

Competition Policy, Technology Policy, and Philippine Industrial Competitiveness

Epictetus E. Patalinghug

Abstract

The disappointing performance of the Philippine industrial sector in the past five decades has been attributed to several factors such as the lack of a stable macroeconomic environment, poor infrastructure, low productivity, low savings rate, and an overvalued currency.

This paper attempts to summarize the link between competition policy, technology policy, and industrial policy, and suggests direction for future industrial policy. It gives a brief discussion on recent Philippine industrial development; analyzes the scope and elements of competition policy; and gives an assessment of industrial policy in the Philippines.

Introduction

The disappointing performance of the Philippine industrial sector in the past five decades has been attributed to several factors such as the lack of a stable macroeconomic environment, poor infrastructure, low labor productivity, low savings rate, and an overvalued exchange rate. Export, investment, and growth performance of the sector have likewise failed very poorly relative to its ASEAN neighbors.

The Philippine industrial structure used to be highly protected and its capital-intensive bias led to absorption of only a small fraction of the labor force, while

the agriculture and services sectors absorbed the bulk of the labor force. This traditional industrial structure was directly responsible for the absence of a strong export growth in non-traditional manufactures.

In the past, several studies had identified the adverse effects of the import-substitution strategy that was anchored on high tariff, quantitative restriction, and overvalued exchange rate. No structural change took place and a high degree of concentration in manufacturing activities existed. Incentive availment was dominated by firms located in Metro Manila, and the incentive structure was biased against labor-intensive firms.

However, in 1993-1998, policy reforms aimed at increasing the competitiveness and efficiency of the industrial sector were initiated. Liberal foreign investment laws were implemented, and the foreign exchange market was deregulated. Airline, banking, telecommunications, and oil industries were liberalized; privatization of public enterprises was encouraged; and tariff rates were rationalized. Evidently, the macroeconomic environment tremendously improved during this period. And infrastructure development was gradually addressed through build, operate and transfer (BOT) schemes. But the problems of overvalued exchange rate, low savings rate and poor productivity have remained. The goal to reorient the economy towards investments, trade and exports is gradually being addressed by the government. In addition, the Medium-Term Philippine Development Plan (MTPDP) has specified the need to attain international competitiveness in selected industries.

This paper attempts to summarize the link between competition policy, technology policy, and industrial policy and suggests direction for future industrial policy. Section II gives a brief discussion on recent Philippine industrial development. Section III provides an overview of Philippine competition policy. Section IV discusses technology policy. Section V explains the link between productivity and technology. Section VI gives an assessment of industrial policy. Section VII surveys the literature on industry analysis. Section VIII suggests direction for competition policy and industrial policy. And Section IX gives the concluding comments.

Industrial sector performance

Industrial planning is a major component of the integrated national physical development plan which aims to rectify interregional disparity by a fully market-driven development. Industrial promotion through effective use of regional resources will not only rectify regional disparities but will likewise make economic development plans consistent with physical development and land-use plans. The contribution of the industrial sector to economic growth and development can be maximized given an integrated national physical planning framework. This kind of comprehensive planning must provide a road map to develop industrial competitiveness and avoid policies that tend to (a) develop capital-intensive industries in labor-surplus regions, (b) favor urban locations over rural areas, and (c) promote large-scale import substituting industries at the expense of export-oriented small and medium enterprises.

The industrial sector grew at 3.2 percent during the 1987-1992 period and at 4.7 percent during the 1993-1998 period. It was targeted to grow at an average annual rate of 7.3 percent for the 1993-1998 period. The industrial sector contributed 35.1 percent of gross domestic product (GDP) and accounted, on the average, for 15.5 percent of total employment from 1987 to 1992. The share of the industrial sector in GDP was targeted at 36 percent in 1998, but its actual share was 35.2 percent. Within the industrial sector, manufacturing grew at an increasing trend from 1992 to 1995, but increased at a decreasing rate between 1995 and 1997 and had

**Table 1. Gross domestic product: industrial sector
(growth rates, in percent)**

Program	1987-1992	1993	1994	1995	1996	1997	1998
Industry	3.2	1.6	5.8	6.7	6.4	6.1	-1.7
Mining and Quarrying	-1.0	0.7	-7.0	-6.8	1.3	1.7	1.8
Manufacturing	3.6	0.7	5.0	6.8	5.6	4.2	-1.1
Construction	6.9	5.7	8.9	6.5	10.9	16.2	-8.1
Electricity, Gas & Water	1.9	2.9	13.9	13.0	7.5	4.8	4.4
GDP	3.3	2.1	4.4	4.8	5.5	5.2	-0.5

Source: *The President's Socio Economic Report, 1994, 1995, 1996, 1997, and 1998 Medium-Term Philippine Development Plan, 1993-1998*

negative growth in 1998. The utilities sector followed the same pattern, but grew at a higher level than manufacturing. However, the growth of all industry subsectors slowed down abruptly in 1998 due to the effect of the Asian financial crisis. The most hard-hit sector was construction (see Table 1). Although the economic plan (e.g., Medium-Term Philippine Development Plan, 1993-1998) promotes the production of high-valued commodities for the domestic and export markets, the export performance between 1997 and 1998 indicates that the Philippines' top-three exports are concentrated in low value-added commodities. Furthermore, it is likewise interesting to point out that Philippine merchandise exports are concentrated in three products (garments, semiconductors, and electrical machinery) which are vulnerable to instability in the export market.

An overview of Philippine competition policy

Competition policy consists of measures intended to promote a more competitive environment as well as measures designed to prevent a reduction in competition. Examples of measures intended to promote a more competitive environment are policies to ease entry into the banking industry, and policies to encourage more players in the shipping, airline, and oil industries. Examples of measures designed to prevent a reduction in competition are policies to discourage mega-mergers in deregulated industries and policies against unfair business practices in liberalized industries. There are two major views on competition policy. One view advocates that competition policy should be directed towards modifying market structures and imposing constraints on a firm's behavior. The other view argues that competition policy is unnecessary because efficiency prevails regardless of market structure. The first view advocates breaking up or regulating monopolies which are protected by entry barriers or preventing firms from holding dominant market position through mergers. The second view argues that policy should be focused on factors which make it difficult for new entrants to compete with established firms. The first view exemplifies the move to establish a national framework for competition policy. This view believes that there is a need to establish a national competition policy to prevent firms from undertaking anti-competitive practices.

