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特集：Globalization, Challenges for Managers, and Calls for Leadership

Rediscovering Japan's Leadership in "Shared Growth" Management:

Some Findings from a Study on Philippine Economic Zone and Automotive Industry*

Ferdinand C. Maquito**, Henrietta Carbonel***

Abstract

This paper provides four micro-level refinements of the concept of shared growth, a conventionally macro-level concept referring to national income growth accompanied by improvements in distribution of such income. Based on an understanding of Japanese corporate practices at domestic and international levels, shared growth is refined to connote the following: 1. labor shares in the growth of its employing firm; 2. subcontractor firms share in the growth of the contractor firm; 3. producer shares in the growth of its market; and 4. trading countries share in each other's growth through mutual trade dependence.

By way of a non Japan-centric case study, data relating to manufacturing economic zones in the Philippines and trade among several countries in the automotive industry are used to clarify certain aspects of each of the four refinements of shared growth. Using a production function framework and Philippine economic zone data, we show that indicators conceptually representing the first three refinements have positive effects on production efficiency. Using a trade network methodology and automotive industry trade data, we show that East Asian countries have a higher tendency to approach mutual trade dependence, although there might be some cause for concern regarding early signs of imbalance in East Asia.

Keywords: institutions and international business, shared growth, comparative institutional analysis, flying geese

I Introduction

With the explosion of the sub prime loan crisis, the world is said to have been thrown into the depths of a "once-in-a-century credit tsunami"[1], triggering a chain reaction of interest in reforming the world system to ensure that such crisis does not happen again. An observer of business and economic affairs, however, would claim that the tsunami, with its concomitant onslaught of reforms and widespread destruction, has actually been tearing away at the fabric of economies ever since the failure of the socialist/communist experiments in the 1980s. The streets, whether Main or Wall, were full of politicians, media people, business/economic analysts, and corporate leaders who were rejoicing in the victory of the market-oriented way of doing business and economics.

We do not aim to question the validity of such a way of doing business and economics, which has obvious merits in rationally allocating an economy's resources. We, however, cast doubts on a blind and extreme form of adherence to such a system, which unfortunately drowned out the invaluable lessons related to business and economics that were just then being voiced out. Criticisms then dominated

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** Researcher, Sekiguchi Global Research Association (c/o Atsumi International Scholarship Foundation). 3-5-8 Sekiguchi, Bunkyo-ku, Tokyo, 112-0014, Japan, Tel: 03-3943-7612, Fax: 03-3943-1512 www.aisf.or.jp/sgra; e-mail: fcmaquito@gmail.com.

*** Adjunct Faculty, Department of Economics, International Christian University. www.icu.ac.jp, e-mail: henrietta.carbonel@gmail.com

the rhetoric that Japanese management practices being passé and out of sync with the global standard.

This paper aims to share the results of a study of economic zones (ecozones) and the automotive industry in the Philippines that point to the importance of rediscovering Japan's leadership in a set of management practices that contribute to a particular type of economic development which we refer to as "shared growth." The ecozone and automotive industry studies were precisely prompted by our interest in investigating the potential of these two sectors to become catalysts of shared growth.

Moreover, our study stresses "rediscovery" in the light of the rejection of such practices that seems to have engulfed Japan for the past several years. The ecozone/automotive industry study was guided by our understanding of the practices that enabled Japan to be a leading model of shared growth in East Asia in the past. This model consisted of management practices that enabled Japan to achieve shared growth in the past. This paper points out the continued efficacy of shared growth management practices, as well as some concerns that should be taken into consideration in an increasingly globalizing world.

In this paper, we present four micro-level refinements of the conventionally macro-level concept of shared growth, suggested by findings in earlier research done on the Philippine ecozones and automotive industry: 1. labor sharing in the growth of its employing firm through more stable employment; 2. the subcontracting firms sharing in the growth of the contracting firms through greater local procurement; 3. the producer sharing in the growth of its customers through higher sensitivity of the former to the latter; 4. trade partners that consider each other indispensable. The conceptual aspect of these four refinements is discussed more in Section 3.

The empirical aspects of these four micro-level refinements are further discussed in Section 4, which yields the following four shared growth points: *Shared Growth Point #1*. Greater stability of employment is good for productive efficiency. *Shared Growth Point #2*. Enhanced local procurement is good for productive efficiency. *Shared Growth Point #3*. Greater sensitivity to the Japanese market is good for productive efficiency. *Shared Growth Point #4*. Based on global trade in the automotive industry, the East Asia region appears to be performing well in terms of achieving mutually indispensable trade relations. However, one possible cause of concern is a growing imbalance in the automotive industry, wherein the Philippines appears to be lagging behind in the integration process, especially vis-à-vis Thailand.

Ⅱ Brief Survey of Related Literature

This paper brings together several strands of literature to provide several elaborations of shared growth-oriented management practices. It also builds on and shares the results of earlier works on Philippine ecozones and automotive industry (U, Terosa and Maquito, 2006; Hirakawa, U and Maquito, 2008). At the end of this survey, we will point to some gaps in the literature, which this paper will seek to address.

It was the East Asian Miracle Report (World Bank, 1993) that used the term "shared growth" to refer to the peculiar type of development that eight highly performing East Asian economies, led by Japan, were able to achieve for several decades after the Second World War. As conceived in that report, shared growth refers to rapid income growth accompanied by improvements in income distribution.

The East Asian Miracle Report in itself is significant as it is an early attempt of the World Bank to come to grips with an economic phenomenon that has been seldom seen in modern economic development history. It is also significant as an effort of the World Bank to deviate from its traditionally neoclassical framework by conceding the importance of selective intervention by the government. In explaining the shared side of shared-growth, the East Asian Economic Miracle focused mainly on the macro-institutional basis for shared growth. Shared growth was a means of achieving legitimacy in a region of rapidly advancing communism. Universal education, equitable land holding through land re-

form, housing policy, and cooperative unions which increased the share of labor, as well as a reputable and competent public service were the main factors highlighted in the World Bank report.

However, firm theory at the micro level can also lead to some important insights into the benefits of shared growth. In this paper, we take a more disaggregated and private (firm) level approach based on the idea that the corporate sector also contributed substantially to an economy's ability to achieve shared growth.

One strand of literature is the study of Japanese corporate practices by Masahiko Aoki and his collaborators (1994, 2001) who developed the comparative institutional analysis framework. The preoccupation of this literature is not so much to expound on the shared growth phenomenon but more on developing efficiency arguments for stylized Japanese corporate practices. Nevertheless, this literature provides direction for our empirical work, especially with regards to identifying the first three shared growth indicators, i.e., sensitivity to markets, local procurement and employment stability. This literature draws from developments in microeconomic theory which essentially relaxes the stringent assumptions of traditional neoclassical thought pertaining to access of decision-makers to perfect information and perfect capability to process such information.

Although admitting that the majority of firm-stakeholder relationships in a stylized Japanese firm is cozy and hence introducing imperfect competition in the relevant markets, comparative institutional analysis argues that firm-customer relationships in the final goods markets are more arms-length and hence more perfectly competitive. This is epitomized by the Just-In-Time production system, which tries to address greater diversity in market preferences with ever-increasing timeliness, as discussed in Asanuma (1994).

