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**Financial Liberalization, Trade, and Regional
Macro-Economic Stabilization in the Pacific Rim:
A General Equilibrium Analysis**

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Financial Liberalization, Trade, and Regional Macro-Economic Stabilization in the Pacific Rim: A General Equilibrium Analysis

I. Introduction

The last few months have seen a great deal of volatility in Pacific Rim financial and currency markets. Many observers expect that the next few months will now bring important shifts in regional and global trade flows as a results of these currency realignments and a slow down in growth rates among developing countries within the APEC (Asian Pacific Economic Cooperation) community.

The rapid globalized reaction to Southeast Asian financial volatility has led some voices within APEC to suggest that perhaps the root of the problem lies in policies that have stressed financial and trade liberalization. Other voices, even those traditional favoring trade and financial reform, have stated that that the recent turmoil in financial markets in Asia was making it much more difficult to politically make the case for further financial sector liberalization

Missing in this discussion is an analysis that clarifies the significant benefits that global financial sector liberalization could have on developing countries, both in terms of setting the basis for sustained investment and growth, but also for strenghtening the Pacific Rim's intra-regional trade and financial linkages. The paper seeks to thus further prompt governments in the region to seriously engage in WTO negotiations by clarifying the case for financial sector liberalization, even among segments of government and public opinion that in other circumstances might be more favorably disposed to these efforts. This paper builds on a previous UCLA NAID Center research report on "Financial Sector Liberalization in China and India: A General Equilibrium Analysis".

The key point made in this study is that financial sector liberalization is actually an important part of the solution towards a more sustained economic recovery in the Pacific Rim. Based on the large modeling efforts and data bases we have developed with the NAID Center APEC CGE model, the study substantiates the follow key points necessary for the general argument:

(1) Financial liberalization produces substantial benefits for a wide range of countries, but especially for developing countries. In this paper, we expand the analysis we did on China and India to include other countries which will be key in the WTO negotiations. The model provides results on a global as well as regional level, including results for countries in East Asia such as Indonesia, Philippines and South Korea, as well as other parts of the world, such as South America and Eastern Europe.

(2) Compared to trade liberalization, financial liberalization is potentially much more important in terms of overall growth, economy-wide structural productivity and improved income distribution. Having developed global models of trade liberalization for the World Bank and the OECD, we can say that based on our recent results from modeling financial sector liberalization, a comparison shows the significantly higher importance of financial liberalization for real GDP growth. The CGE framework is unique in that it can further allow for an analysis of the benefits of this GDP growth to specific sectors and income groups, as well as decompose the components of this growth in terms of increased investment and productivity impacts.

(3) Financial and trade liberalization together have the potential to dramatically improve the context for sustained macro-economic stability by enhancing overall growth, while maintaining a more stable share of the trade and capital account relative to GDP. These issues were an important part of the discussions at the World Bank-IMF Meetings in Hong Kong. This study is one of the first and only empirical statement on the positive impacts of financial sector liberalization on the relative magnitudes of key macro variables show important improvements.

Multi-country regional efforts to push forward on WTO oriented financial liberalization in conjunction with trade liberalization will substantially increase the share of intra-regional trade and thus improve the ability of countries in the region to coordinate regional macro-economic cooperation mechanisms. In line with our previous trade and financial liberalization work, the results of this study make the case that further liberalization within a global WTO framework will result in an increased range of policy options for regional cooperation and development, not less as is being suggested in many circles

In Section II, a computable general equilibrium (CGE) model designed for countries within APEC is presented which focuses on the real side impacts of trade and financial liberalization. Section III presents the results of our NAID-APEC CGE model, in which all changes have impacts that spread throughout the economy, three primary avenues of effect from financial liberalization to savings, investment and production decisions are introduced. Section IV presents our conclusions and some policy recommendations. A brief description of the workings of the base model is given in Appendix 1.

