

# 10. China's Emergence, Real Exchange Rates, and Implications for East Asian Regional Trade and Growth

David Roland-Holst<sup>1</sup>

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## 10.1. INTRODUCTION

Over the last decade, a new landscape of economic relations has begun to emerge in the Pacific Basin. In this region as much as anywhere else, the agenda of globalization has advanced, more countries are embracing outward economic orientation and open multilateralism as a means of accelerating domestic economic growth. Most prominent of the later entrants in the regional arena is China, whose economic reforms have led it to record growth rates, dramatically accelerating export expansion and sharply improving material living standards.

China's global economic emergence is one of the defining characteristics of modern globalization. This most populous economy has also, over the last two decades, been the fastest growing, and a significant part of this growth has been leverage by external demand. While satisfying millions of foreign consumers, however, Chinese exports have engendered ambivalent and even hostile sentiments among other producers, both in the markets they penetrate and among other export competing nations. The latter group is concentrated in East and Southeast Asia, and this region is facing significant adjustments as a result of China's dramatic emergence.

Preoccupation with China's opening has also drawn new attention to East and Southeast Asian trade blocs. Many of the more established regional agreements (e.g. ASEAN) are being re-examined in light of China's WTO accession and are in some cases moving to include China. At the same time, adoption of the WTO agenda by this most populous of formerly nonaligned countries has given special impetus to globalization as the prevailing standard for multilateral trade relations, calling into question the central tenets of regionalism. For these reasons, East Asia's existing trade arrangements will undergo searching examination and, in all likelihood, significant change in the coming years.

In addition to export competitiveness, another symptom of China's external success has emerged in the global trade debate, unprecedented reserve accumulation. As a combined results of sustained trade surpluses and managed exchange rate policies, China now holds the world's largest expatriate dollar reserves. This financial "overhang" now exceeds \$1 Trillion and represents a complex adjustment risk for the global trading system. In fact, a number of East Asian economies have pursued stable exchange rate policies while the real landscape of regional trade has changed dramatically around them. The monetary implications of this divergence, including nominal rates of exchange, prices, and interest rates have been very widely discussed and remain controversial, but the Chinese situation has attracted particular attention because of its rapid emergence.

Presumably, sensitivity of these monetary issues relates the real side of the economy. Despite this, very little evidence exists on actual structural adjustments that might ensue from more flexible exchange rates in East Asia. This paper aims to support more complete policy dialogue by showing how patterns of East Asian trade and domestic economic activity could shift with adjustments in one salient real exchange rate, that of the China. Using a global simulation model, we forecast changing trade and economic structure over the next two decades, considering scenarios for status quo growth and alternatives where structural imbalances are constrained to induce real exchange rate adjustment. Our results suggest a mixed verdict on the efficacy of exchange rate intervention, revealing relatively intricate shifts in the regional activity matrix when the Pacific Basin's most dynamic economy experiences shifts in its aggregate terms of trade.

## 10.2. ASIAN REGIONAL TRADE PATTERNS AND THE TRADE TRIANGLE

Before examining scenarios for alternative trade and exchange rate regimes, it is instructive to examine a baseline scenario covering the forecast period 2007-2020. The general baseline calibration procedure and more detailed information about the model and data are given in a companion paper, and only essential features are summarized. The present dynamic forecasting model was constructed according to generally accepted standards, implemented in the GAMS programming language, and calibrated to the GTAP global database.<sup>2</sup> The result is an eighteen-country/region, eighteen-sector global CGE model, calibrated over a twenty-four year time path from 2001 to 2020.

To set the dynamic baseline, the model was calibrated to annualized real GDP growth rates obtained from consensus independent estimates displayed in the first column of Table 1 below.

**Table 1: Selected Macroeconomic Indicators, Baseline Scenario  
(percentage annualized growth rates, 2000-2020)**

	<b>Real GDP</b>	<b>Absorption</b>	<b>Exports</b>	<b>Imports</b>	<b>Exp PI</b>	<b>Imp PI</b>	<b>Real ER</b>
<b>China</b>	<b>7.10</b>	<b>6.94</b>	<b>6.27</b>	<b>5.85</b>	<b>-.22</b>	<b>-.18</b>	<b>-.04</b>
<b>Japan</b>	<b>2.20</b>	<b>2.12</b>	<b>2.37</b>	<b>3.15</b>	<b>.22</b>	<b>-.13</b>	<b>.35</b>
<b>NIE</b>	<b>4.34</b>	<b>4.42</b>	<b>4.01</b>	<b>4.21</b>	<b>-.09</b>	<b>-.08</b>	<b>-.01</b>
<b>ASEAN</b>	<b>4.75</b>	<b>4.55</b>	<b>4.46</b>	<b>4.25</b>	<b>-.26</b>	<b>-.13</b>	<b>-.13</b>
<b>USA</b>	<b>2.62</b>	<b>2.61</b>	<b>3.07</b>	<b>2.94</b>	<b>.12</b>	<b>-.09</b>	<b>.21</b>
<b>EU</b>	<b>2.52</b>	<b>2.63</b>	<b>2.37</b>	<b>2.60</b>	<b>.13</b>	<b>.01</b>	<b>.13</b>
<b>ROW</b>	<b>3.65</b>	<b>3.65</b>	<b>3.69</b>	<b>3.40</b>	<b>-.19</b>	<b>-.09</b>	<b>-.11</b>

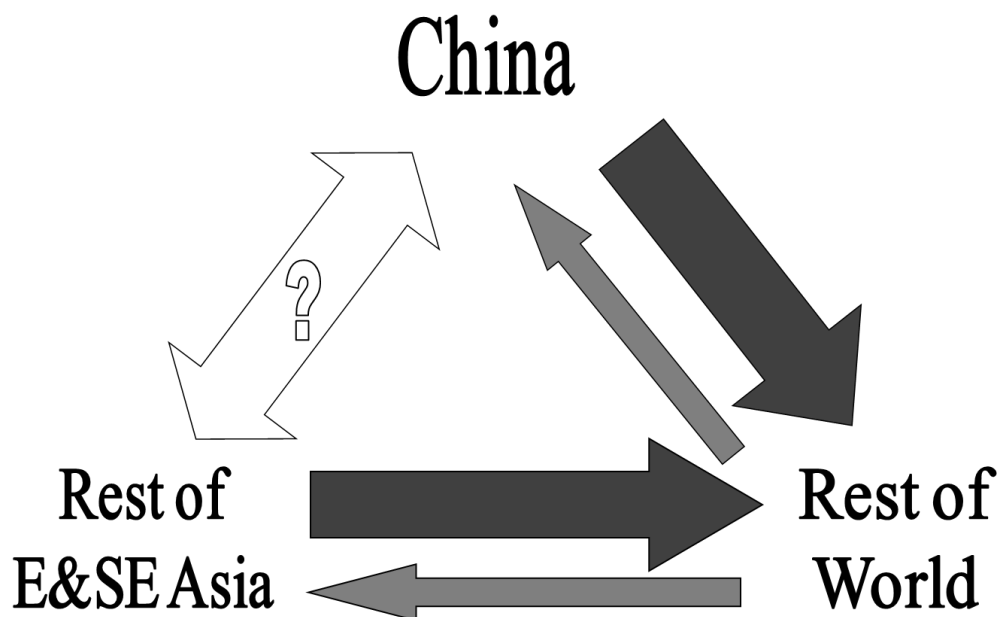
Sources: DRI, Cambridge Econometrics, IMF.

