Growth and Trade Horizons for Asia: Long-term Forecasts for Regional Integration

DAVID ROLAND-HOLST, JEAN-PIERRE VERBIEST, AND FAN ZHAI

With the emergence of People's Republic of China (PRC) and India, the economic landscape of Asia and its relation to the global economy have changed. Using a new dynamic global model, we present forecasts for Asian expansion over 2025. These baseline growth forecasts elucidate shifting patterns of regional specialization and their consequences for growth and structural change in the Asian economies. The central role of trade is examined through analysis of a variety of hypothetical global and regional trade agreements. Our results indicate that trade within the Asian region is far from reaching its potential, and policies that facilitate integration and more efficient regional trade can accelerate growth, especially for lower-income Asia. A deeper and more inclusive Asian free trade area can achieve for its members large benefits. As an emerging growth bridge between the PRC and India, economies of the Association of Southeast Asian Nations have the most to gain from Asian economic integration.

I. INTRODUCTION

Economic emergence of the world's two most populous countries, People's Republic of China (PRC) and India, is transforming the economic landscape of East and South Asia, contributing to fundamental shifts in global economic relations. While Asia's traditional trade with members of the Organisation for Economic Co-operation and Development (OECD) continues to expand and intensify, intra-Asian trade is accelerating as the most dynamic economies provide growth leverage to their neighbors. This trend is facilitated by official efforts to liberalize trade, and private agency that propagates growth linkages over regional supply networks. Intensified Asian regional integration has the potential to raise incomes among a majority of the world's poor, yet policymakers

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cannot foresee how trade patterns and domestic adjustments will evolve in the medium and long term.

Using the new GTAP (version 6)[1] database with a dynamic global model, we present forecasts for Asian expansion over the next two decades (2006–2025). These baseline growth forecasts elucidate shifting patterns of regional specialization and their consequences for domestic growth and structural change in the Asian economies. Regional differences in growth rates are then analyzed in terms of their fundamental determinants. In our examination of the central role of trade in regional growth, we provide detailed analysis of the impacts of a variety of hypothetical regional and global trade agreements.

Generally speaking, our results indicate that the sustainable growth potential of the region remains great, but policies facilitating both integration and adjustment will be needed to fulfill this potential. This is particularly the case with regard to poverty alleviation and differing growth experience. In the absence of more focused policy commitments, there are risks that real growth benefits may be very unevenly distributed across the region, both at the international and subnational level. Other salient issues that emerge in this analysis include:

(i) Trade within the Asian region is far from reaching its potential, and policies that facilitate integration and more efficient regional trade can accelerate growth and expand its basis, especially for lower-income Asia.

(ii) Tariff barriers are only part of the challenge to further economic integration and trade expansion in the region. If trade within the Asian region can be made more efficient, even by small but continuing improvements in reducing distribution costs, the gains would be much greater than those resulting from tariff or other trade policy reform. A deeper and more inclusive Asian Free Trade Area can achieve for its members larger benefits than that would arise from global trade liberalization along World Trade Organization (WTO) lines.

(iii) The economies of the Association of Southeast Asian Nations (ASEAN) have the most to gain (in domestic terms) from Asian economic integration, provided that this happens in a relatively uniform way. This is because ASEAN will emerge as a growth bridge between the larger dynamic emerging economies of the PRC and India.

(iv) There will be a shift of emphasis across the region from export competition to competition for imports. As absorption by the larger and more dynamic regional economies increases, this presents new export opportunities, yet the same absorption includes raw materials needed for higher value-added production in other economies.

More empirical research of this kind can help policymakers better identify both the opportunities and challenges ahead. This ability to evaluate policy

[1]Global Trade Analysis Project; see Hertel (1997).

impacts *ex ante* will help them recruit beneficiaries in support of their policies and anticipate the adjustment needs of those who might be adversely affected.

II. BACKGROUND

Regional events of the last two decades have fundamentally changed the economic landscape of Asia and its relationship to the global economy. The PRC has moved from a command and control economy to a model of global resource allocation based on comparative advantage. In the process, the PRC's export competitiveness has provided new standards for efficient international division of labor. At the same time, sustained growth by this economy has also shifted attention from its export competitiveness to the new basis for Asian regional growth: internal demand. Over the last decade, the PRC's absorption has become one of the primary drivers of regional growth and development.

The recent acceleration of India's growth process, with attendant economic reforms, now promises to propagate rapid growth across the Asian region. As these two large economies proceed in tandem, they will confer growth leverage on their neighbors, directly via bilateral trade and indirectly across a web of supply chain linkages between their two economies and elsewhere across the region and beyond. Southeast Asia is especially well situated to benefit from the parallel expansion of the PRC and India. Because of geography and established comparative advantages in resources, commercial facilitation, and intermediate production, ASEAN economies will emerge as a "growth bridge" between the dynamic markets of the PRC and India. In this process, growth externalities will be transmitted to some of the lowest-income and slower-growing ASEAN economies. Cambodia, Laos, Myanmar, and Viet Nam are all well situated to become pillars of the PRC–India growth bridge. This kind of recruitment into more dynamic growth trends will contribute significantly and positively to growth convergence across Asia.

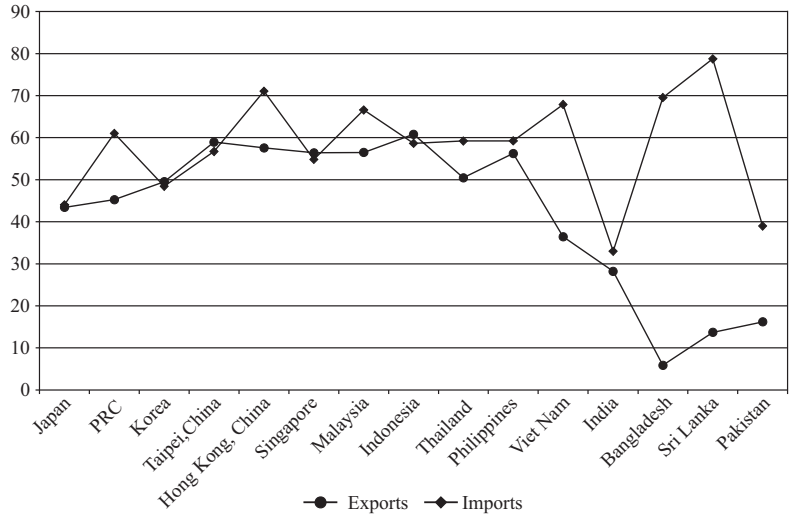
To realize the full potential of this process, policies that facilitate trade will be essential. Most important among these will be institutional change and public and private commitments to infrastructure. Institutional approaches to trade facilitation include both traditional trade reform and more determined efforts at economic integration. The Asian policy environment has historically relied on informal and nonbinding agreements to promote regional commerce, but more recent initiatives are striving for greater exactitude, coherence, and transparency. In the areas of regulation, legal conventions, and technical standards, movement to greater formality and uniformity can do much to facilitate private agency, trade, and growth. Indeed, an Asian counterpart of the OECD might do much to consolidate the basis for integration and growth. This model is very different from a more disciplined economic union like the European Union, which is striving for the benefits of standards without deeper policy coordination.

For commitments to infrastructure, the public sector can take leadership directly (both domestically and multilaterally) and indirectly by promoting the climate for long-term private capital commitments. Success in this area is an essential precondition for economic participation and growth, because infrastructure makes a fundamental contribution to both. By extending the horizon of profitable private investment wherever it is established, infrastructure multiplies growth benefits and strengthens the capacity of markets to allocate resources and opportunities. This in turn recruits new human and other resources to the growth process, extending a virtuous growth cycle around the region.

The next century begins with very different initial conditions for Asia. As political systems have become less polarized and inward-looking, economic systems have also evolved from head-to-head export competition to greater integration. In the process, regional ideology and rivalry have given way to new pragmatism and recognition of opportunities for mutual prosperity. Uncertainties and cycles will remain inevitable, but the region has now demonstrated its residence against external and internal shocks. In addition to greater institutional coherence, two economic trends will help Asia secure the basis for growth. The first is a more diversified and collaborative foundation for future growth, based on more intensive regional trade linkages. Secondly, internal growth and the emergence of consumer majorities in these economies will mean that more and more growth will be internally generated, both inside Asian economies and within the Asian region. If these trends can be supported and extended, sustainable progress toward greater and uniform prosperity in the region can be realized.

As Figure 1 indicates, Asian economies direct a far greater share of their demand than supply to the region. The gap between these two graphs represents the structural trade surplus that has persisted between Asia and the western OECD. While burgeoning exports have an important source of external income for Asia, there are continuing and recently escalating concerns about whether these imbalances are sustainable. Rather than contemplate reducing them by attenuating east–west trade, we advocate measures to more rapidly increase intraregional trade, promoting domestic growth and absorption that can reduce dependence on traditional export markets, and their attendant relative imbalances, in ways that increase the volume of trade and achieve diversification for more sustainable progress and global economic security.