The second aspect of Japanese management that we tackle in this paper is the contractor and subcontractor relationship. The cheek-to-cheek relationship (less than arms length) as evidenced by a high reliance on small- and medium- scale parts suppliers through subcontracting arrangements that limit the number of bidders, and shy away from the open-bidding type of competition, This, however, is argued by the literature to be one way of solving the so-called hold-up problem, wherein the contractor could take advantage of a subcontractor's firm-specific investments. In contrast, a more western approach to addressing the same hold-up problem is greater internal production of parts (Holmström and Roberts, 1998).

Finally, firm-labor relationships are also cheek-to-cheek as evidenced by higher job tenures of Japanese firms vis-à-vis their western counterparts, but is argued by the literature as promoting the development of firm-specific skills that eventually enable the firm to achieve a high level of craftsmanship and competitiveness (Itoh, 1994 ; Tsuru, 1996).

A second strand of literature that we bring into this paper is the Flying Geese model or Catching-up Product Cycle model pioneered by Kaname Akamatsu in the 1930s but not published in English until the 1960s (Akamatsu, 1961, 1962). His work has also been greatly elaborated by his first-generation student Kiyoshi Kojima (2000, 2003). This literature gained renewed interest when Saburo Okita (1985) used it to explain the international division of labor in East Asia, driven by trade and investment from the so-called leading goose, Japan. Kosai and Tran (1994) also elaborated on the Flying Geese model, inspired by Okita. One important implication of the Flying Geese model is that through industrial upgrading and international recycling, it is possible to arrive at a coherent division of labor among trading countries. As such, the model could also be considered as very much related to management decisions regarding the division of labor among countries. This constitutes a fourth addition to what we refer to as shared growth management in this paper.

So far, the approach in the Flying Geese empirical work has been generally a comparative analysis of the competitiveness profile of industries emphasizing the role of Japan as the lead goose (Hiratsuka, 2003; Kwan, 2002) It occurred to us, however, that the trade relationship matrix (Hierarchy Structures in World Trade) of Piana (2006) could yield a fourth refinement of shared growth that is consistent with

the Flying Geese model, although again this was not the preoccupation of this methodology. Through this methodology, it is possible to measure the degree of trade dependence, dominance or interdependence for different countries both across the world and within regions. Piana creates a matrix of trade relationships that highlights the type of trade relations a country has with other economies, showing whether it is an important provider or market for the other country and vice versa. Applying this framework to the auto industry, we can analyze how integrated the economies are, what types of relations exist between countries and thus measure the degree of shared growth (in the fourth sense) across the world and within regions.

As suggested above, these strands of literature present at least two gaps which this paper will seek to fill. One gap is the lack of clarification as to how these management practices relate to shared growth. We shall provide a conceptual discussion of this in Section 3 leading to the four micro-level conceptual refinements of shared growth. Another gap comes from their focus on Japan, even when cross-country analysis is made; hence, leaving out a perspective that is not Japan-centric. Using data on Philippine ecozones and automotive industry, we shall attempt to provide a perspective that is not Japan-centric in Section 4, leading to the four points of shared growth management.

Ⅲ Analytical Framework

1 Overview

Our four micro-level refinements of the concept of shared growth were actually the offshoot of our search for micro-level indicators of shared growth. In this sense, the four conceptual refinements are intimately related one-on-one to the four empirical clarifications, although the conceptual refinements could in principle be general enough to work with any empirical measure of shared growth. In this section, we discuss the conceptual refinements together with their empirical counterparts.

We use two different empirical approaches in this paper. To clarify the effect of the first three management practices on output, we use a production function. We look at how sensitivity to markets, local procurement and stable employment have affected output in the automotive industry. We take the specific case of Philippine manufacturing ecozones as a way of providing a non Japan-centric perspective. Moving onto a more regional and global level that is not necessarily Japan-centric, we look at how trade in the auto industry is integrated or not using Piana's trade network analysis matrix.

2 Employment Stability, Local Procurement, and Sensitivity to Markets

The focus in manufacturing ecozones when studying shared growth is natural-given, in the case of the Philippines, their tendency to be located outside traditional urban growth centers. Despite the obvious handicap with regards to the urban amenities, the manufacturing ecozones sprouted all over the Philippine archipelago, with a total of 176 operating ecozones as of September 2009. Moreover, the largest share of accumulated investments in the ecozones is that of Japanese-affiliated firms, accounting for 36.82% for the period 1995 to 2007 (De Lima, 2008). Such firms are assumed to bring with them the practices that helped Japan to achieve shared growth.

Data were collected directly from the quarterly reports submitted by ecozones to the Philippine Economic Zone Authority (PEZA). Accessing the reports of PEZA, we eventually decided on the following fifteen ecozones to be included in our sample (see Table 1). The basic criterion for inclusion in the sample is the existence of a consistent set of data sufficient to enable us to carry out a statistical analysis. Quarterly data were collected from the first quarter of 2001 to the fourth quarter of 2004.

Based on the available data collected from PEZA, manufacturing ecozones were hypothesized to be production entities with import and labor quantities as inputs and export quantity as output. Given no data on actual capital utilization, import quantity was used as a proxy for capital assuming that for the quarterly data, imported inputs and capital were utilized in a fixed proportion basis. An additional feature of this production relationship is the inclusion

Table 1 List of Ecozones in the Sample

Short Name	Variable Name	Full Name	Size (hectares)
Baguio	BAG	Baguio City Economic Zone	119
Bataan	BAT	Bataan Economic Zone	1,733
Cavite	CAV	Cavite Economic Zone	279
Mactan	MAC	Mactan Economic Zone	119
Angeles	ANG	Angeles Industrial Park	32
1st Cavite	1STC	First Cavite Industrial Estate	60
Gateway	GAT	Gateway Business Park	28
LIIP	LAGI	Laguna International Industrial Park	35
Laguna	LTP	Laguna Techno Park	290
Luisita	LUI	Luisita Industrial Park	29
MEPZ	MEP	Mactan Economic Zone II	63
Subic	SUB	Subic Shipyard Special Economic Zone	52
Toyota	TOY	Toyota (Sta.Rosa) Special Economic Zone	29
Victoria	VIC	Victoria Wave Special Zone	50
West Cebu	WCE	West Cebu Industrial Park	50

Source: Philippine Economic Zone Authority.

of explanatory variables for production efficiency, taken to be the remaining variation in the export production which is not explained by the two input variables. We initially hypothesized that production efficiency is influenced by a set of three shared growth management indicators, and one ecozone-specific factor.[2]

The first shared growth management indicator is the relative volatility of employment. For a certain time T, this is computed as follows $\sigma^2 = \frac{(L-\bar{L})^2}{(X-\bar{X})^2}$, where L, X are employment and export volume, respectively. $\bar{L}$, $\bar{X}$ are the yearly average of employment and export volume, respectively, corresponding to the period of the employment and export volume being used.[3] As can be seen from the formula, this indicator is essentially a ratio of variances: the variance of employment divided by the variance of the export volume. A high value for this indicator means that employment is highly unstable relative to output.[4]

Employment stability here would refer to a situation wherein workers are not laid off so easily at the first sign of a slump in business conditions, and/or additional workers are not hired in large numbers when business conditions swing the other way. Such an employment arrangement stresses the indispensability of labor and effectively empowers labor. This is consistent with the importance of firm-specific skills in the surveyed literature. It is very possible that workers could leverage such empowerment to lay claim to a greater share in the firm's revenues. In so doing, the workers are able to share more in the growth of the firm. This constitutes the first micro-refinement of the shared growth concept.