These baseline results have also been discussed extensively in Roland-Holst (2002), but a few salient points are worthy of re-emphasis. Growth rates for China are moderate in historical context, and China in 2020 will still lag behind the United States, EU, and Japan in aggregate real GDP. However, its share of total world trade (exports + imports), will nearly equal the U.S. and significantly exceed Japan. Moreover, by about 2008 China will be Asia's largest individual importer and by about 2010 it's largest exporter. China's exports by destination will be directed primarily at the U.S. and EU. For more than half of its imports, China will rely on East and Southeast Asia. Korea and Taipei, China combined (NIE) will be the largest regional source of these, followed by Japan and ASEAN. Finally, China will become Japan's largest trading partner in terms of both imports and exports.

One of the most arresting and important results of this investigation, however, is the estimated emergence of a Trade Triangle that will leverage regional trade via China's expanding exports and induced domestic growth. This result offers an important inference for regional policy: China's expansion may represent a challenge to traditional Asian exporters, but it also offers unprecedented opportunities for new export expansion. Contrary to the view that China's exports will stifle competitiveness and growth among its neighbors, these results show that China's expansion, particularly when accelerated by WTO accession, constitute a windfall opportunity for regional exporters.

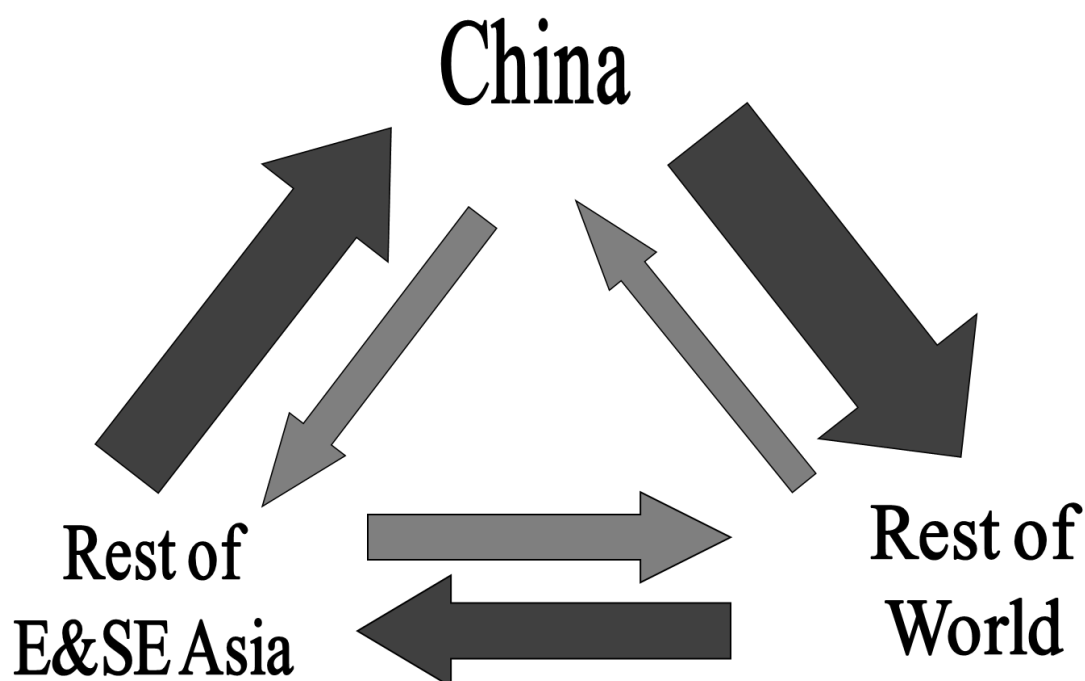
Consider global trade patterns partitioned into three geographic spheres, China, the Rest of East and Southeast Asia, and the Rest of the World. Because the OECD countries account for 75% of world trade, they will dominate the third group. With this in mind, the schematic in Figure 1 represents trade among these groups in the year 2005, indicating export flows by green arrows and import flows in red. The general message here is one of head-to-head export competition by Asian economies in ROW markets. Both of the former are currently running substantial surpluses on trade in that direction, and their bilateral trade (China-ROEA) is indeterminate for the moment.

**Figure 1: Asian Trade Triangle, 2005**



Now contrast this with a schematic rendering of the results obtained for the baseline in 2020. Even without China fulfilling its WTO commitments, trade patterns have shifted dramatically. In particular, China sustains and even increases its structural trade surplus with the (mainly western OECD) ROW, while at the same time developing a structural deficit of about equal magnitude with the Rest of East and Southeast Asia. Yes, China appears to have displaced other Asian exports to third region markets, but the relentless growth of its domestic absorption has offset this and created dramatic new export opportunities for its regional neighbors.

**Figure 2: Asian Trade Triangle, 2020**



The logic behind this transitive mechanism is straightforward. Apart from a prodigious endowment of human capital, China is a very resource-constrained economy. To sustain its baseline growth rates, this economy must sharply increase absorption of external resources, intermediates, and capital goods. This is true for export sectors, where the needs for capacity expansion to meet external demand are very substantial. Moreover, income growth in China will inexorably change demand patterns, accelerating import demand for agricultural products (meat and/or animal feed) and energy in particular.

In any case, the schematic representation is only intended to motivate the Triangle concept. Table 2 presents the actual bilateral balances for 2020 as forecast by the model. Here the triangle is delineated within a matrix of component trade relationships, each generally consistent with the intuition arising from the schematic.

**Table 2: Bilateral Trade Balances Baseline Scenario**  
(year 2020 in billions of 2001 USD)

<u>Exporter</u>	<u>Importer</u>							<u>Total</u>
	China	Japan	NIE	ASEAN	USA	EU	ROW	
<b>China</b>	0	-5	-135	-41	166	66	71	122
<b>Japan</b>	5	0	39	20	23	-15	-50	21
<b>NIE</b>	135	-39	0	19	-32	-32	-12	40
<b>ASEAN</b>	41	-20	-19	0	18	8	12	41
<b>USA</b>	-166	-23	32	-18	0	48	-40	-168
<b>EU</b>	-66	15	32	-8	-48	0	34	-41
<b>ROW</b>	-71	50	12	-12	40	-34	0	-16
<b>Total</b>	-122	-21	-40	-41	168	41	16	

Note in the first row how China registers surpluses with the USA, EU, and ROW, while running bilateral deficits with Japan, NIE, and ASEAN. In the closure of this model, aggregate foreign savings for each country are held constant in real terms, essentially fixing aggregate trade balances in this reference case. The constituent bilateral balances are

endogenous, however, and evolve in the indicated triangular relationship because of the underlying comparative advantages of the trade partners.

### 10.3. SIMULATION RESULTS

Using the multi-country model and baseline information discussed above, we conducted a series of policy experiments reflecting more liberal East and Southeast Asian trade regimes at the global, regional, and national levels. In particular, we compared global tariff abolition with three East Asian regional arrangements that resemble Free Trade Areas presently being discussed. The results obtained make more apparent both the potential rewards of further liberalization and the very complex incentives facing East Asian participants in regional and global negotiations. Four general results are worthy of emphasis:

1. Global trade liberalization (GTL) confers greater aggregate gains, not only on the world but on a decisive majority of individual countries and every East Asian regional grouping considered.
2. The regional Free Trade Areas considered here would, in the absence of other negotiating initiatives, benefit most FTA member countries, but less so than globalization.
3. China's role in all these scenarios is unique and appears to be governed by complex incentives. China gains much less in relative terms than either ASEAN in the AFTA or the rest of East and Southeast Asia under GTL. The reason for this is that China can realize most of its export growth by eliminating its own protection unilaterally, while a large part of the export gain to East and Southeast Asia comes from Chinese market access.
4. The Trade Triangle enables China to "deliver globalization" to its regional neighbors by its accession to the WTO, i.e. East and Southeast Asia can capture most of the absolute export growth expected from full globalization by just forming an ASEAN+3 FTA. Put differently, our results indicate that, in the wake of China's WTO accession, the best strategy for East and Southeast Asia is to pursue globalism through more comprehensive regionalism.