Economies that have established an effective competition policy have embraced both market-structure view and efficiency view of competition policy. Thus, competition policy should cover all measures (laws, regulations,

procedures, and policies) that directly or indirectly influence firm behavior, managerial decision-making, and industry structure. The absence of government intervention does not necessarily guarantee a more competitive market environment because anti-competitive and unfair business practices might emerge. Competition policy therefore aims at ensuring that as government barriers go down, business barriers do not go up.

An effective competition policy must have the following elements: (a) policy towards monopoly, (b) policy towards mergers, (c) policy towards restrictive and anti-competitive practices, (d) policy towards state entry barriers, and (e) policy towards consumer protection.

The 1987 Philippine Constitution prohibits anti-competitive practices. It applies the “rule of reason” on monopolies. Monopolies are not prohibited “per se”, but only when the public interest so requires. Combinations in restraint of trade and unfair competition are prohibited without exception. However, the 1987 Constitution provides no imposable sanctions for violations of this provision.

Article 186 of the Revised Penal Code (1930) describes the acts punishable, such as monopolies and combinations in restraint of trade, and the penalties imposable, such as imprisonment or fine ranging from two hundred to six thousand pesos (or both). Article 186 of the Revised Penal Code is similar to Section 2 of the Sherman Act (1890) which was a major legislation that brought competition law into the limelight in the U.S.

Other special laws and statutes contain provisions dealing with competition policy. For instance, Republic Act 3247 (An Act to Prohibit Monopolies and Combinations in Restraint of Trade, 1961) provides for recovery of treble damages for civil liability arising from anti-competitive behavior. Republic Act 165 (Patent Law, 1947) and Republic Act 166 (Trademark Law, 1947) describe the appropriate civil action which can be resorted to, and the penalties imposable. Under the Patent Law, a person possessing rights to the patented invention can bring a civil action before the Regional Trial Court to recover from the infringer damages sustained by reason of the infringement of his rights. And under the Trademark Law, any person possessing exclusive use of a registered mark or trade-name may recover damages from the infringer in a civil action before a proper Regional Trial Court. Presidential Decree 49 (Copyright Law, 1972) penalizes

copyright infringement; Republic Act 386 (Civil Code of the Philippines, 1949) stipulates the collection of damages arising from unfair competition. Republic Act 7581 (The Price Act, 1991) protects the consumers by stipulating price manipulation (hoarding, profiteering, and cartels) as illegal acts. And Republic Act 7394 (The Consumer Act of the Philippines, 1932) imposes penalties for such behavior as deceptive, unfair and unconscionable sales practices in both goods and credit transactions.

The Philippine Corporation Code (1980) provides rules and procedures to approve all combinations, mergers, and consolidations. The danger of anti-competitive mergers or acquisitions that substantially lessen competition is not a major regulatory issue at the Securities and Exchange Commission (SEC). In the first place, the threat of fines for non-compliance with annual corporate financial reports is not binding because the penalties are negligible compared to the value firms are willing to pay to keep confidential data from public scrutiny. The attitude in the SEC seems to imply that the efficiency or synergy advantages of mergers more than compensate for their competitive risks. Furthermore, SEC does not have the legal mandate to challenge mergers unless it can prove that it is against public interest. Greater emphasis is placed on allowing friendly mergers and acquisitions that take place in the market voluntarily. A soft attitude prevails in SEC's implementation of merger policy: unless evidence against public interest exists, merger applications are automatically approved. It may take a while for this attitude to change. The era for greater emphasis on analysis of the potential effects of mergers on competition, or emphasis on procedure for pre-merger evaluation will have to wait until an effective competition policy is established in the Philippines.

Existing competition laws are inadequate and ineffective because the impossible fines are negligible; they are mostly penal in nature which requires a quantum of evidence to prosecute; there is a lack of jurisprudence on competition law; and there is no central agency to oversee the implementation of competition law in the Philippines. However, there are legislative proposals in Congress to establish a Fair Trade Commission—an independent body that will act as a central entity to implement competition laws and policies. There are two options being considered: (1) to establish the Fair Trade Commission, and (2) to maintain the existing multi-agency set-up, but ensure close coordination among them. Those favoring the first option argue that responsibility is too diffused; accountability is too difficult to locate; and there is a lack of expertise in the appreciation and

implementation of competition laws under the existing set-up (Free Trade Asia Consulting, 1996). On the other hand, those that favor the second option argue that the different implementing agencies have no overlapping functions, have the necessary capacity and capability, and simply require close coordination to secure the smooth implementation of competition laws (Santos, 1995).

Technology policy

Technology policy is usually defined as the management and generation of scientific and technological knowledge which can be used to address specific problems related to the production and delivery of economic, health and social goods and services. Programs and projects based on an effective technology policy allow firms to produce and market new products and services, increase their abilities to undertake innovations, increase their market value, enhance their competitiveness, and raise their productivity. The following discussion describes efforts by the Philippine government to formulate and implement a technology policy.

The Department of Science and Technology (DOST) introduced the Science and Technology Master Plan (STMP) in 1990 which set the goals and objectives for the Science and Technology (S & T) sector, and provided a framework for the effective coordination of S & T projects and programs consistent with national development policies. STMP cited the following major problems in the S & T sector: (1) underutilization of S & T for development as reflected in the low quality, and low productivity of the production sector and heavy dependence on imports; (2) underinvestment in S & T development in terms of manpower training, technological services, research and development (R & D) facilities and financial resources; and (3) weak linkages between technology generation, adaptation and utilization.

There has been a general failure to use technology to gain competitive advantage. Resource-based exports (timber, copper) are basically in raw material or unprocessed form. Traditional agricultural exports (coconut, sugar, and banana) are also exported without infusing technology-based processing in the value-added chain. The shift from primary exports (e.g., coconut, sugar) to manufactured exports (e.g., garments, electronics) has simply reflected the changing factor composition of exports (that is,

from resource-intensive to labor-intensive). The shift from labor-intensive to skill-or technology-intensive manufactured exports has not yet occurred.

The three main strategies of the STMP are: (1) modernization of the production sector through massive technology transfer from domestic and foreign sources; (2) upgrading of R & D capability through intensive activities in high priority sectors; and (3) development of S & T infrastructure, including institution building, manpower development and development of S & T culture.