The second shared growth management indicator is the income elasticity of export volume for Japan, and is computed for each period as follows $\varepsilon_J = \lambda_J \frac{Y_J}{X}$, where λ_J is the change in export volume per change in income of country in Japan. Y_J is the income of Japan, measured by the GDP in dollar terms, and X is the export volume of the ecozone.

This elasticity is taken to measure the responsiveness of the production entity to fluctuations in customer needs to the extent that such needs are closely related to the customer's income. It is also consistent with the Just-In-Time aspect of production in the surveyed literature. In doing so, the producing entity could be considered as sharing in the growth of its customer, the second micro-level refinement of shared growth.

The third shared growth management indicator is given as follows[5] $NX\$ = \frac{X\$ - M\$}{X\$ + M\$}$, where $NX\$$, $X\$$, $M\$$ = net export ratio, export value, and import value, respectively.

Positive and high numbers for this indicator would suggest that the ecozone is exporting more and/or importing less. There is growth coming from more exports, and this growth is being shared

more with local suppliers as imports are reduced. Indeed, in one interview with an ecozone executive, it was pointed out that the ratio is a measure of local value added. This is consistent with the tendency of engaging local subcontractors in the surveyed literature. This would suggest a third micro-level refinement of shared growth wherein the subcontracting firm shares in the growth of the contracting firm.

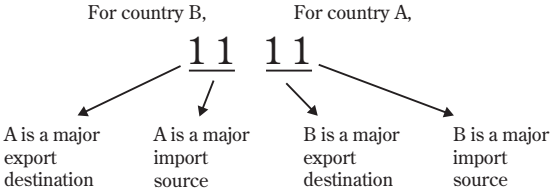
A dummy variable was used to distinguish each of the fifteen ecozones and, hence, account for the hypothesized ecozone-specific factor affecting production efficiency. Three forms of the production relationship were estimated: Cobb–Douglas, Constant Elasticity of Substitution (CES), and Translogarithmic.

3 International Division of Labor

The fourth shared growth management indictor, international division of labor, will directly be based on the methodology described in Piana (2006). It readily provides a method for calculating the strength of a country's trade relationship with another country. Between two countries A and B, there are four possible types of relationship: whether or not A is a major exporter to B; and whether or not it is a major importer from B. Since A can also independently take any of these four possibilities, there is a total of sixteen possible relationships between any two countries. Each relationship, as shown in Figure 1, is coded as a four digit number with 1 if the relationship is true and 0 otherwise. In our analysis, we arbitrarily use a cut-off level of 10% in determining the strength of the trading relationship. A country which exports (imports) more than at least 10% of its total exports (imports) to (from) another country is said to have a strong export (import) relationship with that country.

For example, the trade pattern between Japan and Thailand is 1101, which means that for Thailand, Japan is both an important destination and an important source of imports in the auto industry. And for Japan, Thailand is a major export destination. For the Philippines, the relationship is 0000 which means neither country is significant for the other in the automobile industry.

Figure 1 4–Digit String Coding for Integration



From the different trade patterns, it is possible to determine whether a country is not integrated (0000), mostly dependent (source dependence 0001, destination dependence 0010, overall dependence 0011), dominant (source dominance 0100, destination dominance 1000, dominance 1100) or integrated (source integration 0101, mono-integration 0110, dependent source interconnection 0111, mono integration 1001, destination integration 1010, dependence destination interconnection 1011, dominant source interconnection 1101, dominant destination interconnection 1110, full integration 1111). Using these relationships, we measure the type of integration for each country in the auto industry.

Piana's methodology in itself is largely descriptive, and attributes no value judgment on the derived degrees of integration. We form our fourth micro-level refinement of the shared growth concept by choosing a set of rankings for the various degrees of integration, which we think is consistent with the surveyed literature. Such ranking conforms very well with the concept in the surveyed literature that a shared growth type of integration should ultimately move towards bilateral relationships wherein the two countries find each other indispensable.

The data used for the analysis is a CD–compilation of the UN Commodity Trade statistics. We focused on the trade statistics for industry classification HS 87, covering export and import values in completely built-up vehicles as well as automotive parts. Our sample includes twenty seven countries from three regions: EU (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, and the United Kingdom); East Asia (China, Indonesia, Japan, Republic of Korea, Malaysia, the Philippines, Singapore, Taiwan (POC), and Thailand); and NAFTA (Canada,

Table 2 Estimation Results of Production Function for Ecozones

	Cobb-Douglas		CES		Trans-Log	
Variable	Coefficients	*t*-statistic	Coefficients	*t*-statistic	Coefficients	*t*-statistic
Constant	−1.915	−2.860*	5.375	5.953*	−3.102	−4.324*
$\ln L$			−1.545	−17.843*	0.148	7.583*
$\ln M$	0.902	62.359*	2.009	26.669*	0.934	47.557*
$(\ln L - \ln M)^2$	—	—	0.069	19.154*	—	—
$\ln M^2$	—	—	—	—	0.059	21.819*
$\ln NX\$$	2.086	25.654*	2.119	25.115*	2.133	27.454*
$\ln \varepsilon_j$	0.401	3.165*	0.525	4.101*	0.347	2.719*
$\ln \sigma^2$	−0.011	−2.358**	−0.015	−3.489*	−0.013	−3.086*
F-statistic	773.4044*		620.138*		1091.404*	
Adj. R^2	0.973		0.981		0.979	

Note: The dependent variable is ln *X*. Number of Observations = 299.
* Significant at the 1% level. ** Significant at the 5% level.

Mexico, the United States). Brunei and Vietnam were intentionally excluded because of the lack of available data. Given that there was a measure of fluctuation in the trade data, the average of the trade values for the annual statistics from 2000 to 2004 was used.

Ⅳ Empirical Results

1 Employment Stability, Local Procurement, and Sensitivity to Markets

Table 2 shows a portion of the results obtained from the production function estimation. This will be used in deriving the first three Shared Growth Points.

Shared Growth Point #1. Greater stability of employment is good for productive efficiency. Relative volatility of employment σ^2 was found to have a negative and significant effect. This indicates that a greater stability of employment has a positive effect on production efficiency of a manufacturing ecozone. One explanation for this result, as suggested by the literature on Japanese corporate practices, is that, unlike universal skills, the development of craftsmanship skills requires a stable employment environment. Ultimately, craftsmanship skills contribute to the efficiency and competitiveness of manufacturing entities.

Shared Growth Point #2. Enhanced local procurement is good for productive efficiency. The net export ratio $NX\$$ was found to have a positive and significant effect. This indicates that a greater degree of local procurement is good for production efficiency of a manufacturing ecozone. Aside from the obvious benefits of reduced shipping costs, relying more on local suppliers could create repeated subcontracting relationships with local small- and medium- scale enterprises, which as the literature on Japanese corporate practices suggest, could be a source of competitiveness of manufacturing entities.

Shared Growth Point #3. Greater sensitivity to the Japanese market is good for productive efficiency. The income elasticity of export demand ε_j was found to have a positive and significant effect. This indicates that greater sensitivity to the Japanese market is good for production efficiency of a manufacturing ecozone. As Japanese manufacturing practices, such as Just-In-Time would suggest, the ability to respond to the changing market constitutes a competitive edge of manufacturing entities.

It is to be noted that the ecozone-specific factor was found to have no significant effect. This indicates that all the differences in production efficiency among ecozones could be basically explained by the three shared growth indicators.

