

Taking the Right Road to Inclusive Growth

Industrial Upgrading and Diversification in the Philippines

Norio Usui

Asian Development Bank



Taking the Right Road to Inclusive Growth

Industrial Upgrading and Diversification in the Philippines

Norio Usui

Asian Development Bank

© 2012 Asian Development Bank

All rights reserved. Published in 2012. Printed in the Philippines.

ISBN 978-92-9092-618-4 (Print), 978-92-9092-619-1 (PDF) Publication Stock No. RPT124495

Cataloging-In-Publication Data

Asian Development Bank.

Taking the right road to inclusive growth: Industrial upgrading and diversification in the Philippines. Mandaluyong City, Philippines: Asian Development Bank, 2012.

1. Inclusive growth. 2. Industrial diversification. 3. Philippines. I. Asian Development Bank.

The views expressed in this publication are those of the authors and do not necessarily reflect the views and policies of the Asian Development Bank (ADB) or its Board of Governors or the governments they represent.

ADB does not guarantee the accuracy of the data included in this publication and accepts no responsibility for any consequence of their use.

By making any designation of or reference to a particular territory or geographic area, or by using the term "country" in this document, ADB does not intend to make any judgments as to the legal or other status of any territory or area.

ADB encourages printing or copying information exclusively for personal and noncommercial use with proper acknowledgment of ADB. Users are restricted from reselling, redistributing, or creating derivative works for commercial purposes without the express, written consent of ADB.

Cover photo of the Palawan North Road funded by ADB's 6th Road Project was taken by Rita Festin.

Note: In this publication, "\$" refers to US dollars.

Asian Development Bank 6 ADB Avenue, Mandaluyong City 1550 Metro Manila, Philippines Tel + 63 2 632 4444 Fax + 63 2 636 2444 www.adb.org

For orders, please contact: Department of External Relations Fax + 63 2 636 2648 adbpub@adb.org



Printed on recycled paper

Contents

List of Tables and Figures				
Ał	vi			
Ad	cknowledgments	vii		
Ех	ecutive Summary	viii		
In	troduction	1		
St	ructural Transformation—Aggregate Productivity Growth	9		
St	ructural Transformation—Evolution of Product Space	19		
Se	ervice-Led Growth—Can Services Alone Drive Inclusive Growth?	36		
Pc	blicy Options for Economic Diversification—Product Identification and Targeted Public Sector Support	47		
Co	oncluding Remarks	64		
Ro	bad Map	67		
A	opendixes			
1	Labor Productivity, 1980–2009	68		
2	Labor Productivity—Manufacturing, 1980–2006	69		
3	Technical Notes on Key Concepts in Product Space	70		
4	PRODY-PATH Distribution	76		
5	Evolution of Product Space—Selected Countries, 1965-2008	79		
6	Investment Promotion Agencies and Incentive Packages	86		
7	Labor Intensities of Export Products in the Philippines	90		
8	List of Selected "Middle" and "Far Away" Products	92		

Tables and Figures

Tables		
2-1	Structural Changes, 1980–2009	10
4-1	Labor Productivity of Services, 2009	42
4-2	Structural Changes: India and the Philippines	44
5-1	Priority Activities in Investment Priority Plans (IPPs)	49
5-2	Top 20 "Nearby" Products with the Highest Level of Sophistication	55
5-3	Top 20 "Nearby" Products with the Highest Spillover Effect	56
5-4	Top 20 "Nearby" Products with the Highest Labor Intensity	58
5-5	Policy Options	61
A4-1	PRODY–PATH Distribution of the 773 Products	76
A8-1	Top 20 "Middle" Products with the Highest Level of Sophistication	92
A8-2	Top 20 "Far Away" Products the Highest Level of Sophistication	93
A8-3	Top 20 "Middle" Products with the Highest Spillover Effect	95
A8-4	Top 20 "Far Away" Products with the Highest Spillover Effect	96
A8-5	Top 20 "Middle" Products with the Highest Labor Intensity	98
A8-6	Top 20 "Far Away" Products with the Highest Labor Intensity	100

Figures

1-1	GDP Growth from 1960 to 2010	2
1-2	GDP Growth in the 2000s	3
1-3	Unemployment and Underemployment Rates	3
1-4	Poverty Incidence	4
1-5	Investment Ratio	5
1-6	Exports and Global Semiconductor Sales	5
1-7	Decomposition of Per Capita GDP growth	6
1-8	GDP Per Capita: 1950–2010	7
1-9	Chronic Problems of the Philippine Economy	8
2-1	Economy-Wide Labor Productivity Growth	12
2-2	Sectoral Labor Productivity, 1980–2009	13
2-3	Productivity Growth Decomposition, 1980–2009	13
2-4	Sector Contribution to Productivity Growth, 1980–2009	14
2-5	Productivity Growth Decomposition	15
2-6	Productivity Growth of Manufacturing and Its Decomposition, 1980–2006	16
2-7	Import to Export Ratio of Electronics Products	17
2-8	Tariff Rate Applied for Manufactured Products	18
2-9	Foreign Direct Investment Inflows	18
3-1	Export Structure of the Philippines: 1965–2008	21
3-2	Level of Sophistication of Export Baskets	22
3-3	Product Space	24
3-4	Evolution of Product Space in the Philippines	26
3-5	Number of Products with Comparative Advantage – The Philippines	27
3-6	Product Space of Selected Countries (2008)	28
3-7	Comparative Advantage in Electronics Products in 2008	29

3-8	Product Diversification—Number of Products with Comparative Advantage	30
3-9	Uniqueness of Export Baskets (2008)	31
3-10	Unexploited Opportunities (2008)	32
3-11	Open Forest (2008)	33
3-12	Share of Electricity Cost in Total Production Cost	35
Δ_1	Sector Contribution to GDP Growth 1980–2009	37
4-2	Services Labor Productivity Growth 1980–2009	37
4-3	Services Labor Productivity by Subsector 1980–2009	38
4-4	Subsector Contribution to Services Labor Productivity Growth, 1980–2009	38
4-5	Growing Business Process Outsourcing (BPO)	39
4-6	Employment Status by Educational Attainment, 2009	41
4-7	BPO's Linkages with Other Sectors	43
4-8	Labor Productivity Growth: India and the Philippines	45
4-9	Labor Productivity Growth Decomposition and Sectoral Contributions	45
5-1	Export Performance of IPP Priority Products	50
5-2	Classification of Unexploited Products, 2008	53
5-3	Top 20 Products with the Highest Level of Sophistication	54
5-4	Top 20 Products with the Highest Spillover Effect	54
5-5	Top 20 Products with the Highest Labor Intensity	57
5-6	Distance and Sophistication of Priority Products in the Philippine Development Plan (PDP)	
	2011–2016	59
A3-1	Standardness and Diversification, 2008	71
A3-2	Distribution of PRODY	72
A3-3	Product Space of Country A	73
A3-4	New Product Space of Country A	75
A4-1	Distribution of Products According to PRODY and PATH	77
A4-2	Number of Electronic Products under Machinery	78
A7-1	Distribution of Labor Intensities	91

Abbreviations

ADB	_	Asian Development Bank
ASEAN	_	Association of Southeast Asian Nations
BOI	_	Board of Investments
BPO	_	business process outsourcing
CPBI	_	Census of Philippine Business and Industry
CSEZ	_	Clark Special Economic Zone
CSEZA	_	Cagayan Special Economic Zone Authority
DSRE	_	dynamic structural transformation effect
DTI	_	Department of Trade and Industry
GDP	_	gross domestic product
FDI	_	foreign direct investment
ICT	_	information and communication technology
ILO	_	International Labour Organization
10	_	input-output
IPA	_	Investment Promotion Agency
IPP	_	Investment Priority Plan
ISIC	_	International Standard Industrial Classification
IT	_	information technology
LFS	_	Labor Force Survey
MITI	_	Ministry of Industry and Trade
NSCB	_	National Statistical Coordination Board
NSO	_	National Statistics Office
OFW	_	overseas Filipino worker
PDP	_	Philippine Development Plan
PEZA	_	Philippine Economic Zone Authority
PSIC	_	Philippine Standard Industrial Classification
R&D	_	research and development
SITC	_	Standard International Trade Classification
SSRE	_	static structural reallocation effect
UN	_	United Nations
UNCTAD	_	United Nations Conference on Trade and Development
UNIDO	—	United Nations Industrial Development Organization
WSPGE	_	within-sector productivity growth effect
ZEZA	_	Zamboanga City Special Economic Zone Authority

Acknowledgments

his report is prepared by Norio Usui, senior country economist, Philippines Country Office, Southeast Asia Department, Asian Development Bank (ADB), with Amador Foronda and Albert Kirby Tardeo, consultants, under Technical Assistance (TA 7654) on the Structural Transformation Study of the Philippines. The author appreciates comments and suggestions received from reviewers: Joven Balbosa (Southeast Asia Department, ADB), Joao Pedro Farinha (Central and West Asia Department, ADB), and Utsav Kumar (Southeast Asia Department, ADB). Key findings of the report were presented in several workshops and seminars such as the Philippine Economic Society's annual meeting (November 2010), ADB and the Philippine Institute of Development Studies joint forum (September 2011), the Philippine Manufacturers and Producers Summit (November 2011), Development talks in Department of Trade and Industry (January 2012) and ADB, Agence Française de Développement, Japan International Cooperation Agency joint forum (February 2012). The author acknowledges comments and suggestions from the participants. The findings, interpretations, and views expressed are entirely those of the author, and do not necessarily represent the views of the Asian Development Bank, its executive directors, or the countries they represent. The author can be reached at nusui@adb.org.

Executive Summary

he primary objective of this report is to discuss key policy challenges that need to be addressed if the Philippines is to embark on sustainable and inclusive growth. We take the view that the main reason behind the Philippines' lagging growth performance and development outcomes in the regional context lies in a sluggish transformation of the economy—in particular stagnant industrialization—in the past decades. The Philippine economy's chronic problems of high unemployment, slow poverty reduction, and low investment, are reflections of the sluggish industrialization. In the past decades, the Philippine economy has been led by services, and it has been further shifting toward services with the rapidly growing business process outsourcing (BPO). Nevertheless, sole development of the services sector is not sufficient to address the development challenges and lead to inclusive growth.

We thus propose more targeted public sector support, which focuses on specific industries and products, for industrial upgrading and diversification. This report shows a new methodology of choosing products for the targeted public sector support, and recommends effective dialogue between the public and private sector to identify constraints specific to the target products, and develop adequate solutions. The Philippines' biggest need is to develop stronger industrial base to enable the economy to "walk on two legs" of industry and modern services, to create productive job opportunities for the growing working-age population.

The Philippine economy has shown solid growth performance over the 2000s. The country, however, has not yet succeeded in translating this into inclusive growth, one that can benefit the entire population. Despite opportunities created by the economic growth in the period, many people remain poor and unemployed, and investments in the country are still below the regional standard. Identifying and connecting that missing link between economic growth and poverty reduction is the Philippine economy's enormous challenge. The Philippines was an early leader, with a relatively advanced manufacturing sector and well-developed human capital in the 1950s and 1960s. Despite these favorable initial conditions and being located in growing East Asia, the country failed to achieve the high growth that other countries in the region achieved over the last few decades. Over the last 5 decades, gross domestic product (GDP) per capita dropped from being one of the top in the region to almost the bottom. The country has had the slowest rate of poverty reduction in the past decades, despite its relatively low levels of absolute poverty in early days. What has gone wrong?

The country went through a process of deindustrialization from the early 1980s, and urban growth wholly relied on the services sector. Thus, instead of continuing the industrial upgrading process that most of its neighbors underwent, the Philippines' industrialization stagnated. The country transformed itself into a service-based economy, and the recent boom in the BPO sector has accelerated this process. Services have contributed to over 60% of total GDP growth over the past 3 decades—the highest in the region. In fact, the services sector in the Philippines contributes over half of the country's total output and employment. Given the dominance of services in the economy, what are the implications of the service-led growth to the country's long-term growth and development potential? Is there a connection between the decade-long growth pattern and the high unemployment, widespread poverty, and low investment? Can the new phenomenon of rapidly growing BPOs change the nature of such nexus, and help address those chronic problems of development and benefit the population?

To answer these critical questions, this paper analyzes structural change in production and employment patterns of the Philippine economy in the past decades, and examines its implications on the country's long-term growth

and development outcomes. The paper focuses on the impact of structural transformation on employment growth and economy-wide productivity growth, and assesses the process of product diversification and its implications on the growth performance by applying the concept of product space. The paper also proposes a new policy approach to revitalize public sector support for productive economic diversification.

Economy-wide labor productivity (real output per unit of labor input) growth is a key indicator of a country's ability to continue improving its standards of living over time. Labor productivity growth in excess of wage increases is also a key strategy in retaining international export competitiveness. Successful Asian economies have continuously increased their economy-wide productivity (aggregate productivity) by improving sector productivity and shifting labor from sectors with low productivity to those with high productivity. Productivity growth within each sector and resource reallocation toward high productivity sectors are two engines of productivity growth throughout the economy. Over the last 3 decades, however, the Philippines' aggregate labor productivity increased by only 10%. Neither sectoral productivity growth nor reallocation of labor across sectors contributed significantly to aggregate productivity growth. Labor productivity of services, which has been the key growth engine of the Philippine economy and absorbed labors from rural activities, has persistently been less than half of that of industry. In contrast, industry, which has indeed retained the highest productivity over the years, has neither raised its productivity level nor absorbed workers from the less productive sectors.

This lack of industrial dynamism in the Philippines, the low capacity of firms to expand or upgrade the range of industrial products being exported competitively is documented this report and argued to be inherently linked to the Philippines' lagging performance. The evolution of the Philippine economy's product space, which visualizes the process of economic diversification at the product level, shows that its regional neighbors continuously managed to shift their competitive industries' products toward more diversified and sophisticated export baskets. Despite the increasing level of sophistication of its export basket, however, the process of industrial diversification in the Philippines has stagnated. The initial success in electronics did not translate into a deepening of other industrial capabilities across the economy. The Philippines has not fully utilized the accumulated capabilities in some electronics products into more sophisticated segments of electronics and other manufacturing products such as machinery, chemicals, and some metals. Arguably, private sector incentives to redeploy those productive capabilities into the production of new products have been weakened by several constraints such as underprovision of basic infrastructure and poor business and investment climate. Although progress was made, generous and passive public sector support provided through export promotion agencies have not achieved the expected outcomes in industrial development—at least compared with those in neighboring countries.

The Philippines' growth has mainly been led by services. Productivity of the services labor, however, has persistently been well below that of industry. This suggests that although services have made the greatest contribution to economic growth and job creation, it was not necessarily associated with a rise in productive employment on the aggregate. The BPO industry entered the Philippine economy in the early 2000s, and the country has now become the third largest global BPO destination. However, the BPO industry employs only about 1% of the total labor force (2009), and its labor demand is biased toward relatively skilled workers. Given the large amount of under utilized labor with moderate skills and the prospect of further increasing the labor force in the near future, it is unlikely that development of services, even with the growing BPO industry, would be solely sufficient to address the development challenges of the country and bring the economy on the right track to inclusive growth.

To achieve inclusive growth, the Philippines needs to develop a stronger industrial sector to create productive job opportunities for the growing labor force. However, as the growing literature in industrial development illustrates, industrial upgrading and diversification are unlikely to take place without public intervention due to market failures in information, coordination, and externalities. Recent literature also emphasizes that market failures require public policy response or support specific to each product. The government needs to play an active role to help entrepreneurs take advantage of market opportunities. The Philippines has a long tradition of public sector support for both domestic and foreign investors, mainly through investment promotion agencies (IPAs). IPAs have provided a variety of tax incentives for investment, export, job creation, and regional development. Registered firms enjoy income tax holidays, tax-exempted import of materials and capital goods, and deduction of wage bills from taxable income. While the IPAs have supported a wide range of priority industries in the Investment Priority Plans (IPP), the country has failed to attract investors, particularly foreign ones, and to spur local entrepreneurs in industry. Most investors have regarded past provision of fiscal incentives as redundant. The revenue loss due to the redundant incentives has likely reached over 1% of GDP. Impact assessments of the fiscal incentives have rarely been conducted.

Public sector support that can be implemented by the government usually falls in one of two broad categories: one is to improve general business and investment climate across sectors (broad-based or horizontal interventions), and another is to improve the efficiency of specific products and industries (targeted or vertical interventions).

A first step toward effective industrial development is to undertake broad-based reforms necessary to address the long-standing challenges such as tight fiscal position and weak business and investment climate. Fiscal consolidation is urgently needed to increase spending on infrastructure, since public investment has been constrained by weak revenue performance and poor expenditure management. The business community has been concerned about cumbersome business procedures and over-regulation, weak contract enforcement and property rights, and rigid labor market regulations. While significant progress has been made both in fiscal consolidation and business environment, experience in the country shows that broad-based public sector interventions are not enough to effectively develop the industry sector.

This paper stresses the critical importance of targeted interventions for industrial upgrading and diversification. Policymakers need to think of more focused ways to identify the needed interventions that would help promote new products that require very specific capabilities. Cross-cutting issues such as infrastructure have sector-or product-specific consequences. Installing roads instead of ports, for example, will have product-specific consequences. The high price of electricity can impede the development of manufacturing, but its impact varies significantly across products depending on the share of electricity costs in the total production cost in each product. Given limited resources and capacity, the government needs to choose target products to prioritize its interventions. Once policymakers recognize the need for targeted interventions, they face two policy challenges: first, identifying the right industries or products for public sector support, and second, helping the private sector exploit business opportunities in the targeted products. This paper proposes a two-step solution to these problems.

Selecting target products. This paper lists products that the Philippines can develop with relative ease ("nearby" products). These "nearby" products that the government can target are those where the accumulated capabilities for producing the current export basket are already being used. Thus, the available capabilities are mainly deployed to these new products, and no new capabilities are created. Policymakers can then develop the appropriate selection criteria for choosing target (or priority) products from the group of "nearby" products. This paper shows three criteria that the government may use for choosing these products, and (ii) products with higher sophistication, (ii) products with a high spill-over effect to other products, and (iii) products with the highest labor absorption capacity. Based on its policy priorities, the government can establish its own set of appropriate criteria.

Public and private dialogue. Once policymakers set targets, the next task is to uncover the reasons why entrepreneurs have not moved into the target products despite the relative ease of jumping into these products. There is no clear answer to this question. Probable reasons can be the lack of product-specific infrastructure, regulatory framework, certificates, property rights protection, and market information. However, compared with the private sector, the public sector has less information on the location and nature of market failures that impede investments. An effective solution is to set up institutions, or a "coordination and deliberation council," where through interaction with the private sector, the public sector can identify significant obstacles in exporting new goods and develop interventions to address them. To avoid the possibility of these dialogues

resulting in the establishment of constraints that may be counterproductive to business, the dialogues need to be conducted in the specific context of a product. Public sector support can be provided in different forms and does not necessarily mean only financial support such as subsidies to the target products.

This paper emphasizes the critical importance of establishing an institutional mechanism that will identify the constraints to discovering new products and determine the adequate public sector support to address the identified problems. The key is to conduct a diagnostics exercise at the product level, not at the aggregate level. Major constraints, which are identified in a variety of business surveys at the aggregate level can provide valuable information for designing a broad direction of policy reforms. Indeed, it is quite important to resolve standing issues such as inadequate infrastructure and poor business and investment climate. However, they cannot capture constraints specific to a product. Experiences in many countries show that despite a wide range of problems, the private sector could develop new "nearby" products and foreign investors can set up their production bases. Public sector intervention that focuses on specific products can help the country to find niches for industrial upgrading and diversification.

The success of targeted public sector support depends on strong political commitment. This will enable coordination among different ministries and agencies within the government in designing and implementing public sector support programs, and will help to effectively monitor and evaluate the programs. Despite the strong theoretical justifications, however, there remains much opposition to targeted interventions. But the conventional argument against target interventions does not rest on its use but on the practical difficulties of its implementation ("picking winners" and governance concerns). However, these pitfalls can be avoided by applying several design and implementation principles of successful interventions.

The key elements of successful interventions for targeted products are: first, with a strong political commitment, establishing an effective dialogue mechanism with the private sector to identify key constraints specific to the target products; second, to the extent possible, incorporating different market mechanisms, for instance, cofinancing, in designing public sector support; and third, setting up clear monitoring and evaluation mechanisms with performance indicators and benchmarks. Well-targeted interventions with careful monitoring and rigorous impact assessment will help foster the structural transformation that drives inclusive growth in the Philippines. The changing global and regional economic environment, such as tightening labor market and increasing wages in neighboring countries, the currency appreciation in Japan, and restructuring regional production network after natural disasters, have furnished wider opportunities for the Philippines. The government can be pragmatic enough to capture the opportunities afforded by the changing global and regional economic environment.

Introduction

"The Philippines is one of the world's major development puzzles."

Balisacan, A. and H. Hill 2003,¹ p. 3.

espite being located in fast-growing Asia, why is it that the Philippines cannot achieve growth similar to that of its neighbors? Why did its favorable position in the 1950s and 1960s not lead to higher growth in subsequent decades? What are the main causes of the chronic problems of unemployment, poverty, and low investment? Why can't the higher growth achieved during the 2000s translate into poverty reduction?

This paper aims to answer these fundamental questions by analyzing the long-term growth of the Philippine economy in the regional context through the lens of structural transformation. The paper concludes that the root cause of the Philippines' poor growth performance and development outcomes is chronic productivity growth deficit due to stagnant industrialization, in particular, sluggish industrial upgrading and diversification.

Over the decades, the services sector has driven the growth and transformed the Philippines into a servicebased economy. The process toward the service-based economy has been accelerated since the business process outsourcing (BPO) industry entered the economy. The Philippines has become one of the key BPO destinations in the world, with annual revenues of \$7.7 billion, and about a half million workers (BSP 2009).² The country's high literacy rate, coupled with widespread use of English, has made the Philippines an attractive hub for the BPO industry. The question in many people's minds is whether the booming BPO industry will be the savior of the Philippine economy. The conclusion of this paper is that although the BPO industry can greatly help, the Philippines needs to "walk on the two legs"³ of industry and services to put the economy on the track for inclusive growth.

Once the Philippines decides to develop a stronger industrial base for inclusive growth, policymakers face two practical challenges: identifying new industries in which the country may have comparative advantage in the future, and removing constraints that impede the emergence of such industries and creating favorable conditions that give comparative advantage. This paper shows the list of products that the Philippines can exploit with comparative ease, and proposes a new policy for public sector support for industrial upgrading and product diversification.

Recent growth performance and observed structural weaknesses. The Philippine economy has shown strong growth performance over the 2000s. Average annual growth rate of gross domestic product (GDP) over the last decade reached 4.8% in real terms, which is much higher than the 2.9% in the 1990s and the 1.7% in the 1980s (Figure 1-1). The growth was led mainly by strong private consumption backed by remittance inflows

² Department of Economic Statistics. 2011. *Results of the 2009 Survey of Information Technology Business Process Outsourcing (IT-BPO) Services.* Manila: Bangko Sentral ng Pilipinas.

¹ Balisacan, A. and H. Hill 2003. The Philippine Economy: Development, Policies, and Challenges, New York: Oxford University Press.

