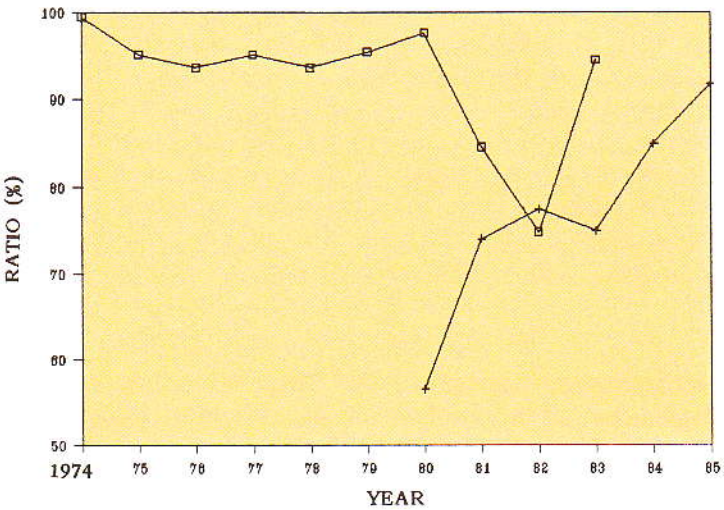
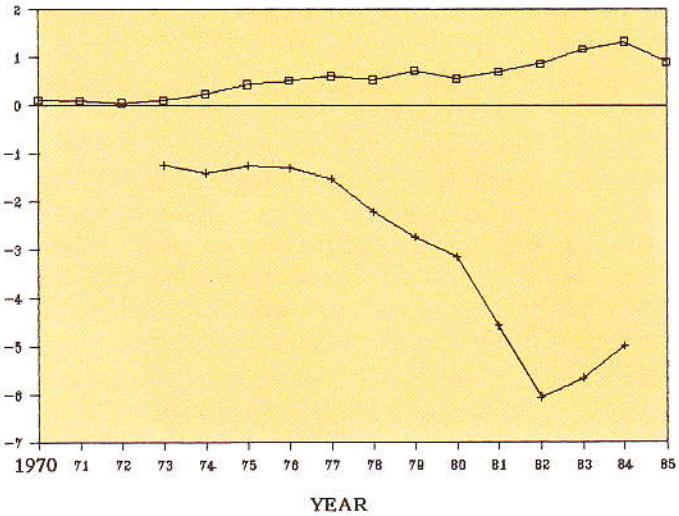
SELF-SUFFICIENCY RATIOS



□ SMALL TRACTORS + DIESEL ENGINES FOR AGRICULTURAL MACHINERY

EFFECT OF ENERGY PRICE DIFFERENTIALS ON THE DEMAND FOR VEHICLES DIESEL ENGINES



□ QUANTITY DEMANDED FOR VEHICLES DIESEL ENGINES (100,000 units) + PRICE DIFFERENTIALS BETWEEN SIESEL AND REGULAR (baht)

PEOPLE AND ACTIVITIES

Anat Elected Chairman of the IHP

TDRI President Dr. Anat Arbhabhirama has been newly elected as the Chairman of the intergovernmental Council of the International Hydrological Program (IHP) in the United Nations Educational, Scientific and Cultural Organization (UNESCO).

The composition of the Intergovernmental Council of the IHP includes members from 30 countries from around the world and the list of member states having designated a national committee or a national focal point for the IHP totals 138.

Dr. Anat has achieved world-wide recognition in the water resources field and has been responsible for a number of successful water resources development projects in Thailand as well as in other developing countries. He was elected to the post at the Seventh Session of the IHP Intergovernmental Council meeting held in Paris on June 18-23, 1986.

Dr. Anat Arbhabhirama (center) at the meeting of the International Hydrological Program (IHD) held in Paris.