2 International Division of Labor

The results from the application of the Piana methodology suggest the fourth point.[6]

Shared Growth Point #4. The East Asian region

Table 3 Dependence, Dominance, and Integration

	Global Trade			Regional Trade		
	Dependent	dominant	Integrated	Dependent	Dominant	Integrated
AUSTRIA	0%	27%	73%	0%	11%	89%
BELGIUM	0%	14%	86%	0%	18%	82%
DENMARK	6%	19%	75%	0%	17%	83%
FINLAND	0%	27%	73%	0%	25%	75%
FRANCE	0%	31%	69%	0%	30%	70%
GERMANY	0%	41%	59%	0%	27%	73%
GREECE	6%	25%	69%	0%	25%	75%
IRELAND	6%	17%	78%	8%	0%	92%
ITALY	0%	27%	73%	0%	36%	64%
LUXEMBOURG	11%	67%	22%	0%	60%	40%
NETHERLANDS	0%	38%	63%	0%	36%	64%
PORTUGAL	22%	22%	56%	0%	17%	83%
SPAIN	7%	40%	53%	0%	40%	60%
SWEDEN	0%	25%	75%	0%	9%	91%
UNTD KINGDOM	0%	39%	61%	0%	36%	64%
Total Average	4%	30%	66%	1%	26%	74%
Variance	0.004	0.017	0.022			
CHINA	0%	27%	73%	0%	0%	100%
INDONESIA	11%	28%	61%	11%	0%	89%
JAPAN	4%	30%	65%	0%	44%	56%
KOREA REP.	6%	19%	75%	0%	25%	75%
MALAYSIA	6%	33%	61%	0%	13%	88%
PHILIPPINES	20%	50%	30%	40%	20%	40%
SINGAPORE	5%	35%	60%	0%	13%	88%
TAIWAN (POC)	5%	38%	57%	0%	50%	50%
THAILAND	5%	30%	65%	0%	38%	63%
Total Average	7%	32%	61%	6%	22%	72%
Variance	0.003	0.007	0.017			
USA, PR, USVI	0%	50%	50%	0%	0%	100%
CANADA	0%	13%	88%	0%	0%	100%
MEXICO	8%	58%	33%	0%	0%	100%
Total Average	4%	35%	60%	0%	0%	100%
Variance	0.002	0.060	0.077			

displays a higher degree of mutual indispensability in their division of labor within the auto industry.

Table 3 shows that most countries have a majority of integrated relationships at over 60% of global trade relations, both countries being dependent on each other for trade. Dependent trade relations are just 7% of all trade in Asia and 4% in Europe and NAFTA. Dominant relationships are around 30%, although showing a greater variance in NAFTA countries. Trade within regions shows similar results but with a movement towards even greater integration (above 70% in all regions and reaching 100% in NAFTA).

However, two countries appear to be outliers: Portugal and the Philippines, with over 20% of relationships being dependent and low levels of integrated relations at 56% and 30%, respectively. As for all countries, the ratio of integrated trade is high for intra-regional trade, but remains significantly lower than the average.

However, the type of relationship (dependent, dominant or integrated) is perhaps less important than the overall trade integration: how many important trade relations does the country have, whether they are as exporter or importer. Both sides of trade participate in shared growth. A weighting of each level of trade patterns will give us more detailed picture of the level of integration. We give a rank assignment to each type of pattern based exactly on the number of ones so that a rank of 0 is given to (0000), a rank of 1 if there is just one important trade relationship and so forth. As such, the rank of 4 is given for the highest level of integration (1111). 1111 shows that both economies are totally integrated and thus share in each other's growth completely. Table 4 gives the average value of the trade

Table 4 Results of ranking based on the fourth refinement

	Global level of trade integration			Within region level of trade integration		
reporter_name	Average	Variance	MVAR	Average	Variance	MVAR
AUSTRIA	1.50	3.14	0.48	2.07	3.76	0.55
BELGIUM	1.46	3.22	0.45	2.21	3.26	0.68
DENMARK	1.46	2.58	0.57	2.29	2.84	0.81
FINLAND	1.42	2.65	0.54	2.07	2.69	0.77
FRANCE	1.42	2.73	0.52	2.21	2.95	0.75
GERMANY	1.81	3.12	0.58	2.50	3.04	0.82
GREECE	1.65	2.80	0.59	2.57	2.73	0.94
IRELAND	1.31	2.22	0.59	1.93	2.84	0.68
ITALY	1.54	3.06	0.50	2.29	3.30	0.69
LUXEMBOURG	0.77	1.06	0.72	1.14	1.52	0.75
NETHERLANDS	1.54	2.82	0.55	2.29	2.99	0.76
PORTUGAL	1.00	2.08	0.48	1.64	2.86	0.57
SPAIN	1.42	2.41	0.59	2.07	2.99	0.69
SWEDEN	1.81	3.36	0.54	2.57	3.19	0.81
UNTD KINGDOM	1.77	2.90	0.61	2.57	2.11	1.22
Average	1.46	2.68	0.55	2.16	2.87	0.77
CHINA	1.50	2.82	0.53	1.63	3.41	0.48
INDONESIA	1.38	1.85	0.75	2.75	0.79	3.50
JAPAN	1.96	2.28	0.86	2.00	1.71	1.17
KOREA REP.	1.62	2.89	0.56	1.00	2.57	0.39
MALAYSIA	1.69	2.30	0.74	3.00	1.14	2.63
PHILIPPINES	1.04	1.56	0.67	2.25	1.36	1.66
SINGAPORE	1.85	2.22	0.83	3.13	0.70	4.49
TAIWAN (POC)	1.65	1.84	0.90	1.75	2.50	0.70
THAILAND	1.81	2.00	0.90	2.75	1.64	1.67
Average	1.61	2.19	0.75	2.25	1.76	1.85
CANADA	0.50	0.98	0.51	3.00	0.00	
MEXICO	0.77	1.22	0.63	3.50	0.50	7.00
USA, PR, USVI	1.15	2.22	0.52	4.00	0.00	
Average	0.8	1.47				

MVAR = Mean-Variance ratio

relationships for each country in the world as a whole (Global level of trade integration) and within each region (within region level of trade integration).

One important and surprising finding is that East Asian countries are more integrated on the average (higher mean) and more stable (lower variance) than European economies or NAFTA countries both at the global and intra-regional levels. East Asian countries show more significant trade relations and of a higher degree than the other two regions. As expected, integration within regions is stronger than globally. Once again, the Philippines and Portugal are strong exceptions, with relatively lower levels of integration than other similar countries at around 1. Luxembourg also has a low level, but the auto industry is not central to this micro-country's economy.

However, there are emerging indications of an imbalance in the division of labor within the East Asian region, in the form of Thailand appearing to be at a higher degree of integration compared to most other East Asian countries, especially with respect to the Philippines. This is, of course, not to detract the sterling efforts of Thailand to become the Detroit of Southeast Asia. Our purpose in bringing this matter up is to call attention to the possibility of a division of labor in East Asia that is not in keeping with our fourth refinement of the shared growth concept.