 ³ A. Paragaria (2006) used the term "walking on two legs" in analyzing India's long-term growth pattern and its implications for inclusive growth. Panagaria, A. 2006. *Transforming India*. Presented at the conference India: An Emerging Giant. Columbia University. 13–15 October.



Figure 1-1 GDP Growth from 1960 to 2010 (annual average, %, constant 2000 \$)

Source: World Bank, World Development Indicators.

from overseas Filipino workers (OFW) and increasing service export, accompanied by relatively low inflation, strong external balances, and sound financial indicators. Moreover, the economy did not seriously suffer from the recent global economic crisis. While growth slowed in 2008 and 2009, the economy retained positive growth (Figure 1-2). Since late 2009, however, the Philippine economy has recovered rapidly because of a sharp rebound in exports, especially in the electronics industry; the emergence of strong growth in BPO; a real estate construction boom; and solid private consumption backed by remittance inflows. While the restocking of inventories led to early recovery from the crisis, private investment has become another growth engine. Private investment has been stimulated by a strong business sentiment since the reform-minded new administration assumed office in 2010. The GDP growth rate in 2010 reached 7.6%, the highest since the mid-1980s.

However, the Philippine economy, despite the recent favorable performance, shows several structural weaknesses that make it difficult to translate the good performance into inclusive growth.

Weak link between growth and labor (and poverty) indicators. Despite the recent growth episode, the economy suffers from high unemployment (7.3% in 2010) and underemployment (18.7% in 2010).⁴ Given the unemployment (7.4%) and underemployment (19.3%) in 2008 when the economy was hit by the global crisis, it is clear that the economic growth could not necessarily lead to better labor market indicators (Figure 1-3). Reflecting the limited job opportunities, workers have been restricted to low-productivity jobs that do not pay enough to lift themselves and their families out of poverty. The official poverty data shows that the Philippines' poverty incidence fell from 33.1% in 1991 to 24.9% in 2003, but rose markedly to 26.4% in 2006, and then stagnated at 26.5% in 2009 (Figure 1-4).⁵ The latest progress report on the Millennium Development Goals reveals that universal primary education and targets for maternal and reproductive health are not likely to be achieved by 2015.⁶

⁴ Defined as employed persons seeking additional employment.

⁵ The latest official poverty data, based on a new estimation methodology, was released on 8 February 2011. While the new estimates show lower poverty incidences since 1991, the overall trend of poverty reduction follows the same pattern with the previous estimates. www.nscb.gov.ph/pressreleases/2011/PR-22011-SS2-01 pov2009.asp

⁶ Government of the Philippines. 2010. Philippines 4th Progress Report on the Millennium Development Goals 2010. Manila. www.neda.gov.ph/econreports_dbs/MDGS/



Figure 1-2 GDP Growth in the 2000s (year-on-year, %, constant 2000 \$)

GDP = gross domestic product.

Source: World Bank, World Development Indicators.





Note: The series break between 2004 and 2005 is due to the change in definition of unemployment.

Source: National Statistics Office (NSO), Labor Force Survey (LFS).



Figure 1-4 Poverty Incidence (%)

Rising growth and declining investment. In the recent investment-led economic recovery process, the country's fixed investment-to-GDP ratio jumped to 20.3% in 2010 from 18.3% in 2009 (Figure 1-5). Although the level is lower than the regional average (25% of GDP), it is the first increase in investment share since 2000. However, the Philippines' fixed investment share has consistently declined from over 20% in early 2000s to 18.9% in 2009, when the economy attained a relatively higher growth than it did during the 1990s. This phenomenon of rising growth and declining investment has attracted the interest of researchers as a paradox of the Philippine economy (Bocchi 2008).⁷

Limited diversification of export products. The recent global slowdown revealed another structural weakness of the Philippine economy. Even in the face of the global slowdown, most countries in the region managed to retain positive export growth. The Philippines, however, has experienced a double digit decline in exports since the middle of 2011 (Figure 1-6). The GDP growth rate in 2011 slowed down to 3.7%. The reason behind it is that the Philippines' export products are too highly concentrated in electronics, particularly semiconductors. The exports are highly dependent on electronic products (60% of total export in 2010), and the bulk of electronics export comes from the semiconductors (about 77% of total electronics export). With a sharp slowdown of global semiconductor sales, the country's overall exports have significantly shrunk. The limited diversification of export structure, which is the result of structural transformation in the past decades, makes the economy more vulnerable to global economic slowdown.

The structural weaknesses observed in the recent growth episode—weak labor (and poverty) indicators, low investment, and limited diversification of export products—suggest a need for a fresh look at the country's long-term development pattern, particularly the change of production and employment structure of the Philippine economy, to identify their root causes.

Source: National Statistical Coordination Board (NSCB), 2009 Philippine Poverty Statistics.

⁷ Bocchi, M. A. 2008. Rising Growth, Declining Investment: The Puzzle of the Philippines. *Policy Research Working Paper* 4472. Washington, DC: World Bank.





Source: National Statistical Coordination Board (NSCB), Revised National Account of the Philippines (2000 = 100).





Global Semiconductor Sales and the Philippines' Semiconductor Exports



(% change to the previous year)

Long-term development performance and chronic problems. The Philippines' long-term development performance is a major puzzle. With one of the highest per capita incomes in the region in the 1950s and 1960s, the country was an early leader, with a relatively advanced manufacturing sector and well-developed human capital. In fact, the Philippines had the highest school enrollment rate in the region, and its average schooling year in 1960 was comparable with that of the Republic of Korea (Barro and Lee 2010).⁸ Early development strategy based mainly on import substitution led to a diversification of the industry, protected with high tariffs and dependent on the domestic demand. During the 1970s–1980s, the country's development policy shifted gradually to opening the economy through export promotion and liberalization of trade and foreign exchange regime. However, growth during this period was mainly financed by external resources, exacerbating the vulnerability to external shocks. In 1983, the Philippines experienced a large debt crisis resulting in a major economic collapse. The country then entered a period of protracted subdued growth, accompanied by important structural changes. In particular, the services sector expanded rapidly at the expense of industry. Over the last decade, the growth performance led by the services sector improved.

The country's growth and development performance has been disappointing in any yardstick in the regional context. Between 1960 and 2008, real GDP grew at a rate of 4.0% per annum. With a relatively high population growth of 2.5%, per capita GDP increased only by 1.5% (Figure 1-7). Over the same period, neighboring economies in the Association of Southeast Asian Nations (ASEAN) such as Indonesia, Malaysia, and Thailand (ASEAN-4) grew at a rate of about 4% in per capita term. Even if the focus is on the last 2 decades (1990–2008), during which a series of reforms made the economy one of the most open to trade and capital inflows, the overall story of the Philippines' lagged growth remains. By the end of the 1990s, the Philippines' per capita GDP has dropped to the bottom in the ASEAN-4, and now even the gap with Viet Nam is narrowing (Figure 1-8). Contrary to popular belief, the Philippines' high population growth ore the same period.



Figure 1-7 Decomposition of Per Capita GDP Growth (annual average, %)

GDP = gross domestic product, INO = Indonesia, MAL = Malaysia, PHI = Philippines, THA = Thailand. Note: Population growth rate is shown as negative. Source: World Bank, World Development Indicators.

⁸ Barro, R. and J. W. Lee. 2010. A New Data Set of Educational Attainment in the World, 1950–2010. *NBER Working Paper* 15902. Massachusetts: National Bureau of Economic Research. www.barrolee.com/



Source: World Bank, World Development Indicators.

Considerable literature on the topic have identified three issues as central challenges of the Philippine economy: high unemployment, slow poverty reduction, and stagnant investment (Figure 1-9). Indeed, the country's unemployment rate has remained high over the past 3 decades, relative to other countries in the region. The pace of poverty reduction has been slower than that of its neighboring countries, reflecting the limited job opportunities.⁹ The share of fixed investment in GDP has also remained lower compared with that of its neighboring countries, and stagnated even during the relatively high growth period in the 2000s.

Structure of the paper. The rest of the paper proceeds as follows. Section II analyzes aggregate productivity growth in the country through the lens of structural transformation. Section III analyzes in detail structural transformation in the Philippines at the product level by using the new concept of product space developed by Hausmann and Klinger (2006)¹⁰ and Hidalgo et al. (2007).¹¹ Section IV discusses the services sector, particularly the rapidly growing BPO sector, in terms of its impacts on job creation and labor productivity, and linkages with the rest of the economy. Section V reviews the current public sector support for investment promotion, and discusses an alternative policy option for successful industrial development. A brief summary is provided in the last section.

⁹ Son, H. H. 2008. Explaining Growth and Inequality in Factor Income: The Philippine Case. *ERD Working Paper* 120. Manila: Asian Development Bank, analyzes the relationship between growth and inequality of factor income based on household survey data and concludes that low productivity jobs were taken over by the more educated labor force. This finding implies that the massive expansion in the supply of qualified labor was not utilized for productive jobs. Given the limited job opportunities, workers with high educational attainment entered into low productivity jobs and crowded out the less educated workers.

¹⁰ Hausmann, R., and B. Klinger. 2006. The Structure of the Product Space and the Evolution of Comparative Advantage. *CID Working Paper* 146. Massachusetts: Center for International Development, Harvard University.

¹¹ Hidalgo, C. A., B. Klinger, A.-L. Barabási, and R. Hausmann. 2007. The Product Space and its Consequences for Economic Growth. *Science* 317:482–87.



Figure 1-9 Chronic Problems of the Philippine Economy (constant 2000 \$)

Slow Poverty Reduction (headcount ratio at \$2 a day PPP, % of total population)







GDP = gross domestic product, PPP = purchasing power parity. Source: World Bank, World Development Indicators.

Structural Transformation—Aggregate Productivity Growth

"Productivity isn't everything, but in the long run it is almost everything."

Krugman, P. 1994,¹² p. 13.

tructural transformation. Structural transformation has been the core issue of development. In the early days of development economics, development was mainly about transformation of productive structure and needed capabilities to support the transformation (Ha-Joon Chang 2010).¹³ Arthur Lewis developed the two-sector model, which views traditional agrarian economy with large surplus of labor that can be used to spur the development of an urban industrial sector. Simon Kuznets suggested a generalized pattern of structural changes that were intrinsic parts of the growth process—first, the rise of the industrial sector at the expense of agriculture, second, the growth of urban, instead of rural areas, and third, the rise of factories, based on wage employment. Hollis Chenery analyzed the sequential process through which the economic, industrial, and institutional structure of an underdeveloped economy is transformed into new industries as the engine of economic growth. In a review article, Syrquin (1988, 205)¹⁴ noted that "economic development is seen as an interrelated set of long-run processes of structural transformation that accompany growth." Lucas (1993, 236)¹⁵ also mentions that "a growth miracle sustained for decades involves the continual introduction of new goods, not merely continued learning on a fixed set of goods."

The main growth engine of East Asian economies has been dynamic structural transformation. The growth miracle of East Asian countries started in the 1970s, when they shifted their development strategy toward promoting export and attracting foreign direct investment (FDI). This process was accelerated in the 1980s when foreign firms actively relocated their production bases across the region. Structural transformation in these countries had three dimensions: first, output shifted from low-productivity goods into high-productivity ones, particularly manufacturing goods; second, the labor force moved from traditional activities in the primary sector to modern industry; and third, the export basket diversified toward more sophisticated products. The industrial sector has continually raised its productivity sectors. The dynamic structural transformation and employment structures has sustained growth and reduced poverty by creating affluent job opportunities.

¹² Krugman, P. 1994. *The Age of Diminished Expectations*, Massachusetts: The MIT Press.

¹³ Chang Ha-Joon. 2010. Hamlet without the Price of Denmark: How development has disappeared from Today's 'Development' Discourse. In Khan S. and J. Christiansen, eds. *Toward New Developmetalism: Market as Means rather than Master*. Abingdon: Routledge.

¹⁴ Syrquin, M. 1988. Patterns of Structural Change. In H. Chenery and T. N. Srinivasan, eds. *Handbook of Development Economics*, Volume 1. Amsterdam: North-Holland.

¹⁵ Lucas, R. E. Jr. 1993. Making a Miracle. *Econometrica* 61 (2): 251–72.

Enhancing productivity or reducing structural change. Developing countries are characterized by large productivity gaps between the different sectors of the economy, reflecting an inefficient allocation of resources that reduces the overall labor productivity of the economy. These productivity gaps can actually be important engines of growth for developing countries, since economy-wide productivity can grow by reallocating resources to high productivity sectors, even without productivity growth within sectors. McMillan and Rodrik (2011)¹⁶ analyze the relationship between structural transformation and aggregate labor productivity growth for countries in different regions—Latin America, Sub-Saharan Africa, and Asia—for 1990–2005, and found two different patterns of structural transformation. They found that both in Latin America and Africa, labor moved from sectors with high productivity growth to sectors with low productivity growth, offsetting to a large extent the large productivity growth within a sector. In these countries, structural change has served to reduce rather than increase overall labor productivity, and hence economic growth (productivity-reducing structural change). In contrast, Asian countries as a whole improved economy-wide labor productivity through sectoral productivity growth, and sectoral reallocation of labor to high productivity sectors from low productivity sectors (productivity-enhancing structural change). This shows the critical importance of both the speed and the direction of structural transformation for productivity growth in developing countries.

Structural transformation in the Philippines. The Philippines' industry sector has stagnated for years and even decreased its share of GDP from 39% (1980) to 32% (2009) (Table 2-1). Labor force employed in the industry sector remained stagnant at about 15% over the same period. Trade liberalization in the 1990s, and even in the recent high growth period, did not trigger a rising share of industry, particularly manufacturing. As of 2009, the manufacturing sector accounts only for 21% of GDP and less than 9% of employment. This is in marked contrast with that of neighboring economies, where the share of manufacturing has steadily increased both in output and employment. In the Philippines, workers leaving the agriculture sector have been entirely absorbed by the services sector, which accounts for over 55% of GDP and employs 50% of the total workforce. Reflecting the structural changes in the direction of services, which are less capital-intensive and more labor-intensive than manufacturing, the country's fixed investment as share of GDP has stagnated, even slightly declined, during the relatively high growth period in the 2000s.

Contor	Indonesia			Malaysia			
Sector	1980	2009	Change	1980	2009	Change	
Agriculture	24.0	15.9	(8.1)	22.6	9.5	(13.1)	
Industry	41.7	49.6	7.9	41.0	44.3	3.3	
Manufacturing	13.0	27.4	14.4	21.6	25.5	3.9	
Services	34.3	34.5	0.2	36.3	46.2	9.9	
Total	100.0	100.0		100.0	100.0		
	Philippines			Thailand			
Sector		Philippines			Inaliand		
Sector	1980	2009	Change	1980	2009	Change	
Sector Agriculture	1980 25.1	2009 13.1	Change (12.0)	1980 23.2	2009 11.5	Change (11.7)	
Sector Agriculture Industry	1980 25.1 38.8	2009 13.1 31.7	Change (12.0) (7.1)	1980 23.2 28.7	11.5 43.3	Change (11.7) 14.6	
Sector Agriculture Industry Manufacturing	1980 25.1 38.8 25.7	2009 13.1 31.7 21.3	Change (12.0) (7.1) (4.4)	1980 23.2 28.7 21.5	2009 11.5 43.3 34.2	Change (11.7) 14.6 12.7	
Sector Agriculture Industry Manufacturing Services	1980 25.1 38.8 25.7 36.1	2009 13.1 31.7 21.3 55.2	Change (12.0) (7.1) (4.4) 19.1	1980 23.2 28.7 21.5 48.1	11.5 43.3 34.2 45.2	Change (11.7) 14.6 12.7 (2.9)	

Table 2-1 Structural Changes, 1980–2009

Output Structure (% of GDP)

¹⁶ McMillan, M., and D., Rodrik. 2011. Globalization, Structural Change, and Productivity Growth. Massachusetts: Harvard University. Mimeo.

Soctor	Indonesia			Malaysia			
Sector	1980	2009	Change	1980	2009	Change	
Agriculture	56.4	39.7	(16.7)	37.2	13.5	(23.7)	
Industry	13.1	18.8	5.7	24.1	27.0	2.9	
Manufacturing	9.0	12.4	3.4	16.1	18.3	2.2	
Services	30.5	41.5	11.0	38.7	59.5	20.8	
Total	100.0	100.0		100.0	100.0		
Soctor	Philippines			Thailand			
	1980	2009	Change	1980	2009	Change	
Agriculture	51.8	35.2	(16.6)	70.8	41.5	(29.3)	
Industry	15.4	14.5	(0.9)	10.3	19.6	9.2	
Manufacturing	10.8	8.9	(1.9)	7.9	13.7	5.8	
Services	32.8	50.3	17.5	18.9	38.9	19.7	
T ()							

Employment Structure (% of total employment)

GDP = gross domestic product. Figures in parentheses are negative.

Source: World Bank, World Development Indicators, and International Labour Organization, LABORSTA.

The growth of the services sector has accelerated since the mid-1990s, when the Philippines started enjoying high remittance inflows and service exports mainly through the business process outsourcing (BPO) industry. Despite stagnant investment, the economy kept growing due to strong private consumption backed by soaring remittance inflows. However, the booming services sector did not translate into higher employment. Informal activities and emigration are the major outlets for underutilized labor. Quality labor continues to seek job opportunities abroad or take over relatively low-wage and low-skill jobs. A serious mismatch between the quality of labor supply and demand is observed in the sense that workers are over qualified for the skills required by their jobs. For example, it is not uncommon to see college-educated maids, and college-educated taxi drivers. Many medical doctors tend to take up nursing jobs in advanced countries. The deployment of overseas workers and high underemployment mask the extent of domestic unemployment.

Economy-wide labor productivity growth. Labor productivity growth is a key measure in capturing a country's ability to improve its standard of living over time. Aggregate labor productivity in the economy is the average of the productivity in all sectors, weighted by the share of employment in each sector. Hence, economy-wide productivity can be raised by productivity growth within sectors, labor shift from less productive to more productive sectors, or both. A key question is to what extent aggregate productivity growth can be explained by the performance specific sectors or labor reallocation across sectors. A decomposition of aggregate productivity growth provides a picture of how changes in sector productivity and sectoral reallocation of labors affect economy-wide productivity.¹⁷

¹⁷ Aggregate labor productivity growth can be decomposed into three components. The first, "within-sector productivity growth effect (WSPGE)," measures how much of the changes in aggregate productivity can be explained by the change in labor productivity within an individual sector. The second, "static structural reallocation effect (SSRE)," captures the changes in productivity associated with the reallocation of employment from low-productivity to high-productivity sectors. The last component, "dynamic structural reallocation effect (DSRE)," is an accounting term that reconciles growth in the aggregate with the SSRE and WSPGE. The DSRE is calculated by multiplying the change in each sector's labor productivity times each sector's change in employment share. It is negative for any given sector if either the change in labor productivity or the change in employment share is negative. It is positive for a sector if employment increases (decreases) in that sector and productivity decreases (increases) in that sector; it is negative for a sector if employment increases (decreases) in that sector and productivity decreases (increases) in that sector. If the three components are aggregated for each sector, we can analyze each sector's contribution to aggregate productivity growth. The decomposition can be written as:

Lagged labor productivity growth in the Philippines. The Philippines' lagged growth performance compared with that of its neighbors is reflected in a huge gap in aggregate labor productivity growth. Over 1980 and 2009, the Philippines' aggregate labor productivity increased by only 10% (annual average growth rate was only 0.3%), while that of Indonesia, Malaysia, and Thailand more than doubled (Figure 2-1 and Appendix 1). What are the major causes of this gap? In all countries in the region including the Philippines, the industry sector has retained the highest labor productivity compared with those in other sectors (Figure 2-2). Although the contribution of the different components has been uneven, aggregate productivity of neighboring economies was fueled by productivity growth within the sector, but also, quite importantly, by the reallocation of workers from less to more productive sectors (Figure 2-3). The cross term DSRE was also positive since workers shifted toward sectors that are growing productively. This means that other countries in the region have improved their aggregate labor productivity through continual reallocation of labor toward more productive sectors, in particular, industry. This finding is consistent with the argument by McMillan and Rodrik (2011). In the Philippines, the only contribution was made by SSRE, shifting labor from agriculture to services.



Figure 2-1 Economy-Wide Labor Productivity Growth (annual average, %)

Source: Author's calculation.

$$\begin{aligned} dy_{\tau}^{1} / y_{\tau}^{0} &= \frac{1}{y_{\tau}^{0}} \left[\sum_{i} s_{i}^{0} \cdot \left(y_{i}^{1} - y_{i}^{0} \right) \right] & \text{Within - sector productivity growth effect (WSPGE)} \\ &+ \frac{1}{y_{\tau}^{0}} \left[\sum_{i} y_{i}^{0} \cdot \left(s_{i}^{1} - s_{i}^{0} \right) \right] & \text{Static structural reallocation effect (SSRE)} \\ &+ \frac{1}{y_{\tau}^{0}} \left[\sum_{i} \left(s_{i}^{1} - s_{i}^{0} \right) \cdot \left(y_{i}^{1} - y_{i}^{0} \right) \right] & \text{Dynamic structural reallocation effect (DSRE)} \\ &= \frac{1}{y_{\tau}^{0}} \sum_{i} \left[y_{i}^{0} \cdot \left(s_{i}^{1} - s_{i}^{0} \right) + s_{i}^{0} \cdot \left(y_{i}^{1} - y_{i}^{0} \right) + \left(s_{i}^{1} - s_{i}^{0} \right) \cdot \left(y_{i}^{1} - y_{i}^{0} \right) \right] & \text{Contribution by sector} \end{aligned}$$

where, *i*: sectors (agriculture, industry, services), 0: base year, 1: final year, y_T : aggregate labor productivity, y_i : labor productivity of sector *i*, and s_i : share of sector *i* in total employment.



Figure 2-2 Sectoral Labor Productivity, 1980–2009 (constant 2000 \$)

Figure 2-3 Productivity Growth Decomposition, 1980–2009 (%)



 $\label{eq:DSRE} DSRE = dynamic structural reallocation effect, SSRE = static structural reallocation effect, \\ WSPGE = within-sector productivity growth effect.$

Source: Author's calculation.



Figure 2-4 Sector Contribution to Productivity Growth, 1980–2009 (%)

Sectoral decomposition of aggregate productivity growth shows that industry and services are the two main engines of productivity growth in the neighboring countries (Figure 2-4). Both sectors increased their own productivity and absorbed more workers from agriculture, which led to the dramatic jump of aggregate productivity. In the Philippines, sector productivity for all sectors stagnated for over 3 decades.¹⁸ Industry and agriculture contributed negatively to aggregate productivity growth, and only a minor contribution was made by services. The services sector absorbed workers without improving much its own productivity. Reflecting the relatively strong growth performance over the 2000s, the aggregate labor productivity has increased by 17% (1.8% annual average growth) for 2000–2009. This productivity growth was attained mainly through productivity increase both in industry and services, and labor shift from agriculture to services, not to industry (Figure 2-5). While not so dramatic, the steady growth of industry productivity since the mid-1990s may partially reflect the intensified competition brought about by the trade liberalization initiated in the early 1990s. The degree of aggregate productivity growth over the 2000s has remained lower than that in the neighboring countries. The recent structural change toward a service-based economy has been insufficient to lift the economy-wide productivity.