II. Basic Model Structure and Assumptions

This paper examines the case of some of the most important emerging countries in the world economy and the choices they will face in the context of post-GATT policy reforms and negotiations. The potential impacts of financial sector liberalization for these countries is of particular interest since reform of this sector is emerging as one of

the most important issues for negotiations within the new World Trade Organization (WTO) framework. It is also a case where the political economy of specific concerns within national financial sectors may be at odds with the broader economy wide implications and opportunities of financial sector reforms. This paper seeks to make available more comprehensive methodologies for evaluating the economy-wide impacts of both trade and financial liberalizations, which might be able to better inform the choices available to policy makers and other economic actors.

The Need for a General Equilibrium Approach

Missing in the earlier discussion is an analysis that clarifies the significant benefits that global financial sector liberalization could have on developing countries, both in terms of setting the basis for sustained investment and growth, but also for strengthening the Pacific Rim's intra-regional trade and financial linkages. General equilibrium analysis (GEA) is the best way to model and understand these linkages between sectors in a country and between countries in the region. In GEA, the impact of financial liberalization is seen in terms of connections throughout the economy on the cost of financial services used by all producers of goods and services. Reducing trade barriers and eliminating subsidized lending is thus seen both in terms of the reduction in production in subsidized sectors and the increase in overall efficiency, production in previously disprotected sectors, and possibly the reduction in taxes which had been needed to finance the subsidy. The net effect of higher productivity in other sectors will undoubtedly offset the reduction in profits of existing financial institution and previously subsidized sectors.

A computable general equilibrium (CGE) model, like the one used here, can actually be used to estimate such overall impacts. Starting from a mapping of the flow of goods and services (including trade flows), factors of production, and payments in an economy (called a social accounting matrix, or SAM), the impact of alternative policies on equilibrium prices and on elements of the SAM can be traced. The CGE model ensures that the estimated outcomes are all consistent with each other. In other words, policies that favor one sector increase demand for intermediate goods (including imports) used in the sector and generate additional demand for all factors of production used intensively in that sector's production, bidding up their cost. The resulting increase in output is either consumed domestically or exported, depending on demand, which in turn depends on relative incomes and prices. A brief description of the workings of the base model is given in Appendix 1.

Trade Liberalization

Computable general equilibrium models have been used to analyze a wide variety of economic issues and there is a long tradition and literature in the use of CGE models to estimate the economic impacts of trade liberalization at the national, regional and global level (See Dervis, de Melo, and Robinson (1982); and Devarajan, Lewis, and Robinson (1993)). In the context of regional integration, particularly dealing with the North American Free Trade Area, CGE models have also been widely used, with the work reviewed by Brown (1992) and Hinojosa-Ojeda and Robinson (1992). The CGE model

we use here has been built up over many years of analyzing a variety of regional and global trading arrangements

The model and scenarios presented in this paper are designed to evaluate the impact of alternative paths of trade and financial liberalization among countries in the APEC region. The scenario results display the static and dynamic general equilibrium effects of changing the structure of trade protection in the region. By systematically altering only the trade policy variables of the countries in the region, we can evaluate the effects of different patterns of protection on the structure of production and income distribution for each country or sub-region in APEC, the regional structure of trade, the pattern of trade with the rest of the world.

For each alternative scenario, the model generates results concerning the impact on real GDP, output, trade, value added, the real wages paid to each labor category, as well as the rental rate of capital and land. Trade diversion and trade creation impacts will be evaluated through data on total, intra-regional, and extra-regional trade. For each alternative scenario we can therefore evaluate the impacts of a different path of integration on the whole regional pattern of trade and financial interdependence.

These scenarios should be seen as model experiments rather than predictions of the actual pattern of growth that may accompany each of these alternative paths of integration. The actual growth pattern will be the result of many more factors than just trade policy, especially macro-economic and incomes policies. The CGE modeling framework allows for controlled experimentation to determine the size of the impact that could be strictly attributed to changes in a select set of policy variables, specifically tariff and non-tariff barriers in this paper. Both the comparative statics and dynamic experiments are meant to describe, therefore, the impact of different patterns of trade liberalization in the medium to long run. Dynamics here does not imply the actual path of the transition, but rather the net cumulative effect over time of positive productivity externalities that could potentially result from regional integration.