The Comprehensive Technology Transfer and Commercialization (CTTC) program was initiated in 1990 as part of STMP to disseminate and commercialize locally developed technologies. But there was a lack of locally developed commercializable technologies. In 1995, DOST reported that CTTC was able to commercialize 7 new technologies such as soya ice cream, sambong tablets, cassava chips processing and production of hydrogenerated oil. There was little government-private sector joint research ventures, and government budgetary constraints made it impossible to implement the S & T infrastructure projects.

The *Medium-Term Philippine Development Plan, 1993-1998* has targeted an increase in R & D expenditures from 0.24 percent of GNP in 1992 to one percent of GNP in 1998. However, the priority activities in support of this goal have not been adequately implemented. For instance, activities such as (1) modernization of production facilities in technology-based industries; (2) global technology search to acquire foreign technology in the priority areas; (3) provision of S & T services (e.g., standards, quality control, chemical and physical analysis, etc.); and (4) transfer and commercialization of technologies for the development of competitive industries are yet to be visibly felt in the industrial sector. One difficulty of satisfying the S & T goal of the MTPDP is the lack of consensus in the Philippine government of what industries qualify in the category of "priority areas" or "competitive industries". Section VIII of this paper will attempt to address this issue.

In 1993, DOST came up with the Science and Technology Agenda for National Development (STAND), a successor to STMP. STAND's objective was to help realize the vision of Philippines 2000 by focusing S & T activities on export niches identified by the private sector. While STMP identified fifteen priority sectors (Table 2), STAND identified seven

Table 2. STMP priority sectors

-
1. Agriculture
 2. Aquaculture and Marine Fisheries
 3. Forestry and Natural Resources
 4. Metals and Engineering
 5. Textile Industry
 6. Mining and Minerals
 7. Process Industry
 8. Food and Feed Industry
 9. Energy
 10. Transportation
 11. Construction Industry
 12. Information Technology
 13. Electronics, Instrumentation and Control
 14. Emerging Technologies
 15. Pharmaceutical
-

Source: *Science and Technology Master Plan*, Department of Science and Technology (Manila, 1990).

export winners, eleven basic domestic needs, three support industries, and the coconut industry (Table 3). Specific products and processes are being identified for research and development in the STAND through programs coordinated by DOST-approved product managers working in consultation with academe, government and private sector. The assistance of experts from private organizations (local and foreign) has been enlisted by DOST under UNDP funding support. A UNDP-assisted project, “Achieving International Competitiveness Through Technology Development and Transfer” was undertaken for DOST by outside experts in 1995. The most current program for DOST to build scientific and technological capability refers to the Engineering and Science Education Project (ESEP) which was supported by a program loan from the World Bank. It is envisioned to build and upgrade scientific and engineering expertise and facilities in selected engineering and science institutions. The ESEP includes a Management of Technology (MOT) program which attempts to build and upgrade managerial expertise of scientific and technical decision makers. In addition, it provides assistance for the upgrading of science and mathematics teaching in selected secondary schools in the Philippines. ESEP was terminated in 1999 and replaced by a new program called Virtual Center for Technology Innovation (VCTI) which is designed to serve as a networking mechanism between industry, academe, and government R & D institutes.

Table 3. STAND priority list

-
- A. Export Winners
 - 1. Computer Software
 - 2. Fashion Accessories
 - 3. Marine Products
 - 4. Fruits
 - 5. Gifts, Toys and Housewares
 - 6. Furniture
 - 7. Metals Fabrication

 - B. Basic Domestic Needs
 - 1. Food
 - 2. Housing
 - 3. Health and Nutrition
 - 4. Clothing
 - 5. Environment
 - 6. Energy
 - 7. Transport
 - 8. Telecommunications
 - 9. Defense
 - 10. Manpower
 - 11. Disaster/Hazard Mitigation

 - C. Support Industries
 - 1. Packaging
 - 2. Metals
 - 3. Chemicals

 - D. Coconut Industry
 - 1. Production
 - 2. Processing
 - 3. Development of New Products
-

Source: *Science and Technology Agenda for National Development*, Department of Science and Technology (Manila, 1993).

Productivity and technology

The preceding section explains that the use of technology can bring sustainable productivity gains to Philippine firms. This is so because changes in production technologies allow firms to produce existing and new products with shorter production times, lower production cost, higher product quality, on-time product delivery, and responsive after-sales services to more demanding customers.

Nelson (1981) raised objections to the orthodox economic literature because it assumes competitive equilibrium and ignores the disequilibrium features of long-run dynamic processes. He likewise objects to the assumption in most productivity models that technological knowledge is public good which is not consistent with the following observations: (1) substantial uncertainty faced by firms which try to create or evaluate new technologies, and (2) considerable inter-firm differences in the technologies they create and adopt. He suggests that further productivity studies focus on the research question: "Why do certain industries experience much faster productivity growth than others?" This question can be addressed, according to Nelson (1981), by investigating the factors affecting productivity at the level of the firm, and the sources of productivity differences among firms. Another area where new direction in productivity research needs some reorientation deals with the role of uncertainty, incentives and property rights on the relationship between R & D and productivity growth.

Several productivity estimates are made in the Philippine setting. Hooley (1985) explained that the decline in total factor productivity between 1956 and 1980 could be attributed to several factors; one of these factors is the absence of R & D in industry. He also raised the issue of the implementation of an inappropriate industry targeting policy that favored poorly performing capital-intensive industries instead of exploiting the efficiencies of labor-using import-substituting industries. The limited evidence on Philippine manufacturing consistently points to a failure in policy and in practice for Philippine industries which did not seriously consider the technology factor in achieving long-run competitive advantage. Fabella (1993) analyzed the productivity performance between the Philippines, Taiwan and South Korea. He observed that the absolute growth rate of productivity in Taiwan and South Korea was three times and five times that of the Philippines, respectively. The predicament of "low investment growth leads to low productivity and poor competitiveness." Thus, sustainable growth is not guaranteed unless the complementarities of capital investment and technological advance are demonstrated. Intal (1991) analyzed the role of labor productivity, real exchange rate, and infrastructure in the country's poor export and growth performance. In terms of trends in labor productivity, the Philippines lags behind China, Indonesia, Malaysia, Singapore and Thailand. The World Bank (1993) attributed the so-called rapid productivity growth among the highly performing Asian economies (HPAEs) to better technology, innovations

on the shop floor, gains from specialization and better organization. But empirical estimates of technical change showed that Indonesia, South Korea, Malaysia, and Singapore were not characterized as shifting rapidly from average practice to best practice. Freeman (1994) expressed his disappointment that the World Bank (1993) study on the “East Asian Miracle” has little to say about technology policy or how new technology was adopted in these economies.