Overall, the assessment of aggregate labor productivity growth suggests that behind the poor growth performance over the last 3 decades, the country's productivity grew only slightly through a labor shift from agriculture to services, a sector with low productivity growth. The industry sector, the key growth engine in the neighboring countries, did not contribute to the growth of the Philippines' aggregate labor productivity.

The Philippines' regional neighbors raised the labor productivity of their manufacturing sector by increasing productivity within each subsector (Figure 2-6 and Appendix 2). Although there were marked differences across the countries, the biggest contributors were chemicals, petroleum, coal, rubber, and plastic (code 35); and fabricated metal, and machinery and equipment, including electronics products (code 38). In contrast, the Philippine manufacturing sector's labor productivity remained stagnant over the same period. Trade liberalization in the 1990s led to the infusion of foreign electronics investments in the Philippines, and electronics and related products now

Source: Author's calculation.

¹⁸ The stagnant productivity of Philippine agriculture also forms a striking contrast with that of its neighboring countries, where increasing agricultural productivity enabled labor to shift to other sectors without decreasing agricultural production.



Figure 2-5 Productivity Growth Decomposition (1980s, 1990s, and 2000–2009)

Sectoral Contribution to Productivity Growth (%)



DSRE = dynamic structural reallocation effect, SSRE = static structural reallocation effect, WSPGE = within-sector productivity growth effect. Source: Author's calculation.

account for over 60% of country's total export earnings. However, compared to that of its neighboring countries, the contribution of the electronics industry to the Philippines' sector-wide productivity growth has been limited.

The Philippines' electronics industry is concentrated in the lowest segment of the value chain, assembly and testing (Reyes-Macasaquit 2009).¹⁹ Several studies show a negative picture of high dependency on electronics exports by the focus on low value addition and weak backward linkages with the rest of the economy. Indeed, electronics production in the Philippines highly depends on imports, which suggests that simple assembly dominates electronics

¹⁹ Reyes-Macasaquit, Mari-Len. 2009. Case Study of the Electronics Industry in the Philippines: Linkages and Innovation. In Intarakumnerd, P., ed.Fostering Production and Science & Technology Linkages to Stimulate Innovation in ASEAN. ERIA Research Project Report 7-4. Jakarta: Economic Research Institute for ASEAN and East Asia.



Figure 2-6 Productivity Growth of Manufacturing and Its Decomposition, 1980–2006

(%)

DSRE = dynamic structural reallocation effect, SSRE = static structural reallocation effect, WSPGE = within-sector productivity growth effect.

Note: Subsector classification is based on the ISIC revision 2: code 31 (food, beverages and tobacco), 32 (textile, wearing apparel and leather), 33 (wood and wood products, including furniture), 34 (paper and paper products, printing, and publishing), 35 (chemicals and petroleum, coal, rubber, and plastic), 36 (non-metallic mineral products), 37 (basic metal), 38 (fabricated metal, machinery and equipment), and 39 (other manufacturing).

Source: The author's calculation based on UN Industrial Development Organization (UNIDO), INDSTAT3 2005 and INDSTAT4 2010.

production. However, judging from trade data, there is no clear evidence that the Philippines' electronics industry has extremely high import content (Figure 2-7). Other countries in the region that initiated electronics production at an earlier stage also have a high import ratio. The point is, smaller value-added components of exports does not mean that export countries do not gain. Quite the opposite, they can enhance the accumulation of capabilities. A key difference with the Philippines is that it could diversify its production structure toward a wider range of manufacturing products and develop a large manufacturing sector.

A real mystery of the Philippines' industrialization is why its initial success in electronics did not spill over to other industrial products. Countries in the region have diversified their production and export structure toward more skill-intensive and research-intensive segments of electronics²⁰ and even more sophisticated products such as machinery and chemicals. As a result, they are now engaged in a broad range of industrial activities. The continual shifts toward more sophisticated products have been the key growth engine in their productivity growth. A key challenge for the Philippines is making its success in electronics products lead to industrial upgrading and diversification.

Weak industrial base has been a long-standing challenge. Nye (2011)²¹ pointed out that the issue of weak industry base was already discussed in the early 1990s, when a team of economists led by Paul Krugman

²⁰ Figure 3-6 (Chapter 3) shows which products the Philippines could establish its comparative advantage within the electronics products. While the country has comparative advantage in a wide range of electronics products, several sophisticated products have not yet acquired comparative advantage.

²¹ Nye, J. V. C. 2011. Taking Institutions Seriously: Rethinking the Political Economy of Development in the Philippines. Asian Development Review 28 (1): 1–21.



Figure 2-7 Import to Export Ratio of Electronics Products (%)

Source: The author's calculation based on United Nations, Comtrade database.

prepared a report on the Philippine economy (Krugman et al. 1992).²² The report focused on the country's small manufacturing sector, employing only 10% of the labor force—higher than 8.4% in 2010—producing about a quarter of GDP. Two thirds of the labor force was employed either in subsistence agriculture and marginal services, producing only one fifth of output per worker. At that stage, the team pointed out that the share of industry in employment was less than that in the 1970s.

The report identified high tariffs and poor export orientation as the key culprits in the Philippine economy. The protected industrial sector is highly inefficient largely due to the tiny domestic market. Further, the report blamed the protected trade policy, which had a strong incentive for capital-intensive technology. Since then, tariffs have been substantially reduced, and the Philippines became one of the most open economies in the region by the end of the 1990s (Figure 2-8). While the trade liberalization since the early 1990s had allowed the infusion of several foreign companies—including those in electronics, the main export industry in the country—it has not proven sufficient to help the country's industrialization. As reflected in the stagnant FDI inflows (Figure 2-9), foreign investors have not yet seen the country as a favorable investment destination in the region, despite generous fiscal incentives provided by investment promotion agencies.

²² Krugman, P., James, A., S. M. Collins, and E. M., Remolona. 1992. *Transforming the Philippine Economy*. Manila: National Economic Development Authority and United Nations Development Programme.



Figure 2-8 Tariff Rate Applied for Manufactured Products (simple mean, %)

Source: World Bank, World Development Indicators.





Source: United Nation Conference on Trade and Development, UNCTADSTAT.

Structural Transformation— Evolution of Product Space

"Development is about the accumulation of more complex sets of capabilities and finding paths that create incentives for those capabilities to be accumulated and used."

Hausmann R. and C. A. Hidalgo. 2009,23 p. 8.

The critical importance of analyzing structural transformation has been revived in recent arguments on sustainable and inclusive growth in developing countries. In his new framework of structural economics, Lin (2009)²⁴ argues that structural transformation, particularly industrial upgrading and diversification, is the core issue in understanding "what policies and factors make it possible for some countries to attain sustained and inclusive growth, while others languish." He raises two key aspects of structural transformation: (i) "a process of continuous technical innovation leading to improved quality and/or lower production costs of the same goods;" and (ii) "a dynamic process of industrial upgrading and structural change with new and different goods and services produced continuously."

Rodrik (2006)²⁵ analyzes recent empirical evidence and finds several new stylized facts that placed industrial development in the driver's seat of growth and development. The new stylized facts he found are: (i) economic development requires diversification, not specialization; (ii) rapidly growing countries are those with large industrial sectors, particularly manufacturing; (iii) growth acceleration is associated with structural changes in the direction of manufacturing; (iv) countries that promote exports of more sophisticated goods grow faster; and (v) some specialization patterns are more conductive to others in promoting industrial upgrading. He emphasizes the centrality of industrial development for sustained and inclusive growth, since it is the manufacturing sector that can improve overall productivity and create productive job opportunities for low-skilled workers with which many developing countries are endowed.

Hausmann and Klinger (2006) and Hidalgo et al. (2007) argued that growth and development are the result of structural transformation, and that, crucially, an economy grows with diversification of its export basket toward sophisticated products. Imbs and Wacziarg (2003),²⁶ on the other hand, show that, as incomes increase, economies first become less specialized and more diversified, then at high income levels, tend to specialize. These arguments confirm that "upgrading of export products through diversification" is the key to long-term growth.

²³ Hausman, R., and C. A. Hidalgo. 2009. Counting the Pin Factories: Plotting Economic Complexity. Impact 2(1): 1. Massachusetts: Harvard Kennedy School.

²⁴ J. Y. Lin. 2009. Economic Development and Structural Change. Lecture at Cairo University, Egypt, 5 November.

²⁵ Rodrik, D. 2006. Industrial Development: Stylized Facts and Policies. Massachusetts: Harvard University. Mimeo. He also emphasizes the need of public sector support for industrialization, since the expansion of the manufacturing sector is fraught with externalities and spillover in all kinds.

²⁶ Imbs, J., and R. Wacziarg. 2003. Stages of Diversification. American Economic Review 93 (1): 63–86.

Sophistication of export baskets. Hausmann and Klinger (2006) analyze the implication of export sophistication for economic growth. They first measure the income level associated with each product in the world trade, termed PRODY.²⁷ The PRODY for a particular product is the average of GDP per capita of exporting countries of the product. Therefore, products exported by developed countries tend to have a higher PRODY, and those by developing countries have a lower PRODY. Next, they measure the income level associated with a country's export basket as a whole, which is called EXPY. The EXPY is calculated as an average PRODY of the country's export products with export share of individual product to total export as a weight. Countries whose export baskets are made up of "rich country goods" can have a higher EXPY, while export basket made up of "poor country goods" have a lower EXPY. This approach does not suffer from the traditional shortcoming that assumes the level of technology content or value.

Hausmann and Klinger (2006) find that GDP per capita grows with the level of sophistication of export baskets,²⁸ and that export sophistication robustly predicts subsequent growth. What is interesting in their finding is that there is significant variance in the EXPY among countries with similar level of GDP per capita. Successful Asian economies including the People's Republic of China (PRC) and India have more sophisticated export baskets than might be expected given their income levels. This variance has important implications for developing countries: the goods that developing countries export today do affect their future growth. In other words, countries that can develop a sophisticated export structure grow faster, while others specializing in unsophisticated products suffer from poor growth in the future. In essence, economic growth is a path-depended process since current export structure can determine future growth.

The export structure of the Philippines has dramatically changed in the last decades (Figure 3-1). From approximately 75%–85% of total exports in the 1970s, traditional export products such as sugar, banana, coconut oil, and abaca took a sizeable drop in export share to about 20% in the 1990s. The declining share of the traditional exports coincided with the rapid rise of nontraditional exports, garments (since the mid-1970s) and electronics (since the 1990s). The growth of electronics exports has been the most dynamic component of export growth since the 1990s. Electronics exports now make up over 60% of total export of the Philippines.

Given the income level, the Philippines has performed well on the EXPY score since the late 1970s compared to its neighbors (Figure 3-2). This corresponds to the development of labor-intensive industries, mainly garment industries, in the mid-1970s, and infusion of foreign electronics industries into the economy in the late 1970s. The country's high concentration on electronics and related products, which have relatively high PRODY scores, in its export basket led to the increasing EXPY in the following years. However, the Philippines' industrial sector

PRODY (of product *i*) and EXPY (of country *C*) are defined as:

$$PRODY_{i} = \sum_{c} \left[\frac{x val_{a}}{\sum_{i} xval_{a}}}{\sum_{c} \left(\frac{x val_{a}}{\sum_{i} xval_{a}}}{\sum_{c} \left(\frac{x val_{a}}{\sum_{i} xval_{a}} \right)} \right] \times GDPPC_{c} \quad EXPY_{c} = \sum_{i} \left(\frac{x val_{a}}{\sum_{i} xval_{a}} \times PRODY_{i} \right)$$

where *xval_{ci}* is the export value of product *i* by country C. Using trade data from UN Commodity Trade (UN Comtrade) and GDP per capita data from UN Statistics Division (UNSD), PRODYs are calculated for 773 products (defined in the SITC revision 2 at 4 digit aggregate level) for 2004–2006. The average PRODY from 2004 to 2006 is then used to construct the EXPY index.

²⁷ Appendix 3 provides a detailed explanation on the key concepts used in this chapter.

²⁸ Hausmann and Klinger 2006 measure the level of sophistication of a country's export baskets (EXPY) in two steps. For each product, they compute the weighted average of real per capita incomes (GDPPC, in constant \$ 2000) of the countries exporting that product with comparative advantage, where the weights are Balassa's revealed comparative advantage (RCA) index in that product of exporting countries. This index is called PRODY, which gives us the income or productivity level associated with a product. The EXPY for a country is then computed as the weighted average of the PRODY of the country's export basket, where the weights are the share of each product in the country's total exports.



Figure 3-1 Export Structure of the Philippines: 1965–2008

05: vegetables and fruits; 06: sugar, sugar preparations, and honey; 08: feeding stuff for animals; 22: oil seeds and oleaginous fruit; 24: cork and wood; 26: textile fibers and their wastes; 28: metalliferous ores and metal scrap; 42: fixed vegetable oils and fats; 68: non-ferrous metals; 75: office machines and automatic data processing equipment; 76: telecommunications, sound recording and reproducing equipment; 77: electric machinery, apparatus and appliances; 84: articles of apparel and clothing accessories.

Source: Author's calculation.







Sector Contributions (by Leamer's classification)

Source: Author's calculation.

has stagnated and did not become the key growth engine for the last 3 decades. This finding contradicts with the argument that a country with a sophisticated export basket can grow faster. To fill the gap, we need to analyze another key aspect of structural transformation, product diversification.

Product diversification. Hausmann and Klinger (2006) examine the key determinants of product diversification. They argue that the production of each product requires capabilities (or inputs) specific to that product, such as knowledge, physical assets, intermediate inputs, labor training requirements, infrastructure, property rights, regulatory requirements, and other public goods. They also include problem-solving knowledge embodied in organizations for technology, marketing, and labor relations. Capabilities needed to produce one product are generally imperfect substitutes for those needed to produce another product. However, this specificity is relative. For example, human, physical, and institutional capabilities for producing cotton trousers are similar to those needed to produce cotton shirts, and significantly different from those needed to produce computer monitors. Cotton trousers and shirts may involve similar capabilities, but trousers and computer monitors involve quite different ones.²⁹ In terms of relative similarity of needed capabilities, we can say that cotton shirts and cotton trousers are "nearby" products, but cotton shirts (and also cotton trousers) and computer monitors are "far away." Following the argument, it is natural to predict that structural transformation favors "nearby" products since they can redeploy capabilities that are utilized for already existing products. Hence, the success of a new product or industry depends on how well it matches with existing production and capabilities.

Hidalgo et al. (2007) measure distance (proximity) of each pair of product and develop the concept of "product space" by applying network theory to visualize the "distance" between products by their relative similarities in needed capabilities. For each product, we can then measure the strength of the linkages with other products by simply adding up the proximities leading to that product. This index, called "path," shows which products are well connected with other products, and which are not. Some products with a high path value contain capabilities that can be deployed by many other products, while other products with a low path have capabilities that cannot be used for others.³⁰

The product space looks like a forest consisting of many trees (Figure 3-3). The different circles (nodes) represent products, and the node size is proportional to world trade value. Colors represent different product groups according to factor intensity. The colors of the lines that connect the nodes represent the distance (proximity) between a pair of products.³¹ The product space is highly heterogeneous: in the dense part (or the core part), many products, particularly machinery, chemicals, and other capital-intensive products, are closely connected to each other; while in the periphery, products such as natural resources, primary products, and agricultural products are only weakly connected to others. There are some groupings among the peripheral products, such as petroleum products (the large red nodes on the upper left side of the network), garments (the very dense cluster at the middle left), and raw materials (upper right). The heterogeneity means that products in the core part involve capabilities that can be redeployed to produce many other products, but those in the periphery

 $\varphi_{i} = \min\{P(x_{i} = 1 \mid x_{i} = 1), P(x_{i} = 1 \mid x_{i} = 1)\},\$

where $x_i = 1$ implies that, for every country C and commodity *i*, $RCA_i > 1$.

The path of product *i* is defined as $Path_i = \sum \phi_{ij}$

²⁹ Hidalgo et al. (2007) capture this notion of similarity between a pair of products, called "proximity," by observing trade outcomes rather than by looking at physical similarities between products or their inputs. If every country that exports a product also exports another product, then these two products must involve similar capabilities. On the other hand, if every country that exports a product does not export another product, then these two products must involve different capabilities. This led to the use of conditional probabilities to measure the similarity between the two products. "Proximity" is measured as the minimum between the probability that countries export product i given that they already export product j; and the probability that countries export product j given that they already export product i. The reason for taking the minimum of the two probabilities is to create a symmetric measure of distance for a pair of products. Formally, the proximity between products i and j is defined as:

³⁰ Appendix 4 classifies products in accordance with their sophistication level (PRODY) and the strength of linkages with other products (PATH).

³¹ Red line shows the closest link, followed by dark blue, yellow, and light blue. Each product is connected to its closest neighbor and to all others that are at distances that correspond to either red or dark blue lines.



Source: Hidalgo et al., 2007.
cannot. Thus, if a country produces goods in a dense part of the product space, then structural transformation is much easier because the set of acquired capabilities can be easily redeployed to the production of other nearby products. However, if a country specializes in the peripheral products, this redeployment is more challenging, as no other set of products requires similar capabilities.

To visualize the evolution of structural transformation of the Philippine economy, we highlight, using black squares, the products in which the country had comparative advantage in 1965, 1975, 1985, 1995, 2005, and 2008 (Figure 3-4). We also show the number of products that the country had comparative advantage in each year by Leamer classification (Figure 3-5). For comparison, the product space maps of neighboring countries in 2008 are shown in Figure 3-6.³² By 1975, the Philippines had developed comparative advantage in most garment products in addition to the traditional agricultural and forest products. In the following decades, the country acquired comparative advantage in a few electronics products by attracting foreign investors. The country continued to establish comparative advantage in more electronics products in the next two decades (Figure 3-7). However, even in 2008, there were only a few new black squares in the core area of the product space,³³ which supports the previous argument that success in electronics has not spilled over to more sophisticated industrial products. Since 1995, the number of products with comparative advantage in the Philippines has even decreased compared with that in the previous period (Figure 3-8).

Other countries in the region, for example Thailand, had comparative advantage in fewer garment products except agricultural and forest products in 1975 (Appendix 5).³⁴ However, the process of product diversification accelerated in the following decades, allowing the country to acquire comparative advantage in garments, textiles, electronics, and even some core products, such as machinery and chemicals. As a result of product diversification, Thailand is engaged in 186 products with comparative advantage in 2008, of which 70 products belong to the core area of the product space. This product diversification toward sophisticated products enabled a continuous increase in labor productivity of the industry sector, and subsequently higher aggregate productivity through absorption of workers into the sector. A similar diversification process is observed in other countries in the region.

We also analyzed the extent to which the products that the Philippines exports are unique or not. Figure 3-9 shows the number of products exported with comparative advantage (diversification) against an index of "standardness"³⁵ of the products exported. A lower value of standardness indicates that the products exported are more unique (i.e., exported by fewer countries). Countries with high diversification and more unique export products are well positioned for future growth, while those with low diversification and fewer standard products have a limited potential for future growth. While the Philippines exports relatively unique products given the level of diversification, regional neighbors have more diversified and unique export baskets. An interesting contrast exists between the Philippines and Malaysia. While the level of product diversification has remained same, Malaysia exports much more unique products.

Unexploited opportunities. Given the limited product diversification in the past, how can we assess the potential for future structural transformation in the Philippines? We map the "unexploited products" of

Standardness_i =
$$\frac{1}{Diversification_{i}} \sum_{j} Ubiquity_{k}$$

³² Evolution of the product space in selected countries is provided in Appendix 4.

³³ Products in the core area of product space consist of machinery, chemicals, and metal products.

³⁴ Appendix 5 shows the evolution of product space in neighboring countries: People's Republic of China, India, Indonesia, Republic of Korea, Malaysia, Thailand, and Viet Nam, for 1965–2008.

³⁵ Standardness is the average ubiquity of commodities exported with comparative advantage for each country c, and is calculated as:

where diversification is the number of products exported by country *c* with comparative advantage and ubiquity of commodity *i* is the number of countries exporting commodity *i* with comparative advantage.



Figure 3-4 Evolution of Product Space in the Philippines



Figure 3-5 Number of Products with Comparative Advantage – The Philippines





Figure 3-7 Comparative Advantage in Electronics Products in 2008

RCA = revealed comparative advantage, SITC = Standard International Trade Classification.

7621: radio receivers for motor vehicles; 7622: portable radio receivers; 7638: other sound recording and reproducer, nes, video recorders; 7641: electrical line telephonic and telegraphic apparatus; 7642: microphones, loudspeakers, audio-frequency electric amplifiers; 7643: television, radio-broadcasting, transmitters, etc.; 7648: telecommunications equipment, nes; 7649: parts, nes of and accessories for apparatus falling in heading 76; 7721: switches, relays, fuses, etc., switchboards and control panels, nes; 7722: printed circuits, and parts thereof, nes; 7731: insulated electric wire, cable, bars, etc.; 7762: other electronic valves and tubes; 7763: diodes, transistors, photocells, etc.; 7764: electronic microcircuits; 7768: crystals, and parts, nes of electronic components of heading 776.



Figure 3-8 Product Diversification—Number of Products with Comparative Advantage

100 -



India









Note: The dark blue bar shows the number of core products over which the country has comparative advantage. The core products are composed of machinery, metal, and chemicals. Source: Author's calculation.



Figure 3-9 Uniqueness of Export Baskets (2008)

IND = India, INO = Indonesia, KOR = Republic of Korea, MAL = Malaysia, PHI = Philippines,
 PRC = People's Republic of China, VIE = Viet Nam.
 Source: Author's calculation.

the country in the distance³⁶ and sophistication (PRODY) space. "Unexploited products" are those in which the country has not yet developed comparative advantage. Thus, those products can be regarded as an "opportunity set" for the future. "Distance" here is not physical concept, rather it measures how close (far) each unexploited product (not exported with comparative advantage) is to the country's current export basket in terms of the capabilities it requires.³⁷ It is a proxy for the probability that a country can successfully export a "new" product (export with comparative advantage). The horizontal axis shows the distance of each unexploited product, thus products toward the left side are "nearby," that is, those that use similar capabilities to those used by current export basket. If products are "far away" from the origin, it implies that production of those products require a completely different set of capabilities that the country currently has.

The unexploited product set of the Philippines, as a whole, is located far from the origin compared with that of its regional peers (Figure 3-10). For example, Indonesia, Thailand, and Viet Nam, have more unexploited products near their current export baskets, which reflect the more diversified production structure that they already have. In the Philippines, however, the capabilities embedded in the current export basket can hardly be

³⁶ Density for a product *i* is defined as the sum of proximities between product *i* and all products that are exported with comparative advantage, scaled by the sum of all proximities leading to product *i* (Path *i*): By definition, density ranges between 0 and 1. The closer the density of a product is to 1, the "nearer" the product is to the country's current export basket, thus, the more likely it is to be exported in the future with comparative advantage.



³⁷ "Distance" here is measured as the inverse of density.



Figure 3-10 Unexploited Opportunities (2008)

used for producing new products. This implies that the Philippines has accumulated less capabilities needed to jump into the production and export of sophisticated products. This offers a greater contrast to the PRC and India, where the set of unexploited products is much closer to their current export baskets. They can easily develop comparative advantage in new products by redeploying existing capabilities.