The NAID-APEC CGE model, like other multi-country CGE models, has a medium to long-run focus. We assume, for example, that factor markets adjust. While sectoral employment changes, aggregate employment is assumed to remain unchanged (except for the migration flows discussed above). Later in this paper, we report the results of comparative static experiments in which we shock the model by changing some exogenous variables and then compute the changed equilibrium solution. We do not explicitly consider how long it might take the economy to reach the new equilibrium. The model's time horizon has to be viewed as long enough for full adjustment to occur, given the shock. While useful to understand the pushes and pulls the two economies will face under the creation of an FTA, this approach has obvious shortcomings. In particular, it does not consider the costs of adjustment, such as transitional unemployment, that might occur while moving to the final equilibrium.

Table 1 presents the alternative scenarios studied. The results of each scenario are presented relative to a base calibrated with the pre-liberalization structure of trade and financial protection throughout the region. For each scenario, the Aa≡ version represents the comparative statics effects while the Ab≡ version additionally measures the potential dynamics effects of the same scenario.

The General gains from trade liberalization fall into four main categories: (a) the comparative “statics” effects which results from one-time enhanced efficiency of resource allocation through increased specialization according to comparative advantage; and (b) the potential “dynamics” effects that positive externalities to the process of trade liberalization and integration may have on each country and on the region as a whole.

In modeling the “dynamics” effects of trade liberalization, we focus on mechanisms which are empirically important in export-led development, including the effects on aggregate and sectoral productivity of increased exports and economies of scale and well as productivity-enhancing importation of new technologies via capital goods. “Dynamic” effects of trade liberalizations are modeled through three mechanisms: (1) increased productivity from exploiting economies of scale in production for the larger market; (2) increased efficiency in production and marketing due to competition in domestic markets; and (d) technological advances affecting production technologies, factor usage, and linked to foreign capital goods inflows.

Additional gains relate to regional trade agreements, of which only a few will be further discussed below.¹ Regional integration can create a positive feedback loop. Trade preferences to neighboring economies can increase economic activity, incomes, trade, and economic growth in a mutually reinforcing way, given strong ties among the countries. These factors could certainly work for APEC countries, which already have strong trade and financial linkages among member countries.

Regional integration may also lead to policy coordination or even mutual support that benefits all member countries. US balance of payments support for Mexico in 1995 was prompter and more extensive due to the NAFTA link, and APEC countries have contributed generously to support neighboring countries in distress, yet effective coordination of policies in the future to obviate the need for such bail-outs would be even more valuable.

In Scenario 1a we model at the effect of intra-APEC trade liberalization. In this scenario, all modeled APEC countries cut their tariffs with APEC partner countries, forming an APEC free trade agreement. In Scenario 1b, “dynamic” positive externality effects of scenario 1a are modeled due to: (1) increased economies of scale; (2) increased efficiency due to competition in domestic markets; and (3) technological advances linked to foreign capital goods inflows.

Scenario 2 models the effects of unilateral APEC trade liberalization. In this

¹ For more details, see McCleery 1998.

scenario, all modeled APEC countries cut their tariffs unilaterally to all partner countries. In this way, “open regionalism” and the Bogor declaration goals are both met. In Scenario 2b, the same “dynamic” positive externalities are measured as scenario 1, only here they are applied to the impact of unilateral APEC liberalization.

Finally in Scenario 3, we model the effect of multilateral APEC trade liberalization with the WTO. In Scenario 3a, we measure the static effects when we assume that, in response to the reduction of all tariffs in APEC countries or by negotiated agreement, the rest of the WTO also cuts its tariffs to all partner countries. In Scenario 3b, positive externality effects of scenario 3a are modeled based on the same dynamics due to: (1) economies of scale; (2) increased efficiency due to competition in domestic markets; and (3) technological advances linked to foreign capital goods inflows.

Financial Liberalization

While the potential benefits of trade liberalization are widely discussed and much better understood, the comparative impact of financial sector liberalization is much less a focus of attention. Financial liberalization, as part of a broader program of economic reforms, may contribute to economic growth in three keyways, which we explicitly model within our NAID-APEC CGE model.