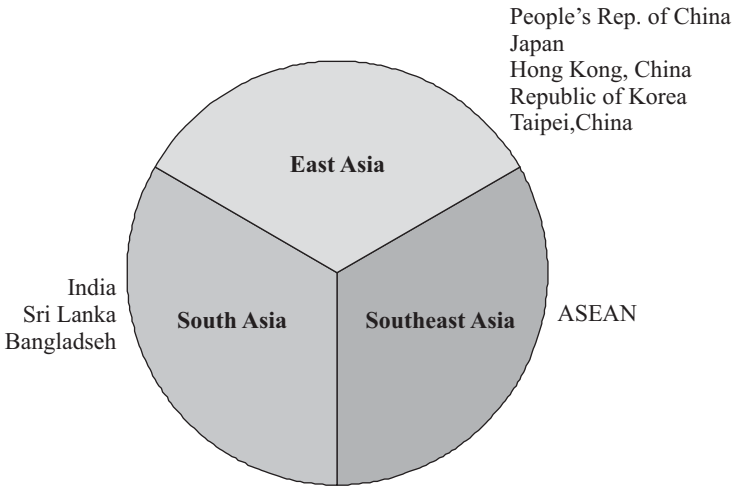
Figure 1. **Demand is Already Leading Supply Regionally**
(Intra-Asian Import and Export Shares by Country in 2003, percent)



Source: Direction of Trade Statistics (IMF, 2004).

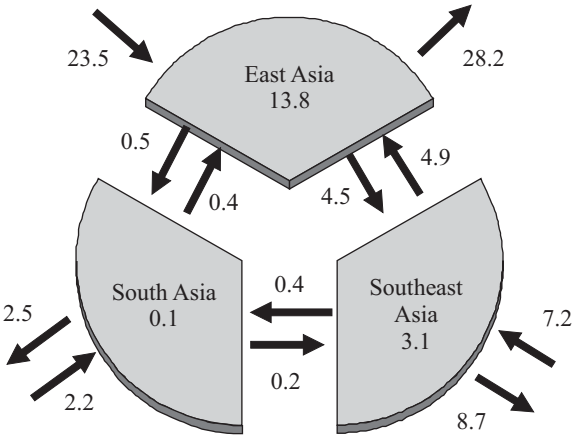
To better understand Asian regional trade and how it can contribute to progress, consider a schematic regional scheme as in Figure 2. Here we categorize Japan and selected Asian Development Bank developing member countries into three generic regions: East, South, and Southeast Asia. Our GTAP database actually details all the Asian countries listed in this diagram, but for the sake of general discussion this regionalization is convenient. While this simplification glosses over many differences as well as similarities between the economies, it has a strong geographical basis in history.

Figure 2. **Schematic View of Asian Economies**



From this perspective, Figure 3 decomposes total Asian trade into bilateral flows between each of the three regions and with respect to the aggregate Rest of the World (ROW) residual. While this diagram is rather detailed, two facts emerge immediately. Firstly, Asia remains heavily reliant on external sources of demand for its export supplies. Since exports have been a decisive catalyst for Asian dynamism, this fact is especially significant from a growth perspective. Secondly, and just as importantly, intra-Asian patterns of absorption indicate that Asia is far from its potential to stimulate and sustain regional growth.

Figure 3. **Asian Trade Shares**
(Trade flows as a percent of Total Asian Trade, 2001)



Source: GTAP database, v6

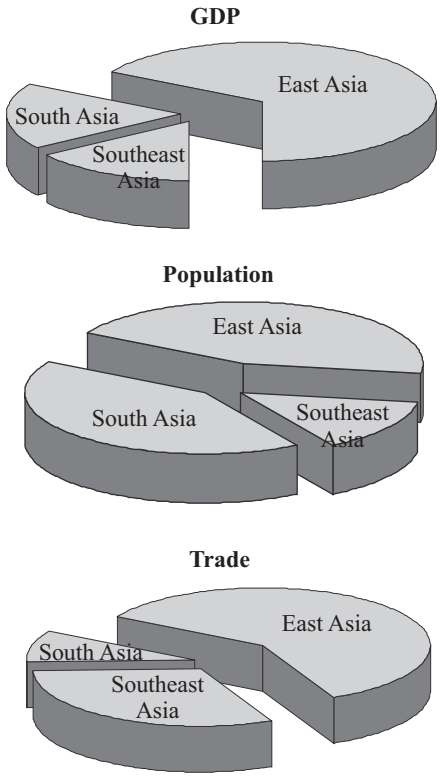
What we see most definitively in Figure 3 is the Asian legacy of third-market export competition. Over the last two generations, most resources for Asian export development have been targeted at affluent western OECD markets, inducing head-to-head competition and limiting reliance on regional demand as a growth source. This was partly an artifact of earlier trade regimes, and partly an inevitable consequence of relative incomes. The political and economic fundamentals of the Asian region have changed dramatically, however, and it is time for trade patterns to adjust to this reality.

Rapidly rising incomes in all three regions will create new absorption and markets for both domestic and foreign suppliers, and responses by the latter can sharply increase the minute bilateral trade shares observed in 2001. Demand alone will not be enough to accomplish this, however. Institutional changes that can overcome "soft" trade barriers, including protectionism, administrative inefficiency, and political dissonance are already progressing rapidly. The final barrier, explaining the small bilateral shares and threatening to keep them small,

is distribution margins. As already emphasized, determined public and private commitments will be needed to reduce these to levels that make intra-Asian trade as efficient and profitable as, for example, its trans-Pacific counterpart.

Before moving on the policy analysis, it is worth reviewing a little more about the fundamentals of Asian regional development. As Figure 4 indicates, the three regions in question are quite diverse. East Asia currently leads in total economic activity by a margin of more than two to one. The importance of trade to the region has already been mentioned, so we know it is no coincidence that regional trade shares show a close relationship to gross domestic product (GDP) shares. The only significant difference here is for Southeast Asia, which is even more trade-dependent in GDP terms than East Asia and much more so than South Asia. This fact should be recalled below when the results for regional integration show dramatic gains for ASEAN.

Figure 4. **Summary of Macro Conditions, 2001**



The population figures are well known and widely understood, but comparing them to GDP shares emphasize the initial differences in relative living standards across Asia. Generally speaking, Southeast Asia is intermediate in

terms of average per capita income, South Asia relatively low, and East Asia relatively high. Of course the East Asian results are biased somewhat by very high-income economies, yet the proximity of these to the PRC will be a persistent source of growth leverage to the entire East Asian population. Once again, only greater regional integration can transmit such Keynesian benefits more widely.

III. BASELINE AND POLICY SCENARIOS

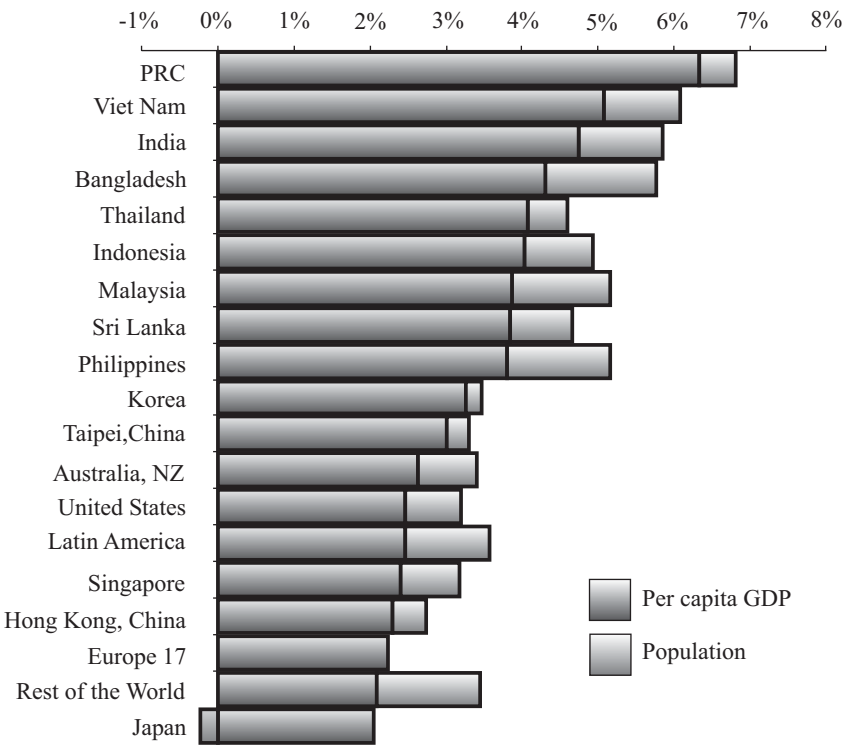
A. Baseline Scenario to 2025

The starting point for this Asian regional trade analysis is a global trade database for 2001, which we extrapolate forward to 2025 with the Structural ADB General Equilibrium (SAGE) Model, a dynamic calibrated general equilibrium forecasting facility calibrated to the GTAP v6 global trade database.[2] The extrapolation is carried out as a dynamic calibration to baseline aggregate growth forecasting obtained from growth accounting calculations. The calibrated baseline then serves as a reference point to evaluate policy scenarios and other counterfactual events, but it is also of independent interest as an indicator of changing long-term economic conditions. In this section we review some of the economic fundamentals from the baseline projection and compare them to scenarios for alternative trade regimes and changing conditions for regional trade and transport.