Building on the baseline forecasts, a variety of trade liberalization scenarios for East and Southeast Asia were examined with reference to China's WTO accession. In particular, unilateral Chinese liberalization was compared with several examples of East and Southeast Asian regionalism and a reference Global Trade Liberalization scenario (GTL) that abolishes all tariffs. The results are consistent with some conventional intuition and in other ways indicate the complexity of the regional negotiating environment.

At the national level, unilateral liberalization is also evaluated for a number of larger East Asian economies. The results are then compared to a reference scenario where bilateral partners reciprocate, conferring free market access on the country removing all its tariff barriers. Not surprisingly, these two alternatives can differ significantly, depending upon prior protection patterns and domestic resource constraints. Although there are important characteristics of the individual country scenarios, these results suggest that the choice between unilateral and negotiated tariff removal should be made on a case by case basis. Indeed, unilateral removal would rarely be preferable, but negotiated liberalization should be informed by more detailed analysis of partner-specific and sector-specific considerations.

#### 3.1. *Adjustments in Trade Patterns*

Before presenting more detailed results, aggregate effects of seven counterfactuals for regional trade liberalization are evaluated. Each scenario includes the first one as a new baseline including China's accession to the WTO:

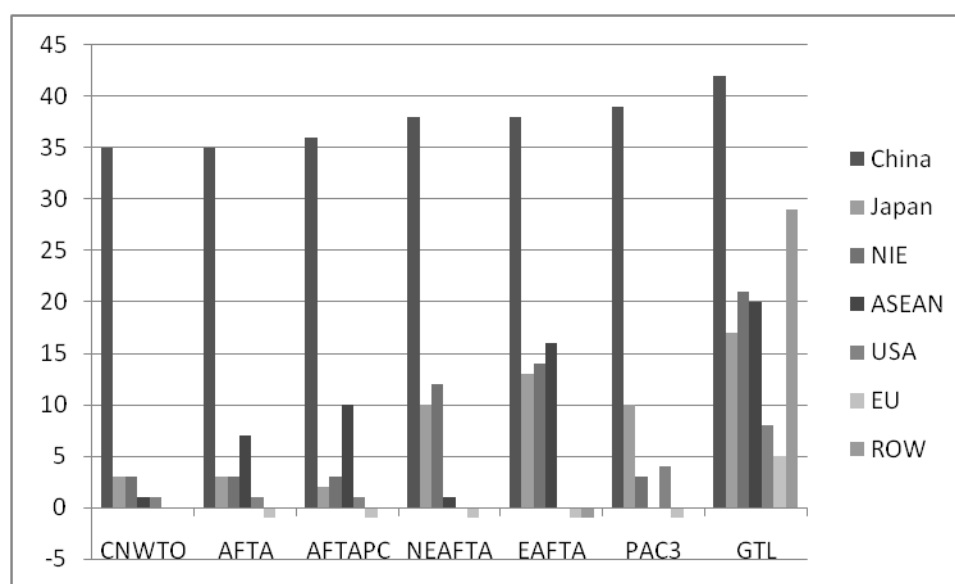
1. CNWTO: China joins the WTO, status quo policies elsewhere
2. AFTA: ASEAN Free Trade Area
3. AFTAPC: AFTA plus China
4. NEAFTA: Northeast Asian Free Trade Area (China, Japan, and Korea)
5. ASEAN+3: AFTA plus China, Japan, and Korea
6. PAC3: Pacific Trilateralism - China, Japan, USA
7. GTL: Global Trade Liberalization

The first of these represents realization of China's commitments to the WTO, assuming other countries simply continue

with status quo policies. This then forms a revised baseline for the other scenarios, which are then contrasted with five East Asian regional scenarios reflecting different kinds of Free Trade Area. Scenario 2 considers the conventional notion of an ASEAN Free Trade Area (AFTA), including abolition of trade taxes between all countries in the region, with maintenance of prior individual protection against the rest of the world. Scenario 3 extends AFTA to include China, as was agreed in principle last year in Cambodia. The Fourth scenario captures another idea discussed recently, a Northeast Asian Free Trade Area, liberalizing trade between China, Japan, and Korea. The FTA for Scenario 5, ASEAN+3, is the most inclusive, bringing together the principal economies of East and Southeast Asia. Finally, a scenario with as much geopolitical as economic significance is included, a trilateral FTA between the world's two largest economies, the US and Japan, and China. If China's growth rate proves sustainable, it will ultimately have to be accommodated into trade and capital flow patterns that have more profound global implications. Many other scenarios could be studied with the same methodology, but these five are adequate to support initial discussion of the salient issues regarding globalization and East Asian regionalism. Finally, Scenario 7 is a reference case representing the hypothetical culmination of the WTO process, Global Trade Liberalization (GTL). This may be an ephemeral goal, but the results given here at least help to calibrate expectations about the potential gains from truly open multilateralism.

A general indication of the results for these FTA scenarios is given (in terms of total export effects) in Figure 1 below:

**Figure 3: Real Exports in 2020  
(Percent change from Baseline)**



As intuition would dictate, we find that GTL yields the largest and most widespread gains, both for the region and for the rest of the world. The AFTA plus China regional arrangement is beneficial to all members and expands their trade within the region and with the rest of the world, but more detailed results indicate that it induces significant trade diversion away from nonmembers.<sup>3</sup> Despite these effects, ASEAN's ability to leverage China's growth would appear to make this arrangement quite attractive to them.

China's role in all these scenarios is a unique one, however, and appears to be governed by complex incentives. China gains much less in relative terms than either ASEAN in the AFTA or the rest of East and Southeast Asia under GTL. The reason for this is that China can realize most of its export growth by eliminating its own protection unilaterally, while a large part of the export gain to East and Southeast Asia comes from Chinese market access.

China may have other reservations about regionalism that limit its willingness to take detours from the path to globalization. In particular, our detailed results indicate that China might experience adverse terms of trade effects by diverting its trade into smaller zones delineated by Southeast Asian regional preferences. In addition to this, it appears that most regional arrangements would reinforce China's neo-mercantilist position vis-à-vis economies outside the region. In each scenario, China is estimated to increase ex-Asian exports more than it increases ex-Asian imports, while doing the opposite for East and Southeast Asia.

These two issues could make it difficult to recruit China into East and/or Southeast Asian regional agreements, yet our

results indicate its membership is essential to the gains realized by others. Barring China's participation, most regional pacts would yield only small gains and other regional economies would probably be better off going directly toward the goal of GTL. Thus, China's current orientation, i.e., GTL as reflected in its assertive WTO commitments, is the primary goal for this country and may ultimately be the best route for other East and Southeast Asian economies.

Regional gains indicate the Trade Triangle at work. As emphasized in the last section, our results predict emergence of a systematic pattern of triangular trade for East and Southeast Asia. The Trade Triangle reveals that China's export expansion offers significant growth leverage to its neighbors. Strategic responses to China's emergence must take account of this, exploiting the Triangle to translate regionalism into globalism. The extent to which East and Southeast Asian economies can facilitate access to the Triangle through FTAs will of course depend upon negotiations involving China itself.

In particular, economies of the region need to negotiate relatively inclusive FTAs with China to avoid being crowded out of regional and extra-regional markets. The regional incidence of global export gains from the Triangle depends critically on this. Our results indicate that significant trade diversion could occur among regional exporters, at the expense of those countries who opt out of an FTA including China.

Finally, China's situation in the East and Southeast Asian trading region appears to be unique in other important respects. Because of the sheer size and growth momentum of this economy, it apparently is in a position to "go it alone" on the path to globalization, i.e. most of its own benefits from multilateralism can be captured by unilateral liberalization. This fact not only strengthens its resolve to follow that path, but could limit any incentive to be drawn into preferential, trade diverting regional agreements.