First, interest rate decontrol leads to higher real returns for savers and, in most cases, an increase in resources in the financial system which can be loaned for investment projects. To the extent that pre-liberalization savings rates were voluntary, we would expect national rates of savings and investment to rise, boosting economic growth in the medium to long term.

Secondly financial liberalization means an end to the practice of allocating cheap credit to preferred sectors. This will improve the allocation of resources in the economy, as capital is allocated to sectors in which it is most profitable. Over a transition period of 5 to 10 years, depending on the extent of the pre-liberalization distortions, economic growth will be higher. A third benefit of financial liberalization is greater access to international capital. This access to international markets can be a double-edged sword, since macroeconomic mismanagement may now lead to capital outflows in search of less risky investments. But as long as inflation is low and predictable, openness to participation by foreign banks, direct and portfolio investment, and foreign currency loans to national corporations should increase the supply of foreign savings and thus the level of investment and growth rate of real output.

As in the trade liberalization scenarios, two types of results are presented. The “a” batch are “comparative statics,” meaning the expected changes in key variables like aggregate and sectoral production, exchange rates, and trade balances in the base year if financial liberalization had been instituted well before the base year, and the economy had completely adjusted. These changes should be read as once and for all changes in the levels of these variables that could result from financial liberalization. We also present a

batch of “b” type scenarios of “dynamics effects of financial liberalization on long term growth rates, based on differences in savings and investment levels in the base year, indicating how financial liberalization may change the level and quality of investment over time.

In the ‘dynamic’ scenarios (4b, 5b, and 6b), the higher investment rates generated from the “static” scenarios would result in higher real income over time, as investment leads to more rapid growth. In these scenarios we present counterfactual GDP levels as if the liberalization efforts had taken place a decade earlier and the economy in question had grown faster due to the higher investment rates. Two sets of estimates are presented. The first are computed using the incremental capital/output ratio (ICOR) methodology. These should be interpreted as upper bounds on the possible impact. The second set of estimates are derived from a simple Cobb-Douglas macroeconomic production function, and can be interpreted as a lower bound. A more complex production function, perhaps taking into account linkages between investment and technological progress (Kim and Lau 1994), would yield estimates in between these extremes.

III. The NAID-APEC CGE Model Scenario Results

Tables 2 and 3 present the results of the NAID-APEC CGE Model running six scenarios, three for trade liberalization and three for financial liberalization. Table 2 presents the “comparative statics” results and Table 3 presents the “dynamic” results.

NAID-APEC CGE Model Results of Trade Liberalization

The results of the NAID-APEC CGE model for trade liberalization scenarios are rather straightforward and consistent with other CGE modeling results of regional trade liberalization.

Scenarios 1, 2 and 3 present results for alternative paths of trade liberalization from which APEC countries can select. The most significant findings of these results is that Scenario 1, where we model at the effect of intra-APEC trade liberalization, is the least advantageous alternative scenario for all APEC countries (Table 2). In this scenario, where all modeled APEC countries cut their tariffs with APEC partner countries, forming an APEC free trade agreement. Even in Scenario 1b, where the “dynamic” positive externality effects of scenario 1a are modeled, all countries (with a minor difference for the Philippines) would also be better off moving beyond a mere APEC specific agreement.

Most countries would comparatively prefer Scenario 2 which models the effects of unilateral APEC trade liberalization. In this scenario, all modeled APEC countries cut their tariffs unilaterally to all partner countries. In this way, “open regionalism” and the Bogor declaration goals are both met. In Scenario 2b, the same “dynamic” positive externalities are measured as scenario 1, only here they are applied to the impact of

unilateral APEC liberalization.

Yet it is Scenario 3, where we model the effect of multilateral APEC trade liberalization with the WTO, which is by far the alternative scenario which maximized every APEC countries' GDP. In Scenario 3a, we measure the static effects when we assume that, in response to the reduction of all tariffs in APEC countries or by negotiated agreement, the rest of the WTO also cuts its tariffs to all partner countries. In Scenario 3b, positive externality effects of scenario 3a are modeled based on the same dynamics due to: (1) economies of scale; (2) increased efficiency due to competition in domestic markets; and (3) technological advances linked to foreign capital goods inflows.