Prem Appoints 3 from TDRI as Advisors

Prime Minister Prem Tinsulanonda has recently announced the names of his 9 member Advisory Board, headed by Pol Lt Charn Manoodham. Of the 9 advisors appointed, 3 are from TDRI -- Dr. Anat Arbhabhirama, Dr. Virabongsa Ramangkura, and Dr. Thinapan Nakata.

Dr. Anat is the President of TDRI and Program Director of the Natural Resources and Environment Program. He was formerly Minister of Agriculture and Cooperatives in the Prem II coalition, was an advisor to the Prime Minister during the previous coalition. He will serve as the Prime Minister's economic advisor along with Dr. Virabongsa.

Dr. Virabongsa, former dean of Chulalongkorn University's Economics Faculty, is currently the Macroeconomic Program Director at TDRI.

Dr. Thinapan, former dean of the School of Public Administration, NIDA, has recently joined the research team at TDRI. He will serve as political advisor to the Prime Minister.

The Advisory Board serves to counsel the Prime Minister on a wide range of issues -- political, economic, social, foreign affairs, etc.

Snoh, Phaichitr, Thinapan and Ammar Honored

Dr. Snoh Unakul, Dr. Phaichitr Uathavakul, Dr. Thinapan Nakata and Dr. Ammar Siamwalla were honored recently at a reception given by Dr. Anat Arbhabhirama, the President of TDRI.

The occasion was to congratulate Dr. Snoh Unakul, the Chairman of the Council and the Board of TDRI, for his honorary doctorate degree in Commerce and Accountancy from Thammasat University; to welcome Dr. Phaichitr Uathavakul the former Deputy of Finance and the Executive Director of the World Bnk who will assist TDRI as an expert consultant for the Management of Economic and Social Development Project; to welcome Dr. Thinapan Nakata, the former dean of the school of Public Administration at NIDA and advisor to the Prime Minister, for joining the research team at TDRI as team leader of the Management of Economic and Social Development Project; and to congratulate Dr. Ammar Siamwalla, the Program Director of Agriculture and Rural Development at TDRI, for his award by the National Research Council as distinguished researcher in economics for 1986.

Snoh Promotes Thai/Canadian Policy Research

Dr. Snoh Unakul, Secretary General of the National Economic and Social Development Board (NESDB) and Chairman of the Council and the Board of TDRI has just recently returned from a trip to promote Thai/Canadian economic relations and to establish working relationships between TDRI and Canadian policy research institutes. Dr. Snoh met with many prominent figures in the government, private sector and in the policy research field. Among these were Mr. William H. Neville, Chairman of Public Affairs International Ltd. and Dr. A.R. Dobell, President of the Institute for Research on Public Policy, both of whom are members of the TDRI Council of Trustees. Other important meetings were with the Canadian National Conference Board, the C.D. Howe Institute, and the Asia Pacific Foundation.

USAID/IIED/TDRI Collaboration on Natural Resources Profile

Aside from reviewing the situation and trends in natural resources development of the country, the on-going TDRI project "Thailand's Natural Resources Profile" is also serving as the national counterpart complementary to the research work of the International Institute on Environment and Development (IIED) World Resources 1986. During a recent visit to TDRI in August this year, Mr. David Runnalls, Vice President of IIED finalized the linkage between the two institutes offering to provide a consultant to assist TDRI in finalizing the report to be printed by the end of the year.

In this connection, USAID-Bangkok, through its Regional Environment Advisor, Mr. Will Knowland, has collaborated with TDRI both in analyzing the information compiled in the course of the current study and in formulation a program for the following phase.

Electronic Mail – box in Operation at TDRI

TDRI on-line data communication through the EMAIL system has progressed up to the point where users can send information to Canada, the USA, Singapore, etc., within a few seconds. The Institute for Research on Public Policy (IRPP) of Canada through the auspices of Dr. A.R. Dobell, IRPP President and also TDRI Council of Trustees member, and technical assistance to make these facilities possible.