The product level information of unexploited products for each country can be aggregated into a single indicator, which shows the potential for the future structural transformation of the country. Hausmann and Klinger (2006) have developed the concept of "open forest"³⁸ to measure the value of a country's "unoccupied trees" by weighting the PRODY of each unexploited product by its distance to the current export products. Countries with a higher open forest value, such as the high-growth economies of the PRC and India have better opportunities to diversify their products. Given the income level, the Philippines' open forest is comparable with countries with similar income levels (Figure 3-11). It is actually better than the international average (above the regression line). However, it is much lower than regional comparators such as Indonesia, Thailand, and Viet Nam, which have a greater potential for future structural transformation given their more diversified production structures.



IND = India, INO = Indonesia, MAL = Malaysia, PHI = Philippines, PRC = People's Republic o China, VIE = Viet Nam.

Source: Author's calculation.

 $Open \ Forest = \sum Density_i \cdot PRODY_i$

³⁸ Open forest measures the value of unexploited products at the country level taking into account the distance from the country's current export products. Open forest is defined as:

Note that the weight of a PRODY corresponds to the density of each unexploited product. The open forest of a country thus depends on the proximity of the unexploited products to the products in which the country has already developed comparative advantage; and how sophisticated the unexploited products are. A higher value of open forest implies more opportunities to jump to new products.

Why can't the Philippines follow a similar diversification process as its neighbors? Why can't its success in electronics products create a dynamic path of product upgrading and diversification? The reasons for the stagnant structural transformation in the Philippines are no doubt complex. Growth diagnostics exercises for the Philippines, such as ADB (2007)³⁹ and Bocchi (2008), list several different growth and development constraints. Major constraints identified in these studies can be consolidated into the four key issues: (i) persistent underprovision of basic infrastructure, among others, and inadequate transport and electricity infrastructure, due to serious fiscal pressure; (ii) weak business and investment climate due mainly to governance concerns; (iii) inability to address market failures for industrial upgrading and diversification; and (iv) "elite capture" of the traditional sectors such as agriculture, sea and air transport, power, cement, mining, and banking.

Without doubt, these problems raised in various studies have weakened entrepreneurs' incentives to utilize the accumulated capabilities for product diversification. They have also prevented foreign firms from investing in the country. However, these constraints identified at the macro level assessments do not necessarily capture the real constraints of each entrepreneur that produces different products. For example, while some industries that intensively use electricity may suffer from high electricity tariff, others may not if power cost makes up a minor portion of their total production cost (Figure 3-12). Another example is the growing BPO industry. Despite the poor infrastructure provision, they could come to the country since their operation doesn't depend much on hard infrastructure. Once we realize that each industry or product faces its own unique and different constraints, it becomes quite important to focus on products and identify specific constraints that prevent firms from upgrading the specific products, and barriers that limit entry to the products by other entrepreneurs.

³⁹ Asian Development Bank. 2007. Philippines: Critical Development Constraints. Manila: Asian Development Bank.



Figure 3-12 Share of Electricity Cost in Total Production Cost (%)

Note: The horizontal axis shows 240 sectors in the 2000 input and output table. Total production cost for each sector consists of total input costs from other sectors (intermediate inputs), compensation, depreciation, and net tax payments (taxes minus subsidies). Source: Author's calculation based on the input-output table 2000 (NSCB).

Service-Led Growth—Can Services Alone Drive Inclusive Growth?

"Sustaining economic growth and rising living standards will require shifting labor out of agriculture into both manufacturing and services and not just into one or the other."

Eichengreen, B. and P. Gupta. 2010,40 p. ii

The Philippines' main growth engine has been services, which made an over 66% contribution to overall GDP growth in the last 3 decades (Figure 4-1). The services sector has increased its output share to 55.2% (2009) from 36.1% (1980), and labor share to 50.3% (2009) from 32.8% (1980) (Table 2-1). In contrast, the Philippines' industry sector has reduced its shares both in output and labor for the same period. The decreasing shares of industry in the Philippines deserve special attention. Indeed, the Philippines is the only country where the industry sector reduced its output and employment shares in the region. The services sector has increased its labor productivity by 10.1% (0.3% annual average) for 1980–2009, which was led mainly by the improving productivity in the transport, storage, and communication subsector (Figure 4-2, Figure 4-3, and Figure 4-4). Since 2000, services sector productivity increased by 16.3% (1.7% annual average), which was attained by similar productivity increase across all subsectors (Figure 4-5). Despite the progress, the services sector's labor productivity has remained less than half of those in industry and manufacturing. This suggests that although the services sector has made the greatest contributions to growth, it is not necessarily associated with a rise in productive employment.

Global service revolution. Traditionally, industrialization has been recognized as the main engine of economic growth, particularly at an early stage of development. The essential features of the transformation of the production structure in developing countries include an increase in the proportion of the national income derived from manufacturing, a rise in the labor share engaged in manufacturing, and an increase of the economy-wide labor productivity. The process of industrialization is accompanied by migration of labor from rural to urban areas.

Successful Asian economies have followed this growth pattern and achieved a remarkable level of growth by transforming their production structure toward more sophisticated or high value-added manufacturing products. The manufacturing sector has continually raised its productivity through product diversification and sophistication, and absorbed labor from low productivity sectors such as agriculture. Labor shift to the manufacturing sector has contributed to the growth of the economy-wide productivity. Increasing job opportunities created by growing manufacturing has made economic growth more inclusive by providing more workers with adequate incomes to lift themselves and their families out of poverty. The experience of successful Asian economies shows the centrality of industrialization in driving growth and reducing poverty.

⁴⁰ Eichengreen, B., and P. Gupta. 2010. The Service Sector as India's Road to Economic Growth? *Indian Council for Research on International Economic Relations Working Paper* 249. New Delhi: Indian Council for Research on International Economic Relations.



Figure 4-1 Sector Contribution to GDP Growth 1980–2009 (%)

IND = India, INO = Indonesia, MAL = Malaysia, PHI = Philippines, PRC = People's Republic of China, THA=Thailand. Source: Author's calculation.







Figure 4-3 Services Labor Productivity by Subsector, 1980–2009 (constant, 2000 \$)





Source: Author's calculation.



Figure 4-5 Growing Business Process Outsourcing (BPO)



Note: "Other BPOs" category includes backroom operations, data processing, database activities, online distribution of electronic content, financial and accounting services, and business and management consultancy services.

Source: Bangko Sentral Ng Pilipinas, Survey of IT and IT-enabled services 2007, 2008, and 2009.

From a conventional viewpoint, services have been viewed as a graveyard for productivity because most of them are nontradable, with limited potential to exploit economies of scale. Since people consume more services only when they reach a certain level of income, the economic structure can shift toward services only at an advanced stage of development. In practice, advanced countries such as the United States, European countries, and Japan, have experienced steady de-industrialization. This raises the question of whether developing countries such as the Philippines can solely rely on service-led growth path.

Globalization has, however, fundamentally changed the economic landscape during the last 2 decades. Globalization has created new business opportunities for developing countries. Many services that were nontradable in the past have now become tradable, although traditional ones such as trade, tourism, and public administration still remain nontradable. Information technology, finance, biotech, call centers, consulting, design, and other outsourced business processes, have become the drivers of economic growth for some developing countries.

India, for example, has successfully seized new opportunities in the growing global service trade, mainly information technology (IT) and IT-enabled services. India, which has growth by over 6% over the last 2 decades, has been largely backed by the services sector. Further, India's services sector is characterized by higher labor productivity compared with the industry sector. The recent development in global service trade has led some to think that developing countries can largely bypass the process of industrialization and move directly to a service-led economy (Ghani 2010).⁴¹ Their argument is that, after all, once the industry sector reaches a certain stage, its share declines and that of services increases—therefore, developing countries can skip the transitional stage and directly jump to services. This argument, known as the "leapfrogging" development strategy, has important implications for inclusive growth for developing countries including the Philippines.

Rapidly growing business process outsourcing. Since the early 2000s, service export, notably in the form of business process outsourcing (BPO), has continued to grow at a double-digit rate (over 50%) and reached \$7.7 billion (14.2% of the country's total exports of goods and services) in 2009 (Figure 4-5). The Philippines is now the third largest BPO destination after India and Canada. Although traditional voice services (contact centers) still comprise over 50% of the total BPO exports, a wide range of higher-value services such as software development, finance, animation, engineering, medical transcription, and architectural services are also provided. The authorities offer fiscal and nonfiscal incentives to attract foreign investment in the BPO industry as part of the Investment Priorities Plan (IPP). Business services, a subsector of the services that includes the BPO industry, makes up 1.2% of total GDP (in real terms) and 2.57% of total employment in 2009.

Impact on job creation. With the sharp increase in exports, the BPO industry has significantly contributed to job creation. Employment in the BPO industry grew by a staggering 34.5% between 2004 and 2009. Total employment in the BPO industry reached to 0.44 million in 2009 from less than 0.1 million in 2004 (Figure 4-5). Although contact centers remain the top employer among the BPO categories, accounting for 57% of total employment, the industry has been moving up the value chain from voice-based services to knowledge-based businesses such as software development, financial services, accounting, and medical services. However, the BPO industry still employs only about 1.2% of the total labor force of the country, where about 7.5% of the total labor force (2.8 million workers in 2009) are unemployed and 19.1% are underemployed (7.2 million workers in 2009). A business association for the BPO industry in the Philippines expects that workforce employed in the sector would increase to 1.3 million in 2016.⁴² While the direct benefit of job creation is clear, the expected size of employment by the BPO industry will still be less than 3% of the estimated total labor force in 2016. The Philippines' labor force is expected to increase to 52 million in 2030 from 38 million in 2008 (Felipe and Hasan 2006).⁴³

⁴¹ Ghani, E, ed. 2010. The Service Revolution in South Asia. New York: Oxford University Press.

⁴² Business Processing Association of the Philippines. 2010. *Philippines: The New Outsourcing Hub.* A debrief on the International Outsourcing Summit, 26–27 October.

⁴³ Felipe, J., and R. Hasan, eds. 2006. *Labor Market Outcomes in Asia. In Labor Markets in Asia: Issues and Perspectives.* New York: Palgrave Macmillan.

Another concern comes from labor demand by the BPO industry. The minimum qualification for employment in the BPO industry is a college degree. This implies that job opportunities created by the BPO industry benefit workers with tertiary education. In the Philippines, 1.2 million are unemployed and 1.4 million are underemployed workers with tertiary education (2008). The BPO industry can directly help these skilled workers. However, it must not be overlooked that the country also has a total of 7.5 million workers with primary and secondary education who have been suffering from limited job opportunities as well (Figure 4-6). Unfortunately, the BPO industry cannot generate productive jobs for the less-skilled workers with which it is abundantly endowed. In a review paper of service outsourcing industries, Tschang (2011)⁴⁴ pointed out that the BPO industry does not help the more impoverished or less educated, and hence slow poverty reduction in developing countries.



Figure 4-6 Employment Status by Educational Attainment, 2009

Unemployment and Underemployment Rates (%)



Source: Author's calculation based on Labor Force Survey (NSCB).

⁴⁴ F. T. Tschang. 2011. A Comparison of the Industrialization Paths for Asian Services Outsourcing Industries, and Implications for Poverty Alleviation. *ADBI Working Paper* 313. Tokyo: Asian Development Bank Institute.

Although it can make an important contribution to job creation, it is not realistic to believe that the BPO industry can answer the huge employment needs of moderately skilled labor in the Philippines.⁴⁵

Labor productivity growth. The labor productivity of the BPO industry is estimated to be about \$5,000 (constant \$ 2000) in 2009, which is about 35% higher than the labor productivity of the services sector as a whole (Table 4-1) ⁴⁶. It is also 49% higher than economy-wide productivity. The expansion of the BPO industry has thus contributed to the overall productivity growth of the economy. However, the level of its productivity has still remained at about two thirds of industry (\$7,500) and manufacturing (\$8,200) in 2009. Without a dramatic improvement of labor productivity, it is thus likely that the BPO sector's contribution to the aggregate productivity growth will be limited even in the future. Inclusive growth requires not just a rise in employment but also an increase in productive employment. For this to occur, the BPO industry needs to move up the value chain toward more sophisticated and high value-added segments of modern services.

		Labor Productivity	Ratio of Produ	ctivity against:
	Sectors	(constant 2000 \$)	Economy-wide Productivity	Industry Productivity
Services		3,787	1.10	0.50
1	Wholesale and Retail Trade	3,576	1.04	0.47
2	Transport, Storage, and Communication	4,500	1.30	0.60
3	Financing, Insurance, Real Estate, and Business Services	5,872	1.70	0.78
	of which, BPO	5,127	1.49	0.68
4	Community, Social and Personal Services, and Others	3,310	0.96	0.44
Industry		7,546	2.19	-
Economy-w	vide	3,451	-	0.46

Table 4-1 Labor Productivity of Services, 2009

BPO = business process outsourcing.

Note: Labor productivity of the BPO sector is estimated based on Bangko Sentral ng Pilipinas' survey of information technology-business process outsourcing (IT-BPO) services.

Source: Author's calculation.

Linkages with the rest of the economy. Another aspect of assessing the BPO industry is its linkages with the rest of the economy. Even if the BPO industry's direct contribution to job creation is limited, it may induce job opportunities in other sectors in the economy through forward and backward linkages. Forward linkages measure the relative importance of the BPO industry as a supplier to other sectors, whereas backward linkages capture its importance as a demander of other sectors. The estimated forward and backward linkage indexes of the BPO sector, using the 2000 input–output (IO) table,⁴⁷ are 0.59, and 0.95 respectively (Figure 4-7).

⁴⁵ Amoranto, G., H. B. Brooks, and N. Chun. 2010. Service Liberalization and Wage Inequality in the Philippines. *ADB Economics Working Paper* 239. Manila: Asian Development Bank, also pointed out that growing services sector production in the country requires a high-skilled and more educated labor force.

⁴⁶ We estimate the labor productivity of the BPO sector for 2004 to 2009 based on the data available (gross revenue, value-added ratio, and employment) in Bangko Sentral ng Pilipinas' regular survey of information technology–business process outsourcing (IT–BPO) services. NSCB's deflator for business services is used to estimate the BPO's value added in the real term.

⁴⁷ The latest input–output (IO) table for the Philippines is 2000, which covers the 240 by 240 industries and commodities. The 2000 IO table includes several new industries such as the semiconductor industry, call centers, and computer hardware and software development.



Figure 4-7 BPO's Linkages with Other Sectors

BPO = business process outsourcing.

Note: The input-output table in 2000 covers 240 industries and commodities. The table includes new industries such as the semiconductor industry, BPO, and computer hardware and software development. In estimating the linkage indixes of the BPO sector, the sector is subtracted from the private services and treated as an independent subsector.

Source: Author's calculation on the input-output table 2000.

They rank 11th (forward linkage) and 8th (backward linkage) among the 12 sectors in the IO table, suggesting the limited linkage effect of the BPO industry in both directions.

As expected, the manufacturing sector has the highest intersectoral links (forward and backward linkage indexes are 2.98 and 1.27, respectively) in the economy. This implies that manufacturing is the leading sector that can stimulate growth in other sectors. If manufacturing could have a higher share, an expansion of the sector would create higher growth through its strong link effects with other sectors.⁴⁸ Unfortunately, the Philippine economy has shifted toward services and the share of manufacturing has declined over the years.

India's service-led growth. India's steady growth (over 6% per year over 2 decades) has been focused since the growth has been driven more by services than by industry. While industry's share of GDP remained at about 25%, services' share jumped to 57% from 38% over the last 3 decades.⁴⁹ (Table 4-2). In terms of employment, India is an agricultural economy since over 55% of the total labor is still in agriculture (2005). Industry and services increased its employment shares from 11% to 19%, and 17% to 25%, respectively, for 1980–2005. The services sector made an over 60% contribution to overall GDP growth, which is comparable to that of the Philippines (Figure 4-1). Further, services have made the greatest contribution to economy-wide productivity growth through improving its own productivity and absorbing workers from agriculture (Figure 4-8 and Figure 4-9). However, what is striking is that in the India's service-led growth, industry has also raised its labor productivity and continuously led aggregate productivity growth. Although the Philippines' services sector has achieved high productivity growth in recent years, the pace of the productivity growth is not comparable to that of India's services sector.

Structural Changes		Philippines			India	
Output Structure (% of GDP)	1980	2009	Change	1980	2009	Change
Agriculture	25.1	13.1	(12.0)	37.2	16.5	(20.7)
Industry	38.8	31.7	(7.1)	24.5	26.1	1.6
Manufacturing	25.7	21.3	(4.4)	14.2	14.9	0.7
Services	36.1	55.2	19.1	38.3	57.3	19.1
Total	100.0	100.0		100.0	100.0	
Employment Structure (% of tot	al employmer	nt)				
Agriculture	51.8	35.2	(16.6)	72.4	55.8	(16.6)
Industry	15.4	14.5	(0.9)	11.0	19.0	8.0
Manufacturing	10.8	8.9	(1.9)	9.1	11.2	2.1
Services	32.8	50.3	17.5	16.6	25.2	8.6
Total	100.0	100.0		100.0	100.0	

Table 4-2 Structural Changes: India and the Philippines

GDP = gross domestic product.

Note: Figures in parentheses are negative.

Source: World Bank, World Development Indicators.

⁴⁸ Magtibay-Ramos, B., G. E. Estrada, and J. Felipe. 2011. Exploring the Philippine Economic Landscape and Structural Changes Using the Input-Output Framework. *International Journal of Development Issues* 10 (1): 34–59, also estimates the forward and backward linkages and concludes that the Philippines need to focus on industrialization to accelerate economic growth.

⁴⁹ Sectoral employment data for India for 1960–2005 is available in the databases of the Groningen Growth and Development Centre. See. www.ggdc.net/index.htm.



Figure 4-8 Labor Productivity Growth: India and the Philippines (annual average, %)

Figure 4-9 Labor Productivity Growth Decomposition and Sectoral Contributions India (1980–2005) and the Philippines (1980–2009)



 $\mathsf{DSRE} = \mathsf{dynamic}\ \mathsf{structural}\ \mathsf{reallocation}\ \mathsf{effect},\ \mathsf{SSRE} = \mathsf{static}\ \mathsf{structural}\ \mathsf{reallocation}\ \mathsf{effect},\ \mathsf{WSPGE} = \mathsf{within}\ \mathsf{sector}\ \mathsf{productivity}\ \mathsf{growth}\ \mathsf{effect}.$

In a comparative study of poverty reduction, Ravallion (2009)⁵⁰ found a relatively slow poverty reduction in India compared with that in the PRC. He found that while a 1% increase of GDP could reduce poverty rate by 0.8% in the PRC for 1981–2005, the same GDP growth could reduce poverty rate by only 0.3% in India (1993–2005). Differentials in GDP growth rates do not explain the differential performance in poverty reduction between the PRC and India. He argued that India needs to do more to assure that poor people are able to participate in both the country's growth process and its social policies. A possible reason explaining the slower poverty reduction in India is the limited job opportunities for moderately skilled workers. India's remarkable growth has been led mainly by services. High productivity service industries, such as the IT industry and the BPO industry, employ workers who are at the top end of the education distribution. However, the majority of India's labor force still remains in rural areas with limited educational attainment. It is thus critical for India to generate productive jobs for those workers with limited skills to make the solid growth performance more inclusive. ⁵¹

There is no doubt that the BPO industry will continue to help the Philippine economy. It has become an important driver of job creation and export earnings. The Philippines should make the best strategic use of the opportunities created by the global service revolution. However, it is not yet a sufficient source of inclusive growth. The services-led growth in the past and even the rapidly growing BPO industry in recent years could not create enough productive jobs to absorb the abundant labor in the country. Despite its big contribution to export earnings, employment by the BPO industry accounts for only about 1% of the total labor force. Even if it can easily increase by another few percentages within a few years, it is not realistic to think that BPO alone can drive inclusive growth in the Philippines. It should not be overlooked that about one fourth of the total labor force of the Philippines is either unemployed or underemployed. It is also difficult to believe that the BPO industry, which demands more skilled workers, can provide enough job opportunities for a large number of Filipino workers with moderate skills.

As discussed in the previous chapter, the Philippines has achieved a relatively higher growth in both output and exports compared to previous decades. It has happened, however, without the expansion of the share of the industry sector in GDP. Filipino workers out of agriculture have continuously shifted to less productive services. The Philippine economy needs a stronger industrial base to create more productive employment opportunities to translate the growth benefits to the entire people. At the same time, service labor productivity should be improved by moving up the value chain. To this end, it needs to undertake major reforms in the higher education system to ensure a steady stream of qualified workers for high productivity services. What the Philippines needs is to sustain the current boom in the BPO industry while improving the prospects for industry to achieve a more sustainable and inclusive growth.

⁵⁰ Ravallion, M. 2011. A Comparable Perspective on Poverty Reduction in Brazil, [People's Republic of] China, and India. *World Bank Research Observer* 26 (1): 71–104.

⁵¹ Given the huge work force in rural areas with limited educational attainment, it is critical for India to generate productive jobs for lowskilled workers. The manufacturing sector can absorb large numbers of workers with moderate skills, providing them with stable jobs. See, for example, Panagariya, A. 2008. *India: The Emerging Giant*. New York: Oxford University Press; and Subramanian, A. 2008. *India's Turn: Understanding the Economic Transformation*. New York: Oxford University Press.

Policy Options for Economic Diversification—Product Identification and Targeted Public Sector Support

"Economic growth requires a pragmatic government willing to do whatever it takes to energize the private sector."

Rodrik D. 2011,⁵² p. 148.

arket failures in discovering new products. Developing countries need to diversify their economies toward sophisticated products. However, product diversification is far from an automatic process that market forces can induce. Producing new goods is rife with market failures, such as coordination and information externalities (Hausmann and Rodrik 2003, 2006, Lin and Monga 2010, and Lin 2011).⁵³ This provides a rationale for policy support for industrial upgrading and diversification. Coordination failures occur when the return to one investment depends on whether some other investment is also made. Investments in new products are profitable only if other related investments are made simultaneously. An entrepreneur that fails an investment in a new product will bear the full cost of the failure. If, however, the entrepreneur succeeds, he or she will not be fully remunerated because other entrants will easily copy the business. These failures prevent entrepreneurs from investing in new products by reducing incentives for self-discovery, although their success can produce high social returns.

Public support: Broad-based or targeted. Government interventions for industrial upgrading and diversification can be classified broadly into two types: one is "broad-based" (horizontal) interventions and another is "targeted" (vertical) ones. Broad-based interventions provide the framework in which firms and industries operate and where the market mechanism is the key determinant of their development. Broad-based interventions try to help the private sector development as a whole without specifying target sectors or industries. They usually include the protection of property rights, improvement of overall business and investment environment, and national research and development (R&D) strategies.

On the other hand, targeted interventions focus on specific firms, industries, and sectors. They include selected provision of subsidized loans, subsidies, tax incentives, and trade protection. Infrastructure provision and human capital development for specific industries are also included in the category. Targeted public support,

⁵² Rodrik, D. 2011. The Globalization Paradox: Democracy and the Future of the World Economy. New York: W.W. Norton & Company.