Strong as these trade liberalization impacts may be in once-and-for-all increases in exports (including 18% for the Philippines and 12% for Thailand), as well as significant once-off increases in GDP (ranging from 3.25% for Thailand, to 2.2% for China/Hong Kong and to %1.1 for the Philippines), these impacts are still significantly less than the positive long run "dynamic" effects of financial liberalization.

NAID-APEC CGE Model Results of Financial Liberalization

The NAID-APEC CGE model also allows for an analysis of the real side impacts of financial liberalization was designed for a variety of countries in the Pacific Rim and around the world. Within the broad CGE context, in which all changes have impacts that spread throughout the economy, three primary avenues of effect from financial liberalization to savings, investment and production decisions were introduced.

The first effect, highlighted in scenario 4, runs from the real return received by savers to the domestic savings rate and domestic investment, which is set equal to the sum of domestic and foreign savings. Following the logic of the literature on financial liberalization, relaxation of interest rate controls allows the deposit rate of interest to rise. The higher rate of interest raises the real return to savings, thus encouraging savings and increasing financial intermediation in the economy. If the financial liberalization also makes financial institutions more competitive, as has occurred elsewhere, the spread between the loan rate and deposit rate of interest is reduced.² While the direction of the effect is clear, there is considerable uncertainty, even in developing countries for which detailed and reliable historical data is available, about the magnitude of the interest elasticity of savings. We have assumed the following functional form: $S = s * Y_d + S_0 * (r_b / r_{b0})^e$ where S is the total value of savings, s is the marginal propensity to save out of disposable income, Y_d is disposable income, S_0 is the initial level of savings, r_b is the current borrowing rate of interest, r_{b0} the initial borrowing rate, and e works roughly like an elasticity. In the base simulation, we use an elasticity of 0.2. This estimate represents the mid-point of the empirical literature, which presents

² In theory, the loan rate may rise as well, lowering the demand for loans and thus the level of investment. In particular, calls for aggregate demand reduction as part of a stabilization effort tied to IMF loans may require temporary increases in interest rates. For simplicity, we assume a fixed lending rate and a reduction in the spread due to greater domestic and foreign competition after liberalization. This assumption is consistent with the intent of this exercise to estimate long-term, equilibrium effects.

estimate ranging all the way from 0 to 0.4. Note that for small changes in the borrowing rate, a one percent increase in the interest rate would generate about a 0.2 percent increase in savings, but for larger changes in the interest rate, the impact diminishes.³ Another reason for assuming a substantial interest elasticity of savings is because it serves as a proxy for increases in savings stemming from growth in the number of financial institutions, markets, and instruments that accompany financial liberalization, and growth in the supply of investable funds to the private sector from a given amount of savings as reserve requirements and other forms of forced lending to the government are eased. The correct way to interpret this parameter is as a measure of the combined impact on savings and investment of both interest rate decontrol and all other aspects of financial liberalization. As such, the estimate is likely to be rather conservative, judging from other financial liberalization experiences.⁴ Scenario 4 simulates a reduction in the spread such that the deposit rate of interest rises by 25 percent, from a real return of 6 percent to 7.5 percent. As we have discussed, real deposit rates are actually about 1 percent in real terms. The spread between borrowing and lending rates is thus reduced by 1.5 percentage points. Again, this change is a conservative estimate in light of the experience with financial liberalization in Korea, and elsewhere.⁵