The importance of building S & T infrastructure was stressed in STMP. However, the need to improve the effectiveness of adoption and commercialization of new technologies is equally desirable. Encouragement of developing technological capabilities within firms will probably require the use of incentives to enhance increased collaborative activities between corporate R & D and academic research. Technology importation is not simply a purchase of production inputs and the licensing of production know-how; it also requires a strong capacity for reverse engineering including some informal tinkering type of R & D in the shop floor of small entrepreneurs and innovators. Thus, simply importing technology does not transfer know-how. A combination of technology importation, in-house training, learning by doing, and corporate R & D is needed.

The framework to be used in assessing the relationship between industrial productivity and technology must start with data on total employment, scientific personnel, research intensity, capital intensity and employment concentration in Philippine industries. The object is to evaluate the laboratory foundations, rather than simply employment, in the different industries. The hypothesis is that rapid expansion in a given industry could be attributed to the scientific investments or laboratory foundations it made in earlier periods. Each industry analysis must attempt to verify the applicability of this hypothesis in the Philippine experience.

Industrial policy

The most important issue in industrial policy is the level and scope of government intervention. Policy analysts disagree on what policies are needed to achieve technological and economic development.

There are two views of industrial policy. One view argues that the main elements of industrial policy intervention in developing countries

should be limited to providing the fundamental conditions such as maintaining a stable macroeconomic environment, limiting price distortions, investing in education and health, investing in infrastructure, and ensuring public order and safety (Krugman, 1984; World Bank, 1993). The other view argues for selective intervention in major sectors to make these sectors competitive through the use of incentives such as subsidies, tariff protection, directed credit, tax exemptions, foreign-exchange allocation and accelerated depreciation allowance (Amsden, 1989; Wade, 1990). Critics of the selective intervention approach (Medalla, et al., 1995; World Bank, 1993; Krugman, 1984) argue that the policy of industrial targeting is not effective. On the other hand, proponents of the selective intervention approach (Amsden, 1989; Wade, 1990) argue that even if markets exist and work well, they may produce terrible results. Thus, government intervention is required to break the numerous barriers faced by developing countries aspiring to become industrializing economies.

The government should likewise identify and foster the growth of strategic industries because without active government support, private firms will find it increasingly difficult to achieve market viability in a highly risky and competitive environment. Nevertheless, it has been shown (Kirkpatrick, Lee, & Nixon, 1984) that most economies (both developing and industrialized) use wide-ranging and extensive policy measures to intervene in the industrial sector (e.g., regulations on location of production, quality standards, prices of products, production volume, type of ownership, nature of market competition, etc.). It has also been pointed out (Kirkpatrick, Lee, & Nixon, 1984) that many of these industrial policy measures could have offsetting effects on the attainment of other development objectives. For instance, a regional dispersal policy may promote industrial growth in the depressed areas but it induces the establishment of new industries in a high-cost area; national government offers tax incentives in regional industrial centers, but this deprives local government units (LGUs) of additional tax revenues; fiscal incentives may attract investments, but its non-neutral effect on factor prices may encourage capital-intensive methods of production; or incentives may not have a substantial effect on the overall level of investment, but they influence the composition of total investment in favor of manufacturing and against agriculture (Patalinghug, 1991). The main argument in favor of government intervention is the presence of market failure. But government interventions are more likely to fail in the absence of (1) competent and honest civil service, (2) performance-based standards of success, (3) government's ability

to discipline big business, (4) stable macroeconomic environment, and (5) consistent government policy. For industrial policy to be effective, a combination of market discipline and government efficiency is desirable. Market-failure argument has likewise been used in support of basic research, science and engineering education programs, and R & D expenditures in emerging technologies. Policies designed (1) to improve the flow of technological information and to improve competence of firms in priority industries, and (2) to maintain or attain competitive advantage of identified industries vis-à-vis its competitors are interventionist. Intervention policies aimed at correcting market failure should not simply be used to compensate for market failure when it occurs but to develop a competitive industrial sector because markets often work well and produce terrible results.

The Philippines does not have an integrated industrial development plan. However, implicit or ad-hoc industrial plans can be deduced from hodge-podge programs of various government agencies attempting to address the issue of growth and competitiveness of Philippine-based industries. An example of an attempt at industry classification is found in the *Medium-Term Philippine Development Plan: 1993-1998* (a document prepared by the National Economic and Development Authority or NEDA) which identifies three groups of priority industries: (a) industries with strong competitive potential, (b) basic industries, and (c) industries critical to agri-industrial development (Table 4). Another classification is made by the Department of Trade and Industry (DTI) which identifies 14 “export winners” in its *Medium-Term National Export Development Program: 1993-1998*. DTI has recently added 16 “emerging exports” to its original lists of 14 “export winners” (Table 5). Another industry priority list is found in the *Science and Technology Master Plan (STMP)* of the Department of Science and Technology (DOST) which enumerates 15 priority sectors (Table 2). DOST’s *Science and Technology Agenda for National Development (STAND)*, the successor of STMP, groups priority industries into four categories: export winners, basic domestic needs, support industries and coconut industry (Table 3). In addition, the Development Bank of the Philippines (DBP) identifies priority subsectors for restructuring (Table 6). And the Board of Investments’ (BOI) *1997 Investment Priorities Plan (IPP)* classifies priority industries into six major groups: export-oriented industries, catalytic industries, industries undergoing industrial adjustments, support activities, mandatory inclusions, and priority investment areas for the Autonomous Region in Muslim Mindanao or ARMM.