In addition to Envoy 100, through which TDRI can obtain an access to the IRPP and the Biosphere Group, TDRI has now established linkages with SHARP APL Message Processing Facility through TYMNET and TELENET networking systems. This provides TDRI an access to users of SHARP APL throughout the world. Messages have already been delivered to the World Bank. Information to be delivered can be prepared by the IBM Personal Editor (PE) on a floppy diskette and transactions can be made through the micro-computer in the library.

Khun Poonsin Wongkoltoot, Information Specialist from the Natural Resources and Environment Program and Khun Chairat Jitkaew, Computer Technologist from the S&T Development Program demonstrating the use of the electronic mail-box system.

Announcing the TDRI Year – End Conference "Resources Management"

The Thailand Development Research Institute (TDRI) is in the process of finalizing plans for the 1986 Year-end Conference.

The objectives of the TDRI year-end conferences are to attract attention to national policy issues, to address the country's development agenda based on economic and social development plans and other critical issues of the time, and to attract eminent scholars and researchers from Thailand as well as from abroad who can provide insight into the development problems and issues facing Thailand.

The theme of this year's conference is "Resources Management". The discussions will focus on three major areas:

- **Financial Resources Management**
- **Human Resources Management**
- **Natural Resources Management**

The conference is to be held December 13-14, at a major hotel outside Bangkok (conference facilities are still being negotiated). Funding for the conference is being provided by The Asia Foundation with supplementary funding from participants.

TDRI has held two major national level conferences in the past. Both have been highly successful in meeting the confernce objectives. The first major conference was in December, 1984, entitled "Development Research and National Development". This was the first seminar of its kind ever to be held in Thailand. The output from this seminar confirmed the need for a national policy research institute and laid the groundwork for the future direction of TDRI. The second TDRI year-end conference entitled "New Dimensions for Development" was held in Pattaya on December 14-15, 1985, in cooperation with the NESDB and financed by The Asia Foundation. The conference received extensive coverage by the mass media and was evaluated as a productive, efficient, and useful way to address the country's development problems.

For additional information on the 1986 TDRI Year-end Conference, please contact Khun Rajada Roberts or Khun Prasith Chantrdee at TDRI.

Second Phase Import Substitution

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feedstock to the plastics and plastic products industry. However, the project's feasibility seems to decrease under the present declines in oil prices and world demand. Since the project will take a long time to recoup the returns, the question of dynamic comparative advantage of the project has to be seriously evaluated. In addition, the strategy of what to do after the domestic energy is exhausted has to be spelled out.

The Second Phase Import substitution in Thailand is part of a project on "ASEAN Cooperation in Second Phase Import Substitution" which is funded by the Asian and Pacific Development Center. Dr. Narongchai Akrasanee and Dr. Paitoon Wiboonchutikula have been appointed as the researchers on the Thai part. The mid-term review meeting of the above project will be held in Bangkok during September 12-13, 1986. Comments on the aforementioned findings are welcomed.

PUBLICATIONS

The following list includes publications currently available from the Publications Office at TDRI. To ensure prompt handling of requests, include payment where applicable. Other publications such as the TDRI Report 1985, TDRI monthly newsletter and the TDRI brochure may be obtained free of charge.

"National Strategy for Major Accident Prevention in the Chemical Industry", by Dhira Phantumvanit and others, Jan., 1986, ฿ 200.

"Clean Technologies for the Pulp and Paper Industry, the Textile Industry and Metal Coating and Finishing in Thailand", by Dhira Phantumvanit and others, Feb., 1986, ฿ 200.

"Population Policy Background Paper for the Sixth National Economic and Social Development Plan", by Chira Hongladarom and others, Jan., 1986, ฿ 300.

"Export Industries and Export Promotion Policies of Thailand", by Juanjai Ajanant, April, 1986, ฿ 100.

"นโยบายการรักษาเสถียรภาพราคาไก่เนื้อ" (Policy on the Stabilization of Chicken Prices), โดย ดร. สมนึก ทับพันธ์, มีนาคม 2529, 100 บาท

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