⁵³ Hausmann, R., and D. Rodrik. 2003. Economic Development as Self-Discovery. *Journal of Development Economics* 72:603–33; and Hausmann, R., and D. Rodrik. 2006. Doomed to Choose: Industrial Policy as Predicament. Massachusetts: Harvard University, Mimeo; Lin, J. Y. and C. Monga. 2010. Growth Identification and Facilitation: the Role of the State in the Dynamics of Structural Change. *Policy Research Working* Paper 5313. Washington, DC: World Bank; and Lin, J. Y. 2011. New Structural Economics: A Framework for Rethinking Development. *Policy Research Working Paper* 5197. Washington, DC: World Bank.

commonly called industrial policies, have been challenged for years after significant failures in many developing countries. The conventional argument against targeted interventions rests on the practical difficulties with its implementation. Governments do not have the necessary information and expertise to make informed business decisions and "pick winners" through industrial policy. Industrial policy induces corruption and rent seeking, and it works as a form of preferential policy just to transfer scarce public resources to politically connected groups.

Recently, targeted public support has been reassessed in light of the experience of the success stories of the East Asian countries, and the unexpectedly poor performance of economies (mainly in Latin America) that followed orthodox market-based policy recommendations. Their argument is that for any type of intervention, policymakers need to choose target products. One might think this is because they cannot afford to deal with all products. However, a much more important reason they raise is that each product in a country's opportunity set has a different possibility of export success depending on the availability of required capabilities. Creating conditions for business process outsourcing (BPO), for instance, requires very different public inputs compared to those for the automobile industry and tourism. Food processing industries need a specific set of standards and regulatory rules on product qualities, and market access rules that guarantee the right to export in foreign markets. Depending on the level and type of accumulated capabilities, each country has a different path toward product diversification. It is thus critical to determine products that a country can develop with relative ease, and identify product-specific constraints that impede the emergence of those products (Hausmann and Rodrik 2006). Lin and Monga (2010) also emphasize the importance of the targeted public interventions.⁵⁴

Current public interventions in the Philippines. The Philippines has a long tradition of targeted public support for both domestic and foreign investors through investment promotion agencies (IPAs).⁵⁵ Since the early 1970s, the government has established several IPAs and authorized them to provide fiscal incentives to registered entrepreneurs that could invest in predetermined priority sectors. The priority sectors have been defined in the government's annual Investment Priority Plan (IPP). IPAs have provided registered firms with a variety of tax incentives for investment, export, job creation, and regional development, such as income tax holidays, exemptions from value-added tax and import duties, and deduction of wage bills from taxable income.⁵⁶

The priority sectors in the annual IPP are defined broadly (Table 5-1). In 2004, for example, investment priority sectors included a wide range of industries, such as agriculture and fishery, information and communications technology, electronics, motor vehicle, energy, infrastructure, tourism, R&D, machinery, cement, iron and steel, medicines, jewelry, and fashion garments. The priority list has not changed much until 2010, while several new industries such as BPO were added. The Philippines has an open door policy on investments and help investors in a wide range of industries.

Given the high priority on export promotion in the public support, its effectiveness needs to be assessed in terms of its contribution to diversifying the country's export structure. Figure 5-1 shows how many products within each priority sector in the IPPs could establish comparative advantage. Although there are some successful cases, such as electronics and fishery products, most of the products in the priority sectors have failed to acquire comparative advantage.

⁵⁴ The major reasons raised by Lin and Monga (2010) for justifying the targeting interventions are: first, a firm's incentive to be the pioneer for producing a new product will be low, because of the asymmetry between the cost of failure and the gain of success. Broad-based interventions cannot resolve the need for compensating pioneer firms. Second, they also emphasize that required public support are industry or product-specific. Even if a country as a whole needs better infrastructure, the electronics industry and the textile industry require different infrastructure. Given limited resources and capacity, the government needs to prioritize the infrastructure needs according to the targeted industries.

⁵⁵ They include: Board of Investments (BOI), Philippines Economic Zone Authority (PEZA), Base Conversion and Development Authority (BCDA) and Subic Bay Metropolitan Area (SBMA).

⁵⁶ Appendix 6 summarizes incentive packages in each IPA.

(IPPs)
Plans
Priority
Investment
.⊆
Activities
Priority
Table 5-1

Preferred Activities	1997	2003	2004	2008	2009	2010
Catalytic Industries	Manufacturing: Composite board, drugs, medicines, shipbuilding, processed foods, cement, and paper	Information technology Petrochemicals	Electronics, motor vehicles, transport equipment,	Strategic Activities Minimum project investment cost of \$300 million and	Contingency List Job saving/ creation projects (to	Business process outsourcing, creative industries
Agriculture, Food, Forestry Industries Undergoing Industrial Adjustment	Machinery and equipment, textiles, chemical products, sugarcane, packaging products, coconut plantation, fishery and/or feeds production		iron and steel, mass housing, jewelry, fashion garments	complies with either of the following: (i) generates at least 1,000 jobs, or (ii) uses of internationally accented hich level	mitigate the impact of the global financial crisis, covers firms that retain and/or increase	(e.g., film, TV, theater arts), green projects, disaster prevention, mitigation,
Support Activities	Infrastructure (e.g., roads, telecommunications, ports, water, power) Common carriers (land, water, and air transport)			of technology. It also covers major projects of global	and number of workers.	Retained contingency liet and/or inh
	Agricultural services Environmental and ecological support facilities			to be located as a regional hub.		saving/ creation projects.
	R&D of private firms and research institutions Support to government priority programs: Rice and corn production, livestock and poultry, socialized housing, motor vehicle parts, social services, tourism					
Mandatory	Mineral resources, iron and steel, industrial tree pl cooperation projects	antations, book pu	blishing, built-c	operate-transfer project	ts, ASEAN industria	- e
Exports	Nontraditional export products and services, activit (product testing), export trader, agri-processing es-	ties in support to e tates	xporters (e.g., l	ogistics services, sub-as	ssembly and fabric	ation

ASEAN = Association of Southeast Asian Nations, R&D = research and development.

Source: IPP, various issues.

Export Performance of IPP Priority Products (Original Priority List in 1997) 16 -Figure 5-1



Note: The light blue bar shows the number of products that are exported with comparative advantage, while the dark blue bar shows those without comparative advantage.

Taking the Right Road to Inclusive Growth



51

Despite the long tradition of public sector support, the Philippines has failed to attract foreign investors. Foreign direct investment (FDI) inflows in the country have been much lower than that of its neighboring countries since the 1980s. Even in the 2000s, when the economy achieved relatively high growth compared with those in the previous decades, FDI inflows have remained less than half of that for Indonesia, Malaysia, and Viet Nam, and one fourth of Thailand (Figure 2-9). Further, several studies⁵⁷ find that the tax incentives provided by IPAs have been regarded as redundant by over 50% of firms. This implies that the firms that were granted the tax incentives would have invested irrespective of receiving the tax incentives. Reside (2006) estimates that the government's revenue loss from redundant incentives could be as high as 1% of GDP, providing a windfall gain to receiving firms.⁵⁸

Looking at the linkages of IPAs is another way of looking at how incentives are managed to attract investments to the Philippines. The Department of Trade and Industry (DTI) manages investments in the Philippines in general. Specifically, the Board of Investment (BOI) promotes investments. As the lead agency that promotes investments, BOI develops and implements investment promotion strategies for the Philippines, registers and monitors qualified enterprises, and administers investment incentives to registered enterprises. However, other IPAs, including the Clark Special Economic Zone (CSEZ), Philippine Economic Zone Authority (PEZA), Cagayan Special Economic Zone Authority (CSEZA), and Zamboanga City Special Economic Zone Authority (ZEZA) have the autonomy to authorize and regulate investments in their zones. As indicated by BOI (2005),⁵⁹ requirements are evaluated and scrutinized by the authorities operating each IPA. These IPAs are guided individually by their respective implementing rules and regulations.

Reside (2006) states that currently, nine laws govern the system in granting fiscal incentives in the country. The autonomy of each IPA may have merits in terms of the competition across IPAs. However, the lack of standard and systematic way of granting incentives has been perceived as a source of inefficiency and corruption.

In designing effective public interventions for targeted products, policymakers face two critical challenges: the first is to identify the target industries or products in which the country can acquire comparative advantage with relative ease in the future, and the second is developing an effective policy and institutional framework to identify constraints that impede the emergence of the target industries and to find our solutions to remove the identified constraints. This paper proposes a two-step solution to these problems.

Selecting target products. In line with the recent arguments for targeted public support, we classify all products in the Philippines' unexploited opportunity set (a total of 663 products) into three groups (Figure 5-2). The unexploited products mean that the Philippines has not yet developed its comparative advantage in those products, thus they can be candidates for product diversification. The classification of the products depends on the "distance" of each product from the current export products. The three product groups created are: (i) the "nearby" group (products with inverse density less than 0.75 standard deviations below the average of all unexploited products); (ii) the "middle" group (products with inverse density between ± 0.75 standard deviations around the average); and (iii) the "far away" group (products with inverse density at least 0.75 standard deviations above the average). There were 140 (nearby), 371 (middle), and 152 (far away) products in 2008. The products that fall into the nearby group can be developed with relative ease, since they can intensively utilize existing capabilities embedded in the current export products. On the other hand, development of any product in the far away group can aggravate the difficulties since they need quite different capabilities that the country has not yet developed.

⁵⁷ For example, Asian Development Bank. 2010. *Technical Assistance to the Philippines for Strengthening Investment Climate and Competitiveness*. Manila.

⁵⁸ Reside, R.E. 2006. Towards Rational Fiscal Incentives (Good Investments or Wasted Gifts? *Economic Policy Reform Advocacy Fiscal Sector Report* No. 1. Manila: Ateneo de Manila University.

⁵⁹ BOI. 2005. Primer on Doing Business in the Philippines. Manila: DTI, BOI. www.boi.gov.ph/doingbusiness.html.





Source: Author's calculation.

The government then needs to identify the list of priority products from the nearby group since the group consists of as much as 140 products. Various selection criteria can be used to choose the priority products. For instance, the government could select the most sophisticated products. This option of choosing the most sophisticated products (i.e., those with high values of PRODY) can improve the level of sophistication of the country's export basket (Figure 5-3 and Table 5-2). The second option is to choose products that have the highest spillover effect into other products (Figure 5-4 and Table 5-3). The spillover effect of each product can be measured by "strategic value."⁶⁰ Capabilities needed for producing these products can be deployed into a wide range of other goods, thus discovery of those products can help in the emergence of other new products in the future. Thirdly, it is also possible to select products with the highest labor absorption capacity (Figure 5-5 and Table 5-4).⁶¹ This is a realistic option if the government puts a high priority on job creation. The government may also opt for a combination of these criteria, and may develop its own selection criteria depending on its policy priorities.

Strategic Value_j =
$$\sum_{i} \frac{\varphi_{ij}}{\sum \varphi_{ij}} (1 - x_i) \cdot PRODY$$

Where $x_i = 1$ if the product *i* has comparative advantage, and $x_i = 0$ if the product *i* does not has comparative advantage.

⁶⁰ The strategic value of each unexploited product (product *j*) is the potential contribution of that product to the open forest if it is assumed to be exported with comparative advantage. It can be defined as:

⁶¹ We estimate labor intensity (total employment divided by value added) at the product level by using 2006 Census of Philippine Business and Industries (CPBI). Appendix 7 gives a detailed explanation about the method used for estimating labor intensity at the product level.



Figure 5-3 Top 20 Products with the Highest Level of Sophistication (selected by PRODY)





Source: Author's calculation.

RODY)
by P
(selected
ophistication
of S
Level
Highest
the F
with
Products
'Nearby"
20,
Top
Table 5-2

SITC Code	"Nearby" Commodities	Leamer Classification	PRODY	Strategic Value	Labor Intensity	RCA	Export Value (\$ million)	Share in World Export (%)	Global Demand Growthª (%)
7522	Complete digital data processing machines	Machinery	28,109	3,403	1.347	0.327	164.24	0.740	24.76
8851	Watches, watch movements and case	Machinery	25,310	6,014	2.982	0.656	89.72	0.201	8.07
8811	Photographic cameras, flashlight apparatus, parts, accessories, nes	Machinery	17,702	5,488	2.042	0.912	16.37	0.034	(9.97)
7643	Television, radio-broadcasting; transmitters, etc.	Machinery	16,537	8,103	1.193	0.644	447.26	1.116	12.12
8852	Clocks, clock movements and parts	Machinery	15,040	7,273	2.982	0.624	15.13	0.037	2.23
6531	Fabrics, woven, of continuous synthetic textile materials	Capital intensive	14,843	9,480	3.065	0.508	38.44	0.121	2.99
7641	Electrical line telephonic and telegraphic apparatus	Machinery	14,713	8,346	1.193	0.160	20.84	0.238	(7.89)
7622	Portable radio receivers	Machinery	13,995	3,808	0.957	0.034	0.61	0.034	(1.67)
0350	Fish, dried, salted or in brine; smoked fish	Animal products	13,841	5,650	1.611	0.949	21.25	0.035	7.63
7642	Microphones; loudspeakers; audio-frequency electric amplifiers	Machinery	13,583	7,997	0.957	0.635	49.25	0.121	7.19
7512	Calculating, accounting, cash registers, ticketing, etc., machines	Machinery	13,485	8,199	0.383	0.031	0.72	0.036	2.96
0344	Fish fillets, frozen	Animal products	13,286	5,413	1.611	0.762	44.87	060.0	12.67
0612	Refined sugar, etc.	Tropical Agriculture	12,595	7,539	0.647	0.008	0.33	0.063	12.59
8973	Precious jewellery, goldsmiths' or silversmiths' wares	Labor intensive	12,091	6,952	2.982	0.188	38.39	0.321	13.69
6664	Porcelain or china houseware	Labor intensive	11,998	10,039	2.829	0.573	9.57	0.027	7.93
8981	Pianos, other string musical instruments	Labor intensive	11,293	6,961	8.981	0.028	0.21	0.011	5.56
0814	Flours and meals, of meat, fish, etc., unfit for human; greaves	Cereals	11,284	4,220	1.022	0.152	3.25	0.031	6.67
7243	Sewing machines, furniture, needles, etc., and parts thereof, nes	Machinery	11,250	9,035	1.392	0.228	4.16	0.035	3.01
7757	Domestic electromechanical appliances; and parts thereof, nes	Machinery	10,866	8,559	0.505	0.092	8.02	0.142	11.13
8952	Pens, pencils, and fountain pens	Labor intensive	10,829	9,795	3.547	0.028	0.85	0.049	6.45

RCA = revealed comparative advantage, SITC = Standard International Trade Classification.

Figures in parentheses are negative.

^a Annual average growth rate of world export value (%, 2000–2007). Source: Author's calculation.

ē
valu
gic
ate
/ str
q
ted
elec
(se
ect
Eff
'er
2
Spil
st S
he
Hig
he
Ьt
wit
cts
qu
Pro
lrby
Nea
1.
20
Тор
ň
<u>е</u>
Tabl

SITC		Leamer		Strategic	Labor		Export Value	Share in World Export	Global Demand Growth ^a
Code	"Nearby" Commodities	Classification	PRODY	Value	Intensity	RCA	(\$ million)	(%)	(%)
7522	Complete digital data processing machines	Machinery	28,109	3,403	1.347	0.327	164.24	0.740	24.76
8851	Watches, watch movements, and case	Machinery	25,310	6,014	2.982	0.656	89.72	0.201	8.07
8811	Photographic cameras, flashlight apparatus, parts, accessories, nes	Machinery	17,702	5,488	2.042	0.912	16.37	0.034	(9.97)
7643	Television, radiobroadcasting; transmitters, etc.	Machinery	16,537	8,103	1.193	0.644	447.26	1.116	12.12
8852	Clocks, clock movements and parts	Machinery	15,040	7,273	2.982	0.624	15.13	0.037	2.23
6531	Fabrics, woven, of continuous synthetic textile materials	Capital intensive	14,843	9,480	3.065	0.508	38.44	0.121	2.99
7641	Electrical line telephonic and telegraphic apparatus	Machinery	14,713	8,346	1.193	0.160	20.84	0.238	(7.89)
7622	Portable radio receivers	Machinery	13,995	3,808	0.957	0.034	0.61	0.034	(1.67)
0350	Fish, dried, salted or in brine; smoked fish	Animal products	13,841	5,650	1.611	0.949	21.25	0.035	7.63
7642	Microphones; loudspeakers; audio-frequency electric amplifiers	Machinery	13,583	7,997	0.957	0.635	49.25	0.121	7.19
7512	Calculating, accounting, cash registers, ticketing, etc., machines	Machinery	13,485	8,199	0.383	0.031	0.72	0.036	2.96
0344	Fish fillets, frozen	Animal products	13,286	5,413	1.611	0.762	44.87	060.0	12.67
0612	Refined sugar, etc.	Tropical Agriculture	12,595	7,539	0.647	0.008	0.33	0.063	12.59
8973	Precious jewellery, goldsmiths' or silversmiths' wares	Labor intensive	12,091	6,952	2.982	0.188	38.39	0.321	13.69
6664	Porcelain or china houseware	Labor intensive	11,998	10,039	2.829	0.573	9.57	0.027	7.93
8981	Pianos, other string musical instruments	Labor intensive	11,293	6,961	8.981	0.028	0.21	0.011	5.56
0814	Flours and meals, of meat, fish, etc., unfit for human; greaves	Cereals	11,284	4,220	1.022	0.152	3.25	0.031	6.67
7243	Sewing machines, furniture, needles, etc., and parts thereof, nes	Machinery	11,250	9,035	1.392	0.228	4.16	0.035	3.01
7757	Domestic electro-mechanical appliances; and parts thereof, nes	Machinery	10,866	8,559	0.505	0.092	8.02	0.142	11.13
8952	Pens, pencils, and fountain pens	Labor intensive	10,829	9,795	3.547	0.028	0.85	0.049	6.45

RCA = revealed comparative advantage, SITC = Standard International Trade Classification.

Figures in parentheses are negative.

^a Annual average growth rate of world export value (%, 2000–2007).



Figure 5-5 Top 20 Products with the Highest Labor

Source: Author's calculation.

We emphasize exclusively focusing public action on enhancing production possibilities around the existing capabilities. However, this may not produce the leaps that are often required to sustain growth. The Philippines is better positioned in the product space in the world context, but, the country's position in the product space is still poor compared with those of the other countries in the region. Therefore, policymakers may need to explore new areas of the product space, including products that are not so close to current export products. For this reason, policymakers may consider selecting some products from the "middle" and/or even "far away" groups that they would want to develop (Appendix 8). This option is more challenging since any product from these groups needs a different set of capabilities that the country may not have. A realistic policy action for these products is to attract foreign firms through the FDI channel instead of making a strategic bet on domestic firms. FDI allows transfer of technology and capabilities that can be deployed for the production and export of other products.

The government has set several priority sectors in the Philippine Development Plan (PDP) 2011–2016.⁶² We can assess the feasibility of developing the products in the priority sectors in terms of their distance from the currently available capability and their level of sophistication (Figure 5-6). Several electronics products can be good candidates for diversification since they are relatively nearby and have a higher sophistication than the current export basket. However, most products in other sectors are not necessarily realistic options since they are either in the "far away" category, implying that they need a different set of capabilities that the country has not yet developed, or less sophisticated than the current export products.

⁶² The PDP 2011–2016 lists the following sectors as development priority sectors: tourism, business process outsourcing, mining, agribusiness and forest-based industries, logistics, shipbuilding, housing, electronics, infrastructure, and other industries with high growth potential (Chapter 3, page 57). Motor vehicle parts and components, garments, wood-based products, metal-based products, nonmetal-based products, and chemical-based products are included in the category of high growth potential industries. National Economic Development Authority. 2011. *Philippine Development Plan 2011–2016*. Pasig City: National Economic Development Authority.

SITC Code	"Nearby" Commodities	Leamer Classification	PRODY	Strategic Value	Labor Intensity	RCA	Export Value (\$ million)	Share in World Export (%)	Global Demand Growth ^a (%)
6674	Synthetic or reconstructed precious or semi-precious stones	Labor intensive	10,643	8,688	16.177	0.070	0.20	0.004	3.05
8981	Pianos, other string musical instruments	Labor intensive	11,293	6,961	8.981	0.028	0.21	0.011	5.56
6552	Knitted, not elastic nor rubberized, of fibers other than synthetic	Capital intensive	10,446	7,267	4.594	0.142	11.15	0.125	14.25
8952	Pens, pencils, and fountain pens	Labor intensive	10,829	9,795	3.547	0.028	0.85	0.049	6.45
8998	Smallwares and toilet articles, nes; sieves; tailors' dummies, etc.	Labor intensive	10,275	8,317	3.547	0.272	7.47	0.043	7.24
6531	Fabrics, woven, of continuous synthetic textile materials	Capital intensive	14,843	9,480	3.065	0.508	38.44	0.121	2.99
8852	Clocks, clock movements and parts	Machinery	15,040	7,273	2.982	0.624	15.13	0.037	2.23
8973	Precious jewellery, goldsmiths' or silversmiths' wares	Labor intensive	12,091	6,952	2.982	0.188	38.39	0.321	13.69
8851	Watches, watch movements, and case	Machinery	25,310	6,014	2.982	0.656	89.72	0.201	8.07
6664	Porcelain or china houseware	Labor intensive	11,998	10,039	2.829	0.573	9.57	0.027	7.93
8811	Photographic cameras, flashlight apparatus, parts, accessories, nes	Machinery	17,702	5,488	2.042	0.912	16.37	0.034	(9.97)
0350	Fish, dried, salted or in brine; smoked fish	Animal products	13,841	5,650	1.611	0.949	21.25	0.035	7.63
0344	Fish fillets, frozen	Animal products	13,286	5,413	1.611	0.762	44.87	0.090	12.67
7243	Sewing machines, furniture, needles, etc., and parts thereof, nes	Machinery	11,250	9,035	1.392	0.228	4.16	0.035	3.01
7522	Complete digital data processing machines	Machinery	28,109	3,403	1.347	0.327	164.24	0.740	24.76
7641	Electrical line telephonic and telegraphic apparatus	Machinery	14,713	8,346	1.193	0.160	20.84	0.238	(7.89)
7643	Television, radio-broadcasting; transmitters, etc.	Machinery	16,537	8,103	1.193	0.644	447.26	1.116	12.12
0814	Flours and meals, of meat, fish, etc., unfit for human; greaves	Cereals	11,284	4,220	1.022	0.152	3.25	0.031	6.67
7642	Microphones, loudspeakers, audio-frequency electric amplifiers	Machinery	13,583	7,997	0.957	0.635	49.25	0.121	7.19
7622	Portable radio receivers	Machinery	13,995	3,808	0.957	0.034	0.61	0.034	(1.67)

RCA = revealed comparative advantage, SITC = Standard International Trade Classification.

Figures in parentheses are negative.

^a Annual average growth rate of world export value (%, 2000–2007). Source: Author's calculation.



Figure 5-6 Distance and Sophistication of Priority Products in the Philippine Development Plan (PDP) 2011–2016

continued on next page



^a Includes only parts and components of motor vehicles. Source: Author's calculation.