Table 4. MTPDP's priority industries

-
- A. Goods and Services with Strong Competitive Potential
 - 1. Animal Feed Ingredients
 - 2. Cutofflers
 - 3. Livestock and Poultry
 - 4. Fresh and Processed Fruits
 - 5. Fresh and Processed Vegetables
 - 6. Garments
 - 7. Electronics (Hardware and Software)
 - 8. Gifts, Toys and Housewares
 - 9. Fisheries and Marine Products
 - 10. Metal Engineering Products

 - B. Basic Industries
 - 1. Rice
 - 2. Corn
 - 3. Sugar
 - 4. Coconut

 - C. Commodities and Industries Critical to Agri-Industrial Development
 - 1. Basic Metals
 - 2. Chemical and Chemical Products
 - 3. Electricity and Gas
 - 4. Petroleum Products
-

Source: *Medium-Term Philippine Development Plan: 1993-1998*

In 1995, "Philippines 2000" identified *product niches* (Table 7) under the following categories: (a) basic commodities, (b) critical industries, (c) goods and services, and (d) tourism. If anything, this evidently adds to a long (if not confusing) list of "identified" or "priority" industries. The *leapfrogging strategy* ("Philippines 2000") was soon replaced by the *pole vaulting strategy* which identifies 9 "must do" programs involving at least 12 sectors (Table 8).

In 1996, President Fidel V. Ramos issued Executive Order No. 380 (1996) creating the Industry Development Council (IDC) composed of government and private sector representatives. In addition, Executive Order 98 (1993) and Republic Act 7844 (Export Development Act of 1994) created the Export Development Council (EDC) responsible for monitoring the performance of the country's export winners and for drafting the Philippine Export Development Plan (PEDP). Some of IDC's main

Table 5. National Export Development Program priority list

-
- A. Export Winners¹
1. Electronics
 2. Garments
 3. Processed Fruits
 4. Construction Services
 5. Marble Tiles
 6. Computer Services
 7. Ceramics
 8. Jewelry
 9. Shrimps and Prawns
 10. Carrageenan/Seaweeds
 11. Gifts and Housewares
 12. Professional Services
 13. Furniture
 14. Metal Compound
- B. Emerging Exports²
1. Bio-technology
 2. Activated Carbon
 3. Copper Wires
 4. Education Services
 5. Explosives and Pyrotechnics
 6. Fertilizers
 7. Footwear
 8. Fresh Fruits
 9. Healthcare Services
 10. Leathergoods
 11. Motor Vehicle Parts
 12. Oleochemicals
 13. Specialty Paper
 14. Petrochemicals
 15. Specialty Steel
 16. Tree Plantation
-

Sources: ¹Department of Trade and Industry, *Medium-Term National Export Development Program: 1993-1998*

²Department of Trade and Industry, Bureau of Export Trade Promotion

functions are: (1) to formulate policies on the rationalization of the government's industry promotion and development programs; (2) to periodically review and assess the performance, problems, and prospects of the country's industries; and (3) to recommend to Congress any legislation that will contribute to the development of Philippine products. IDC is likewise tasked to draft the Industrial Development Plan of the Philippines (IDPP).

Table 6. DBP priority subsectors for restructuring

-
- A. First Priority
1. Wood and Wood-Based Products
 2. Canned/Preserved Fruit, Fruit Juices and Vegetables
 3. Canned and Preserved Fish
 4. Electronic Appliances/Housewares
 5. Cocoa/Chocolate/Confectionery
 6. Spinning and Weaving
 7. Knitting Mills
 8. Plastic Products
- B. Second Priority
1. Rubber N.E.C. and Rubber Footwear
 2. Cigarettes
 3. Coffee Roasting and Processing
 4. Footwear N.E.C.
 5. Steelworks and Rolling Mills
 6. Fabricated Metals N.E.C.
 7. Toys, excluding rubber toys
 8. Soap and Cosmetics
 9. Tires and Tubes
 10. Pottery, China
 11. Glass and Glass Products
-

Source: Development Bank of the Philippines, *Philippine Industrial Restructuring Programme: Subsector Strategy Study* (September 1993).

In 1997, a document was drafted for BOI and IDC entitled, “Industrial Development Plan of the Philippines: A Preliminary Report.” The IDC criteria for the inclusion of specific industries are: (a) actual or latent industry competitiveness; (b) industry size; and (c) impact on jobs. The selected industries are: (1) industrial tree plantation, (2) natural rubber, (3) fertilizer, (4) copper, (5) petrochemical, (6) iron and steel, (7) cocochemical, (8) fresh fruits, and (9) motor vehicles and car parts. The final IDPP could not be drafted because the number of industries to be included kept rising.

In 1999, a new council was created under the DTI called the Domestic Trade Development Council (DTDC) which takes care of the retail trade industry (presumed to be left out in the IDC and EDC structures).

Table 7. Identified product niches

-
- A. Basic Commodities
 - 1. Rice
 - 2. Corn

 - B. Critical Industries
 - 1. Basic Metals
 - 2. Chemicals and Chemical Products
 - 3. Electricity
 - 4. Gas
 - 5. Petrochemicals

 - C. Goods and Services
 - 1. Animal Feed Ingredient
 - 2. Cutofflowers
 - 3. Fiber (abaca, ramie, salago, maguey)
 - 4. Fisheries
 - 5. Sugar
 - 6. Coconut
 - 7. Cattle
 - 8. Carabao
 - 9. Dairy
 - 10. Swine
 - 11. Poultry
 - 12. Fruits (tomatoes, pineapple, banana, mango)
 - 13. Vegetables
 - 14. Legumes (mungo)
 - 15. Nuts (peanuts)
 - 16. Essential Oils (citronella)
 - 17. Jewelry
 - 18. Fashion Accessories
 - 19. Metal Engineering Products (machinery & equipment, tool & dye, and metal components)
 - 20. Shipbuilding and Repairs
 - 21. Processed Fruits and Vegetables
 - 22. Marine Products (prawn, seaweed, and carageenan)
 - 23. Gifts, Toys and Housewares
 - 24. Furniture
 - 25. Textile and Filament (silk)
 - 26. Garments
 - 27. Electronics (hardware and software)

 - D. Tourism
 - 1. Resorts, Hotels and Inns
 - 2. Tourism Services (transport, shipping, food and entertainment facilities)
-

Source: *Philippines 2000: A Vision for the Nation*, Revised Edition, 1995.

Table 8. National Development Summit “Must Do” Programs

Program	Sector
1. Food Basket in East Asia	Food
2. Financial Center in East Asia	Banking
3. Knowledge Center in the Asia-Pacific	Education/ Information Technology
4. Maritime Power in East Asia	Shipping
5. Telecommunications, Transportation, and Tourism Hub in the Asia-Pacific	Telecommunications, Transportation and Tourism
6. Energy Exporter in East Asia	Energy
7. Shopping Paradise in East Asia	Retail Trade
8. Medical Center in East Asia	Health Services
9. Center of Culture and the Arts in Asia	Entertainment/Tourism

Source: National Development Summit, “Pole-Vaulting Strategy for the 21st Century,” June 8-9, 1997.