One suspicion is that Japanese firms operating in Southeast Asia may have fallen into some kind of information cascade problem. This problem has been raised as a possible cause for herd behavior even in the midst of rational decision-makers (For example, see Bikhchandani, Hirshleifer, and Welch, 1992, 1998). In this model, rational decision makers find themselves unable to change their perceptions despite having private and new information that would suggest otherwise. Such momentum is basically driven by the preponderance of historical data

Table 5 Difference of means test for risk assessments of Thailand and the Philippines

Statistics	Panel (A)		Panel (B)	
	Thailand	Philippines	Thailand	Philippines
Mean	33.39	36.86	47.92	43.32
Variance	259.46	407.86	609.93	640.11
No. of Data	33	33	33	33
Degrees of Freedom	61		64	
computed *t*	−0.7709		0.7473	
P (T<=*t*) 1-Tail	0.2219		0.2288	
critical *t* (1-Tail)	1.670		1.669	
P (T<=*t*) 2-Tail	0.4437		0.4576	
critical *t* (2-Tail)	1.9996		1.9977	

Table 6 Difference of means test of expected profitability of Thailand and the Philippines (Weighted by the number of respondents)

Statistics	Improvement		Worsening	
	Thailand	Philippines	Thailand	Philippines
Mean	15.00	10.73	9.548	7.774
Variance	140.45	69.92	84.84	80.44
No. of Data	22	22	22	22
Degrees of Freedom	38		42	
computed *t*	−1.381		−0.647	
P (T<=*t*) 1-Tail	0.0877		0.264	
critical *t* (1-Tail)	1.686		1.682	
P (T<=*t*) 2-Tail	0.1753		0.5211	
critical *t* (2-Tail)	2.024		2.018	

(i.e., behavior of predecessors), which in effect causes all decision makers to herd towards the same decision. The results of the Piana methodology suggest that such a phenomenon appears to be occurring in the auto industry in Southeast Asia.

To further investigate such suspicion, we carried out statistical tests for difference of means on the survey of Japanese firms operating in the Philippines and Thailand, carried out by JETRO (2008).

Table 5 shows a summary of the results of the *t*-test for the survey results related to management problems.[7] Panel (A) uses the % share figures, while panel (B) uses the number of respondents by multiplying the % share figures with the number of responding firms for each of the problem categories. From these results it could be said that the focus on Thailand over the Philippines, for the automotive industry, is not supported by management-related problem assessments. As could be seen from Table 5 the computed *t*-statistic is much less than the critical *t* values, indicating that, on the average, the Philippines is not significantly different from that of Thailand.

Similar results are obtained from the profitability expectations of the JETRO survey, with regards to how many firms expected an improvement or worsening in profitability. Table 6 shows the *t*-test results using percentage of respondents, while Table 7 shows the results using percentage multiplied by the number of respondents. In both cases, The Philippines' lagging behind Thailand in integration for the automotive industry is not supported by profitability projections.

V Conclusion

The four micro-level refinements of shared growth and their empirical clarifications provide us with a much clearer research agenda for the future, as we try to elaborate on shared growth in a manner that will be useful to policy making. It also provides hope that in countries, such as the Philippines, which have not been associated with shared growth,

Table 7 Difference of means test of expected profitability of Thailand and the Philippines (% of respondents)

Statistics	Improvement		Worsening	
	Thailand	Philippines	Thailand	Philippines
Mean	0.2299	0.2202	0.2360	0.2452
Variance	0.0316	0.0273	0.0224	0.0533
No. of Data	22	22	22	22
Degrees of Freedom	42		36	
computed *t*	−0.1871		0.1581	
P (T<=*t*) 1-Tail	0.4262		0.8753	
critical *t* (1-Tail)	1.682		1.688	
P (T<=*t*) 2-Tail	0.8524		0.8753	
critical *t* (2-Tail)	2.018		2.028	

we see its first signs. Its sustenance, however, will be highly dependent on a change in mindset not only in that country but in the East Asia region, and the rest of the world.

We think that it is high time that we review our business/economic models and its assumption of firms maximizing their profits to ones which maximize shared growth. The socialist/communist experiment has ended in failure for it has shown that too much emphasis on sharing leads to a decline in growth. The latest set of financial crises (i.e., 1997 Asian currency crisis, and the 2007 subprime loan crisis), we think have shown that too much emphasis on efficiency could lead to severely inequitable distributions of income. Indeed, now is a golden opportunity for Japanese firms to rediscover and consistently apply their leadership in shared growth management in cooperation with other East Asian economies.

Notes

1 This phrase is originally attributed to former US Federal Reserve Chairman Alan Greenspan who used it to describe the on-going financial crisis during his testimony to the US House of Representatives Oversight Committee on October 23, 2008.

2 Such a production function approach was inspired by Mefford (1986).

3 The running average is computed from the start of the subject data to the present time. This manner of computing variances is taken from techniques used to compute asset volatility at any point in time. For example, see Koop (2000).

4 Such an indicator has been used to compare the Japanese labor system to that of other advanced industrial countries. For example, see Tsuru (1996).

5 This ratio was actually suggested by the use of international competitiveness coefficients being widely used in the empirical work on the Flying Geese model. For example, see Hiratsuka (2003).

6 A summary of the results is given in the Technical Appendix.

7 The data for the tests are given in the Technical Appendix.

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Technical Appendix 1: Economic Zone Production Function

The shared growth indicators were computed on a quarterly basis[1] from the first quarter of 2000 to the fourth quarter of 2004 for each of the ecozones. The income elasticity of export volume was computed using equation (1) with δ_C being based on an estimation of the following export demand function

$$X = \gamma_1 + \sum_1^n \phi_i D_i + \gamma_2 P + \left(\gamma_3 + \sum_1^n \phi_i D_i\right) JGDP + \left(\gamma_4 + \sum_1^n \phi_i D_i\right) USGDP \qquad (1)$$

where P = export price expressed in Philippine pesos (obtained by multiplying a dollar-based export price index by the peso–dollar rate), $JGDP$ = Japan GDP expressed in Philippine pesos (obtained by multiplying Japan GDP in yen by the peso–yen rate), $USGDP$ = US GDP expressed in Philippine pesos (obtained by multiplying US GDP in dollars by the peso–dollar rate), X = export volume (obtained by dividing export value in dollars by the dollar-

based export implicit price index), and D_i = dummy variable for the ith ecozone. Based on equation (1), we see that the export elasticity values can be computed using $\lambda_J = (\gamma_3 + \phi_i D_i)$ and $\lambda_{US} = (\gamma_4 + \phi_i D_i)$ for each of the ith ecozone. γ and ϕ are the coefficients to be estimated in the regression analysis. Table A-1 shows generally very good estimation results in terms of the statistical measures and the wide range of variables that significantly explain demand for exports of the ecozones.[2] Most of the explanatory variables are statistically significant at the 1% level. It is notable that the export price variable passes the theoretical test in having a negative sign, which helps in identifying the estimated equation as a demand equation.