Because of these complex incentives, China possesses two carrots and one stick in regional negotiations. The carrots are access to its own domestic market and, by joining China in an FTA, greater indirect market access to the rest of the world (the Triangle induced export effect). The stick, obviously, is one of the carrots, used instead as a club: denial of market access and, worse, trade diversion arising from direct export competition by China and its partners. Clearly, the mercantile view of China is too simplistic, but this country still holds a special position in the regional negotiating environment, and other East Asian and Southeast Asian economies must take account of this fact. Overall, our results support a view that China's global emergence represents both challenges and enormous opportunities for East Asian regional economies. The effectiveness of today's policy makers in this context will be judged by their ability to identify both, facilitating timely adjustment to the former and proactive development of the latter.

China's importance to the regional adjustment process is undeniable, with Chinese goods and services representing one-third to one-half of all East Asian trade growth across the four scenarios. However, a rather upbeat interpretation arises from the estimates for Chinese trade within the East Asian region. In every scenario except 2 (where it is excluded from AFTA), Chinese imports from East Asia grow faster than its regional exports.

At the same time, however, it should be noted that China's exports to the ROW more than offset its East Asian imports. This happens because China presents higher prior protection than it faces within each of the trade groupings considered, and thus the Chinese real exchange rate depreciates in every liberalization scenario it joins. The Rest of East Asia, on the other hand, faces higher protection than it presents, driving up its real exchange rate and sending real imports above exports in every scenario. Note that these are essentially macro responses to the prior burdens of trade distortion, and tell us very little about underlying patterns of comparative advantage. The latter are only revealed in more detailed country and sector analysis.

The following tables present bilateral trade adjustments arising from some of the FTA scenarios we considered. The differences between these are revealing, and help to elucidate the incentives facing regional negotiators. The first results, in Table 3, could be captioned "The China Threat Scenario," since it reflects China's unilateral WTO initiative with passive responses on the part of its neighbors. This represents a worst case scenario, where other East and Southeast Asian economies take no action to enhance the leverage offered by the Trade Triangle. In such a situation, our results indicate that China's regional partners would experience serious trade diversion, crowded out Chinese export competition in both their own region and in ROW markets.

**Table 3: Bilateral Trade Flows<sup>4</sup> - CNWTO**  
(percent changes in 2020 with respect to Baseline)

<b>Exporter</b>	<b>Importer</b>							<b>Total</b>
	<b>China</b>	<b>Japan</b>	<b>NIE</b>	<b>ASEAN</b>	<b>USA</b>	<b>EU</b>	<b>ROW</b>	
<b>China</b>	0	37	43	36	31	35	32	34
<b>Japan</b>	38	0	-4	-6	-7	-5	-5	3

<b>NIE</b>	<b>32</b>	<b>-10</b>	<b>-7</b>	<b>-11</b>	<b>-13</b>	<b>-10</b>	<b>-10</b>	<b>3</b>
<b>ASEAN</b>	<b>28</b>	<b>-4</b>	<b>-1</b>	<b>-2</b>	<b>-5</b>	<b>-3</b>	<b>-4</b>	<b>1</b>
<b>USA</b>	<b>24</b>	<b>-1</b>	<b>1</b>	<b>-1</b>	<b>0</b>	<b>-1</b>	<b>-1</b>	<b>1</b>
<b>EU</b>	<b>22</b>	<b>0</b>	<b>1</b>	<b>-1</b>	<b>-2</b>	<b>-1</b>	<b>-2</b>	<b>0</b>
<b>ROW</b>	<b>13</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>-2</b>	<b>-1</b>	<b>-1</b>	<b>0</b>
<b>Total</b>	<b>26</b>	<b>5</b>	<b>6</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>3</b>

The biggest losers are Korea and Taipei,China (NIE) who experience losses in bilateral exports of -10% (to Japan), -11% (ASEAN), and -13% (USA), -10% (RU and ROW), and even -7% of their own bilateral trade because they have missed the opportunity to enter a more liberal expansionary partnership. Japan and ASEAN are also crowded out of Asian and other ROW markets significantly, but in smaller relatively amounts. Note that trade with China itself, via the Triangle; more than offsets these losses in every case, but the foregone exports to third markets are still sacrificed.

**Table 4: Bilateral Trade Flows – AFTAPC**  
(percent changes in 2020 with respect to CNWTO)

<b>Exporter</b>	<b>Importer</b>							<b>Total</b>
	<b>China</b>	<b>Japan</b>	<b>NIE</b>	<b>ASEAN</b>	<b>USA</b>	<b>EU</b>	<b>ROW</b>	
<b>China</b>	<b>0</b>	<b>-4</b>	<b>-4</b>	<b>47</b>	<b>-3</b>	<b>-4</b>	<b>-3</b>	<b>1</b>
<b>Japan</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>-10</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>
<b>NIE</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>-12</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>
<b>ASEAN</b>	<b>2</b>	<b>4</b>	<b>3</b>	<b>33</b>	<b>3</b>	<b>3</b>	<b>1</b>	<b>9</b>
<b>USA</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>-6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>EU</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>-5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>ROW</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>-7</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>

Contrasting these results with the recently negotiated, but still relatively limited ASEAN plus China (AFTAPC) scenario, it is apparent in Table 3 that partnership with China has two prominent advantages.<sup>5</sup> Firstly, it actually increases trade with China over the CNWTO scenario, as would be expected given the new partnership. Secondly, however, it also enables ASEAN to expand its Triangle benefits and even increase exports to third markets. On the obverse, however, ASEAN significantly reduces imports from third partners, an important diversion effect. Moreover, China reduces exports to third markets, as these goods are diverted to ASEAN markets. As usual, the members of a trade conclave benefit from two components of trade expansion, new growth and diversion. Clearly, this relatively exclusive FTA may be a step in the right direction, but it cannot realize to full potential of regional trade expansion, nor carry ASEAN very far along toward globalization.

The most inclusive scenario considered is ASEAN+3, the results for which are given in Table 4. Here the benefits of a more expansive and diversified liberal market are very apparent. Including two OECD economies in particular leads to a more “North-South” FTA, with economic diversity needed to expand the basis for regional specialization and scale economies in export production. The benefits for members are quite dramatic. Indeed, their trade expansion within the region now mirrors that of China itself (compare Table 3.1), indicating the leverage of the Trade Triangle is working more effectively once the FTA can facilitate market access across the region. Interestingly, however, the main percentage gains for Asian economies come not from direct exports to China, but from intra-regional trade expansion. Asian exports to China expand only moderately over the CNWTO base, since China’s WTO accession already confers market access to Asia. What remains for this scenario to achieve is the opening of trade elsewhere in the region, facilitating multilateral linkages to complete the market growth instigated by China. These can be expected to take the form mainly of intermediate links running between China’s direct partners and its upstream and downstream counterparts, running through the complex web of regional supply chains.<sup>6</sup>

**Table 5: Bilateral Trade Flows – ASEAN+3**  
(percent changes in 2020 with respect to CNWTO)

<u>Exporter</u>	<u>Importer</u>							<b>Total</b>
	<b>China</b>	<b>Japan</b>	<b>NIE</b>	<b>ASEAN</b>	<b>USA</b>	<b>EU</b>	<b>ROW</b>	
<b>China</b>	0	21	33	27	-8	-9	-8	3
<b>Japan</b>	2	0	39	40	-2	-2	-2	10
<b>NIE</b>	3	50	31	43	0	-1	-2	11
<b>ASEAN</b>	4	49	35	26	5	4	0	14
<b>USA</b>	5	-4	-11	-9	1	1	1	-1
<b>EU</b>	4	-2	-10	-11	1	0	0	0
<b>ROW</b>	5	-9	-10	-8	1	0	1	-1
<b>Total</b>	4	12	10	13	-1	0	-1	2