The experience of East Asia (World Bank, 1993) points to the key role in decision making of what is called “deliberation councils” which provide a forum for formulation and implementation of government policies as well as for consensus building. Both IDC and EDC are the Philippines’ institutional counterparts to East Asia’s “deliberation councils.” To be an effective mechanism: (1) IDC and EDC should be merged into one entity; (2) the merged council should include all the key players in the sector (e.g., Japan’s Industrial Structure Council includes labor leaders, academics, journalists, and consumer advocates, in addition to government officials and business leaders); (3) council decisions must be reached by rules of consensus; (4) government representatives must be honest, competent and possess bargaining authority; and (5) government should implement council decisions without any major amendments.

Survey of industry studies

Several industry studies provide some economic analysis of industry structure and regulatory policies affecting the industry. For instance, Balisacan (1990) analyzed the structure and regulatory policies supporting the inter-island shipping industry. He concluded that the shipping cost structure can be attributed to the cartel-like behavior of the inter-island shipping industry and the regulatory policies of the government that restrict

market entry and prevent a competitive price determination of sea cargo, passenger service, and port handling services. He recommended that the industry be deregulated from MARINA (Maritime Industry Authority) in order to encourage competition among existing firms and to attract new entrants.

Saldana (1990) examined the impact of government policies and corporate response on consumer welfare in the flour milling industry. The industrial policies used by the government to regulate the industry were price control, entry restriction, and import control. He concluded that government rent-seeking policies led to larger consumer losses. Government directly imposed huge consumer losses due to the inefficiencies of its wheat monopoly up to 1985.

Sanchez (1990) compared the performance of the textile industry in the Philippines and Thailand. The Philippines started its large-scale manufacturing as early as 1906. Thailand started its modern textile company only in the 1950s. In terms of output growth, Thailand outperformed the Philippines during the period from 1975 to 1984. Thailand's output grew by 9.78 percent during this period, while that of the Philippines managed to grow by a negligible 0.56 percent. In terms of total factor productivity, Thailand grew by 2.93 percent while the Philippines grew by only 1.7 percent during the same period. Thailand's textile export grew by 18 percent compared to the Philippines' 8 percent. Sanchez concluded that the superior performance of Thailand was due to its ability to acquire technical knowledge through joint ventures with foreign investors who were actively engaged in textile production in their home countries. A heavy protection on the Philippine textile industry discouraged the ability to compete internationally.

Abenoja and Lapid (1991) examined the determinants of market structure in Philippine manufacturing. They concluded that the Philippine manufacturing sector is highly concentrated (having a weighted average concentration ratio of 73 percent). The study suggested that government policies to deconcentrate manufacturing industries will generate employment, redistribute income, and increase demand for manufactured goods.

SGV (1992) developed detailed case studies of six industries, namely telecommunications, man-made fibers, glass, cement, iron and steel, and

passenger cars. It concluded that government policies erected entry barriers and favored the position of the leading firms in these six industries. The study recommended to open these industries to competition, provided that the timing of such liberalization be examined to minimize dislocation and disruption in these industries.

Patalinghug (1996) analyzed the size, structure, prospects and problems facing the retail trade industry. The retail trade sector contributed on the average 10.4 percent of GDP from 1981 to 1994. It grew at an average annual growth rate of 6 percent during the same period. In the department store and supermarket subsectors, Uniwide was the top retailer in 1995 (in terms of sales), followed by SM and Ever-Gotesco. But in terms of net income, SM was the most profitable retailer in 1995. The study suggested that local retailers must gear up to the inevitability of global competition, and must begin to implement strategic moves and survival strategies in a highly competitive industry environment.

Serafica (1996) analyzed the relationship between policy reform and industry cost structure in the telecommunications industry. The study used two different approaches to study the pre- and post-reform industry cost structures. It concluded that “cost conditions prevailing prior to the liberalization of the industry did not justify monopoly provision of telephone service to the extent enjoyed by the Philippine Long Distance Company.” In the post-reform situation, the conclusion was that small-scale entry under a service-area scheme is not profitable because economies of scale cannot be exploited by new entrants whose market size is constrained. Having a small network of subscribers also weakens the bargaining power of each new entrant vis-a-vis the dominant incumbent firm in terms of negotiating tariffs and interconnection arrangements because the latter has little incentive to grant favorable terms to a minor market player.

Direction for competition policy and industrial policy

Future prospects for competition policy in the Philippines are good. Average overall nominal tariff has dropped sharply from 42 percent in 1981 to 13.43 percent in 1997. It is expected to drop further to only 8.21 percent by year 2000. Average nominal tariff for manufacturing will decline from 13.96 percent in 1995 to 7.47 percent in year 2000. The import liberalization program has lifted import restrictions that reduced the number

of items under import restrictions from 1829 in 1983 to 609 in 1988. In 1992, only 164 items remained to be restricted. This import liberalization policy lifted import restrictions from 33 percent of total commodity lines in 1983 to 2.9 percent of total commodity lines in 1992. Tariff rates will come down to a uniform 5 percent by year 2004. Effective protection rates (EPR) have declined from 49.3 percent in 1985 to 31.3 percent in 1995 which also improved the efficiency performance of some protected industries.

The establishment and fostering of an effective competition policy is an important agenda for the future. But it requires effective legislation that provides substantive authority to assess pre-merger notification, regulate natural monopolies, determine misuse of market power by large firms, and monitor restrictive and anti-competitive practices. A shift from industry-specific regulation to a comprehensive competition policy framework is needed. In addition, an effective competition law regime requires clear objectives: efficiency or equity. As we have seen in the privatization experience, long-term efficiency was being sacrificed to achieve short-term revenue gains. And finally, an effective competition policy in the Philippine setting requires a widely respected institution to be accepted as impartial adjudicators. Institutional credibility must go along with adequate resources in terms of funds, skills, training, and technology for these agencies. In setting the agenda for future competition policy, the Philippines must aim at satisfying these requirements for an effective competition law regime.