Figure 5 presents the average forecasted growth rates for Asian economies over the period in question, to primary calibration variable for our baseline. In this figure, we use a "league table" layout to highlight the ranking of per capita GDP growth rates and the effect of population growth on per capita real incomes. Note that we do not take account here of purchasing power parity or shifts in nominal exchange rates, so these results are subject to some qualification. In our baseline the main characteristics of Asian growth are expected to persist in a relatively stable regional and global policy environment. We also must assume no exogenous shocks (SARS, tsunami, avian influenza, etc.) are of sufficient magnitude to derail baseline growth more than temporarily.

[2]See comments and references in the annex for more about the data source and model specification.

Figure 5. **Real GDP Growth by Country/Region**
(Baseline, annualized percent change, 2005-2025)



Sources: Authors' forecasting, UN population projections.

Having made these caveats, we see that the PRC is expected to continue providing growth leadership in the region, followed by smaller economies, whose aggregate growth and real living standards will be linked to population growth. Bangladesh, India, Malaysia, Philippines, Viet Nam, and other places will all experience significant per capita income discounts because of high population growth, while Europe and Japan will actually experience higher per capita income because of shrinking populations. Rapid productivity improvement and capital accumulation will be the key driving forces of future Asian growth (Table 1).

Table 1. **Asia's Growth and its Sources, 2005-2025**
(Percent)

		2005-10	2010-15	2015-20	2020-25
East Asia excluding Japan					
GDP		6.7	6.0	5.5	5.3
Contribution of:	Labor	0.4	0.3	-0.1	-0.1
	Capital	3.4	3.6	3.6	3.5
	TFP	2.8	2.2	2.1	2.0
Southeast Asia					
GDP		6.9	6.8	6.1	5.5
Contribution of:	Labor	1.0	0.8	0.6	0.4
	Capital	1.8	2.1	2.4	2.6
	TFP	4.4	4.2	3.4	3.0
South Asia					
GDP		7.0	6.1	5.7	5.3
Contribution of:	Labor	1.0	0.9	0.8	0.7
	Capital	2.2	2.2	2.2	2.2
	TFP	3.8	3.0	2.6	2.4
Developing Asia					
GDP		6.8	6.2	5.6	5.3
Contribution of:	Labor	0.6	0.5	0.2	0.1
	Capital	2.9	3.2	3.2	3.2
	TFP	3.2	2.7	2.4	2.2

Note: TFP means total factor productivity.
Source: Authors' calculations.

While GDP trends over the baseline are calibrated from independent forecasting, structural adjustments within the regional economies are projected endogenously. One important example of this is trade patterns, which respond to aggregate individual growth in the SAGE model with complex shifts based on price-directed resource allocation. Table 2 describes how these patterns would change by 2025 under the baseline scenario, in terms of percentage changes in real trade flows and percentage change in shares of total Asian trade. For convenience, the same results are presented schematically in Figure 6, which indicates that Asian trade increases in every direction over the period 2005–2025 by at least 110 percent and as much as 300 percent. While aggregate trade is generally growing, however, its composition shifts. In particular, there is generally an increase in the share of intra-Asian trade and a decline in the percent of Asia's trade with ROW. By comparison, there is moderate improvement in the weak bilateral linkages earlier described in Figure 3.

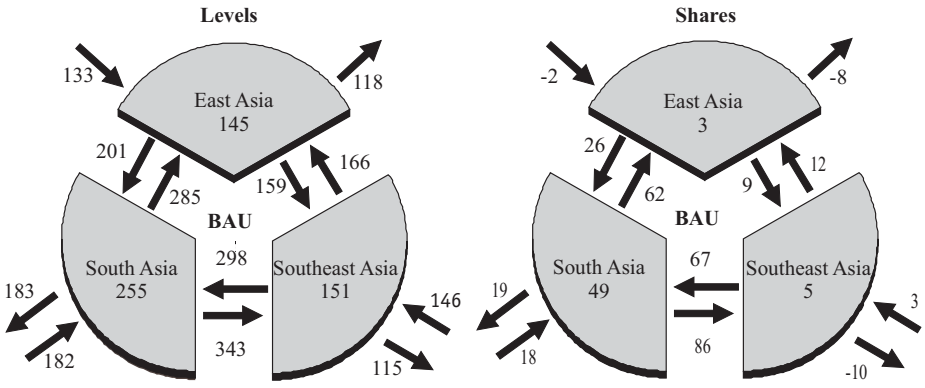
Table 2. **Baseline Trade Composition**
(Percent change from 2005 in 2025)

Regional Trade Flows				
Exporters/Importers	**East Asia**	**SE Asia**	**South Asia**	**ROW**
East Asia	145	159	201	118
SE Asia	166	151	298	115
South Asia	285	343	255	183
ROW	133	146	182	74
Regional Trade Shares				
Exporters/Importers	**East Asia**	**SE Asia**	**South Asia**	**ROW**
East Asia	3	9	26	-8
SE Asia	12	5	67	-10
South Asia	62	86	49	19
ROW	-2	3	18	

Source: Simulation results.

The baseline is of course a status quo or "Business as Usual (BaU)" scenario where the policy regime is unchanged and no external shocks occur. Under these conditions, smooth aggregate growth and moderate structural change are to be expected, yet modern history of the Asian region has been much more dynamic. The difference has been due to a combination of public and private agency, with the former providing reformist guidance and the latter responding quickly to changing opportunities and challenges. To capture these events in a forecasting framework, we must specify the policy or other exogenous changes we are interested in analyzing, and simulate how private actors will respond according to the economic theory embodied in the SAGE model.

Figure 6. **Baseline Changes in Regional Trade Flows**
(percentage change from 2005 to 2025)



Source: Simulation results.

B. Alternative Integration Scenarios

To appraise Asia's prospects for improved growth through regional integration, we have implemented the model with respect to a series of alternative trade scenarios, including global trade liberalization and Asian regional liberalization, and contrasted these under varying regional conditions of further economic integration. In this section we present the results of these preliminary scenarios, intended to bracket the aggregate growth possibilities for the region to give an indication of the potential for deeper regional integration to accelerate growth and promote convergence toward higher living standards across Asia.

Table 3 summarizes the scenarios, where trade liberalization refers to removal of all tariff and tariff-equivalent import and export barriers in the GTAP v6 database. In addition to reforming trade-distorting policies, we also examine the implications of increased trade efficiency, as this might arise from institutional reforms and/or public and private investments in distribution and communication infrastructure. To capture this in a general way, we make use of the so-called "iceberg" specification of trade to represent trade efficiency. This acts as a proxy for measures that would facilitate regional integration. Formally, trade, transport, and transit costs are interpreted in commodity content terms, discounting deliverable quantity in terms of real or virtual perishability during transit. In other words, there is a scalar relationship between the world price of an export and its corresponding import price that takes the form

$$\lambda_{ijk}^{W} = \frac{p_{ijk}^{WM}}{p_{ijk}^{WE}} \geq 1$$

where W denotes the world price system, i and j are trading partners, and k is the tradeable commodity or service in question.

When seen from this very general perspective, it is convenient to think of the iceberg parameter λ as a transactions cost without offsetting income to any service provider. From the exporter perspective, this corresponds to a discount $1/\lambda$ and from the importer a premium $(\lambda-1)$, respectively. These distortions are the ultimate targets of investments designed to improve trade efficiency, and we examine the effects of reducing them in a series of dynamic simulations.

It is worth emphasizing that trade costs over and above any administrative agency are generally very large in the global economy. These costs mainly arise from transportation, distribution, and border-related barriers such as information, language, currency conversion, etc. Some empirical studies based on gravity models have concluded that the tax equivalent of international trade barriers are in the range of 40–80 percent, substantially larger than global average tariff levels (Anderson and van Wincoop 2004).

Table 3. **Initial Simulation Experiments**

0.	Baseline scenario (**BaU**)
	a. Including the admission of the PRC in the WTO
	b. Removal of textile quotas to the EU and the US
1.	Global Trade Liberalization (**GBL**)
	a. Removal of all import tariffs and tariff-equivalent nontariff barriers
	b. Removal of all export subsidies
2.	Asia Trade Liberalization (**ATL**)
	a. Removal of all import tariffs and tariff-equivalent nontariff barriers within Asia
	b. Removal of all export subsidies within Asia
3.	Broad Reform - Asia Trade Liberalization with Trade Facilitation (**ATL2**)
	a. AFT1 with trade-facilitating policies simulated by 3 percent annual reduction in intra-Asian trade costs

Tables 4–6 and Figures 7–9 present the major aggregate simulation results at the national level. Two salient features are worth emphasizing here. First, when trading efficiency can be improved in the Asian region, internal trade emerges to play a dominant role in long-term GDP growth. By comparison to universal tariff abolition, either regionally or globally (ATL and GBL), an Asian free trade agreement with moderate trade facilitation (ATL2) would achieve much greater gains for most of its members. Moreover, every country would be better off pursuing Asian free trade and trade facilitation than waiting for a global regime of free trade, even if this were to occur over the same time horizon.