**Table 6: Bilateral Trade Flows – GTL**  
(percent changes in 2020 with respect to CNWTO)

<u>Exporter</u>	<u>Importer</u>							<b>Total</b>
	<b>China</b>	<b>Japan</b>	<b>NIE</b>	<b>ASEAN</b>	<b>USA</b>	<b>EU</b>	<b>ROW</b>	
<b>China</b>	0	-1	5	12	-4	4	25	6
<b>Japan</b>	4	0	19	23	5	15	29	13
<b>NIE</b>	7	28	16	37	10	17	36	18
<b>ASEAN</b>	8	25	18	21	16	23	26	19
<b>USA</b>	7	11	17	8	0	9	3	7
<b>EU</b>	13	14	32	17	15	-7	30	6
<b>ROW</b>	14	31	18	15	6	42	49	30
<b>Total</b>	9	15	18	18	7	7	27	14

Turning to country-specific results, Table 3.4 presents bilateral trade flow adjustments in response to global trade liberalization (GTL), expressed as percentage changes with respect to the CNWTO levels forecast for 2020. This is clearly a very expansionary scenario, indicating annual export growth over the base year of between of between 6 and 30 percent for the trading countries/regions selected, and with bilateral growth often much higher. Trade within the residual ROW group expands by 40% above CNWTO 2020 levels, for example.

While the general impression is one of trade growth, with the overwhelming majority of flows expanding, some bilateral ties will remain fairly constant or even contract. Net changes in bilateral trade are the result of shifting relative real exchange rates, which in turn result from differences in prior protection levels. Thus it is worth noting that, even in the case of multilateral tariff abolition, trade diversion still results because of asymmetries in prior protection patterns. Fortunately, the diversionary effects are relatively small in this global free trade scenario, and they are far outweighed by trade creation at each national level and, therefore, in the aggregate.

Now we compare the globalization results with those in the most inclusive Asian FTA, ASEAN+3 (Table 3.3). As we noted above, one of the most striking features of the ASEAN+3 results is the scope and magnitude of trade diversion. As one would expect with a regional agreement, trade expands within the East and Southeast Asian bloc, but at a significant expense to trade with and within the rest of the world. There is dramatic (if uneven) expansion of bilateral trade ties across East and Southeast Asia, and many individual bilateral flows expand much more than under globalization. Despite this, however, all the E&SE regions considered experience more total trade growth under GTL.

Thus it is reasonable to ask why an ASEAN+3 would be preferable to the first scenario. The most obvious answer has to do with uncertainty and risk aversion, two salient features of the multilateral negotiating environment that have sustained regionalism in this era of globalization. In particular, many countries view a smaller, more certain (and perhaps more expedient) payoff from regional liberalization as preferable to a more hypothetical future prospect of global free trade. The relative transparency and tractability of regional accords alone might make them preferable to global ones, but of course they need not even be perceived as mutually exclusive.<sup>7</sup> On the contrary, some advocates of regionalism, particularly of the North-South variety, argue that they offer important precedence for more comprehensive global negotiations, both in terms of negotiating standards and domestic adjustments arising from conformity.

Apart from many issues related to uncertainty, impetus for a regional agreement comes from two very practical considerations. First, for every East Asian economy considered, the ASEAN+3 FTA confers most of the total import and export growth they would experience under global free trade (the average is 73%). Thus a regional agreement, in many ways easier and more certain to negotiate, gives its members most of the total trade gain that globalization might offer. An essential caveat, however, is that the composition of this trade might be different, and much of this expansion seems to be bought at the expense of relations with partners outside the region. Thus we can see from these results that regionalism is substantially beneficial, but not how it constitutes a path to globalization or, ultimately, the two can be reconciled.

Patterns of adjustment outside the region are complex, with both trade creation and diversion. The removal of an extensive set of tariffs within one region creates a new set of (*de facto*) trade preferences within the rest of the world, and we see modest offsetting ex-East Asia trade growth in most cases. Occasionally, however, small reductions in bilateral trade outside the region are probably induced by trade contraction with respect to the East Asia (see e.g. ROW). Generally speaking, economies outside the East Asia stand by and watch regional trade expand in the region and contract with respect to them, with only negligible adjustments to their other bilateral ties. Thus much of the trade growth within the East Asia region is offset by diversion.

Returning to the sub-regional arrangements, it appears there would be little enthusiasm for an AFTAPC arrangement outside East Asia since, like the other East Asian pacts, it actually reduces ROW trade. The more detailed results in Table 3.1 also reveal unwelcome trade diversion with respect to East Asian neighbors, driving down total exports and imports for Japan, Korea, and Taiwan. For the world as a whole, trade grows by less than 10% of what would arise from GTL, and for Asia total trade growth is less than half what it would be under ASEAN+3. More seriously, the biggest partner to this arrangement would obtain less than a third of the ASEAN+3 gains and about a fifth of the GTL gains from joining this discriminatory arrangement. Worse, China would be forced into a neo-mercantilist position of trying to expand ROW exports (against contracting ROW exports from E&SE Asia) while substantially cutting ROW imports. In addition, Chinese import demand would be diverted away from important regional allies such as Japan and Korea. All in all, it is unclear why China would sustain such an arrangement against more inclusive ones, particularly given its assertive prior commitment to the WTO process.

Before moving on to examine unilateralism, we summarize results from two other FTA scenarios. The first of these represents an hypothesis about northern regionalism in the Asian Pacific, referred to as a Northeast Asian Free Trade Area (NEAFTA). We examined this prospect in Scenario 5, where China, Japan, and Korea remove all tariff barriers among themselves. Given the size of the economies being considered, both the net and compositional trade effects of this arrangement are more dramatic, as can be seen in Table 3.4. Still, total trade grows only by about half of what an ASEAN+3 agreement would yield, and only a fraction of GTL's trade gains are realized. Total intra-regional trade grows by almost the same amount as under GTL, but significant ROW trade diversion offsets these gains and the region only enjoys about half the export and import growth it would under GTL. The same reasoning generally holds for China's trade. Again, however, China is in the difficult position of trying to expand exports to ROW while reducing corresponding imports.

**Table 7: Bilateral Trade Flows – NEAFTA**  
(percent changes in 2020 with respect to CNWTO)

<u>Exporter</u>	<u>Importer</u>							<b>Total</b>
	<b>China</b>	<b>Japan</b>	<b>NIE</b>	<b>ASEAN</b>	<b>USA</b>	<b>EU</b>	<b>ROW</b>	
<b>China</b>	0	30	38	-7	-6	-6	-6	2
<b>Japan</b>	4	0	44	1	1	1	1	7
<b>NIE</b>	4	63	37	1	3	2	1	8
<b>ASEAN</b>	3	-8	-9	0	1	1	0	0
<b>USA</b>	3	-5	-11	0	0	1	1	0
<b>EU</b>	2	-3	-10	0	0	0	0	0
<b>ROW</b>	4	-9	-10	1	1	0	0	0
<b>Total</b>	4	8	8	-1	-1	0	0	1

As a final scenario, we examine the PAC3 arrangement including Japan, China, and the US, is a idea that more grounded in regional strategic thinking. Still, given the scale and diversity of the economies considered here, these results could be interesting. Given that this arrangement also draws in an extra-regional economy, and the world's largest, it might make an interesting comparison case with respect to GTL and the Asia-only scenarios. In reality, however, this scenario is less than compelling for the two of te three countries. Japan experiences most of the trade growth because of relatively high prior protection, but significantly less than it would under ASEAN+3. Otherwise, trade diversion outweighs most of the potential export gains for both China and the US. The US does appear to alter its trade patterns in important ways, but would presumably antagonize many trading partners in the process. While this might serve as an inducement to bring the latter into a larger regional or even global agreement, it is difficult to see the PAC3 FTA as a stable coalition in the region.