Deliberation councils: Institutional setting for effective public and private dialogue. Once policymakers set their focus on some target products, the next challenge is helping private firms jump into these new products. However, there is no clear ex ante answer to this question. Public support can take many forms and use a wide range of instruments (Table 5-5). To design policies, policymakers first need to know the particular impediments that entrepreneurs would face to export their products successfully. Compared to the private sector, the public sector has less information on the location and nature of market failures that impede private investments. In fact, they may even not know what it is that they do not know. Only entrepreneurs know the constraints and opportunities they face in their operations, making it difficult for policymakers to devise the appropriate policies.

This problem could be alleviated by setting up an institution to interact with the private sector in identifying firms' obstacles in exporting new goods, and determining the most appropriate interventions. Dialogues may be conducted at the product level, not at the aggregate level, since product-specific obstacles can be revealed only through regular dialogue that focuses on the target products. Dialogue conducted at the broad level, for example between a secretary and the president of a chamber of commerce, may cover a wide range of products and industries, and may identify only common constraints shared across the products and industries. Government and entrepreneurs who specialize in a specific product can jointly diagnose the problems, and develop remedies jointly for generating a new product.
Constraints	Possible Instruments
	 Direct loans and/or grants directed toward firms, sectors or regions allocated through agencies with a degree of independence
Finance	Restructuring funds
	Credit lines to banks and/or credit institutions
	Tax incentives
	Venture capital funds and/or private equity
	Direct public investment in physical infrastructure
	• Mixed finance vehicles, including private finance initiatives and public-private partnerships
Infrastructure	Tax incentives to invest in communal resources
	Setting up of technology parks
	Creation of, and investment in, special economic zones
	Establishing long-term relationships between the public and private sectors
Information	Advisory and business services for domestic firms and potential foreign markets
	Export and trade promotion and marketing for improving access to foreign markets
	 Supply side – encouraging the generation and supply of innovation: Direct public funding of research and development: Allocated directly by government or indirectly through an organization Assigned or tendered for in a competitive process
	Tax incentives for research and development
Innovation	• Legal protection for innovation through patenting and intellectual property rights protection
	Raising the level of innovation-related human capital
	Demand side – measures to match innovations to markets:Venture capital finance and management to enable investment in innovation
	Improving the quality of business management through business schools
	Public training programs
Human Capital	Subsidies for skills development
numan Capitai	Investment in education
	Bursaries for foreign study

Table 5-5Policy Options

Source: Author (based on European Bank for Reconstruction and Development. 2008. *Transition Report 2008: Growth in Transition*. London: European Bank for Reconstruction and Development).

In this context, Rodrik (2004)⁶³ recommends "coordination and deliberation councils" for effective dialogue between the public and private sectors. The private sector conveys their requests to the government, and the government helps the private sector invest in new products. Interactions in the councils help the stakeholders share information on investment ideas, achieve coordination, and facilitate changes in legislation and regulation to support private investments. Good public sector support should consist of those institutional arrangements and practices that organize effective collaboration with the private sector. However, experiences suggest that adequate caution should be paid to avoid unintended rent transfers to well-connected entrepreneurs and self-interested government officials. It is thus critical to have a strong political leadership at the top, and incorporate check and balance mechanisms in public support.

⁶³ Rodrik, D. 2004. Industrial Policy toward the Twenty-First Century. Massachusetts: Harvard University. Mimeo.

Some East Asian governments have developed mechanisms to undertake joint diagnostics with the private sector. For example, "policy councils" (*shingikai*) or "deliberation councils" played a key role in Japan's diagnostics process, when the country achieved a high growth rate in the 1950s and 1960s, through the use of active industrial policies. The key players involved in the formulation of industrial policy were: (i) *genkyoku*—bureaus, divisions, and sections within ministries, particularly the Ministry of Industry and Trade (MITI); (ii) industrial associations; and (iii) policy councils. A *genkyoku* was responsible for one or another part of the relevant industry. Policy councils were consultative bodies whose deliberations were referred to in the process of policy formulation. The councils consisted of government officials, business leaders, representatives of industry associations, former bureaucrats, scholars, and journalists. Each policy council focused on a specific industry to fit the different priorities, needs, and circumstances in individual industries.

Policy councils were often criticized for being captive to the ministry. However, it was not the case that only issues in the ministry's interest were discussed in the councils. Business leaders, industry representatives, and other members were also actively involved in these discussions to express their views. In fact, policy councils furnished good opportunities for all stakeholders to share information, and adjust proposals to reflect their joint interests. In a comprehensive study on Japan's industrial policy, Komiya, Okuno, and Suzumura (1988)⁶⁴ point out that policy councils were effective in collecting, exchanging, and disseminating information on the industry; establishing consensus on policy matters; and setting up a long-term vision for the industry.

Designing principles of public sector support. As discussed earlier, it is not possible to devise, ex ante, policy actions for industrial support, since it all depends on the opportunities and constraints that will be identified through the public and private dialogue. Appropriate policy depends on constraints identified through the dialogue process. They can take various forms such as low-cost finance, tax incentives, duty-free imports, subsidies, public research and development, and/or subsidized vocational trainings. They may also be a set of standards and regulatory rules on product characteristics, provision of market information, and/or some specific infrastructure. Policymakers need to find the most appropriate form of intervention through dialogue. Nonetheless, it is possible to list some general design principles that can inform the formulation of the resulting industrial policies. They can be summarized into the following:

- (i) Set clear objectives and targets. Public intervention will support clearly defined objectives, and will target groups of firms that produce and/or export specific products. The target of public support should not be sectors but activities. This facilitates structuring the support to correct specific market failures instead of generic support for a sector.
- (ii) Set monitoring and evaluation mechanisms with performance indicators and benchmarks. Benchmarks must be established performance indicators used to identify and measure outputs and outcomes. Indicators will be used to regularly monitor and evaluate the performance of firms and the effectiveness of the intervention in meeting objectives. In the absence of a clear idea of what constitutes success and observable criteria for monitoring, failures can get entrenched. Recipients of subsidies can continue to ask and receive support despite poor outcomes and bureaucrats administering incentives can claim success and keep their programs running.
- (iii) Set sunset clauses and exit strategies. Interventions must be designed with an exit strategy after a fixed period, or after certain milestones are reached. One way to ensure that resources do not remain tied up in activities that do not pay off is to phase out support by default. Hence, every publicly supported project needs to have not only a clear statement of what constitutes success and failure, but also an automatic sunset clause for withdrawing support after an appropriate amount of time has elapsed.
- (iv) **Design interventions that are simple and flexible.** Design interventions must be easy to administer and interventions must be flexible so that they can be fine-tuned after initial implementation in case they do not show desired results.

⁶⁴ Komiya, R., M. Okuno, and K. Suzumura, eds. 1988. Industrial Policy of Japan. Tokyo: Academic Press, Inc.

- (v) Introduce cost recovery (where applicable). Partial or full cost recovery must be built into the design to ensure sustainability and ownership of the intervention, and to separate the firms that value the service from those seeking free resources.
- (vi) **Conduct participatory and transparent dialogue.** Since the proposed dialogue will happen between the government and firms that produce a specific product, all information on public support should be disclosed to avoid the impression that the government supports only a favored group. Details of the intervention as well as its implementation and evaluation must meet standards of transparency, i.e., full public disclosure.

Hausmann and Rodrik (2003) and Rodrik (2004) recommend a "carrot-and-stick strategy" in the design of industrial policy. Since self-discovery of new goods requires rents for entrepreneurs, governments need to provide them with a "carrot" (trade protection, low-cost finance, tax incentives, duty-free imports, marketing support, R&D support, etc.). At the same time, governments also need to use a "stick" to enforce discipline among recipients of the carrot. To ensure that mistakes are not perpetuated and ineffective policies are phased out, the rents to entrepreneurs should be subjected to performance requirements, particularly export targets. Once policymakers know that a policy cannot work, it should be redesigned or eliminated.

Industrial policies in East Asia included both elements. In the Republic of Korea and Taipei, China, interventions were always kept in check by the requirement that recipient firms become competitive in world markets, and some subsidies were contingent on their export performance (Rodrik 1994). Schuman (2009)⁶⁵ illustrates an important aspect of the Republic of Korea's industrial policy: "[President Park Chung Hee] set up a 'situation room' next to his office to supervise and track programs, held monthly and quarterly meetings with ministers, politicians, bankers, business leaders, and even labor chiefs to check their status. He harassed ministers with persistent phone calls to make sure they were meeting deadlines and targets." President Park Chung Hee laid the foundation of "the Miracle of Han River."

Despite the strong theoretical case and the success stories of the East Asian countries, there remains much opposition to industrial policy. The conventional argument against industrial policy rests on the practical difficulties with its implementation. Governments do not possess requisite information to "pick winners." Even if they have, industrial policy can result in corruption and rent seeking, benefiting politically well-connected business elites. The key challenge is therefore how to maximize the benefits of communication with the private sector and, at the same time, minimize the risk of corruption and rent seeking. The problems can be resolved by applying the design principles discussed above. Further, if target products are those that can be developed with relative ease—the "nearby" products in our argument—it is expected that the required public support will be minimal and possible incentives for political capture will be small.⁶⁶ Public support for these products may be restricted to provision of information, coordination of soft and hard infrastructure, and compensation for externalities (Lin and Monga 2010).

What are much more important for policymakers are: first, to establish an institutional framework for effective dialogues with the private sector to find out key constraints specific to target products; second, to the extent possible, incorporate market mechanism such as cofinancing in designing public sector support; and third, to set up clear monitoring and evaluation mechanisms with performance indicators and benchmarks. The joint diagnosis with the private sector, effective design of support programs, and regular monitoring and evaluation of the programs will pave the way for productive diversification that drive inclusive growth in the Philippines.

⁶⁵ Schuman, M. 2009. The Miracle: The Epic Story of Asia's Quest for Wealth. New York: HarperCollins.

⁶⁶ Lin and Monga 2010 also argue that risk of elite capture should be minimal since required support is minimal for products with latent comparative advantages.

Concluding Remarks

"The essential point to grasp is that in dealing with capitalism we are dealing with an evolutionary process. ... [It is a process] that incessantly revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one."

Schumpeter, J. A. 1942,⁶⁷ pp. 82–83.

Structural transformation is the core issue of development. Countries that attained high growth and rapid poverty reduction are those that were able to diversify their production structure and shift labor and other resources from the less productive to the more productive sectors. Industry plays a critical role in the transformation process and contributes to economy-wide productivity growth by creating decent employment opportunities for workers. Inclusiveness of economic growth thus depends on the direction and the speed of structural transformation in each country.

Despite high and sustained growth over the 2000s, the Philippines has failed to generate inclusive growth that is broad-based across the sectors and benefits the entire population. The country's standing problems of unemployment, poverty, and low investments remain. The past growth led mainly by services could not necessarily be associated with a rise in productive employment. Despite the significant contributions to job creation and export earnings, the services sector with the growing BPO industry has not yet resolved the chronic problems of the economy. The country needs to create productive job opportunities for the growing labor force by transforming the production structure toward industry. It will allow the Philippine economy to "walk on two legs"—industry and services—to achieve inclusive growth in the future.

Labor productivity growth is a key measure in capturing a country's ability to improve its standard of living over time. A decomposition of economy-wide productivity growth shows that, unlike other countries in the region, both productivity growth in an individual sector and reallocation of labor between sectors did not make significant contributions to the economy-wide productivity growth. Minor growth in the aggregate productivity came from the labor shift from agriculture to services, whose productivity has stagnated but is higher than that of agriculture. Although the Philippines has consistently retained the highest labor productivity in industry, labor released from agriculture have continued to flow into less productive services. This is in sharp contrast with that in other countries, where aggregate productivity increased through continual improvement of sector productivity and labor shift toward high-productivity sectors.

The evolution of the Philippines' product space shows that despite the increasing level of sophistication of the country's export basket, the process of industrial diversification has stagnated over the years. Although the Philippines was successful in attracting FDI to the electronics industry, this has not translated into a deepening of industrial capabilities. Indeed, the Philippine economy has accumulated capabilities to jump to more skill-and research-intensive segments of electronics and more sophisticated products such as machinery and

⁶⁷ Schumpeter, J. A. 1942. Capitalism, Socialism and Democracy. London: Unwin.

chemicals. However, the success in electronics has not been converted into sustained and rapid industrialization toward diversified and sophisticated industrial production. The country's export has thus become very narrowly concentrated in electronics, which reveals the vulnerability to external demand shocks.

The services-led growth in the Philippines has not created productive jobs. Over the years, the country continued to suffer the highest unemployment (and underemployment) rate in the region. Even in the latest growth episode, over one fourth of the total labor force has not been fully utilized. Since the early 2000s, the BPO industry has entered into the economy, and the Philippines has become the third largest BPO destination in the world. However, the BPO industry employs about 1% of the total labor force, and the majority of workers employed are skilled workers. Its labor productivity is relatively high within the services sector, but it remains well below compared with industry and manufacturing. Given the large amount of underutilized unskilled labor and the prospect of an increasing labor force, it is difficult to expect that the BPO industry alone can be a source of inclusive growth in the Philippines.

In the near term, the Philippines' services-led growth can be sustained by strong consumption backed by remittance inflows and the BPO industry. However, strong growth of manufacturing is needed to deal with the country's long-term development challenges of job creation and poverty reduction. This is not to suggest that the growing services sector, in particular the BPO industry, should not be the centerpiece of the long-term development strategy. To be sure, the BPO industry is helpful for the Philippines. However, it is not realistic to believe that the BPO industry can allow the economy to leapfrog the process of industrialization. Without dynamic industrial development, the country will continue to suffer from the long-standing problems of high unemployment, slow poverty reduction, and low investment.

The central argument of the paper is that the root cause of the Philippines' poor growth performance in the regional context lies in a chronic productivity growth deficit due to stagnant industrialization, in particular slow product diversification. Sluggish employment growth due to the stagnant industrialization has contributed to continuing high poverty incidence. The low investment share below the regional average is simply because the past economic growth has depended more on services that are less capital incentive than industry. The chronic problems of the economy are thus simple reflections of the stagnant industrialization. The Philippines' biggest need is to foster structural transformation to generate productive job opportunities for the growing working-age population. It is the indispensable requisite to inclusive growth in the Philippines.

How can the past record of slow industrial development be reversed, and the success in developing the electronics industry be converted to industrial upgrading and diversification? A first step is to undertake reforms necessary to address the long-standing challenges, such as underprovision of basic infrastructure and an unfriendly investment and business environment. Broad-based (horizontal) interventions, which improve general business and investment climate, can reduce transaction costs for investors and facilitate industrial development. Fiscal consolidation is an urgent agenda for increasing spending on infrastructure, since public investment has been constrained by weak revenue performance and poor expenditure management. The business community has been concerned about cumbersome business procedures and over-regulations, weak contract enforcement and property rights, and rigid labor market regulations.

At the same time, policymakers need to recognize the limitations of the traditional approach based on the broad-based interventions. Although significant challenges still remain, there have been notable improvements in the past 2 decades. Trade regime has been dramatically liberalized, and the general regulatory and/or licensing system has been significantly simplified. Financial sector reform has created a reasonably sound banking sector, and the removal of interest rate ceiling has given entrepreneurs better access to financial resources. Despite all these improvements, the process of industrial diversification and sophistication is still far behind those of the other countries in the region.

In addition to the sector-neutral interventions, the paper stresses the need for proactive public sector support targeting products (vertical interventions). Recent arguments for public sector support emphasize the critical importance of targeted interventions since required support are sector- or industry-specific. Given limited resources and capacity, the government cannot make the desirable improvements for the whole economy in a reasonable time frame. The government needs to prioritize its interventions according to targeted industries. In line with the argument, the paper identifies several products ("nearby" products) that the Philippines can develop with relative ease by deploying existing capabilities in the current export and production structure. The paper shows the lists of the most promising products for the Philippines, (i) products with higher sophistication, (ii) products with high spillover effect to other products, and (iii) products with the highest labor absorption capacity. The government can choose an adequate selection criteria based on its policy priorities.

Once policymakers determine target products, the next question is how to help private firms jump into the products. There is no clear ex ante answer to this question. The policymakers' challenge is to identify the particular constraints that public sector support aims to address and what instruments to deploy. Because the public sector has less information than the private sector about the location and nature of market failures that impede investments, a coordination and deliberation council could be established. The council can interact with the private sector to uncover significant obstacles in exporting new goods, and determine interventions to remove the obstacles in a coordinated manner. The public and private dialogues proposed in the paper emphasize the process to discover the constraints that prevent the emergence of new industries and the actions needed to resolve the constraints.

The private sector needs public inputs (regulations, standards, infrastructure, certificates, and/or property rights) to internalize market failures embedded in discovery process of new products. The government needs to elicit relevant information about obstacles and the opportunities entrepreneurs face in their operations. The targeted public sector support, we proposed in this report, is thus more process-oriented, focusing on institutional arrangement for effective communication with the private sector.

Despite the strong theoretical case and the success stories of the East Asian countries, there remains much opposition to targeted interventions. The conventional argument against target interventions rests on the practical difficulties with its implementation. Governments do not possess enough information to "pick winners." Target interventions result in corruption and rent seeking. However, these problems can be resolved by applying several design principles, which include performance-linked provisions of incentives, regular monitoring and evaluation, clear sunset clauses, and introducing cofinancing arrangement with target industries. If target products are those that can be developed with relative ease, such as our recommended "nearby" products, needed public sector support and possible incentives for political capture will be minimal.

Product diversification is unlikely to take place without public intervention due to market failures such as coordination failures and information spillovers. Public sector support is thus much needed to help entrepreneurs jump into new products. Even with effective dialogues with the private sector, initiatives for supporting some products may fail. What is more important is that the government can recognize its mistakes and change course when needed.

Without doubt, market forces and private entrepreneurship are the key drivers of development. But markets cannot work well with too much public intervention and too little intervention. It is only the government that could design the long-term vision of the economy. Policymakers need to steer the country's path of capability accumulation to fulfill the vision. Public sector support is not easy. It requires competent bureaucrats under a strong political leadership that places high priority on economic development. What matters most is the government's strong commitment to industrial development and concerted effort to remove market failures that have blocked industrial development.

Structural transformation, by its nature, is a long process. Challenges may look overwhelming. It cannot happen tomorrow, but in a future within our reach. The Philippines has a huge potential to become a key production base within the regional production network. With tightening labor markets and increasing labor cost in some countries in the region, restructuring production network after natural disasters, and realignment of regional currencies, in particular the appreciation of the Japanese yen, would create wider opportunities for the Philippines to attract foreign investors. The government needs to be pragmatic enough to exploit the precious opportunities. Strategic public sector support that embodies a long-term vision of the economy makes it possible to change the economic structure that drives inclusive growth in the Philippines. Success is not always as distant as it seems.

Road Map

his report proposes a new approach in identifying products for targeted public sector support that will upgrade and diversify the industry sector in the Philippines. A key challenge to effective public sector support is establishing an institutional framework of public and private dialogue that can maximize the information benefits and limit the rent-seeking costs. The recommendation in this report will be developed into a strategic policy road map with concrete policy recommendations in the next technical assistance: TA (7912) titled "Strategic Policy Actions for Successful Structural Transformation and Inclusive Growth." We will conduct a series of consultations with government officials, regional experts, and other stakeholders including the academe, research organizations, think tanks, private sector, civil society organizations, and development partners, to reflect their feedback obtained in the consultation process into the strategic policy road map.

Appendix 1 Labor Productivity, 1980–2009



Labor Productivity by Sector



Source: Author's calculation.

Appendix 2 Labor Productivity—Manufacturing, 1980—2006



Note: Subsector classification is based on the ISIC revision 2: code 31 food, beverages and tobacco; 32: textile, wearing apparel and leather; 33: wood and wood products, including furniture; 34: paper and paper products, printing and publishing; 35: chemicals and petroleum, coal, rubber and plastic; 36: nonmetallic mineral products; 37: basic metal; 38: fabricated metal, machinery and equipment; and 39: other manufacturing.

Source: Author's calculation on UN Industrial Development Organization (UNIDO), INDSTAT3 2005 and INDSTAT4 2010.

Appendix 3

Technical Notes on Key Concepts in Product Space

1. Revealed Comparative Advantage and Diversification

Revealed comparative advantage (RCA): In an in-depth analysis of export data, the so-called marginal exports should not be included. To quantify the significance of an export product, this paper uses the concept of RCA. A country exports a product whenever they have RCA in it. Based on Balassa (1965),⁶⁸ RCA is defined as:



where *xval_{ci}* is the value of the exports of country *c* in the product *i*. RCA is larger than one when the share of exports of a country on a given product is larger than the share of that product on the world trade. This RCA sets a hard threshold for country *c*'s export. When $RCA_{ci} > 1$ we say that country *c* exports product *i*, otherwise, that country is a marginal exporter of that product.

Diversification: Diversification of a country is the total number of export products with comparative advantage.

2. Ubiquity and Standardness

Ubiquity: Ubiquity is defined for each product as the total number of countries exporting the product with RCA > 1.

⁸ Balassa, B. 1965. Trade Liberalization and Revealed Comparative Advantage. *Manchester School of Economics and Social Studies* 33: 99–123. Manchester: Blackwell Publications.

Standardness: Standardness is defined for each country as the average ubiquity of the commodities exported from the country with comparative advantage. A lower value of the standardness means that the country has a more unique export basket. Figure A3-1 shows that countries with more diversified export structure tend to export more unique products.

Standardness_c =
$$\frac{1}{diversification_c} \sum_{i} ubiquity_{ic}$$



Figure A3-1 Standardness and Diversification, 2008

Source: Author's calculation.

3. Level of Sophistication (PRODY and EXPY)

PRODY: PRODY is a measure used in evaluating the level of sophistication at the product level. It is computed using trade data from United Nations Commodity Trade (UN Comtrade) website at 4-digit SITC Revision 2 codes and real gross domestic product (GDP) per capita (constant 2000 \$) data from the United Nations Statistics Division website. A sample of 204 countries is included in the calculation for 3 years, from 2004 to 2006. Only countries that reported trade data and had available GDP per capita data are considered in the sample. Import data (by country of origin) from the point of view of the importer countries were used to approximate the export data of the country of origin. The average of the resulting export data across 3 years were used to estimate the PRODY. Figure A3-2 shows the distribution of PRODY of the 773 products, which ranges from \$358 to \$28,438 (constant 2000 \$).



Figure A3-2 Distribution of PRODY

Source: Author's calculation.

EXPY: EXPY defines the level of sophistication at the country level. It measures the level of sophistication of overall export basket of a country by calculating a weighted average of export products with comparative advantage. The EXPY is calculated for all countries reporting trade data from 1962 to 2008. The trade data set used in the study is a combination of the data set from Feenstra et al. (2005)⁶⁹ for 1962–2000 and the original estimates based on the latest data from UN Comtrade for 2001–2008.

PRODY (of product *i*) and EXPY (of country *c*) are defined as:



where $xval_{ci}$ is the export value of product *i* by country *c*, and $GDPPC_{c}$ is per capita GDP of country *c*.

⁹ Feenstra, R., R. Lipsey, H. Deng, A. Ma, and H. Mo. 2005. World Trade Flows: 1962–2000. NBER Working Paper 11040. Massachusettes: National Bureau of Economic Research.