Table 4. **Real Aggregate Income**
(Percentage change from baseline in 2025)

		Scenario		
Region	**Economy**	**1 (GBL)**	**2 (ATL)**	**3 (ATL2)**
East Asia	Japan	0.9	0.9	8.1
	PRC	4.1	1.2	19.8
	Korea	5.3	1.8	24.6
	Hong Kong, China	4.4	2.9	53.8
	Taipei,China	1.4	1.9	25.9
Southeast Asia	Indonesia	1.6	2.1	35.5
	Malaysia	5.0	6.6	116.6
	Philippines	1.8	1.9	33.4
	Singapore	3.9	4.6	81.1
	Thailand	5.0	5.3	61.6
	Viet Nam	7.2	6.5	59.1
South Asia	Bangladesh	1.0	0.6	11.5
	India	2.1	0.3	10.4
	Sri Lanka	2.4	0.6	22.4

GBL means Global Trade Liberalization.
ATL means Asia Trade Liberalization.
ATL2 means Asia Trade Liberalization with Trade Facilitation.
Source: Simulation results.

Table 5. **Real Exports**
(Percentage change from baseline in 2025)

		Scenario		
Region	**Economy**	**1 (GBL)**	**2 (ATL)**	**3 (ATL2)**
East Asia	Japan	13.2	9.0	72.8
	PRC	44.7	18.6	107.8
	Korea	23.2	15.5	75.1
	Hong Kong, China	2.5	3.7	31.2
	Taipei,China	9.3	7.6	55.2
Southeast Asia	Indonesia	13.8	9.3	69.1
	Malaysia	9.4	8.6	71.0
	Philippines	6.0	0.9	72.6
	Singapore	0.8	4.3	109.3
	Thailand	24.4	18.2	104.8
	Viet Nam	56.8	46.1	136.5
South Asia	Bangladesh	50.7	39.7	101.8
	India	67.2	30.0	105.4
	Sri Lanka	14.0	7.9	40.5

GBL means Global Trade Liberalization.
ATL means Asia Trade Liberalization.
ATL2 means Asia Trade Liberalization with Trade Facilitation.
Source: Simulation results.

Table 6. **Aggregate Terms of Trade**
(Percentage Change from Baseline in 2025)

		Scenario		
		1	**2**	**3**
Region	**Economy**	**GBL**	**ATL**	**ATL2**
East Asia	Japan	1.3	2.7	52.9
	PRC	-5.4	0.7	33.7
	Korea	-0.3	-0.3	43.4
	Hong Kong, China	3.9	1.8	48.8
	Taipei,China	1.6	2.5	45.8
Southeast Asia	Indonesia	2.6	3.7	52.2
	Malaysia	0.6	1.5	44.7
	Philippines	2.8	6.2	54.8
	Singapore	2.5	1.9	29.6
	Thailand	1.9	3.9	43.2
	Viet Nam	-3.8	-1.5	31.3
South Asia	Bangladesh	-2.8	-2.4	30.0
	India	-5.2	0.4	43.9
	Sri Lanka	4.5	0.9	38.8

GBL means Global Trade Liberalization.
ATL means Asia Trade Liberalization.
ATL2 means Asia Trade Liberalization with Trade Facilitation.
Source: Simulation results.

The key to real income gains from this approach is a combination of export expansion and improving terms of trade (Figure 9) that are facilitated by lower regional distribution margins. Terms of trade improve because of the classical double-edged benefit of reducing distribution margins: higher producer prices and lower purchaser prices. These results clearly suggest the effectiveness of Asian regional trade intensification as a hedging strategy against lack of WTO progress.

Second, it is apparent from these results that the ASEAN economies have the most to gain from Asian economic integration, provided that regional liberalization proceeds in a relatively uniform way. Comparing the ATL scenario to GBL, it appears that most ASEAN economies would be worse off under global free trade than under Asian free trade, reflecting possible trade diversion toward ASEAN following the formation of an Asian free trade bloc. This highlights the importance of intra-Asia trade to Southeast Asian countries. For the PRC, Republic of Korea (henceforth Korea), and South Asia, globalism would be significantly better than Asian trade liberalization alone because these are economies with above-average, prior levels of extraregional trade dependence. Among all Asian countries, ASEAN and Hong Kong, China have the most to gain from an ATL arrangement, especially Malaysia, Singapore, Thailand, and Viet Nam.

Figure 7. **Real Aggregate Income**
(Percentage change from baseline in 2025)

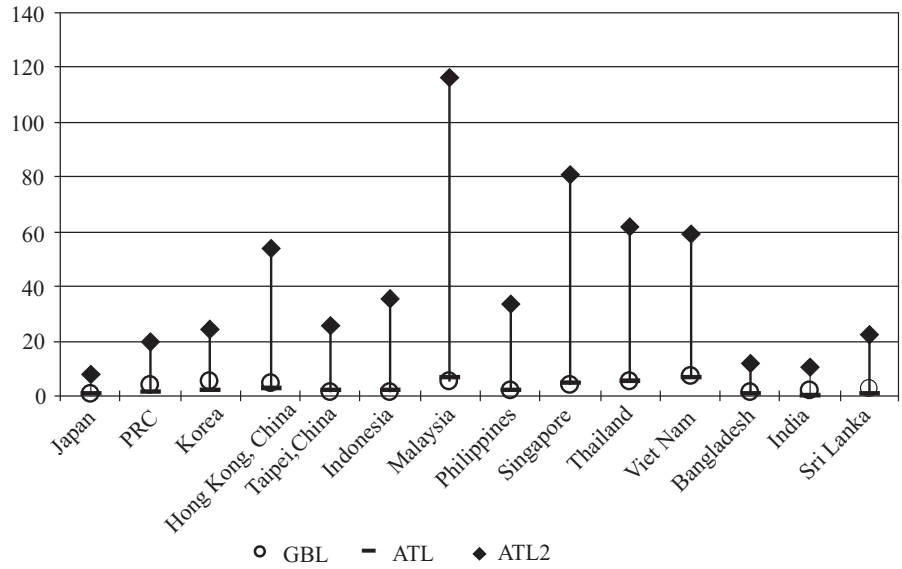


Figure 8. **Total Exports**
(Percentage change from baseline in 2025)

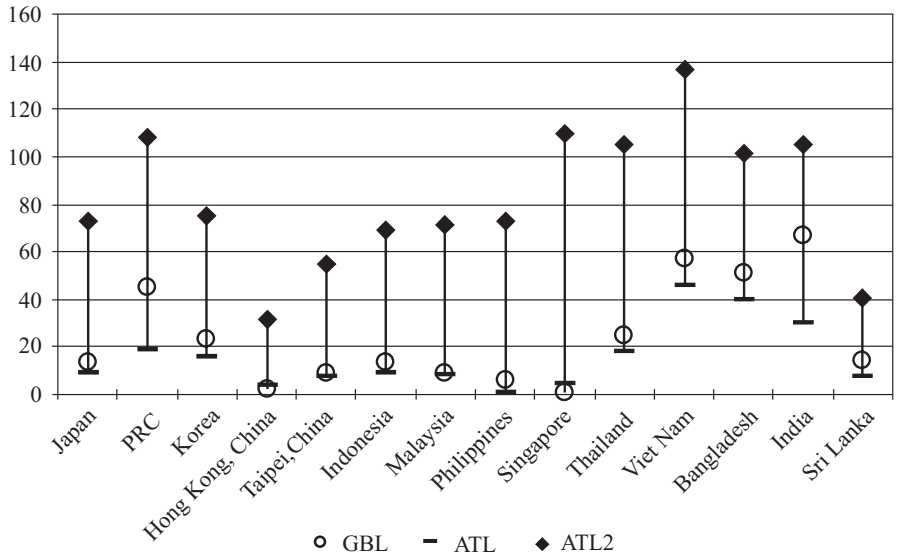
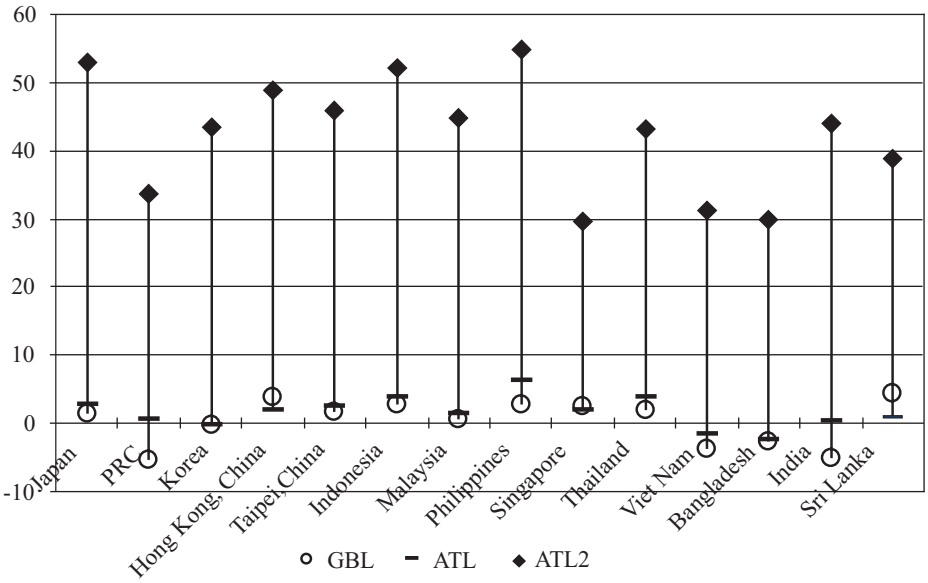