**Table 8: Bilateral Trade Flows – PAC3**  
(percent changes in 2020 with respect to CNWTO)

<u>Exporter</u>	<u>Importer</u>							<b>Total</b>
	<b>China</b>	<b>Japan</b>	<b>NIE</b>	<b>ASEAN</b>	<b>USA</b>	<b>EU</b>	<b>ROW</b>	
<b>China</b>	0	21	-8	-8	15	-8	-4	3
<b>Japan</b>	6	0	3	2	19	2	7	7
<b>NIE</b>	3	-5	0	-1	-5	0	-1	0
<b>ASEAN</b>	4	-9	1	1	-6	1	0	0
<b>USA</b>	5	28	1	1	0	1	0	3
<b>EU</b>	3	-3	0	0	-3	0	0	0
<b>ROW</b>	6	-5	2	1	-2	1	0	0
<b>Total</b>	4	7	0	-1	2	0	0	1

### 3.2. Incentive Compatibility

Since the seminal work of Viner on this subject over fifty years ago, there has been sustained debate about the incentive properties of regional arrangements, both with respect to larger universes of liberalization and, especially, in comparison to unilateral trade liberalization (UTL).<sup>8</sup> Using theoretical models with two or three goods and three countries, a number of authors have argued that regional arrangements are strategically dominated, for individual countries, by unilateral liberalization, and that incentives must therefore be devised to effect voluntary participation in FTA.<sup>9</sup> In this section, we

present results that challenge the generality of this conclusion, indicating that the East Asian FTA can dominate or be dominated by unilateralism, depending upon the economy under consideration. On the basis of this and other evidence presented in this paper, we recommend that the efficacy of trade agreements be decided empirically rather than with rules-of-thumb inferred from simplified theoretical models.<sup>10</sup>

To better understand the incentives facing of a prospective FTA member, we ran a series of policy simulations to estimate the effects of two kinds of unilateralism. In the first case, the country under consideration abolishes tariffs unilaterally and without negotiated or other concessions from trading partners. This scenario we refer to simply as UTL. In the second case, we look at an extreme (and admittedly artificial) reference for negotiated liberalization, where the country abolishes its own tariffs and each of its trading partners reciprocates bilaterally while maintaining their other external tariffs at baseline levels (called UTLR for UTL Reciprocated). We see these two cases as bracketing the potential outcomes of unilateral tariff abolition for the country in question. For present discussion, we disaggregated the larger regional economies in the data set but confined ourselves to a subset them for this detailed analysis.

#### 10.4. RMB APPRECIATION AND STRUCTURAL ADJUSTMENT

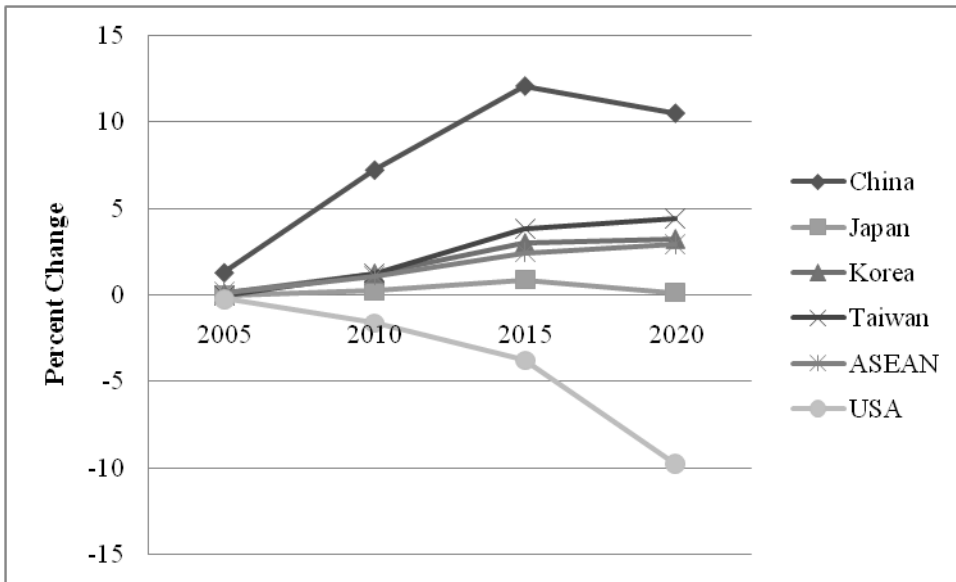
Most outside observers see China's burgeoning foreign exchange reserves as evidence of exchange rate management. In particular, it appears that the RMB is currently below an internationally weighted equilibrium rate that would bring reserves within a more conventional range as a percent of other macro aggregates. Within China, there may be strongly held opinions about exchange rate management. These include, among others, influential stakeholders with neo-mercantilist views regarding export competitiveness and import protection.<sup>12</sup> In light of this, and relatively intense differences on this subject with some trade prominent partners, it has been difficult for China to achieve rapid RMB adjustment, even in the presence of massive reserve accumulation. This situation contributes to complex redistributive forces within Chinese society, both across social groups and generations, yet there is relatively little independent empirical analysis to elucidate this or the implications of alternative policies.

##### *4.1. Scenarios for Real Exchange Rate Appreciation*

To examine the implications of greater RMB flexibility, we examine a scenario where the Pacific regional economies maintain constant ratios of net foreign saving to real GDP. The adjusting variable in this case is the domestic GDP price index, a proxy for the real exchange rate (RER).

Figure 4 (details in Table 8) depicts the aggregate results of this alternative macro closure rule, including significant RER for China. Because of sustained export surpluses, all the Asian economies experience RER appreciation in varying degrees. China is in the lead for analogous reasons, yet the total adjustment is less than might be expected because China is also experiencing bilateral deficits with respect to its neighbors. Appreciation with respect to the US RER, by contrast, is over 20 percent over the period under consideration, a figure generally in line with current public discussion.