Table A-1 Estimation Results of Export Demand Function for Ecozones

Explanatory Variable	Coefficient Estimate	*t*-statistic
Constant	4.796446	6.334404*
P	−0.0004	−2.29685**
JGDP	1.42E-05	3.602736*
D_{GAT}	−29.8664	−12.6774*
D_{LTP}	−11.7304	−6.89771*
D_{SUB}	−5.57429	−17.1151*
D_{VIC}	−5.56645	−17.091*
D_{TOY}	−5.43808	−16.6969*
D_{WCE}	−5.2626	−16.1581*
D_{LUI}	−4.94174	−15.1729*
D_{MC2}	−4.92727	−15.1285*
D_{1ST}	−4.75169	−14.5894*
D_{MAC}	−2.23475	−6.86151*
D_{CAV}	−1.42076	−4.36224*
D_{GAT} * *JGDP*	0.00013	12.49165*
D_{ANG} * *JGDP*	−2.4E-05	−16.7777*
D_{LIL} * *JGDP*	−2.2E-05	−15.048*
D_{BAT} * *USGDP*	−8.4E-06	−14.3239*
D_{LTP} * *USGDP*	3.37E-05	11.06201*

Note: The dependent variable is Real Export.
Adjusted $R^2 = 0.917$, F-statistic = 269***.
Number of Observations = 312.
* Significant at the 1% level.
** Significant at the 5% level.

Only two of the fifteen ecozones display a non-zero export propensity to the US, as measured by the US GDP-related dummy variable coefficients. In contrast, all of the ecozones have non-zero export propensity to Japan. A generally low sensitivity of ecozone exports to US GDP was also observed in similar estimations using quarterly data from 1997 to 2002. This agrees with the stylized fact that there is increasingly growing economic integration among East Asian countries.

Production functions were estimated using three specifications: Cobb Douglas; constant elasticity of substitution; and trans-logarithmic, given in equations (2), (3), and (4), respectively.

$$\ln X = \alpha_1 \ln M + \alpha_2 \ln L + \alpha_0 + \sum_{i=1}^{r} \beta_i Z_i \tag{2}$$

$$\ln X = \alpha_1 \ln M + \alpha_2 \ln L + \alpha_3 [\ln L - \ln M]^2 + \alpha_0 + \sum_{i=1}^{r} \beta_i Z_i \tag{3}$$

$$\ln X = \alpha_1 \ln M + \alpha_2 \ln L + \alpha_3 [\ln M]^2 + \alpha_4 [\ln M \ln L] + \alpha_5 [\ln L]^2 + \alpha_0 + \sum_{i=1}^{r} \beta_i Z_i \tag{4}$$

where α and β are the coefficients to be estimated, X, L, M are export volume, total employment, and import volume, respectively. The last two terms $\alpha_0 + \sum_{i=1}^{r} \beta_i Z_i$ can be considered as the residual measure for total factor productivity (overall efficiency) and is dependent on the zone-specific overall efficiency as well as the shared growth management indicators.

For ecozone production estimation, $\sum_{i=1}^{r} \beta_i Z_i$ has seventeen terms consisting of fourteen dummy variables to represent the sample of fifteen economic zones covered in this study, and the natural logarithm of the three shared growth indicators. Given that only very few ecozones had export demand functions that were significantly explained by US GDP, the export elasticity to US GDP was excluded from the list of shared growth indicators to be used in the export production estimations. All the dummy variables are zero for the case of Baguio, which is used as the reference ecozone.

Technical Appendix 2: Auto Industry Division of Labor

reporter_name	AUSTRIA	BELGIUM	DENMARK	FINLAND	FRANCE	GERMANY
AUSTRIA	0000	1111	0000	0000	1111	1111
BELGIUM	0100	0000	0000	0000	1111	1111
DENMARK	1100	1101	0000	0110	1111	1111
FINLAND	0100	1101	1100	0000	1111	1111
FRANCE	1100	1111	0100	0000	0000	1111
GERMANY	1111	1111	0100	1000	1111	0000
GREECE	1110	1111	0110	0100	1111	1111
IRELAND	0000	1101	0000	0000	1101	1111
ITALY	1111	1111	0100	0100	1111	1111
LUXEMBOURG	0100	0111	0000	0000	0111	0111
NETHERLANDS	1100	1111	0100	0000	1111	1111
PORTUGAL	0100	0111	0000	0000	1111	1111
SPAIN	1100	1111	0000	0000	1111	1111
SWEDEN	1100	1111	1111	1111	1111	1111
UNTD KINGDOM	1100	1111	0100	0100	1111	1111
CHINA	0000	0000	0000	0000	1111	1111
INDONESIA	0000	0000	0000	0000	0000	0101
JAPAN	1000	1101	0000	0000	1111	1111
KOREA REP.	0000	0100	0000	0000	1110	1111
MALAYSIA	0010	0000	0000	0000	1100	1111
PHILIPPINES	0000	0000	0000	0000	0000	0110
SINGAPORE	0000	1100	0000	0000	1100	1111
TAIWAN (POC)	0100	1110	0100	0000	1100	1111
THAILAND	0100	0110	0000	0000	0100	1111
CANADA	0000	0000	0000	0000	0000	1001
MEXICO	0000	1000	1000	0000	1000	1101
USA, PR, USVI	1100	1100	0000	0000	1000	1111

reporter_name	GREECE	IRELAND	ITALY	LUXEM BOURG	NETHER LANDS	PORTUGAL
AUSTRIA	0000	0000	1111	0000	1101	0000
BELGIUM	0000	0000	1111	0100	1111	1001
DENMARK	0000	0000	1101	0000	1111	0000
FINLAND	0000	0000	1001	0000	1100	0000
FRANCE	0000	0000	1111	0000	1110	1110
GERMANY	0000	0000	1111	0000	1111	1100
GREECE	0000	1000	1111	0000	1111	0000
IRELAND	0010	0000	1001	0000	1111	0000
ITALY	0100	0000	0000	0000	1111	0100
LUXEMBOURG	0000	0000	0110	0000	0110	0000
NETHERLANDS	0100	0000	1110	0000	0000	0100
PORTUGAL	0000	0000	0101	0000	0101	0000
SPAIN	0100	0000	1111	0000	1100	1110
SWEDEN	0000	0000	1101	0000	1111	0000
UNTD KINGDOM	0100	0110	1111	0000	1111	1100
CHINA	0000	0000	1100	0000	0100	0000
INDONESIA	0100	0010	0000	0000	0100	1000
JAPAN	0000	0000	1111	0010	1000	0000
KOREA REP.	0100	0000	1111	0010	1111	0000
MALAYSIA	0100	0000	1100	0000	0110	0000
PHILIPPINES	0000	0000	0100	0000	0000	0000
SINGAPORE	0000	0010	1100	0000	0100	0000
TAIWAN (POC)	0000	0000	0110	0010	0110	0000
THAILAND	0100	0000	0110	0000	0000	0110
CANADA	0000	0000	0000	0000	0000	0000
MEXICO	0000	0000	0000	0000	0000	0010
USA, PR, USVI	0000	0000	1000	0000	0000	0000

reporter_name	SPAIN	SWEDEN	UNTD KINGDOM	CHINA	INDONESIA	JAPAN
AUSTRIA	1111	1100	1111	0000	0000	1101
BELGIUM	1111	1101	1111	0000	0000	1101
DENMARK	1100	1111	1111	0000	0000	1001
FINLAND	1101	1111	1111	0000	0000	1001
FRANCE	1111	1100	1111	0000	0000	1001
GERMANY	1111	1110	1111	0100	0000	1111
GREECE	1111	0100	1111	0000	0000	1001
IRELAND	1101	1101	1111	0000	1000	1001
ITALY	1111	0000	1111	0000	0000	1101
LUXEMBOURG	0100	0000	0100	0000	0000	1000
NETHERLANDS	1111	1111	1111	0000	0000	1101
PORTUGAL	1111	0000	0111	0000	0010	0001
SPAIN	0000	1000	1111	0000	0000	1001
SWEDEN	1110	0000	1111	0100	0000	1111
UNTD KINGDOM	1111	1101	0000	0000	0000	1111
CHINA	0100	1001	1110	0000	0110	1111
INDONESIA	0000	0000	0110	1101	0000	1111
JAPAN	1100	1001	1111	1111	1100	0000
KOREA REP.	1110	1001	1111	1111	0000	1101
MALAYSIA	0000	0000	1111	1110	1111	1111
PHILIPPINES	1000	0000	0100	0001	0111	1111
SINGAPORE	0100	1001	1101	1110	1100	1111
TAIWAN (POC)	0100	1101	0110	1111	0000	1111
THAILAND	0110	1110	1110	0100	1111	1111
CANADA	0000	0000	1000	0000	0000	1001
MEXICO	1000	0000	1000	0000	0000	1001
USA, PR, USVI	0000	1000	1101	1000	0000	1111