After discussing the state of competition, industrial and technology policy in the Philippines, the need to set direction for industrial policy in the future is in order. Our task of reaching a common consensus on the nature and substance of industrial policy is more difficult compared to the successful experience of South Korea and Japan because of the following circumstances: (1) critical executive departments espouse different views on industrial policy—NEDA adheres to the fundamental intervention approach, while DTI advocates for the adoption of the selective intervention approach; (2) different agencies have varying lists of industries considered “priority” or “strategic”; (3) there is no existing coordinative mechanism where competition policy, technology policy, trade policy, and industrial policy can be integrated successfully by rationalizing the long-term plans of various industries and minimizing conflicts among the firms; (4) the structure of our version of “deliberation councils” has a built-in tendency for creating conflict rather than arriving at a consensus because of the

political nature of allocating foregone revenues and administering incentive programs to two different industry groups—export-oriented and domestic-oriented industries; (5) there is a perceived bias against the vertically integrated business conglomerates in the formulation and implementation of catching-up strategies in high-technology fields; (6) a system of incentives based on performance rather than one based on entry is not in place. This implies that tariffs and taxes on imported inputs for export production must be paid at the time of importation and then rebated at the time of export; and (7) a proactive management information system of firms availing of incentives does not exist. This explains why measuring impacts of incentive system, monitoring of performance, and imposing penalties on non-achievers are difficult to implement (Patalinghug, 1992).

Since consensus building is crucial in undertaking an effective industrial policy, opportunities for arriving at a compromise exist. A review of the various lists of priority industries in different agencies indicates a list of industries that are commonly listed.

Table 9 presents a priority list of industries commonly listed in most government agencies. The criterion for choosing the “first priority” list is that they are commonly listed as “priority” or “industries with strong competitive potential” by at least five different government agencies. The first priority industries are: (1) fresh and processed fruits; (2) metal engineering products; (3) fisheries and marine products; (4) gifts, toys, and housewares; (5) electronics; (6) feed, poultry and livestock; (7) coconut;

Table 9. Industries commonly listed in various priority lists

-
1. Fresh and Processed Fruits
 2. Metal Engineering Products
 3. Fisheries and Marine Products
 4. Gifts, Toys, and Housewares
 5. Electronics
 6. Feed, Poultry, and Livestock
 7. Coconut
 8. Garments
 9. Chemicals
 10. Furniture
-

Source: Author's own calculation.

(8) garments; (9) chemicals; and (10) furniture. The industries in the first-priority list provide a basis for compromise, acceptability, and consensus among the different sectors whose cooperation is necessary for such a difficult task.

The second priority list is composed of: (1) jewelry, (2) textiles, (3) automotive parts and components, (4) rice, (5) electricity and gas, (6) telecommunications, (7) cosmetics, (8) petroleum, and (9) machinery and equipment. These industries are commonly listed in the priority lists of at least three different government agencies. Some of these industries are probably given top priority by policy makers because they are “politically-sensitive” commodities. Rice, electricity, and petroleum belong to this category. There are industries which are in the low-priority list of all government agencies but which are considered by a few as “strategic”. Iron and steel industry belongs to this category. Another industry considered “basic” by some government agencies is sugar. It does not fit the category of a “strategic industry”. Sugar (like rice, petroleum and electricity) aptly belongs to the “politically sensitive” category. If resources allow to study these industries in the future, the focus of comprehensive analyses on rice and sugar will probably be on explaining why we lost our competitiveness in these industries. In the case of iron and steel, the focus might be: Is it worth investing in an industry where we never showed any actual (or potential) competitiveness?

If we consider NEDA’s definition of “strategic industries,” our first priority list in Table 9 contains none. Despite R. A. 7103 (Iron and Steel Act), iron and steel’s actual or potential export competitiveness has never been demonstrated by any of the studies reviewed. R. A. 7103 simply assumes that iron and steel is crucial to the country’s industrialization because of its potential linkages with other industries in the production system. Maybe the telecommunications industry is in the same position because it was included in DTI’s 1991 list of strategic industries.

The “flying-geese” hypotheses of economic development will support the industries included in the first priority list. The experience of South Korea, Taiwan and Singapore in the sixties and the seventies showed that they moved from labor-intensive manufactured exports to skill-and-technology-intensive manufactured exports in their industrialization process.

The nature and direction of industrial policy must explain the role of technology in inter-firm and inter-industry productivity differences. The government is probably in the best position to create a public-private undertaking of scanning world technology trends and to use these results for directing industrial growth patterns. In the Japanese economic system, this role of a quarterback or economic chief of staff is successfully administered by the Ministry of International Trade and Industry (MITI). The scope of each industry analysis must be as comprehensive as the study undertaken by the M.I.T. Commission for Industrial Productivity (see Dertouzos, et al., 1989) which focused on detailed analyses of eight U.S. industries where it has (or used to have) export competitiveness. The government's list of strategic industries (either DTI's or NEDA's) has simply focused on heavy industries or industries with high value-added. But this is based on mistaken belief among policy makers that high value added is synonymous with high technology (Krugman, 1994). Table 10 shows that the Philippine industries with high value-added per worker are the capital-intensive industries (e.g., steel, petroleum, etc.). Thus, the traditional approach of defining "strategic industries" will exclude high-technology industries like electronics. The procedure used in this study for coming up with a list of priority industries is not subject to this capital-intensity bias of defining "strategic industries". The priority list includes light, heavy, capital-intensive, and technology-intensive industries. But the bottomline of this priority list is that they are the industries with the capability to maintain or attain a competitive position that is superior to that of their competitors—at a certain stage of economic development.

Finally, an integrated approach to industrial policy formulation and implementation is suggested. This means that Table 9 (List of Industries Commonly Listed in Various Priority List) must be made consistent with our international commitments (e.g., WTO, APEC, and AFTA). In WTO's General Agreement on Trade and Services (GATS), the Philippines has committed the following sectors: financial services, tourism, telecommunications, and transportation services (air, land, maritime, and rail transport). On the other hand, the Philippines has prioritized the following areas for liberalization under the ASEAN Framework Agreement on Services (AFAS): professional services, financial services, transportation, tourism, construction, and telecommunications. The list of industries to be chosen for accelerated APEC sectoral liberalization, for CEPT-AFTA, and for WTO-GATS must be guided by the policy framework commonly agreed by policy makers which implicitly or explicitly identifies strategies

Table 10. Value added per worker, 1995 (in thousand pesos)

Industry	Value Added Per Worker
Petroleum and Coal	11,071
Food	437
Beverages and Tobacco	352
Chemicals and Chemical Products	284
Basic Metals	204
Textile	100
Electrical Machinery	95

Source of Basic Data: *1999 Philippine Statistical Yearbook* (Manila: NCSB, 1999).

and policies (fundamental-intervention approach) to attain competitiveness or specific industries, product clusters or sectors (selective-intervention approach) which ought to be promoted because they possess actual or potential comparative advantage for the Philippine economy.