Figure 9. **Terms of Trade**
(Percentage change from baseline in 2025)



To get a better sense of the relative contributions of different policy regimes to national income, consider the real income effects by regional

grouping, beginning with East Asia. Here there are two distinct types of economies, the first being those with large stakes in markets outside Asia that face and/or present high protection levels. These three namely, PRC, Japan, and Korea, would gain relatively less, but still significantly from ATL arrangements, particularly with trade facilitation. The second group consists of economies more dependent on intra-Asian trade, with low initial trade shares, facing and/or presenting low prior protection levels. These two economies namely Hong Kong, China and Taipei,China both have much more to gain from trade facilitation than from regional tariff reductions, so they have a greater stake in reducing structural trade barriers in their own region.

The case of Southeast Asia is more like the second category of East Asian economies, but the growth effects can be much more dramatic. In all the ASEAN cases considered, much greater income gains are obtained by regional trade facilitation than by tariff removal, whether trade liberalization is regional or global. Incidentally, this fact should not be interpreted as a license to promote margin reduction instead of tariff reform. For the region, the gains of removing structural barriers to trade can only be fully realized in a liberal trade environment. In any case, ASEAN achieves very substantial growth dividends from trade from both types of trade facilitation (tariff removal and increased trade efficiency), with 2025 real income increases of between 33 and 116 percent. Removal of structural barriers by achieving greater trade efficiency appears to offer the vast majority of this growth potential, again pointing to the importance of regional trade facilitation and integration as a means to accelerate, broaden, and sustain Asia's growth. This consideration will become particularly significant as other OECD economies continue to mature and their growth trajectories flatten.

Note also the indirect growth dividends that arise from regional linkages, particularly to the more dynamic Asian economies. Such linkages are only discernible with detailed bilateral and sectoral analysis, but intuition makes it plain that, with ATL, the higher-growth regions will confer more demand stimulus on their neighbors. Most advantaged in this context are the geocentric regional economies namely, Malaysia, Singapore, Thailand, and Viet Nam. For all these countries, the combination of regional trade facilitation by tariff removal and improved efficiency far outweighs the gains from global free trade.

The case of South Asia is more mixed, mainly because of higher prior protection levels (presented and faced) and greater economic isolation from East and Southeast Asia. The degree of economic isolation is measured in the model by trade shares. Since South Asia has much greater dependence on extra-Asian markets, global tariff reductions will confer a larger benefit on them in relative terms. Despite these facts, ATL tariff reform and a 3 percent annual reduction in average regional trade costs provide much larger real income benefits to all the three South Asian economies considered. Percentage real income gains are

generally smaller than for Southeast or East Asia, but this again is consistent with the low Asian trade shares for South Asian economies. As we shall see next, however, trade shares increase dramatically within the region under these scenarios, particularly ATL2. The role of ASEAN here is central, and greater policy attention to its bridging role from East to South Asia is needed if regional benefits are to spread more effectively.

C. Regional and Subregional Growth Poles

Which economies will provide the most internal dynamism as the Asian region integrates? The PRC is unusual in being a large and very fast-growing economy, yet growth rates are projected to be relatively high in many other regional economies. Ultimately, growth linkage will depend on detailed expenditure and supply chains within sectors and across webs of multinational commercial networks. Still, it is useful to examine the main sources of regional and subregional growth from the demand side. In terms of import absorption, Figure 10 describes regional and national import demand composition, all in shares of total Asian imports. It is clear from this evidence that the PRC's absorption will be a primary regional growth driver. Subregionally, Malaysia, Singapore, and Thailand will share leadership as growth poles, while India will be the dominant source of import demand in the South Asian subregion.

To summarize the results thus far, a few observations are in order:

(i) Long-run growth prospects for the Asian region remain quite positive and trade can play a central role.

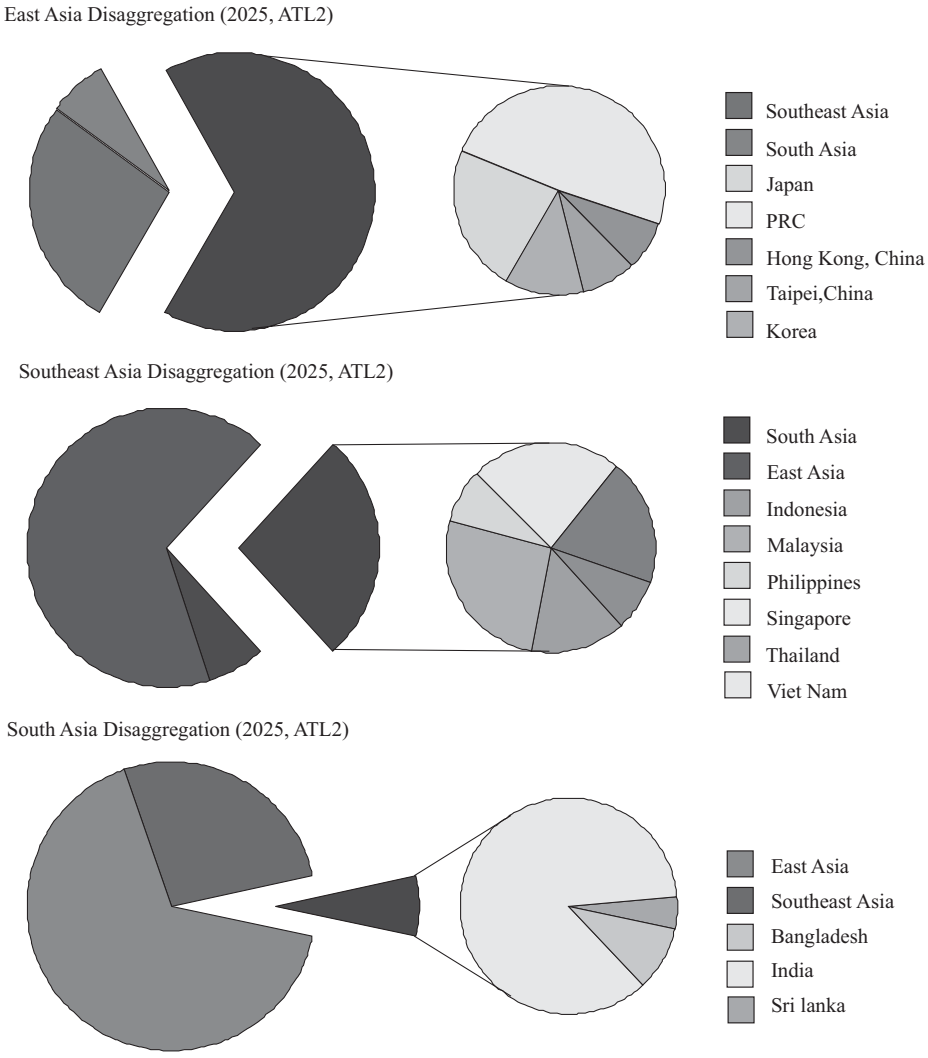
(ii) Combining an Asian free trade agreement with modest but sustained improvements in regional trade efficiency realizes substantial positive real income growth for every Asian economy.

(iii) As a corollary, it needs to be more generally recognized around the region that structural and institutional commitments to regional trade efficiency are much more important than simple tariff reductions.

(iv) Southeast Asia is the biggest percentage winner from the ATL2 scenario, which combines regional liberalization with trade facilitation.

(v) Between the large dynamic economies of the PRC and India, the role of ASEAN is central for two reasons: (a) Because of geographic factors, it can act as a "growth bridge" between South and East Asia, increasing regional trade and value-added capture. (b) ASEAN includes some of the lowest-income economies, and these are among the best situated for infrastructure to promote regional integration. Cambodia, Laos, Myanmar, and Viet Nam could all be "pillars" of the Asian growth bridge.