reporter_name	KOREA REP.	MALAYSIA	PHILIPPINES	SINGAPORE	TAIWAN (POC)	THAILAND
AUSTRIA	1000	1000	0000	0000	0000	0000
BELGIUM	0000	0000	0000	0000	0000	0000
DENMARK	1001	0000	0000	0000	0000	0000
FINLAND	0000	0000	0000	0000	0000	0000
FRANCE	1000	0000	0000	0000	0000	0000
GERMANY	1000	0000	0000	0000	0000	0000
GREECE	1001	0000	0000	0000	0000	0000
IRELAND	1001	0000	0000	1000	0000	0000
ITALY	1001	0000	0000	0000	0000	0000
LUXEMBOURG	1000	0000	0000	0000	1000	0000
NETHERLANDS	1000	0000	0000	0000	1000	0000
PORTUGAL	0000	0000	0000	0000	0000	0000
SPAIN	1001	0000	0010	0000	0000	0000
SWEDEN	1000	0000	0000	0000	0000	0000
UNTD KINGDOM	1000	0000	0000	0000	0000	0000
CHINA	1101	0000	0000	0000	1111	0000
INDONESIA	1001	0110	0110	0011	1110	1111
JAPAN	1100	0100	0000	0100	1101	1101
KOREA REP.	0000	0100	0000	0000	0000	0000
MALAYSIA	1001	0000	0100	1110	1110	1111
PHILIPPINES	0001	0110	0000	0100	0111	0111
SINGAPORE	1111	1111	0110	0000	1110	1011
TAIWAN (POC)	1001	1000	0100	1100	0000	0000
THAILAND	1000	1110	1111	1110	1100	0000
CANADA	1001	0000	0000	0000	0000	0000
MEXICO	1000	0000	0000	0000	0000	1000
USA, PR, USVI	1001	0000	0000	0000	1000	0000

reporter_name	CANADA	MEXICO	USA,PR,USVI
AUSTRIA	0100	0000	1111
BELGIUM	0000	0000	1111
DENMARK	0000	0010	0100
FINLAND	1100	0000	1111
FRANCE	0000	0000	1110
GERMANY	0100	0100	1111
GREECE	0010	0000	1100
IRELAND	0000	0000	0100
ITALY	0000	0000	1110
LUXEMBOURG	0010	0000	0000
NETHERLANDS	0000	0000	1110
PORTUGAL	0000	1000	0000
SPAIN	0000	0100	1100
SWEDEN	0100	0000	1111
UNTD KINGDOM	0100	0000	1111
CHINA	1111	0100	1111
INDONESIA	0100	0100	1111
JAPAN	1110	0101	1111
KOREA REP.	1110	0000	1111
MALAYSIA	0100	0100	0110
PHILIPPINES	0100	0000	0111
SINGAPORE	0100	0000	1111
TAIWAN (POC)	0110	0100	1111
THAILAND	0000	0010	1110
CANADA	0000	1101	1101
MEXICO	0111	0000	1111
USA, PR, USVI	1111	1111	0000

Technical Appendix 3: JETRO Survey Data

We focus on two sets of data to be found in the JETRO report (JETRO, 2008) of a survey of 2,607 Japanese-affiliated companies (response rate of 40.3%) operating in ASEAN 6 countries (Thailand, Malaysia, Singapore, Indonesia, Philippines, and Vietnam) and India with at least 10% of their capital provided directly or indirectly by Japanese entities.

The tables below show the results of the survey regarding various business management problems confronted by Japanese-affiliated firms operating in Thailand and the Philippines. It covers only manufacturing problems and their problems in the following operational areas[3]: sales and other business transactions (Figure 33 in JETRO 2008); production (Figure 35 in JETRO 2008); treasury, finance, and foreign exchange (Figure 36 in JETRO 2008); labor and employment (Figure 38 in JETRO 2008); investment environment (Figure 40 in JETRO 2008); and foreign trade system (Figure 42 in JETRO 2008).

The tables below show the results of the survey regarding profitability expectations by Japanese-affiliated firms concerning Thailand and the Philippines.

Problems of sales and other business transactions (Top five factors)

Factor	Thailand (151) %	Philippines (120) %
Major customers requesting lower prices	51.7	51.7
Competitors' growing market shares	35.1	30.0
Decrease of orders from customers	32.5	29.2
No major gains of new customers or markets	32.5	29.2
Consumption turndown in major sales markets	29.1	27.5

Problems of production (Top five factors)

Factor	Thailand (152) %	Philippines (124) %
Increase in procurement costs	60.5	58.1
Difficulty in quality control	45.4	50.8
Near limit of cost cutting	40.8	45.2
Insufficient production capacity	27.6	19.4
Difficulty in local procurement of parts and raw materials	26.3	46.8

Problems of treasury, finance and foreign exchange (Top five factors)

Factor	Thailand (147) %	Philippines (123) %
Volatility of exchange rates of local currencies against the Japanese yen	55.8	50.4
Volatility of exchange rates of local currencies against the US dollar	54.4	78.1
Tax burden	24.5	25.2
Shortage of cash flows necessary for capital investments	22.5	15.5
Volatility of Japanese yen against the US dollar	8.2	24.4

Problems of labor and employment (Top five factors)

Factor	Thailand (155) %	Philippines (125) %
Increase of employee wages	59.4	76.8
Difficulty in recruitment of local staff (engineers)	54.2	52.0
Difficult to assign local workers to management and supervisory roles	41.9	38.4
Difficulty in recruitment of local staff (middle management)	40.7	35.2
Low rate of worker retention	32.9	0.0
Restrictions on staff dismissal and reduction	0.0	35.2

Problems of investment environment (Top five factors)

Factor	Thailand (129) %	Philippines (119) %
Underdeveloped infrastructure	0.0	73.1
Unstable and insecure political conditions	42.6	60.5
Troublesome and complicated administrative procedures	31.0	26.9
Troublesome and complicated tax practices	31.0	0.0
Uncertain and unclear policy management of local governments	27.1	50.4
Undeveloped economic legal system and arbitrary legal management and application	22.5	26.9

Problems of foreign trade system (Top five factors)

Factor	Thailand (120) %	Philippines (86) %
Complicated customs clearance procedures	45.0	38.4
Lack of thorough publicity of foreign trade regulations, rules and instructions	39.2	40.7
Evaluation and assessment of customs duties is obscure	36.7	19.8
Time-consuming customs procedures	27.5	41.9
Evaluation and assessment of customs duties is obscure	23.3	0.0
Uncertain and unclear inspection system	0.0	18.6

Source: JETRO (2008).
NOTES: (numbers in parentheses refer to number of respondents from manufacturing industries).
% = valid responses from responding companies.
Multiple answers allowed.