4. Proximity and Path

Proximity: If every country that exports a product also exports another product, then these two products must involve similar capabilities. On the other hand, if every country that exports a product does not export another product, then these two products must involve different capabilities. This led to the use of conditional probabilities to measure the similarity between the two products. "Proximity" is measured as the minimum between the probability that countries export product *i* given that they already export product *j*; and the probability that countries export product *j* given that they already export product *i*. The reason for taking the minimum of the two probabilities is to create a symmetric measure of distance for a pair of products. Formally, the proximity between products *i* and *j* is defined as:

$$\varphi_{ij} = \min\{P(x_i = 1 \mid x_j = 1), P(x_j = 1 \mid x_j = 1)\}$$

where $x_i = 1$ implies that, for every country *c* and commodity *i*, $RCA_{ci} > 1$.

Path: For each product, we measure the strength of the linkages with other products by simply adding up the proximities leading to that product. This index, called "path," shows which products are in a dense part of the product space, and which are on the periphery. The path of product *i* is defined as:

$$Path_i = \sum_i \varphi_{ij}$$

5. Density, Open Forest, and Strategic Values

Suppose that there are only five commodities C_i (*i*=1, 2,.., 5) in the product space, and country A exports commodities C_1 and C_2 with comparative advantage, and other products (C_3 , C_4 , and C_5) are unexploited products (no comparative advantage) (Figure A3-3).

Figure A3-3 Product Space of Country A



Density: Density is defined for each unexploited product. In this example, an unexploited product, say product C_5 , links with four products $(C_1, C_2, C_3, \text{ and } C_4)$. Each link with C_5 has a different value of proximity. Some links are with products that have comparative advantage $(C_1 \text{ and } C_2)$, but others are with unexploited products $(C_3 \text{ and } C_4)$. Density of C_5 is the sum of proximities with products that are currently exported with comparative advantage, divided by the sum of proximities with all products. If φ_{ij} is the proximity between products *i* and *j*, $i \neq j$, the density of C_5 in country A is:

$$Density_{5A} = \frac{\varphi_{15} + \varphi_{25}}{Path_5} = \frac{\varphi_{15} + \varphi_{25}}{\varphi_{15} + \varphi_{25} + \varphi_{35} + \varphi_{45}}$$

By definition, density ranges between 0 and 1. If an unexploited product has links only with products that have comparative advantage, the density of that product is equal to 1. This implies that it is highly likely that the unexploited product can be exported in the future since required capabilities for that product are already developed for producing other products.

Open forest: Open forest measures the value of unexploited products at the country level, taking into account the distance from the country's current export products. Open forest (of country A) is defined as:

$$Open \ forest_{A} = \sum_{i} \sum_{j} \frac{\varphi_{ij} x_{Ai}}{\sum_{j} \varphi_{ij}} (1 - x_{Aj}) \ PRODY_{j}$$

Based on Figure A1-3 (Product space of country A), open forest can be expanded as:

$$Open \ forest_{A} = \frac{\varphi_{31} + \varphi_{32}}{\varphi_{31} + \varphi_{32} + \varphi_{34} + \varphi_{35}} PRODY_{3}$$
$$+ \frac{\varphi_{41} + \varphi_{42}}{\varphi_{41} + \varphi_{42} + \varphi_{43} + \varphi_{45}} PRODY_{4}$$
$$+ \frac{\varphi_{51} + \varphi_{52}}{\varphi_{51} + \varphi_{52} + \varphi_{53} + \varphi_{54}} PRODY_{5}$$

Note that the weight of a PRODY above corresponds to the density of each unexploited product. A country's open forest thus depends on the proximity of the unexploited products to the products over which the country has comparative advantage, and the level of sophistication of the unexploited products. A higher value of open forest implies more opportunities to jump into to new products.

Strategic value: The successful export of each unexploited product has a different spillover effect into other unexploited products, since each product involves a different set of capabilities. Some products can provide capabilities that can be applied to a wide range of products, but others cannot. The strategic value of a product precisely provides this information.

In the example, there are three unexploited products (C_3 , C_4 , and C_5). Suppose country A will acquire comparative advantage in C_5 . Successful production of this product creates a new set of capabilities that entrepreneurs can also apply for C_3 and C_4 . The strategic value of product C_5 is defined as:

Strategic value_A =
$$\frac{\varphi_{35}}{\varphi_{31} + \varphi_{32} + \varphi_{34} + \varphi_{35}} PRODY_3$$

+ $\frac{\varphi_{35}}{\varphi_{41} + \varphi_{42} + \varphi_{43} + \varphi_{45}} PRODY_4$

As illustrated in Figure A3-4, the strategic value of C_5 represents the proximity of the other unexploited products (C_3 and C_4) to C_5 , and the level of sophistication of these products (PRODY₃ and PRODY₄). Products with high strategic values have wide-ranging effects on future structural transformation by creating capabilities to be allied for many unexploited products.



Figure A3-4 New Product Space of Country A

Appendix 4 PRODY–PATH Distribution

he methodology and discussion by Felipe et al. (2010)⁷⁰ on PRODY–PATH distribution are replicated in this appendix. We classify the 773 products according to their sophistication (PRODY) and the strength of their linkages with other products (PATH). The products are grouped into high-PRODY, mid-PRODY, or low-PRODY, depending on their groupings to the first, second, or third tercile of the PRODY scale. Similarly, we also classify these products as being high-PATH, mid-PATH, or low-PATH based on the tercile of the PATH scale. Table A4-1 provides a summary of the information of export products in each cell: the number of commodities and the averages of PRODY and PATH of the commodities. The PATH increases row-wise but there are no significant variations across columns. On the other hand, PRODY increases column-wise but there are no significant differences across rows. Almost 50% of the 773 products are "good" products (cells MPR–MPA, HPR–MPA, MPR–HPA and HPR–HPA). The other half could be classified as "bad" products. The 71 core products (machineries, chemicals and metal products) dominate the HPR–HPA cell that contains 103 products. On the "bad" side, less than half of the 128 products under LPR–LPA cell are cereals and raw materials.

			PRODY	
		Low-PRODY (LPR)	Mid-PRODY (MPR)	High-PRODY (HPR)
	Low-PATH (LPA)	(LPR–LPA) No. of Products: 128 Average PRODY: \$2,966 Average PATH: 84	(MPR–LPA) No. of Products: 60 Average PRODY: \$9,696 Average PATH: 89	(HPR–LPA) No. of Products: 70 Average PRODY: \$17,668 Average PATH: 90
РАТН	Mid-PATH (MPA)	(LPR–MPA) No. of Products: 97 Average PRODY: \$4,326 Average PATH: 130	(MPR–MPA) No. of Products: 77 Average PRODY: \$9,675 Average PATH: 131	(HPR–MPA) No. of Products: 84 Average PRODY: \$17,070 Average PATH: 132
	High-PATH (HPA)	(LPR–HPA) No. of Products: 33 Average PRODY: \$5,691 Average PATH: 158	(MPR–HPA) No. of Products: 121 Average PRODY: \$9,819 Average PATH: 163	(HPR–HPA) No. of Products: 103 Average PRODY: \$16,080 Average PATH: 167

Table A4-1 PRODY–PATH Distribution of the 773 Products

Note: Total number of products at the SITC Rev. 2, 4-digit levels is 773. PRODY are computed based at 2000 \$.

Source: Author's calculation.

⁷⁰ Felipe, J., U. Kumar, and A. Abdon. 2010. How Rich Countries Became Rich and Why Poor Countries Remain Poor: It's the Economic Structure... Duh!. *Levy Economics Institute, Working Paper* No. 664. New York: Bard College.

The distributions of the 773 products, divided into 9 cells, are shown in Figure A4-1. Commodities based on SITC Rev. 2, 4-digit codes were grouped based on Leamer's classification for each cell. The original 10 Leamer groups were adjusted to separate the metal products from the capital intensive group. The metal products were assigned as the 11th Leamer group. The core products, comprise of machinery, chemicals and metal products, are the most sophisticated Leamer group with an average PRODY of \$13,500. The interrelationship of their capabilities is the best among all Leamer groups. These products tend to be manufactured. Natural products generally have the least sophistication (LPR–LPA). Petroleum, which has a high average PRODY of about \$12,000, has the least capabilities that can be used to diversify to other products. The core products tend to be from mid- to high-PRODY but spread across the three sections of PATH, low-, mid-, and high-PATH. Electronic products dominate the MPR–LPA and HPR–LPA cells.



Leamer's Classification

Figure A4-1 Distribution of Products According to PRODY and PATH

Notes:

1. The first number above the bar is the share in the respective PRODY-PATH group.

2. The second number above the bar is the share in the respective Learner group.

Source: Author's calculation.

Figure A4-1 indicates that raw materials and cereals recorded the largest shares within LPR–LPA cell and among the two Leamer groups. Petroleum products are concentrated at HPR–LPA cell (30%). Metal products are lumped in the MPR–HPA (41%) and HPR–HPA (26%). Machinery and chemicals are mostly in MPR and HPR cells but spread across three path groups.

Labor-intensive products are spread across low- and mid-PRODY and crossed with low-, mid- and high-PATH categories. Labor intensive products includes garments, footwear, travel goods, and leather products. Twenty-one percent of labor-intensive products are in LPR–MPA, 19% in MPR–HPA, 13% in LPR–LPA, and 11% each in MPR–LPA and MPR–MPA. Only 3% are in the LPR–HPA cell.

Of special interest are electronics and semiconductors, since almost 50% of export products of the Philippines in recent years come from electronics. Electronic products are part of machinery in the Leamer classification. In this paper, we identified 15 SITC commodities that are considered electronics. These products were grouped according to their PRODY and PATH under machinery. Figure A4-2 shows the number of electronic products and non-electronic product under machinery. Out of 15 electronic products, 7 were concentrated in the HPR–LPA, 4 in the MPR–LPA, 2 in the MPR–MPA and 1 each in the LPR–HPA and MPR-MPA. Interestingly, majority of the electronic products are between mid- to high-PRODY but almost exclusively at the low PATH group. This shows that on the average, electronic products are highly sophisticated (high PRODY) but provide less capabilities that can be utilized to produce other unexploited export products (low PATH).





Appendix 5

Evolution of Product Space—Selected Countries, 1965–2008





Source: Author.







People's Republic of China





Appendix 6

Investment Promotion Agencies and Incentive Packages

Agency	Board of Investment (BOI)
Name	Board of Investments
Reference Laws	Executive Order 226 (Omnibus Investments Code)
Income Tax Holiday (ITH)	100% on new project (pioneer status) – for a period of 6 years 100% on new project (nonpioneer status) – for a period of 4 years Expansion projects for 3 years and modernization projects for 3 years – limited to incremental sales revenue and/or volume New or expansion projects in less developed areas – for a period of 6 years Bonus year or extension of the ITH may depend on: uses of indigenous materials, which should be 50% of the total cost of raw materials, the ratio of total imported and domestic capital equipment to the number of workers for the project does not exceed \$10,000 to one worker, the net foreign exchange savings or earnings amount to at least \$500,000 annually during the first 3 years of operation.
Exemption from Taxes and Duties	A registered enterprise with a bonded manufacturing warehouse shall be exempt from customs duties and national internal revenue taxes on its importation of required supplies and/or spare parts for consigned equipment or those imported with incentives (with certain conditions) Exemption from contractor's tax Tax exemption on breeding stocks and genetic materials (within 10 years of operation and on certain conditions) Zero percent duty on imported machinery, equipment, spare parts and accessories, classified under AHTN Chapters 40, 59, 68, 69, 70, 73, 76, 82, 83, 84, 85, 87, 89, 90, 91 and 96 of the Tariff and Customs Code of the Philippines. All enterprises registered under the IPP will be given a 10-year period from date of registration to avail of the exemption from wharfage dues and any export tax, impost and fees on its nontraditional export products.
Tax Credits	On domestic capital equipment, on duty portion of domestic breeding stocks and genetic materials, for taxes and duties on raw materials (with certain conditions) On domestic breeding stocks and genetic materials (with certain conditions)
Additional Deductions from Taxable Income	None

Agency	Philippine Economic Zone Authority (PEZA)
Name	PEZA (expressed below are just for export manufacturing enterprises)
Reference Laws	Presidential Decree 66 (Export Processing Zone Authority 1972), Republic Act 7916 (Special Economic Zone Act of 1995), Executive Order 226 (Omnibus Investments Code)
Income Tax Holiday (ITH)	100% on new project (pioneer status) – for a period of 6 years 100% on new project (nonpioneer status) – for a period of 4 years Expansion projects for 3 years – limited to incremental sales revenue/volume New or expansion projects in less developed areas – for a period of 6 years Bonus year or extension of the ITH (maximum of 8 years) – depends on (i) average net foreign exchange earnings of the project for the first 3 years of operations is at least \$500,000.00; (ii) capital equipment to labor ratio of the project does not exceed \$10,000.00 to 1 for the year immediately preceding the ITH extension year being applied for; and (iii) average cost of indigenous raw materials used in the manufacture of the registered product is at least 50% of the total cost of raw materials for the preceding years prior to the ITH extension year
Exemption from Taxes and Duties	Tax and duty free importation of raw materials, capital equipment, machineries, and spare parts Exemption from wharfage dues and export tax, import or fees
Tax Credits	VAT zero-rating of local purchases subject to compliance with Bureau of Internal Revenue and PEZA requirements Tax credits for exporter using local materials, as inputs shall enjoy the same benefits provided for in the Export Development Act of 1994.
Additional Deductions from Taxable Income	None
Others	Section 23 of this law states that business establishments operating within ECOZONES shall also be entitled to fiscal incentives as provided for under P.D. 66 or those provided under Book VI of Executive Order No. 226 (Omnibus Code of 1987) In lieu of paying taxes, 5% of gross income earned by all business and enterprises within the ECOZONE shall be remitted to the national government Section 42 states that an additional deduction equivalent to one-half of the value of training expenses in developing labor or for managerial development program can be deducted from the national government's share of 3% as provided in section 24

Agency	Subic Bay Metropolitan Authority and Clark Freeport Zone (SBMA)
Name	SBMA and Clark Freeport Zone
Reference Laws	Republic Act 7227 (The Bases Conversion and Development Act of 1992), as amended by RA 9400
Income Tax Holiday (ITH)	None but ITH for 6 years extendible up to a total of 8 years may be availed through the Board of Investments (BOI)
Exemption from Taxes and Duties	None
Tax Credits	Zero value-added tax (VAT) rating on local purchases
Additional Deductions from Taxable Income	Preferential tax rate of 5% based on gross income earned provided that 70% of products are to be exported. (Regional enterprises) May generate revenues locally up to 50% of its total revenues with only 5% tax based on gross income earned
Others	Exemptions from real property tax (Regional enterprises) Allowable deductions: for trading and infrastructure development enterprises, for service enterprises, and for financial enterprises (Regional enterprises) Additional deductions: for trading and infrastructure development enterprises, for service enterprises and for financial enterprises In lieu of paying taxes, 5% of gross income earned by all business and enterprises within the ECOZONE shall be remitted to the national government

Agency	Cagayan Economic Zone Authority (CEZA)
Name	CEZA
Reference Laws	Republic Act 7227 (The Bases Conversion and Development Act of 1992), as amended by RA 9400
Income Tax Holiday (ITH)	100% on new project (pioneer status) – for a period of 6 years 100% on new project (nonpioneer status) – for a period of 4 years
Exemption from Taxes and Duties	Tax and duty free importation of articles, raw materials, capital goods, equipment, and consumer items
Tax Credits	Tax credits for foreign corporations
Additional Deductions from Taxable Income	A special tax rate of 5% of gross income in lieu of all local and national taxes
Others	Permanent resident status for foreign investors and their immediate family, provided that the investor maintains a capital investment not less than \$150,000.00 All applicable incentives under Omnibus Investment Code of 198.

Agency	Zamboanga City Special Economic Zone Authority (ZEZA)
Name	ZEZA
Reference Laws	Republic Act 7903 (Zamboanga City Special Economic Zone Act of 1995)
Income Tax Holiday (ITH)	100% on new project (pioneer status) – for a period of 6 years 100% on new project (nonpioneer status) – for a period of 4 years Expansion projects for 3 years
Exemption from Taxes and Duties	Tax- and duty-free importation of raw materials, equipment, and other articles
Tax Credits	Exemption from all local and national taxes
Additional Deductions from Taxable Income	5% flat tax rate from gross income earned after the ITH
Others	Permanent resident visas for foreign investors and immediate family members with investment of at least \$150,000; Other incentives under the Presidential Decree No. 66 or those provided under Book VI of the Omnibus Investment Code of 1987 or incentives, benefits or privileges presently enjoyed by business establishments operating within the Subic special economic zone pursuant to Republic Act No. 7227

Agency	Aurora Special Economic Zone Authority (ASEZA)
Name	ASEZA
Reference Laws	Republic Act 9490 (Aurora Special Economic Zone Act of 2007)
Income Tax Holiday (ITH)*	ITH (4 years for those located in highly developed areas as determined by the BOI, 6 years for those located in less developed areas or producing new products/services or having strong backward or forward linkages); Deferred imposition of the Minimum Corporate Income Tax
Exemption from Taxes and Duties	Raw materials incentives Incentives on breeding stocks and genetic materials Exemption from wharfage dues
Tax Credits	None

continued

Additional Deductions from Taxable Income	Net operating loss carryover (NOLCO) – Net operating loss of the business or enterprise during the first 3 years from the start of commercial operations, which have not been previously offset as deduction from gross income shall be carried over as a deduction from gross income for the next 5 consecutive years immediately following the year of such loss Imposition of a tax rate of 5% on gross income earned (GIE) Accelerated depreciation of plant, machinery, and equipment that are reasonably needed and actually used for the production and transport of goods and services Capital equipment incentives The importation of source documents by information technology-registered enterprises shall be eligible for tax and duty free importation
Others	*Fiscal incentives specified may be extended up to a period of 20 years

Agency	Poro Point Freeport Zone (PPFZ)
Name	PPFZ
Reference Laws	Republic Act 7227 (The Bases Conversion and Development Act of 1992), as amended by RA 9400
Income Tax Holiday (ITH)	None
Exemption from Taxes and Duties	Tax and duty free importation of raw materials and capital equipment Unlimited purchase and consumption of tax and duty free consumer goods within the PPFZ
Tax Credits	No local and national taxes. In lieu of taxes, PPFZ enterprise shall 5% of gross income earned
Additional Deductions from Taxable Income	None
Others	None

Agency	John Hay Special Economic Zone (JHSEZ)
Name	JHSEZ
Reference Laws	Republic Act 7227 (The Bases Conversion and Development Act of 1992), as amended by RA 9400
Income Tax Holiday (ITH)	None
Exemption from Taxes and Duties	Exemption from taxes under the National Revenue Code (NRC) Exemption from local taxes except real property taxes
Tax Credits	None
Additional Deductions from Taxable Income	Preferential income tax treatment on gross income earned within the economic zone, which is 5% of the gross income earned in the following percentages: national government (3%) and local government unit (2%)
Others	Fiscal Incentives provided under PD 66 Fiscal Incentives provided under EO 266 (Omnibus Investment Code of 1987)

Appendix 7

Labor Intensities of Export Products in the Philippines

abor intensity is the ratio of labor and output. Depending on the availability of data, many indicators represent the amount of labor such as total number of employment, total compensation, and total hours worked. Output can be value of production, gross output, or gross value added. In general, the labor intensity of product *i* is defined as:

Labor Intensity_i =
$$\frac{L_i}{O_i}$$

where L_i = labor indicator and O_i = output indicator of product *i*.

The Philippine export data used in this study come from the United Nations Commodity Trade (UNCommtrade) dataset based on Standard International Trade Classification (SITC) Revision 2 of 1976. There are 773 commodities available based on disaggregation at four-digit level of SITC. A major challenge is the availability of labor and output data for the Philippines corresponding to the 773 commodities. The country's labor and export data are based on local industrial classification, which is linked to the International Standard Industrial Classification (ISIC).

The labor data we considered are the total employed persons and total hours worked in the quarterly Labor Force Survey (LFS), and the total employment and total compensation in the Census of Philippine Business and Industry (CPBI) 2006. The LFS and the CPBI, based on the Philippine Standard Industrial Classification (PSIC), provide data at the disaggregated one- to three-digit codes, respectively. LFS is a household-based survey that includes all workers working in incorporated and unincorporated establishments. LFS covers only the employment profile of the household. On the other hand, CPBI is an establishment-based census that includes only the workers from incorporated establishments. CPBI covers all types of establishments—employment, output, costs, capital expenditures/formation and capital stocks. Output data such as value of production, gross revenue, and census value added are included in the CPBI.

This study uses labor and output data from 2006 CPBI to estimate the labor intensities of manufacturing exports at the three-digit PSIC level. In calculating labor intensity at the product level, we use total employment and value added at the three-digit PSIC codes. Total employment includes all those at the managerial levels, the technical people and the unskilled workers, whether paid or unpaid. Labor intensity is equal to total employment divided by value added (in million pesos). To link these labor intensities in the PSIC to the SITC commodities, a concordance between three-digit PSIC and four-digit SITC is created.