Figure 10. **Asian Import Demand Composition**



IV. AN AGENDA FOR ASIAN REGIONAL INTEGRATION

We have already seen that regional integration can be a potent aggregate growth stimulus for Asia. Although country-specific outcomes vary, combined regional tariff reductions and extensive improvements in trade efficiency can achieve substantial improvements in real incomes. Moreover, this trade and income growth represents diversification and new market development that can promote wider regional benefits and greater sustainability. Despite these obvious advantages, however, the classical theory of customs unions tells us that the expansionary benefits of regionalism can be at least partially offset by diversion of trade from existing partners and markets. For example, we have seen (Figure 6) that the baseline scenario calls for increased trade between all regions. Now we need to examine Asian regionalism more closely to see how it might shift trade patterns away from established markets/relationships and possibly limit the potential gains from institutional and real investments in trade facilitation.

Before proceeding with detailed inspection of Asian regional trade patterns, we want to review conceptual principles of international trade and regionalism. Until relatively recently, dynamic Asian development has been driven mainly by demand outside the region. This orientation was a product of colonial history and traditional thinking about comparative advantage, where international trade is supposed to be driven primarily by structural differences between countries, leading to patterns of specialization that even reinforced these differences. According to these received ideas, north–south trade was driven by, and indeed could be expected to reinforce, northern comparative advantage in capital and skill-intensive products while the south specialized in primary resource and unskilled labor-intensive exports. This trend had obvious implications for global income distribution, since value-added was much higher in the former activities than in the latter, and world trade was long dominated by these two directions of trade (as opposed to south–south or north–north), which further reinforced global economic divergence.

The advent of increased north–north trade in the post-War era began to change economists' understanding about the underlying drivers of trade, however. Increasingly, world trade began to be dominated by exchange among modern, high-income economies with more national commonality than differentiation. As an obvious symptom of this, two-way trade (imports and exports in the same product categories) became the fastest-growing category of trade. With increased European integration in particular, it became apparent that, as economies advance and diversify internally, trade is increasingly driven by shared characteristics. Table 7 makes this trend clear, indicating that since 1948, a majority of world trade has been between similar country categories rather than along more traditional Ricardian lines of comparative advantage based on large-scale national differentiation.

Table 7. **Trade by Development Status**

	1948	1998	2001
Developed to Developed	46	53	40
Developed to Emerging	22	18	22
Emerging to Developed	22	18	26
Emerging to Emerging	10	11	12
	100	100	100

Source: *Direction of Trade Statistics* (IMF 2005).

Three of the similarity-based drivers of international trade are of special significance: (i) economies of scale, (ii) multinational marketing, and (iii) supply chains and production networks. In today's global economy, the main impetus for modern integration is to expand commercial networks and capture value-added through domestic and international diversification. This is well-established in western markets, between Japan and its advanced trading partners, and is now becoming a robust and pervasive feature of Asian trade. Moreover, Asia presents a special attraction for these strategies because of its superior domestic growth rates and low initial trade shares. Taken together, these two characteristics promise the kind of superior returns already identified in emerging market investment patterns. For the same reason, private stakeholders have already recognized this shift in Asian trade fundamentals. To serve both public and private long-term interests in this context then, a new generation of policies is needed to facilitate growth-oriented Asian economic integration.

Before discussing policy fundamentals, however, we want to review evidence from the SAGE model about how trade reform and structural trade facilitation can contribute to more extensive and intensive regional trade ties. We do this by decomposing the bilateral subregional trade links under our three counterfactual scenarios.

Because of its country disaggregation, SAGE allows us to examine the evolution of regional trade patterns in considerable detail. Table 8 presents the bilateral trade results for the baseline (restated from Table 2 above) and our three core scenarios, with schematic presentations in the companion Figures 11 and 12. These results, representing percentage changes in bilateral flows as well as bilateral shares of total Asian trade, bear out two essential features of Asian progress toward regionalism. Firstly, trade growth and diversification are compatible for Asia. In all three scenarios, Asian bilateral trade expands in all directions with few exceptions. Apart from South Asia, most Asian increases trade in both directions with every other region, including ROW, in every scenario.[3] This means that Asian regionalism need not be seen as incompatible

[3]The South Asian trade diversion results from relatively high prior protection against other Asian goods.

with globalization generally or with established extraregional trade ties in particular.

Secondly, even more arresting than the monotonicity of bilateral trade growth are the magnitudes, particularly in the regional scenario. Recalling the original discussion in Section II about regional trade potential, it is encouraging to see modest but sustained gains in trade efficiency translated into three- to 10-fold increases in bilateral flows. Global trade reform will also contribute to Asian trade intensification, less within the region but more growth with respect to ROW (as would be expected). The main difference here is the institutional requirements to achieve conclusive progress of the WTO agenda. The uncertainties in this area are very widely perceived, and a plethora of bilateral and regional agreements have already advanced in part to hedge against these risks. Regardless of WTO uncertainties, however, the logic is clear for Asia to establish its own agenda for trade and economic growth. If greater trade can be facilitated by tariff reform and structural measures, the gains would be very substantial. Moreover, there is no evidence that these would impede the progress of WTO, and might in many ways provide a competitive discipline to expedite it.

Seen from the perspective of trade shares, the integration scenario begins to look more like the classical theory of customs unions. Clearly, preferential trade liberalization will shift the growth of trade into the Asian region, but this is of course a direct objective of trade diversification. For this reason, trade shares rise for all intra-Asian bilateral links, and very significantly, while shares for trade with ROW fall. It must be emphasized that this is not classical trade diversion, however, but growth diversion. Recall that Asian trade with ROW increases in all scenarios, so trade will continue to support growth in all directions emanating from the Asian economies, including their traditional non-Asian trade partners. The ATL2 arrangement merely accelerates growth and confers an increasing share of the benefits of this on those who created it, the Asian economies.

Clearly the potential of regional trade can be realized if sustained growth guarantees the growth of Asian demand. What is needed is an enabling environment for Asian trade to be diversified away from traditional north–south patterns of comparative advantage and specialization. A new generation of integration policies and perhaps even new institutions can accomplish this, but our results indicate that the economic potential is considerable.

Table 8. **Asian Regional Trade Linkages (Percent change from 2005 in 2025)**

Regional Trade Flows				
BAU	**East Asia**	**SE Asia**	**South Asia**	**ROW**
East Asia	145	159	201	118
Southeast Asia	166	151	298	115
South Asia	285	343	255	183
ROW	133	146	182	74
GBL	**East Asia**	**SE Asia**	**South Asia**	**ROW**
East Asia	206	228	404	172
SE Asia	212	167	496	140
South Asia	433	596	451	331
ROW	201	164	306	75
ATL	**East Asia**	**SE Asia**	**South Asia**	**ROW**
East Asia	228	236	634	110
Southeast Asia	261	189	750	93
South Asia	452	571	479	230
ROW	125	150	97	74
ATL2	**East Asia**	**SE Asia**	**South Asia**	**ROW**
East Asia	632	659	1621	91
Southeast Asia	752	539	1353	52
South Asia	1595	1887	1113	208
ROW	80	139	40	72
Regional Trade Shares				
BAU	**East Asia**	**SE Asia**	**South Asia**	**ROW**
East Asia	3	9	26	–8
Southeast Asia	12	5	67	–10
South Asia	62	86	49	19
ROW	–2	3	18	
GBL	**East Asia**	**SE Asia**	**South Asia**	**ROW**
East Asia	3	11	70	–8
Southeast Asia	5	–10	101	–19
South Asia	80	135	86	45
ROW	1	–11	37	
ATL	**East Asia**	**SE Asia**	**South Asia**	**ROW**
East Asia	27	30	184	–19
Southeast Asia	40	12	229	–25
South Asia	114	159	124	28
ROW	–13	–3	–24	
ATL2	**East Asia**	**SE Asia**	**South Asia**	**ROW**
East Asia	101	108	371	–48
Southeast Asia	133	75	298	–58
South Asia	364	444	232	–16
ROW	–51	–34	–62	

GBL means Global Trade Liberalization.
ATL means Asia Trade Liberalization.
ATL2 means Asia Trade Liberalization with Trade Facilitation.
Source: Simulation results.