Conclusions

This paper attempts to describe the link between competition policy, technology policy, and industrial policy. Existing competition laws are inadequate and ineffective because the imposable fines are negligible and there is no central agency to oversee the implementation of competition law in the Philippines. Attempts to formulate and implement a technology policy have been made, but the policy changes its focus everytime a new political order takes power. And the direction of industrial policy is not clear. Some policy pronouncements of DTI and BOI reflect the “selective intervention view” of industrial policy. On the other hand, the dominant view at NEDA is more sympathetic to the “fundamental intervention view” of industrial policy.

Three major recommendations are made in this paper. First, the establishment of an effective competition policy is suggested. This can be done by setting up a legal and regulatory framework via legislation. Second, a more effective and consistent technology policy can be implemented by avoiding the creation of new programs and projects everytime a new government takes power. Moreover, funding should be focused on R & D

activities rather than on general administrative services. And third, an integrated approach to industrial policy formulation is suggested. This requires a consensus on coming up with a list of preferred industries that are consistent with our international commitments in AFTA, APEC, and WTO.

References

Abenoja, Z., & Lapid, D. (1991, December). Barriers to entry, market concentration, and wages in the Philippine manufacturing sector, 1987. *Philippine Review of Economics and Business*, 191-217.

Amsden, A. (1989). *Asia's next giant: South Korea and late industrialization*. Oxford: Oxford University Press.

Balisacan, A. (1990). An Analysis of the Philippine Inter-Island Shipping Industry. *Journal of Agricultural Economics and Development, January - July 1990*, pp. 75-93.

Department of Science and Technology. (1990). *Science and technology master plan*.

_____. (1993). Philippines 2000: The national technology agenda: 1993-1998.

Dertouzos, M., Lester, R. & Solow, R. (1989). *Made in America: Regaining the productive edge*. Cambridge, MA: MIT Press.

Fabella, R. (1993). *Efficiency and competitiveness: The role of the exchange rate*. Manila: Philexport Policy Paper.

Free Trade Asia Consulting. (1996). *Setting the agenda for competition policy in the Philippines*. Manila: Asia Foundation.

Freeman, C. (1994). Technological revolutions and catching-up: ICT and the NICs. In J. Fagerberg, B. Verspagen, & N. Von Tunzelmann (Eds.), *The dynamics of technology, trade and growth*. London: Edward Elgar.

Hooley, R. (1985). Productivity and growth in Philippine manufacturing: Retrospect and future prospects. *Monograph Series No. 9*. Manila: Philippine Institute for Development Studies.

Intal, P. (1991). Taking the flying geese to heart: Economic policy and industrial restructuring challenges for the Philippines in the 1990s. Processed.

Kirkpatrick, C., Lee, N., & Nixon, F. (1984). *Industrial structure and policy in less developed countries*. London: George Allen and Unwin.

Krugman, P. (1984). The U.S. response to foreign industrial targeting. In *Brookings papers on economic activity* (pp. 77-121).

_____ (1994). Competitiveness: A dangerous obsession. *Foreign Affairs*, 73 (2), 28-44.

Medalla, E., et al. (1995). *Catching up with Asia's tigers, vol. I*. Manila: Philippine Institute for Development Studies.

National Economic and Development Authority. (1993). *Medium-term Philippine development plan: 1993-1998*.

National Development Summit. (1997). Pole-vaulting strategy for the 21st century.

Nelson, R. (1981). Research on productivity growth and productivity differences: Dead ends and new departures. *Journal of Economic Literature*, 19, 1029-1064.

Patalinghug, E. (1991). Investment incentives, private initiative and industrial policy. *Philippine Management Review*, 2 (1), 34-39.

_____ (1992). Industrial policy in export-oriented economies: Lessons from the experience of Japan, South Korea and Taiwan. *Philippine Review of Economics and Business*, 29, 264-276.

_____ (1996). *The retail trade industry: Structure, issues, and public policy*. Paper presented to the ADSGM Business Research Conference, New World Hotel, August 22-24, 1996.

_____ (1997). *Current conditions and future prospects of competition policy in the Philippines*. Paper prepared for the APEC/PFP Seminar on Competition Policy for APEC Member Economies, Bangkok, March 18-21, 1997.

Saldana, C. (1990). Rent-seeking public policies and corporate conduct in the Philippine flour milling industry. *Journal of Philippine Development, First Semester 1990*, 89-132.

Sanchez, A. (1990). The textile industry in the Philippines and Thailand: A comparison. *Journal of Philippine Development, First Semester, 1990*, 67-87.

Santos, G. (1995). *Competition regulation: The Philippine experience*. Paper presented to the Asian Law and Policy Studies Colloquium on Competition Regulation within the APEC Region: Commonality and Divergence, Georgetown University Law Center, Washington, D.C.

Serafica, R. (1996). *Tests of efficient industry structure in telephone service provision: Revealing the past and potential direction of Philippine telecommunications*. Ph.D. Dissertation, Department of Economics, University of Hawaii.

SGV Consulting. (1992). *Barriers to entry study: Final report, volume II*. Manila: SGV & Co.

Wade, R. (1990). *Governing the market: Economic theory and the role of government in East Asian industrialization*. Princeton: Princeton University Press.

World Bank. (1993). *The East Asian miracle: Economic growth and public policy*. Washington, D.C. : World Bank.

Date received: 22 February 2000

Dr. Patalinghug is Professor of Economics and Management at the College of Business Administration, University of the Philippines Diliman. This paper has benefited from informal discussions on technology policy with officials from Department of Science and Technology (DOST). In addition, the author's brief stint at the Tariff Commission exposed him to the literature and public policy debate on competition policy. The views expressed in this paper are those of the author and do not necessarily reflect the views of any other individual or organization.