**Figure 4: Real Exchange Rate Adjustments**



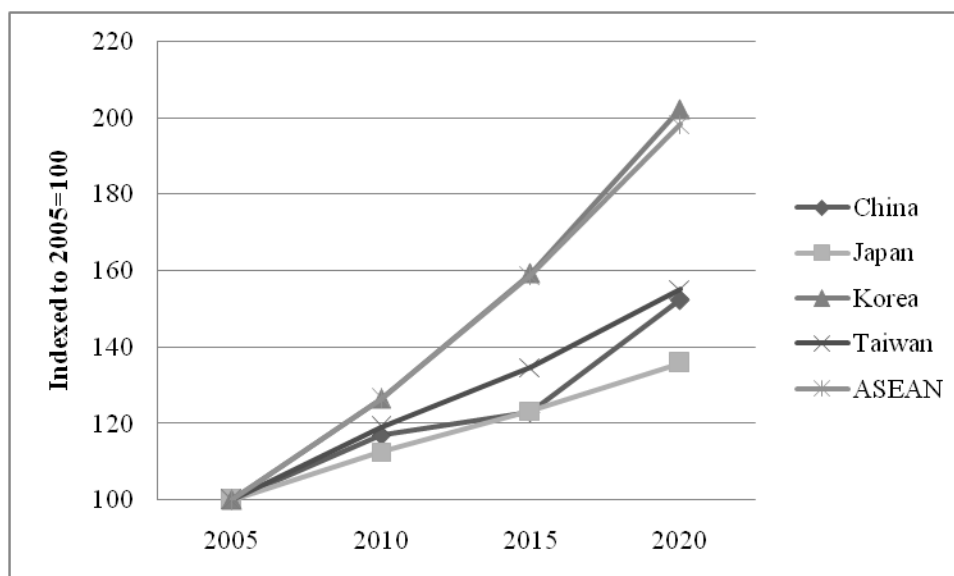
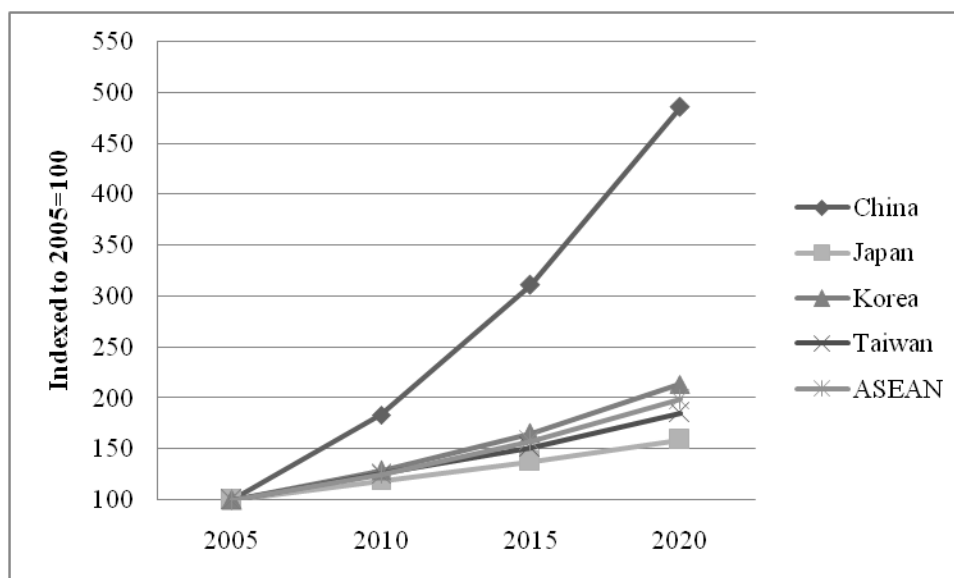
**Table 9: Real Exchange Rate Adjustments  
(percent change)**

	2005	2010	2015	2020
China	1.29	7.23	12.09	10.52
Japan	0	0.26	0.88	0.14
Korea	0.13	1.28	3.04	3.27
Taiwan	-0.01	1.28	3.85	4.43
ASEAN	0.15	1.1	2.45	2.93
USA	-0.21	-1.62	-3.78	-9.78

#### 4.2. Trade Adjustments

More detailed structural adjustments can improve understanding of the policy setting for exchange rate management. In the context of trade adjustment, a few salient effects emerge in the RER appreciation scenario. On the export side Chinese exports are adversely affected with respect to the WTO scenario, but still rise above steady growth in baseline values. Growth of exports is slower than is non-Japanese trading partners, largely because China's RER "opening" has sharply stimulated their export opportunities.

On the other side of regional trade flows, we see the converse effect of exchange rates, with China experiencing dramatic import expansion while its neighbors lag behind. All countries expand trade, but this important (multilateral) component of China's absorption nearly triples across the decade 2010-2020. To this extent, we are seeing China and the US exchanging places from the Asian regional perspective. Indeed, in light of these dynamics it is reasonable to ask if a Strong RMB Consensus might emerge in the wake of the long-held Strong Dollar Consensus. Certainly, trade reorientation on the part of China's neighbors give them two important growth advantages. Export expansion toward China offers important diversification away from traditional, North-South patterns of trade. It also represents a commitment to the world's most dynamic consumer market.

**Figure 5: Asian Export Trends****Figure 6: Asian Import Trends**

Beneath the veneer of macro shifts, dramatic patterns of trade diversion emerge, both between countries and within sectors. The simulation model we use has a significant amount of sector detail, but space constraints prevent detailed discussion of these in this chapter. Even so, a few salient features merit emphasis:

1. China's import dependence accelerates across a wide spectrum of products, but especially energy and food.
2. Asian exports to China will reflect traditional comparative advantages, with high income Asia exporting technology and education intensive products and capital goods, while the rest of Asia ships more diverse consumer goods, intermediates, and raw materials.
3. Other Asian exports accelerate despite RER appreciation (because China is experiencing significantly higher

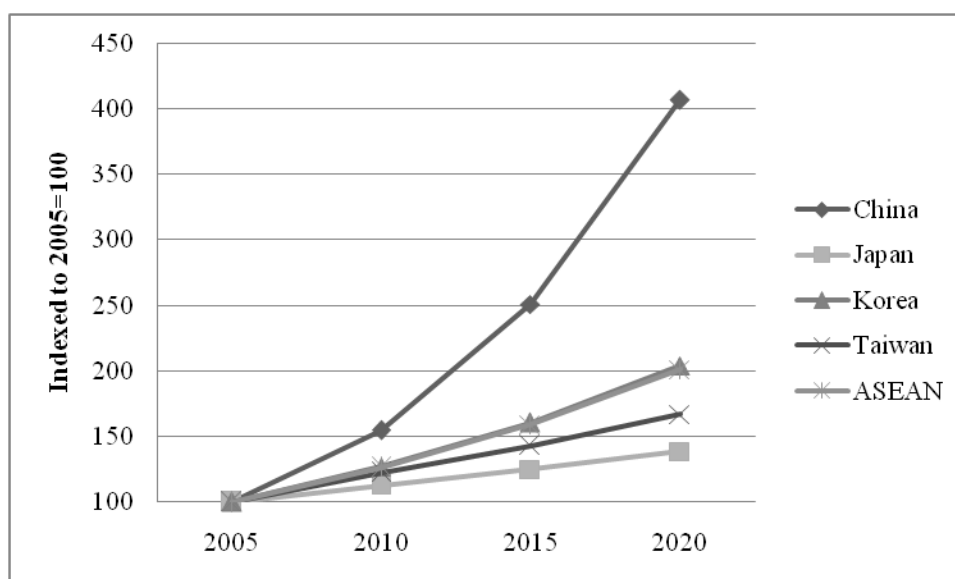
appreciation), increasing their domestic purchasing power sharply.

#### 4.3. Domestic Growth

Perhaps the most interesting result of the RER experiment is that, contrary to neo-mercantile or other protectionist arguments, China's aggregate real economic growth accelerates with currency appreciation. In particular, the attenuation of export growth is more than offset by domestic demand expansion, implying that historic exchange rate rigidity may have actually retarded domestic structural transition as well as aggregate growth.

Figure 7 shows how China's growth (well above the baseline trend) accelerates ahead of other regional economies. The primary driver of this is increased domestic purchasing power, in particular for essential components of the national balance sheet like raw materials, basic consumer goods, and a wide spectrum of intermediate and capital goods. The result is a dramatic shift from external to domestic demand as the engine of real economic growth. In this context, consumer final demand has higher tertiary and employment intensive content and thus longer multiplier chains across the domestic economy.

**Figure 7: Real GDP Trends**



#### 4.4. Capital Market Implications

Obviously, all these current account adjustments will be reflected in the capital account, especially at the bilateral level. Such shifts are notoriously difficult to generalize, yet a few observations are relevant. Under the assumed macroeconomic closure, foreign savings are constrained by real GDP and growth of the trade surplus is slowing. This means FDI is increasing in both absolute and relative terms, with two main effects. First, to the extent that foreign investors are more selective and able to add value to domestic assets, China will experience rising average quality of domestic investment and asset holding. This has important implications for productivity growth and competitive discipline, particularly as export discipline recedes. Secondly, RER appreciation will induce accelerated (and discounted) technology transfer. The cost of embodied foreign technology is falling, which will also contribute to accelerated substitution/adoption/modernization.

As the RER appreciates and FDI accelerates, an extensive sectoral rotation will be set in motion across the economy. Nontradable prices will rise relative to tradables, and domestic resources will be drawn toward these activities. This can be very beneficial to development of the internal market, but there are two potential pitfalls. The first is a variant of

classic Dutch disease, disengagement from external competitive discipline.