Figure 11. **Regional Trade Flow Levels in 2025**
(percentage change from baseline 2005)

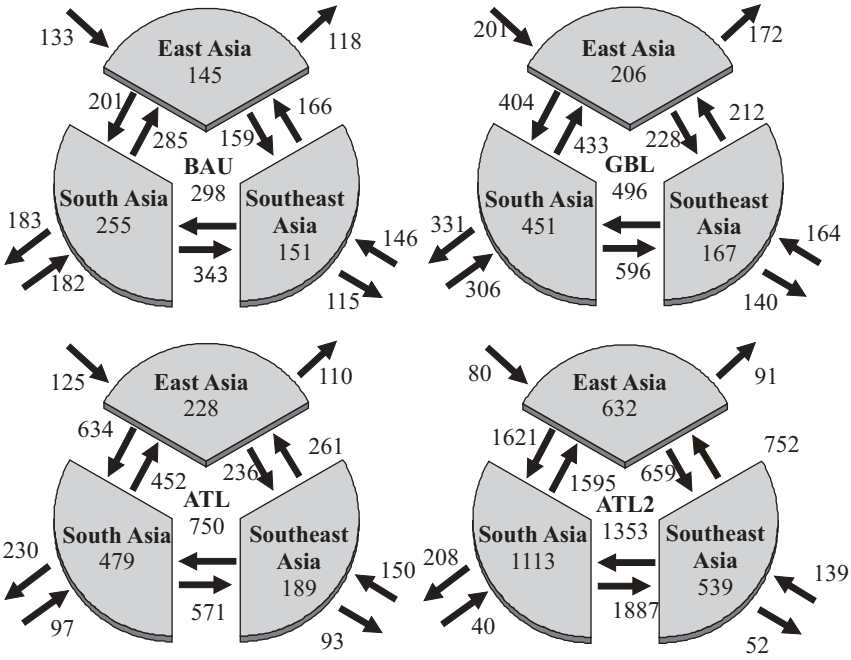
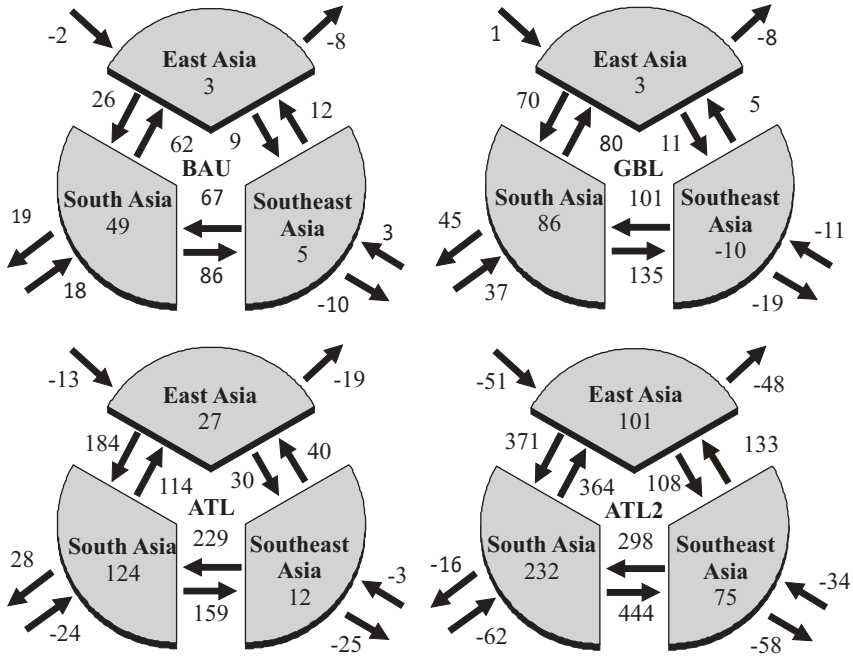


Figure 12. **Regional Trade Flow Shares in 2025**
(percentage change from baseline 2005)



V. POLICIES THAT FACILITATE INTEGRATION

Given the apparent benefits of Asian economic integration, it is reasonable to ask what kinds of policies are most likely to support this process. From an overall perspective, the institutional environment is the first consideration. In this context, we want to distinguish between two categories of institutional arrangements for economic integration. The first of these we call the policy coherence approach to economic integration, as exemplified by OECD-style institutions and initiatives. The second category is the more rigorous (monetary, fiscal, etc.) policy harmonization approach to integration, represented by EU-type arrangements. Structural coherence and harmonization are not incompatible, but the former is much less binding on domestic policy institutions and constituencies. The kind of scenarios we have been evaluating, and their benefits, can be achieved mainly by policy coherence.

In particular, to lay the groundwork for propagating commercial linkages around the region, transferring momentum from Asia's rapid growth economies to its neighbors and coherent administrative, regulatory, and technical standards will be essential. To the extent that an "Asian OECD" could originate and sustain this kind of "soft infrastructure", it would be very desirable. In addition to traditional forms of public sector leadership, a more explicit regional commitment to increased trading efficiency would help recruit private agency to the regional integration agenda.

Apart from institutional development, there are four main areas where policy initiative can make a difference in facilitating Asian regional integration:

(i) cooperative infrastructure development
(ii) regional capital market coherence
(iii) trade negotiation and facilitation
(iv) labor productivity growth

We review each of these in turn, with emphasis on how they can support the kind of outcomes analyzed in the regional scenario above.

A. Infrastructure Investment

Public and private commitments to infrastructure have been an essential guarantor of national development in the dynamic Asian economies, and they will likewise be essential to extending this dynamism across the region. The long-term returns to this kind of investment are well understood. Infrastructure lowers distribution margins, simultaneously raising producer prices and lowering purchaser prices. This virtuous combination extends the profitability horizon of economic participation wherever infrastructure reaches (and often well beyond), generating multiplier effects too complex and extensive for even the most determined project accountant to measure.

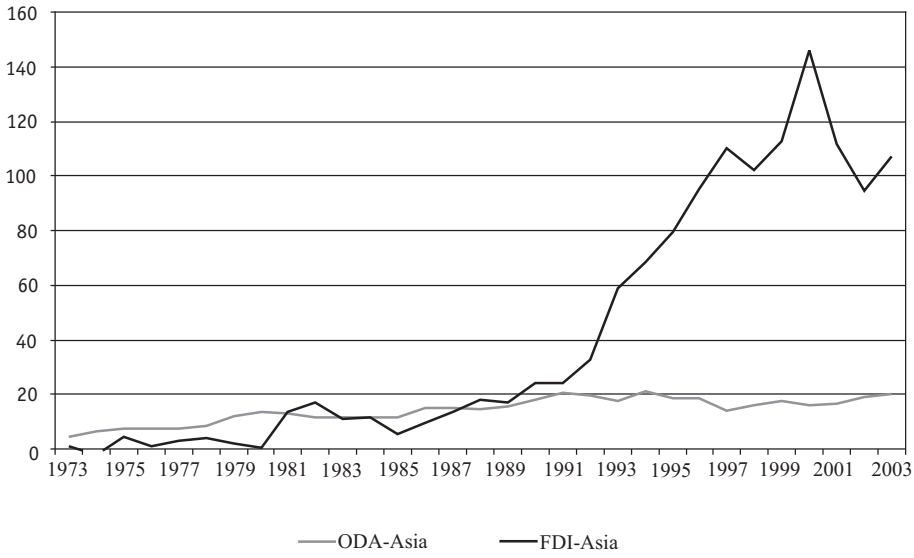
The challenge for infrastructure is not arguing its long-term virtues, but facilitating the capital market's abilities to capture and price the real returns on this kind of investment. Heterogeneous regulatory systems, often lacking transparency or adequate legal support, make it nearly impossible to compute such rates of return, let alone their risk-adjusted counterparts. If Asian governments want to enlist private agency in a regional agenda for this kind of investment so essential to effective integration, more determined efforts at policy coherence will certainly be needed.

Is it worth the effort? There are two arguments in favor of this, the first being the regional rewards to integration estimated in this study. The second argument is one of fiscal effectiveness. All but the highest-income Asian economies have important constraints on their public spending, and for this reason projects with a positive social return must often be deferred. This is particularly unfortunate, since private capital can now be seen as the largest source of regional development finance.

It is well known that Asian economic growth has benefited greatly from external savings, in the form of both public and private foreign capital inflows. In some Asian countries, aid has played a major role historically, but today private foreign direct investment (FDI) is a dramatically emergent phenomenon. While FDI is a private sector activity, and thus is animated by very different primary objectives than aid flows, it has been known to confer many benefits on developing economies that are consistent with aid objectives, including human resource development, technology diffusion, and, ultimately, rising living standards and more sustainable growth. In this sense, it has long been recognized that there may be essential complementarities between private and public foreign investment in developing countries, where the latter means aid.

The extent to which the complementarities matter is not intellectual, but dependent upon their real and potential economic significance (see Figure 13). These depict, for Asian countries, levels of overseas development assistance and inbound FDI for 1973–2003, normalized from constant US dollars to unity in 1973. The most striking feature of this data is of course the meteoric rise in inbound FDI, which has increased almost a hundredfold over the last three decades. This trend must inspire reflection on the appropriate strategy to promote private investment across the region. Clearly, public and private investment commitments must be complementary, particularly if the former is to be effective.

Figure 13. **Asian Regional Public and Private Investment: An Age of Complementarity (Asian inbound Aid and FDI, US$ Billions)**



Sources: OECD (2005) and UNCTAD (2005).