Figure A-1 Estimated operating profits for 2007 and 2008 (January to December) compare to the previous year

(Above: 2007, Below: 2008, Unit: %)

		Improve	Show no change	Worsen
Total	(n = 635)	40.0	26.5	33.5
	(n = 631)	44.5	41.8	13.6
ASEAN Total	(n = 599)	38.9	27.4	33.7
	(n = 595)	44.0	42.4	13.6
Thailand	(n = 157)	37.6	23.6	38.9
	(n = 157)	45.2	42.0	12.7
Malaysia	(n = 145)	31.7	35.9	32.4
	(n = 144)	41.7	44.4	13.9
Singapore	(n = 59)	45.8	27.1	27.1
	(n = 59)	35.6	49.2	15.3
Indonesia	(n = 82)	47.6	18.3	34.2
	(n = 82)	53.7	28.1	18.3
Philippines	(n = 129)	34.9	28.7	36.4
	(n = 127)	40.9	48.0	11.0
Vietnam	(n = 27)	63.0	25.9	11.1
	(n = 26)	53.9	34.6	11.5
India	(n = 36)	58.3	11.1	30.6
	(n = 36)	52.8	33.3	13.9

Sourse: JETRO (2008), p.9.

Figure A-2 Reasons for "Improvement"

(Above: 2007, Below: 2008, Unit: %)

		Increase of export sales	Increase of local market sales (in locared country)	Increase of sales due to higher sale prices (price rise/ raising)	Increase of sales due to lower sale prices (price fall/ cutting)	Reduction of procure-m entcosts	Reduction of persnnel expenses	Reduction of other costs	Improved produc- tion efficiency	Initiation expansion of production of high valueadde d products	Increase of sales due to fluctua- tion in exchange	Others
Total	(n=254)	37.0	42.5	19.3	2.4	25.2	11.4	21.7	37.4	20.5	5.9	6.7
	(n=281)	47.0	39.5	16.0	2.5	21.4	12.8	21.4	50.5	28.8	0.4	5.0
ASEAN Total	(n=233)	39.9	39.1	20.2	1.7	22.3	12.0	21.5	37.3	19.7	4.7	7.3
	(n=262)	48.9	37.8	16.8	1.9	21.0	13.7	22.1	51.5	28.6	0.4	5.0
Thailand	(n=59)	33.9	54.2	13.6	—	28.8	6.8	23.7	45.8	22.0	6.8	6.8
	(n=71)	40.9	50.7	22.5	—	19.7	9.9	25.4	52.1	35.2	—	7.0
Malaysia	(n=46)	30.4	30.4	23.9	—	26.1	26.1	39.1	47.8	21.7	2.2	10.9
	(n=60)	56.7	30.0	11.7	5.0	21.7	15.0	28.3	55.0	23.3	1.7	3.3
Singapore	(n=27)	59.3	33.3	25.9	—	14.8	11.1	11.1	25.9	18.5	—	—
	(n=21)	66.7	38.1	9.5	—	—	14.3	4.8	38.1	42.9	—	4.8
Indonesia	(n=39)	33.3	46.2	23.1	2.6	23.1	7.7	10.3	35.9	12.8	—	7.7
	(n=44)	34.1	43.2	25.0	—	22.7	15.9	25.0	47.7	20.5	—	6.8
Philippines	(n=45)	51.1	26.7	15.6	6.7	20.0	13.3	22.2	31.1	24.4	11.1	4.4
	(n=52)	55.8	23.1	11.5	3.9	32.7	17.3	21.2	59.6	28.9	—	3.9
Vietnam	(n=17)	41.2	35.3	29.4	—	5.9	—	5.9	17.7	11.8	5.9	17.7
	(n=14)	50.0	42.9	14.3	—	7.1	7.1	—	35.7	21.4	—	—
India	(n=21)	4.8	81.0	9.5	9.5	57.1	4.8	23.8	38.1	28.6	19.1	—
	(n=19)	21.1	63.2	5.3	10.5	26.3	—	10.5	36.8	31.6	—	5.3

Sourse: JETRO (2008), p.9.

Figure A-3 Reasons for "Worsening"

(Above: 2007. Below: 2008, Unit: %)

		Decrease of sales due to an export slowdown	Decrease of sales in the market (in the located country)	Decrease of sales due to lower sales prices (price fall/ cutting)	Decrease of sales due to higher sale prices (price rise/ raising)	Increase of procure- ment costs	Increase of personnel expenses	Increase of other costs	Insuf- ficient price transfer	Increase of costs due to changes in the tax system	Decrease of sales due to flucrma- tion in exchange	Others
Total	(n=213)	21.1	19.3	33.3	3.3	56.3	34.3	20.7	22.1	1.4	39.0	15.0
	(n=86)	20.9	20.9	34.9	7.0	58.1	38.4	19.8	14.0	3.5	29.1	8.1
ASEAN Total	(n=202)	22.3	18.8	33.2	3.5	56.9	34.2	20.8	23.3	1.5	39.6	14.9
	(n=81)	22.2	19.8	33.3	7.4	58.0	35.8	18.5	14.8	3.7	30.9	7.4
Thailand	(n=61)	18.0	23.0	37.7	6.6	49.2	19.7	16.4	19.7	—	59.0	9.8
	(n=20)	25.0	25.0	35.0	10.0	50.0	25.0	20.0	25.0	5.0	25.0	15.0
Malaysia	(n=47)	25.5	25.5	36.2	4.3	51.1	19.2	12.8	14.9	2.1	27.7	19.2
	(n=20)	10.0	20.0	30.0	10.0	70.0	30.0	10.0	—	—	30.0	10.0
Singapore	(n=16)	18.8	25.0	37.5	6.3	43.8	43.8	18.8	25.0	—	31.3	18.8
	(n=9)	22.2	22.2	22.2	—	44.4	33.3	22.2	11.1	11.1	22.2	—
Indonesia	(n=28)	14.3	10.7	39.3	—	75.0	42.9	35.7	53.6	7.1	21.4	14.3
	(n=15)	26.7	20.0	60.0	13.3	73.3	46.7	20.0	26.7	6.7	6.7	6.7
Philippines	(n=47)	29.8	10.6	21.3	—	68.1	59.6	25.5	17.0	—	42.6	14.9
	(n=14)	35.7	14.3	14.3	—	42.9	42.9	14.3	7.1	—	78.6	—
Vietnam	(n=3)	33.3	—	—	—	33.3	33.3	33.3	33.3	—	—	33.3
	(n=3)	—	—	33.3	—	66.7	66.7	66.7	33.3	—	—	—
India	(n=11)	—	27.3	36.4	—	45.5	36.4	18.2	—	—	27.3	18.2
	(n=5)	—	40.0	60.0	—	60.0	80.0	40.0	—	—	—	20.0

Sourse: JETRO (2008), p.10.

Notes

1 Averaged over each quarter.

2 The choice of appropriate explanatory variables to include in the estimation was left to the Stepwise algorithm of the SPSS program used for the estimation. The Stepping Method used an entry probability of *F* value of 0.05 and a removal probability *F* value of 0.10.

3 The figure numbers shown in the parentheses refer to the figure numbers in JETRO 2008.

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