A second source of risk comes from labor intensity of emergent demand. The net employment characteristics of the sector rotation will be very important to long term employment levels and composition. If, for example property leads the growth of nontradable demand rather than services, it could be difficult to maintain employment rates or limit the growth of inequality.

#### 4.5. Labor Markets

We have assumed full employment across all scenarios. Clearly, however, compositional features of the employment question will determine how much economic potential is realized and how the benefits of higher growth rates are distributed across each economy. For the Asian region, detailed analysis of sectoral adjustments is needed to assess this question. For China, elastic supplies of unskilled workers are probably less of an issue than recruitment of skilled labor. In any case, observations from three perspectives on labor markets are relevant:

1. How high?
  - a. Skilled labor demand may be rising faster than supply. This trend is being accelerated by FDI, for which skilled labor appears to be a complement.
  - b. What is the real capacity of formal and informal education/training to deliver higher productivity?
2. How long?
  - a. Demographic transition and rising dependency. Aging and family policy may intensify the pressure on the working labor force.
  - b. The only way out is ever-increasing labor productivity
3. How wide?
  - a. Migratory pressure will continue as the opportunity cost of labor in the rural sector declines monotonically.
  - b. Actual migration must continue to be demand-driven.
  - c. Regional growth rates will increasingly determine aggregate growth (median vs. average growth)

#### 4.6. Regional Issues

On the current account, tempering China's export competitiveness and accelerating absorption looks good to regional neighbors. However, there will certainly be intensified regional competition for primary products and intermediate goods. This will squeeze regional balance sheets as a broad shift from export competition to competition for imports ensues. RER appreciation will help China in this purchasing power competition, but intensify the underlying regional (and global) challenges of resource sustainability. Under such conditions, a major trends that are already in evidence can be expected to persist and even intensify.

Firstly, there will an expansion of resource-seeking multilateral partnerships. China is already heavily engaged in this, including mining in South America, energy in Central Asia and Africa, etc. On the private sector side of the same trend, China and perhaps others will have strong incentives to pursue global vertical integration, investing to secure sources of upstream products and factor services. This will have the secondary effect of strengthening downstream market power and will probably accelerate downstream consolidation. Within more highly articulated international supply chains, there will be strong incentives to shift value by bargaining and technology diffusion across national boundaries. Who benefits from this process of supply chain integration nationally is today a matter of pure speculation. Looking to Japanese experience, with its extensive networks of overlapping foreign ownership, overseas facilities and equity listings, it is apparent that the benefits of "network" globalization are widely dispersed, serving the interests of parent company shareholders but many others as well.

## 10.5. CONCLUSIONS

China's remarkable growth experience has inspired both admiration and apprehension on the part of its neighbors. By establishing new standards for efficient international division of labor and using this to sustain unprecedented growth in the world's most populous economy, China has redefined the landscape of regional and global competition. This research uses an empirical simulation model to examine the implications of these events for the Asian region generally and for China in particular.

Among other findings, this research predicts that China will be the largest trading economy in East Asia by about 2010.

It will be the region's largest exporter by this time, but it's largest *importer* by 2008 at the latest. A decade ago, China was seen by its neighbors as a relentless threat to their export-driven prosperity. Now it appears that Chinese absorption will be a primary driver of sustained Asian regional growth. China's internal market, animated by both domestic demand and export requirements, will accelerate other East Asian export growth significantly and create historic opportunities for regional investors. Provided Asian economies do not isolate themselves from the process of Chinese trade liberalization, the net effect of China's growth can be hugely positive.

As part of this process, an East Asian Trade Triangle will emerge, where China develops a sustained trade deficit with East Asia and a surplus with Western OECD economies of nearly equal magnitude. The Trade Triangle enables China to "deliver globalization" to the region as a by-product of its own WTO accession. In this sense, East Asia can capture many of the benefits of full globalization just by forming an inclusive FTA like ASEAN+3. In negotiations with China, Asian countries should be mindful of these broader objectives.

Our results indicate that, in the wake of China's WTO accession, the best strategy for East Asia is to pursue globalism through more comprehensive regionalism. In other words, a substantial portion of China's OECD trade surplus will ultimately accrue to its regional neighbors. This has profound implications for patterns of both North-South and regional capital accumulation, an important area of future research and financial policy dialogue.

If regional balances over the next two decades were to be stabilized with Real Exchange Rate Appreciation, a complex set of adjustments would ensue. Most of these are consistent with prior intuition, but the magnitudes are important for policy reasons. For China, the overall RER would adjust only moderately, but bilateral adjustments could be larger (11 percent globally, against 20 percent vis-à-vis the US).

As a part of a sustained appreciation, China's trade would move in the expected direction. Total export growth would slow but continue, while imports would accelerate rapidly. Aggregate regional trade would not change in trend, but the composition would shift dramatically with export switching from Western OECD markets to China. As part of this geographic shift, a "strong RMB" could be expected to assume part of the burden of global demand sustainability long carried by a "strong Dollar." Indeed, it is an interesting open question whether how the policy environment and financial markets might adapt to this.

Perhaps most importantly, this research indicates that the Chinese economy would experience significant additional growth with RER appreciation, mainly due to accelerated growth of the internal economy. It is apparent from this research that undervaluation of the exchange rate is restricting China's access to essential resources, commodities, and intermediate goods, undermining enterprise expansion and household real incomes. Like most distortionary policies, managed exchange rate regimes entail welfare transfers between social groups (and generations). These results suggest there is also an aggregate (growth) opportunity cost to foreign exchange accumulation.

Among other findings, it appears that RER appreciation will induce significant sectoral rotation of both final demand and investment in China. The employment implications of this could be favorable, since nontradables are generally more labor intensive, but some categories like property will contribute less to employment growth and more to inequality trends.

## NOTES

<sup>1</sup> Thanks to colleagues at the Asian Development Bank Institute and seminar participants at Stanford and UC Berkeley for valuable comments.

<sup>2</sup> GTAP is a 66 country/region, 57 sector global database with detailed domestic industry and bilateral trade accounts. See Hertel et al (2002) for complete documentation.

<sup>3</sup> Throughout this paper, we use the term trade diversion to mean a redirection of export supply from one trade partner to another, and by trade creation we mean an increase in total exports. These concepts differ from those used in the classical theory of customs unions, where comparative costs of production are the defining characteristics.

<sup>4</sup> As the subtitles indicate, rows of this and following tables refer to export supply, while columns refer to import demand. This Input-Output layout is used here to capture bilateral trade flows, here in terms of percent change in the terminal year.

<sup>5</sup> Note for the sake of interpretation that these and other results that follow are defined as changes with respect to the CNWTO scenario (rather than the Baseline discussed earlier).

<sup>6</sup> The multilateral chains in such Asian supply networks often represent the majority of value creation for final goods in the region, whether produced for export or domestic consumption. For a more detailed discussion of such networks and empirical estimates of their significance, see Roland-Holst (2003a).

<sup>7</sup> See, e.g. World Bank (2000) for extensive discussion of the incentive properties of regional and multilateral

agreements.

<sup>8</sup> See e.g. Viner (1950), or a more modern statement in Kemp and Wan (1976).

<sup>9</sup> For recent writing in this vein, see e.g. de Melo, Panagariya, and Rodrik (1993), Hoekman and Leidy (1993), and Whalley (1996).

<sup>10</sup> Roland-Holst and van der Mensbrugge (2002) reached analogous conclusions in a Latin American context.

<sup>12</sup> Among the latter, for example, are powerful advocates of China's food self-sufficiency, who perceive RMB appreciation opening the country to an avalanche of farm products, including those from subsidized OECD producers.

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