	Rice in the husk or husked, but not farther prepared	78.465	
	Mate	28.716	
	Pepper of "piper;" pimento of "capsicum or pimenta"	28.716	
	Spices, except pepper and pimento	28.716	
	Теа	28.716	
	Sugars, beet and cane, raw, solid	19.761	
	Other natural abrasives	16.177	
	Sulphur (other than sublimed, precipitated or colloidal)	16.177	
	Slag, scalings, dross and similar waste, nes	16.177	
	Synthetic or reconstructed precious or semi-precious stones	16.177	
	Commodities with the lowest labor intensity		
	Commodities with the lowest labor intensity Anthracite, not agglomerated Lubricating petroleum oils, and preparations, nes Eucloils nes		0.067 0.008 0.008
•	Commodities with the lowest labor intensity Anthracite, not agglomerated Lubricating petroleum oils, and preparations, nes Fuel oils, nes Petroleum bitumen, petroleum coke and bituminou	s mixtures, nes	0.067 0.008 0.008 0.008
•	Commodities with the lowest labor intensity Anthracite, not agglomerated Lubricating petroleum oils, and preparations, nes Fuel oils, nes Petroleum bitumen, petroleum coke and bituminou Kerosene and other medium oils	s mixtures, nes	0.067 0.008 0.008 0.008 0.008 0.008
•	Commodities with the lowest labor intensity Anthracite, not agglomerated Lubricating petroleum oils, and preparations, nes Fuel oils, nes Petroleum bitumen, petroleum coke and bituminou Kerosene and other medium oils Gas oils	s mixtures, nes	0.067 0.008 0.008 0.008 0.008 0.008
•	Commodities with the lowest labor intensity Anthracite, not agglomerated Lubricating petroleum oils, and preparations, nes Fuel oils, nes Petroleum bitumen, petroleum coke and bituminou Kerosene and other medium oils Gas oils Gasoline and other light oils	s mixtures, nes	0.067 0.008 0.008 0.008 0.008 0.008 0.008
-	Commodities with the lowest labor intensity Anthracite, not agglomerated Lubricating petroleum oils, and preparations, nes Fuel oils, nes Petroleum bitumen, petroleum coke and bituminou Kerosene and other medium oils Gas oils Gasoline and other light oils Petroleum jelly and mineral waxes	s mixtures, nes	0.067 0.008 0.008 0.008 0.008 0.008 0.008 0.008
-	Commodities with the lowest labor intensity Anthracite, not agglomerated Lubricating petroleum oils, and preparations, nes Fuel oils, nes Petroleum bitumen, petroleum coke and bituminou Kerosene and other medium oils Gas oils Gasoline and other light oils Petroleum jelly and mineral waxes Crude petroleum and oils obtained from bituminou	s mixtures, nes s materials	0.067 0.008 0.008 0.008 0.008 0.008 0.008 0.008 0.008 0.008

Figure A7-1 Distribution of Labor Intensities

Appendix 8

List of Selected "Middle" and "Far Away" Products

Table A8-1 Top 20 "Middle" Products with the Highest Level of Sophistication (selected by PRODY)

SITC Code	"Middle" Commodities	Leamer Classification	PRODY	Strategic Value	Labor Intensity	RCA	Export Value (\$ million)	Share in World Export (%)	Global Demand Growth ^a (%)
5415	Hormones, natural, or reproduced by synthesis, in bulk	Chemicals	28,438	9,183	0.504	-	_	0.068	10.39
5148	Other nitrogen- function compounds	Chemicals	24,493	7,171	0.504	0.018	3.28	0.325	29.04
6733	Angles, shapes, sections and sheet piling, of iron or steel	Metal products	24,283	10,346	0.982	0.003	0.39	0.170	18.30
8996	Orthopedic appliances, hearing aids, artificial parts of the body	Labor intensive	23,104	9,616	1.340	0.187	34.67	0.257	19.24
5851	Modified natural resins etc; derivatives of natural rubber	Chemicals	22,883	11,612	1.776	-	-	0.015	15.41
7362	Metal forming machine-tool	Machinery	22,212	9,783	1.392	0.055	2.86	0.077	9.82
0015	Equine species, live	Animal products	21,769	8,916	3.723	-	-	0.020	4.51
5146	Oxygen-function amino-compounds	Chemicals	21,024	7,633	0.504	0.005	0.32	0.115	14.38
8744	Nonmechanical or electrical instruments for physical, etc., analysis	Machinery	20,974	11,212	1.340	0.087	8.29	0.144	11.76
7923	Aircraft of an unladen weight from 2,000 kg to 15,000 kg	Machinery	20,710	7,744	0.752	0.004	0.48	0.113	3.55
5826	Epoxide resins	Chemicals	20,302	11,036	0.504	0.357	9.71	0.044	11.49

SITC Code	"Middle" Commodities	Leamer Classification	PRODY	Strategic Value	Labor Intensity	RCA	Export Value (\$ million)	Share in World Export (%)	Global Demand Growth ^a (%)
6647	Safety glass consisting of toughened or laminated glass, cut or not	Labor intensive	20,133	12,563	1.090	0.516	23.07	0.070	12.35
0013	Swine, live	Animal products	19,497	9,590	3.969	-	-	0.025	13.18
7741	Electro-medical equipment	Machinery	19,473	11,313	1.340	0.040	3.18	0.120	12.11
5841	Regenerated cellulose	Chemicals	19,110	9,898	0.504	-	-	0.003	3.95
5233	Salts of metallic acids; compounds of precious metals	Chemicals	18,996	8,161	0.504	0.003	0.10	0.045	8.11
6643	Drawn or blown glass (flashed glass), unworked, in rectangles	Labor intensive	18,695	5,924	1.090	-	-	0.008	19.37
7499	Other non-electric parts and accessories of machinery, nes	Machinery	18,686	13,174	1.392	0.290	35.19	0.180	8.69
5139	Oxygen-function acids, and their derivatives	Chemicals	18,503	12,623	0.504	0.044	1.59	0.057	5.83
5411	Provitamins and vitamins	Chemicals	18,479	10,149	0.504	0.020	0.67	0.041	6.33

Table A8.1 continued

 $\mathsf{RCA} = \mathsf{revealed}$ comparative advantage, $\mathsf{SITC} = \mathsf{Standard}$ International Trade Classification.

^a Annual average growth rate of world export value (%, 2000–2007).

Source: Author's calculation.

Table A8-2Top 20 "Far Away" Products the Highest Level of Sophistication
(selected by PRODY)

SITC Code	"Far Away" Commodities	Leamer Classification	PRODY	Strategic Value	Labor Intensity	RCA	Export Value (\$ million)	Share in World Export (%)	Global Demand Growth ^a (%)
5147	Amide-function compounds excluding urea	Chemicals	25,388	11,525	0.504	0.008	0.28	0.053	6.82
5155	Other organo- inorganic compounds	Chemicals	25,373	7,287	0.504	-	_	0.045	9.62
6412	Printing paper and writing paper, in rolls or sheets	Forest products	24,237	11,110	1.926	0.017	0.96	0.090	(5.57)

Table A8.2 continued

SITC Code	"Far Away" Commodities	Leamer Classification	PRODY	Strategic Value	Labor Intensity	RCA	Export Value (\$ million)	Share in World Export (%)	Global Demand Growth ^a (%)
7368	Work holders, dividing heads for machine tools, etc.; tool holders	Machinery	24,100	10,664	1.392	0.026	0.58	0.031	10.94
5157	Sulphonamides, sultones, and sultams	Chemicals	23,823	11,524	0.504	-	-	0.037	12.25
5416	Glycosides, glands, antisera, vaccines, and similar products	Chemicals	23,531	13,546	0.504	0.002	0.51	0.430	24.42
7412	Furnace burners; mechanical stokers, etc., and parts thereof, nes	Machinery	23,226	14,411	0.934	0.011	0.15	0.020	12.70
0121	Bacon, ham, other dried, salted or smoked meat of domestic swine	Animal products	23,151	11,275	1.611	0.023	0.33	0.022	9.79
5838	lon exchangers of the polymerization or copolymerization type	Chemicals	22,657	10,615	0.504	-	-	0.007	7.70
6880	Uranium depleted in U235, thorium, and alloys, nes; waste and scrap	Raw materials	22,405	11,370	0.181	-	-	0.000	(6.45)
7452	Other non-electrical machines and parts thereof, nes	Machinery	22,365	10,963	0.934	0.104	20.94	0.299	10.67
8821	Chemical products and flashlight materials for use in photografy	Machinery	22,360	8,695	0.504	0.087	2.44	0.045	4.45
5827	Silicones	Chemicals	22,216	10,544	0.504	-	_	0.043	11.30
5156	Heterocyclic compound; nucleic acids	Chemicals	22,212	8,885	0.504	0.001	0.42	0.501	4.88
5982	Anti-knock preparation, anti- corrosive; viscosity improvers; etc.	Chemicals	22,204	9,868	0.504	0.086	4.13	0.066	10.99
7841	Chassis fitted with engines, for vehicles of headings 722, 781–783	Machinery	21,773	11,638	0.447	0.019	0.37	0.028	7.69
7269	Parts, nes of machines falling within headings 72631, 7264, 7267	Machinery	21,696	13,722	1.392	0.156	2.55	0.030	4.01

2 continued			
	2 continued	2 continued	2 continued

SITC Code	"Far Away" Commodities	Leamer Classification	PRODY	Strategic Value	Labor Intensity	RCA	Export Value (\$ million)	Share in World Export (%)	Global Demand Growth ^a (%)
6832	Nickel and nickel alloys, worked	Raw materials	21,587	11,342	0.181	0.016	0.45	0.052	19.62
7281	Machine-tools for specialized industries; parts or accessories, nes	Machinery	21,558	11,116	1.392	0.051	3.24	0.099	7.59
5145	Amine-function compounds	Chemicals	21,532	12,677	0.504	0.966	47.76	0.073	11.02

RCA = revealed comparative advantage, SITC = Standard International Trade Classification.

Figures in parentheses are negative.

^a Annual average growth rate of world export value (%, 2000–2007).

Source: Author's calculation.

Table A8-3 Top 20 "Middle" Products with the Highest Spillover Effect (selected by strategic value)

SITC Code	"Middle" Commodities	Leamer Classification	PRODY	Strategic Value	Labor Intensity	RCA	Export value (\$ million)	Share in World Export (%)	Global Demand Growth ^a (%)
7492	Cocks, valves and similar appliances, for pipes boiler shells, etc.	Machinery	17,025	14,450	0.934	0.241	81.42	0.492	14.52
7431	Air pumps, vacuum pumps, and air or gas compressors	Machinery	13,728	14,090	0.934	0.210	33.76	0.239	11.97
6571	Felt, articles of felt, nes, whether or not impregnated or coated	Capital intensive	16,580	13,958	3.618	0.033	0.15	0.007	8.11
6573	Coated or impregnated textile fabrics and products, nes	Capital intensive	17,965	13,762	3.086	0.030	1.36	0.070	6.49
8935	Articles of electric lighting of plastic	Labor intensive	12,211	13,716	2.107	0.212	0.41	0.003	7.39
5821	Phenoplasts	Chemicals	12,724	13,629	0.504	0.019	1.15	0.095	11.93
6422	Correspondence stationery	Forest products	13,619	13,560	1.926	0.168	1.05	0.010	8.88
8922	Newspapers, journals, and periodicals	Labor intensive	14,889	13,542	3.292	0.021	0.75	0.075	10.35
6785	Tube and pipes fittings, of iron or steel	Metal products	13,022	13,351	0.982	0.554	50.99	0.129	17.07

Table A8.3 continued

SITC Code	"Middle" Commodities	Leamer Classification	PRODY	Strategic Value	Labor Intensity	RCA	Export value (\$ million)	Share in World Export (%)	Global Demand Growth ^a (%)
6289	Other articles of rubber, nes	Capital intensive	10,829	13,251	1.776	0.623	62.37	0.154	11.07
6572	Bonded fiber fabrics, etc, whether or not impregnated or coated	Capital intensive	14,877	13,189	3.618	0.094	4.66	0.075	10.97
6282	Transmission, conveyor or elevator belts, of vulcanized rubber	Capital intensive	12,892	13,180	1.776	0.125	3.10	0.037	11.94
7499	Other non-electric parts and accessories of machinery, nes	Machinery	18,686	13,174	1.392	0.290	35.19	0.180	8.69
7112	Auxiliary plant for boilers of heading 7111; condensers	Machinery	13,942	13,172	2.923	0.046	0.31	0.007	12.58
6997	Articles of iron or steel, nes	Metal products	13,988	13,089	2.125	0.341	63.00	0.255	12.73
8939	Miscellaneous articles of plastic	Labor intensive	13,645	13,080	2.103	0.461	181.93	0.600	10.89
6996	Miscellaneous articles of base metal	Metal products	10,534	12,993	2.125	0.295	17.21	0.083	13.70
7239	Parts, nes of machinery and equipment of headings 72341 to 72346	Machinery	11,616	12,883	0.982	0.078	22.44	0.386	20.57
5822	Aminoplasts	Chemicals	15,490	12,744	0.504	0.005	0.11	0.031	17.73
8989	Parts, nes of and accessories for musical instruments; metronomes	Labor intensive	14,241	12,655	8.981	0.032	0.20	0.009	6.05

 $\mathsf{RCA} = \mathsf{revealed} \ \mathsf{comparative} \ \mathsf{advantage}, \ \mathsf{SITC} = \mathsf{Standard} \ \mathsf{International} \ \mathsf{Trade} \ \mathsf{Classification}.$

^a Annual average growth rate of world export value (%, 2000–2007).

Source: Author's calculation.
SITC Code	"Far Away" Commodities	Leamer Classification	PRODY	Strategic Value	Labor Intensity	RCA	Export Value (\$ million)	Share in World Export (%)	Global Demand Growth ^a (%)
5162	Aldehyde, ketone, and quinone- function compounds	Chemicals	17,912	14,813	0.504	-	-	0.056	9.55
3345	Lubricating petroleum oils, and preparations, nes	Petroleum	20,286	14,780	0.008	0.098	3.06	0.046	3.28
7439	Parts, nes of the machines falling within headings 7435 and 7436	Machinery	13,463	14,758	1.392	0.383	45.25	0.176	13.74
5163	Inorganic esters, their salts and derivatives	Chemicals	19,095	14,514	0.504	0.027	0.26	0.013	8.17
7732	Electrical insulating equipment	Machinery	14,639	14,491	1.809	0.601	18.86	0.048	6.92
7412	Furnace burners; mechanical stokers, etc., and parts thereof, nes	Machinery	23,226	14,411	0.934	0.011	0.15	0.020	12.70
7212	Harvesting and threshing machines; fodder presses, etc.; parts nes	Machinery	15,121	14,394	1.392	0.008	0.73	0.118	13.33
7188	Engines and motors, nes (wind, hot air engines, water wheel, etc.)	Machinery	16,015	14,318	0.934	0.539	45.17	0.110	16.61
7429	Parts, nes of pumps and liquids elevators falling in heading 742	Machinery	16,919	14,058	0.934	0.149	10.21	0.102	13.31
7849	Other parts and accessories, for vehicles of headings 722, 781–783	Machinery	14,213	14,024	2.125	0.685	945.38	2.220	10.60
5335	Glazes, driers, putty etc.	Chemicals	13,353	13,927	0.504	0.013	0.70	0.078	12.24
6579	Special products of textile materials	Capital intensive	15,672	13,926	3.086	-	-	0.004	11.16
7423	Rotary pumps (other than those of heading 74281)	Machinery	15,084	13,854	0.934	0.032	0.76	0.035	11.85

Table A8-4Top 20 "Far Away" Products with the Highest Spillover Effect
(selected by strategic value)

continued on next page

Table A8.4 continued

SITC Code	"Far Away" Commodities	Leamer Classification	PRODY	Strategic Value	Labor Intensity	RCA	Export Value (\$ million)	Share in World Export (%)	Global Demand Growth ^a (%)
913	Lard, pig, and poultry fat, rendered or solvent-extracted	Cereals	15,474	13,814	1.611	0.067	0.12	0.002	3.48
6418	Paper and paperboard, coated, impregnated, etc., in rolls or sheets	Forest products	19,818	13,800	1.926	0.017	1.98	0.187	7.76
7224	Wheeled tractors (other than those falling in heading 74411, 7832)	Machinery	11,944	13,772	1.392	-	-	0.134	13.41
7129	Parts, nes of steam power units	Machinery	14,930	13,731	0.934	0.007	0.14	0.026	8.01
7269	Parts, nes of machines falling within headings 72631, 7264, 7267	Machinery	21,696	13,722	1.392	0.156	2.55	0.030	4.01
5824	Polyamides	Chemicals	18,607	13,644	0.504	0.023	1.60	0.108	13.32
7435	Centrifuges	Machinery	15,374	13,573	1.392	-	-	0.018	11.21

RCA = revealed comparative advantage, SITC = Standard International Trade Classification.

^a Annual average growth rate of world export value (%, 2000–2007).

Source: Author's calculation.

Table A8-5 Top 20 "Middle" Products with the Highest Labor Intensity

SITC Code	"Middle" Commodities	Leamer Classification	PRODY	Strategic Value	Labor Intensity	RCA	Export Value (\$ million)	Share in World Export (%)	Global Demand Growth ^a (%)
2786	Slag, scalings, dross, and similar waste, nes	Raw materials	15,346	9,211	16.177	0.988	9.19	0.011	13.88
2772	Other natural abrasives	Raw materials	17,217	8,951	16.177	0.054	0.20	0.006	(0.50)
2925	Seeds, fruits and spores, nes, for planting	Animal products	10,423	8,253	9.011	0.080	1.93	0.035	8.73
8989	Parts, nes of and accessories for musical instruments; metronomes	Labor intensive	14,241	12,655	8.981	0.032	0.20	0.009	6.05
0430	Barley, unmilled	Cereals	10,898	9,571	8.309	-	-	0.047	10.91

continued on next page

SITC Code	"Middle" Commodities	Leamer Classification	PRODY	Strategic Value	Labor Intensity	RCA	Export Value (\$ million)	Share in World Export (%)	Global Demand Growth ^a (%)
0811	Hay and fodder, green or dry	Cereals	12,218	8,553	8.309	0.021	0.29	0.019	7.28
0411	Durum wheat, unmilled	Cereals	12,512	7,804	8.309	-	-	0.056	6.61
0452	Oats, unmilled	Cereals	18,114	6,365	8.309	-	-	0.005	12.87
8974	Other articles of precious metals or rolled precious metals, nes	Labor intensive	15,200	11,797	6.435	0.487	7.25	0.015	12.29
9610	Coin (other than gold coin), not being legal tender	Labor intensive	10,958	9,554	6.435	0.592	0.51	0.001	(20.83)
6416	Fiber building board of wood or other vegetable material	Forest products	14,225	10,855	6.012	0.016	0.67	0.071	14.87
6352	Casks, barrels; other coopers products and parts, including staves	Forest products	14,753	7,401	6.012	-	-	0.005	8.40
6330	Cork manufactures	Forest products	11,348	3,630	5.681	0.036	0.29	0.014	5.41
6553	Knitted or crocheted fabrics, elastic or rubberized	Capital intensive	11,894	11,019	4.594	0.159	0.27	0.001	(32.50)
0013	Swine, live	Animal products	19,497	9,590	3.969	-	-	0.025	13.18
0015	Equine species, live	Animal products	21,769	8,916	3.723	-	-	0.020	4.51
2682	Wool degreased, uncombed of sheep or lambs	Cereals	11,197	5,623	3.723	-	-	0.007	0.86
2681	Wool greasy or fleece- washed of sheep or lambs	Cereals	13,986	4,559	3.723	-	-	0.021	6.50
6571	Felt, articles of felt, nes, whether or not impregnated or coated	Capital intensive	16,580	13,958	3.618	0.033	0.15	0.007	8.11
6572	Bonded fiber fabrics, etc., whether or not impregnated or coated	Capital intensive	14,877	13,189	3.618	0.094	4.66	0.075	10.97

 $\mathsf{RCA} = \mathsf{revealed} \ \mathsf{comparative} \ \mathsf{advantage}, \ \mathsf{SITC} = \mathsf{Standard} \ \mathsf{International} \ \mathsf{Trade} \ \mathsf{Classification}.$

Figures in parentheses are negative.

^a Annual average growth rate of world export value (%, 2000–2007).

Source: Author's calculation.

SITC Code	"Far Away" Commodities	Leamer Classification	PRODY	Strategic Value	Labor Intensity	RCA	Export Value (\$ million)	Share in World Export (%)	Global Demand Growth ^a (%)
2741	Sulphur (other than sublimed, precipitated or colloidal)	Raw materials	16,790	4,219	16.177	0.108	-	0.023	16.29
2234	Linseed	Cereals	10,465	6,442	9.011	_	3.06	0.004	13.83
2652	True hemp, raw or processed but not spun, its tow and waste	Cereals	11,330	10,555	8.309	-	45.25	0.000	5.17
6591	Linoleum and similar floor covering	Capital intensive	15,800	8,038	3.547	—	0.26	0.003	7.85
6579	Special products of textile materials	Capital intensive	15,672	13,926	3.086	-	18.86	0.004	11.16
8121	Central heating equipment, not electrically heated, parts, nes	Capital intensive	12,025	13,459	2.923	-	0.15	0.080	14.62
7187	Nuclear reactors, and parts thereof, nes	Machinery	15,564	10,387	2.923	-	0.73	0.023	3.33
6635	Wool; expanding or insulating mineral materials, nes	Labor intensive	13,384	13,555	2.829	0.027	45.17	0.028	14.41
6632	Abrasive power or grain, on a base of woven fabrics	Labor intensive	18,571	13,295	2.829	0.022	10.21	0.025	8.33
7842	Bodies, for vehicles of headings 722, 781–783	Machinery	12,430	12,242	2.363	0.010	945.38	0.073	16.75
7913	Mechanically propelled railway, tramway, trolleys, etc.	Machinery	19,211	12,777	2.275	-	0.70	0.017	13.83
7849	Other parts and accessories, for vehicles of headings 722, 781–783	Machinery	14,213	14,024	2.125	0.685	_	2.220	10.60
7919	Railway track fixtures, and fittings, etc., parts nes of heading 791	Machinery	10,685	13,489	2.125	0.002	0.76	0.082	14.02
6953	Other hand tools	Metal products	15,384	13,444	2.125	0.151	0.12	0.101	10.42
6940	Nails, screws, nuts, bolts, rivets, etc., of iron, steel or copper	Metal products	14,947	13,281	2.125	0.684	1.98	0.234	13.24

Table A8-6 Top 20 "Far Away" Products with the Highest Labor Intensity

continued on next page

Table A8.6 continued

SITC Code	"Far Away" Commodities	Leamer Classification	PRODY	Strategic Value	Labor Intensity	RCA	Export Value (\$ million)	Share in World Export (%)	Global Demand Growth ^a (%)
6954	Interchangeable tools for hand or machine tools (tips, blades, etc.)	Metal products	20,235	12,851	2.125	0.156	-	0.185	10.36
6999	Other base metal manufactures, nes; and of cermets	Metal products	10,320	8,779	2.125	0.015	0.14	0.052	14.92
7929	Parts, nes of the aircraft of heading 792	Machinery	18,641	8,349	2.125	0.116	2.55	0.442	10.69
8822	Photographic film, plates and paper (other than cinematograph film)	Machinery	18,696	10,811	2.103	0.004	1.60	0.099	(1.47)
6418	Paper and paperboard, coated, impregnated, etc., in rolls or sheets	Forest products	19,818	13,800	1.926	0.017	-	0.187	7.76

RCA = revealed comparative advantage, SITC = Standard International Trade Classification.

Figures in parentheses are negative.

^a Annual average growth rate of world export value (%, 2000–2007).

Source: Author's calculation.

Taking the Right Road to Inclusive Growth

Industrial Upgrading and Diversification in the Philippines

This report discusses key policy challenges that need to be addressed if the Philippines were to embark on sustainable and inclusive growth. We take the view that the main reason behind the Philippines' lagging growth and development outcomes in the regional context lies in a sluggish transformation of the economy—in particular, stagnant industrialization. Chronic problems of unemployment, poverty, and low investment are reflections of weak industrial development. The economy has been led by services, and it has been further shifting toward services with the growing business process outsourcing. Nevertheless, sole development of the services sectors is not sufficient to address the development challenges and lead to inclusive growth. We propose more targeted public sector support, which focuses on specific industries and products for industrial upgrading and diversification. This report shows a methodology of choosing products for targeted public sector support, and recommends effective dialogue between the public and private sectors to identify constraints specific to the target products and to develop adequate solutions. The Philippines needs to develop a stronger industrial base to enable the economy to "walk on two legs" of industry and modern services, to create productive job opportunities for the growing working-age population.

About the Asian Development Bank

ADB's vision is an Asia and Pacific region free of poverty. Its mission is to help its developing member countries reduce poverty and improve the quality of life of their people. Despite the region's many successes, it remains home to two-thirds of the world's poor: 1.8 billion people who live on less than \$2 a day, with 903 million struggling on less than \$1.25 a day. ADB is committed to reducing poverty through inclusive economic growth, environmentally sustainable growth, and regional integration.

Based in Manila, ADB is owned by 67 members, including 48 from the region. Its main instruments for helping its developing member countries are policy dialogue, loans, equity investments, guarantees, grants, and technical assistance.

Asian Development Bank 6 ADB Avenue, Mandaluyong City 1550 Metro Manila, Philippines www.adb.org



Printed in the Philippines

Printed on recycled paper.