B. Regional Capital Markets

In addition to the specific category of infrastructure, productive investments of all kinds need to be facilitated as part of a regional integration agenda. Along with export demand, private capital formation has been an essential growth agent in Asia. As was already emphasized, modern regionalism is based on market scope and supply chain linkages that imply very different investment patterns from trade based on national specialization. To facilitate movement of firms and commercial networks around the region, their enterprise capital account transactions must also be facilitated. Again this requires coherence in terms of standards, from accounting to securities regulation, so that both sourcing and placement of capital can happen more extensively and intensively across the region.

Foreign direct investment is now an essential feature of regionalism and a forceful integration mechanism. Moreover, international investment flows have helped many emerging economies overcome savings constraints to stimulate and sustain development. For this reason, FDI can make important contributions to convergence if local market conditions can be made more hospitable. The essential requirements are again transparency and coherence, including any policy that limits distortions to real rates of return on local investment.

C. Trade Policy and Regional Integration

Bilateral and multilateral trade facilitation are of course essential to achieve regional integration and realize its growth potential. Geographically, Asia has an advantage in terms of continuous proximity, but administrative barriers to trade can often be more significant than geography. The vast international rent-seeking network that evolved in response to the Multi-fiber Arrangement import quotas stands as a dramatic historical example of how trade policies can defy geographic or Ricardian logic. For this reason, capacity and commitment to more liberal trade relations is a necessary (if not sufficient) condition to realize the gains from Asian regional integration that we have estimated.

Besides the ongoing efforts on multilateral trade negotiations under the WTO Doha agenda, Asian countries have pursued bilateral or regional free trade agreements (FTAs) to best secure the benefits of economic integration. A number of FTAs have been signed or are under negotiation in East and South Asia, such as the ASEAN FTA, the ASEAN and PRC FTA, and the South Asia Free Trade Area. Each of these will have its particular challenges and opportunities, and some represent steps toward others. For the present, however, we confine ourselves to a more inclusive reference case for Asian integration because we believe it makes the strongest case for further commitments in this direction.

D. Policies to Promote Labor Productivity Growth

In a world of capital mobility, the only long-term justification for higher real wages is higher labor productivity. Judging from their modern policies, it is clear that many Asian countries are well aware of this fact. Initial conditions now vary widely across the region, however, and regional integration will only propagate its gains equitably if it is accompanied by rising labor productivity. The alternative will be something like a regional version of the traditional north–south patterns alluded to earlier, with excessive specialization and divergence in average living standards.

To more fully realize the vast human potential of this region, for domestic income growth arising from both wages and investments at home and elsewhere, a more coherent approach to fostering labor productivity growth would be valuable. For all countries in the region, this is the most important long-term commitment to sustained and equitable growth, but it remains beyond the fiscal reach of many. To advance this regional agenda, private capital can do more of the work in an enabling investment climate. Employment-based education and skills development could be a direct result of greater inbound FDI, in turn a result of expanded trade, if commitments to integration are determined enough.

VI. CONCLUSIONS

Economic dynamism is well established in Asia and continues to spread, yet regional growth rates and living standards remain uneven and many areas have yet to enjoy significant benefits. Historically, this process has relied heavily on demand outside the region, from the early days of global exploration down to the modern north–south orientation of trade with western OECD economies. The research reported here looks to the future of the region, projecting long-term trade and growth scenarios for Asia over the next decade using a global forecasting model. Our results clearly indicate that regional integration is the way forward for rapid and sustainable growth in Asia. By diversifying its traditional trade patterns toward emergent demand within the region, the Asian economies can leverage superior domestic growth rates, accelerate economic diversification, and broaden the basis for regional development. Integration will not only secure a more reliable basis for established growth patterns, it will also confer substantial growth leverage on many of the region's poorest economies. In this way, historic growth can be sustained while greater convergence is achieved in the region.

More specifically, our work compares the potential regional growth effects of alternative regional trade scenarios. Contrasting progress toward WTO-style global trade liberalization with more focused Asian regionalism, we find that most of the gains from the former can be achieved for Asia by a regional FTA arrangement. Moreover, we find that modest progress toward improving regional trade efficiency would have a much greater impact on Asian growth than either global or regional tariff removal alone. Indeed, one important conclusion of this work is that structural barriers to trade are a much greater constraint on growth than residual protection alone. This finding reaffirms the importance of policies to reduce regional trade margins, including administrative reforms, standards promotion, and public and private infrastructure commitments.

The same family of policies is of course central to any agenda for regional economic integration. It should be emphasized, however, that our results show the benefits of structural policies, those governing hard infrastructure (trade, transport, transit, and telecommunications) as well as soft infrastructure (standards, administrative efficiency and transparency, etc.). These characteristics represent a policy coherence approach to economic integration, broadly similar to OECD initiatives. This can be contrasted with the more rigorous (monetary, fiscal, etc.) policy harmonization approach to integration represented by EU-type arrangements. Structural coherence and harmonization are not incompatible, but the former is much less binding on domestic policy institutions and constituencies. The right model of Asia will evolve over time, but our results indicate that the gains from the structural coherence approach to integration could be very substantial.

In this paper, we sketched some of the overall characteristics of more integrated regional growth, including general indications about policy initiatives that will be needed to facilitate this. Building the institutional basis for regional integration is the work of governments, however, not economists. An Asian OECD would provide a convenient venue for this work, but the initiative must be animated by a clear understanding of the potential benefits. Our results indicate that regional integration has more to offer Asia than the WTO itself, although the two should not be seen as substitutes.

Whichever path Asia chooses, rich opportunities are there for stimulating growth through trade diversification. Our results indicate that the volume of trade with traditional partners can continue to grow, but that superior growth in Asia can sustain and indeed be sustained by policies that promote faster trade growth within the region. As the region transits from historical patterns of north–south specialization to a family of more modern, diversified, and integrated consumer societies, the vestiges of head-to-head export competition will give way to a more collaborative basis for growth. This approach represents the best strategy to fulfill the immense economic promise of Asia for all of its people, over half of humanity.

APPENDIX
OVERVIEW OF THE SAGE MODEL AND DATA

The complexities of today's global economy make it very unlikely that policymakers relying on intuition or rule-of-thumb will achieve anything approaching optimality in either the domestic or international arenas. Market interactions are so pervasive in determining economic outcomes that more sophisticated empirical research tools are needed to improve visibility for both public and private sector decisionmakers. The preferred tool for detailed empirical analysis of economic policy is now the calibrated general equilibrium (CGE) model.[4] It is well suited to trade analysis because it can detail structural adjustments within national economies and elucidate their interactions in international markets. The model is more extensively discussed below and the underlying methodology is fully documented elsewhere, but a few general comments will facilitate discussion and interpretation of the scenario results that follow. Technically, a CGE model is a system of simultaneous equations that simulate price-directed interactions between firms and households in commodity and factor markets. The role of government, capital markets, and other trading partners are also specified, with varying degrees of detail and passivity, to close the model and account for economywide resource allocation, production, and income determination.

The role of markets is to mediate exchange, usually with a flexible system of prices, the most important endogenous variables in a typical CGE model. As in a real market economy, commodity and factor price changes induce changes in the level and composition of supply and demand, production and income, and the remaining endogenous variables in the system. In CGE models, an equation system is solved for prices that correspond to equilibrium in markets

[4]See for example, Dervis, de Melo, and Robinson (1982); Francois and Reinert (1997).

and satisfy the accounting identities governing economic behavior. If such a system is precisely specified, equilibrium always exists and such a consistent model can be calibrated to a base period data set. The resulting calibrated general equilibrium model is then used to simulate the economywide (and regional) effects of alternative policies or external events.

The distinguishing feature of a general equilibrium model, applied or theoretical, is its closed form specification of all activities in the economic system under study. This can be contrasted with more traditional partial equilibrium analysis, where linkages to other domestic markets and agents are deliberately excluded from consideration. A large and growing body of evidence suggests that indirect effects (e.g., upstream and downstream production linkages) arising from policy changes are not only substantial, but may in some cases even outweigh direct effects. Only a model that consistently specifies economywide interactions can fully assess the implications of economic policies or business strategies. In a multi-country model like the one used in this study, indirect effects include the trade linkages between countries and regions which themselves can have policy implications. The Structural ADB General Equilibrium (SAGE) model is a version of the LINKAGE 5 model developed at the World Bank by van der Mensbrugghe (2005), implemented in the GAMS programming language, and calibrated to the GTAP (version 6) global database.[5] The result is a 16-country/region, 12-sector global CGE model, calibrated over a 24-year time path from 2001 to 2025. Apart from its traditional neoclassical roots, an important feature of this model is product differentiation, where we specify that imports is differentiated by country of origin and exports are differentiated by country of destination (Armington 1969, de Melo and Robinson 1989). This feature allows the model to capture the pervasive phenomenon of intra-industry trade, where a country is both an importer and exporter of similar commodities, and avoids tendencies toward extreme specialization.

[5]The original model is fully documented in van der Mensbrugghe (2005).

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