Scenario 5 models the impact of financial liberalization on the allocation of investment across sectors of the economy. As we have seen, an important part of economic policy in Asia has been to channel credit to specific industries, and deny access to the formal credit market to other sectors. In the absence of reliable data on rates of return to capital by sector, we were forced to derive our own estimates as follows. We first categorized the 10 sectors in the model by the extent of their access to subsidized domestic credit and access to foreign credit markets. We then simulated how such credit flows would distort the rates of return to capital across sectors. For instance, if unlimited credit were available to the state steel industry at a real cost of funds of 2 percent, additional investments would be undertaken until the return to capital in the industry fell to 2 percent. Of course, subsidized capital was not available in unlimited quantities to any sector, but certain sectors clearly had preferential access to large loans, while others could finance capital accumulation only through retained earnings and the high cost informal sector. The relative rates of return to capital in these 10 sectors used in the base period for the models are presented in Appendix 2. Scenario 5 consists of reallocating capital, as more effective financial intermediation channels funds toward higher returns, such that the rate of return to capital across sectors of the economies is equalized. In actuality, even

³ A doubling of the deposit interest rate would yield an increase in the level of savings of about 11 percent, rather than 20 percent.

⁴ An important caveat must be introduced here. Several authors (Bordes 1993 and Dernberger and Eckhuas 1988, for instance) call much of China's high rates of pre-reform savings "forced savings." If correct, one would expect an offsetting effect working to reduce savings as liberalization eliminates the elements of forced savings, as trade liberalization expands consumer choices, and as financial intermediation is extended to consumer lending. Thus we present level and growth estimates with and without the positive savings effect due to financial liberalization.

⁵ Kwack and Lee (1996) write "According to the *Bank Management Statistics* published by the Bank of Korea, the lending-deposit interest margin for the city banks in Seoul was 6.7 percentage points in 1980, 4.3 percentage points in 1985, and 3.05 percentage points from 1987 to 1992. It was reduced to 1.5 percent in 1993."

in advanced industrial economies some differences in rates of return to capital persist across sectors, reflecting the fact that the *expected* rate of return, subject to risk, is what is really equalized across investment alternatives.⁶

Distortions are introduced of a magnitude that reflects the severity of distortions in the allocation of capital in these countries as of 1992, from the most severe (China) to the least (Japan), with no distortions assumed in the US and EU. Moderate distortions were introduced for Indonesia, Thailand, and the Philippines, with modest distortions in Malaysia/Singapore and South Korea/Taiwan. Scenario 6 considers the impact of financial liberalization on international capital flows. Integrating their financial markets more fully with international markets, including allowing greater participation by foreign banks and non-bank financial institutions, will clearly generate an additional inflow of foreign capital for these relatively capital scarce, high growth economies. However, economic theory gives us little guidance on the expected magnitude of this effect. Instead, we merely present a range of alternatives, centered around estimates of \$2 billion and \$15 billion for individual countries. As in the trade liberalization scenarios, two types of results are presented. The “a” batch are “comparative statics,” meaning the expected changes in key variables like aggregate and sectoral production, exchange rates, and trade balances in the base year if financial liberalization had been instituted well before the base year, and the economy had completely adjusted. These changes should be read as once and for all changes in the levels of these variables that could result from financial liberalization. We also present a batch of “b” type scenarios of “dynamics effects of financial liberalization on long term growth rates, based on differences in savings and investment levels in the base year, indicating how financial liberalization may change the level and quality of investment over time. *Comparative Statics Modeling Results of Financial Liberalization (Scenarios 4a, 5a, and 6a)*

The results of scenario 4a are quite different for the developing Asian countries and the others. Focusing on the developing APEC group, the primary impact of this scenario is to encourage a switching of expenditure from consumption to investment, in response to higher real interest rates. real GDP is essentially unchanged. The increase in real investment ranges from about 3 percent in China, Thailand and the NICs to a low of 1.6 percent in Indonesia. The secondary effect is to boost exports from the region, by up to 1.2 percent (Thailand). This secondary effect is transmitted to the developed countries in the form of a small rise in imports, up to 0.2 percent (Japan).

Scenario 5a yields GDP gains for developing Asia ranging from small (in the range of 0.3 to 0.4 percent for most countries) to moderate (nearly 3 percent for China). Most components of GDP rise for most countries, with significant investment growth taking place in Indonesia, the Philippines, and Malaysia/Singapore. The trade pattern

⁶ One would expect to observe consistently higher average rates of return in, say, oil exploration and internet start-ups than in retail trade, while sound investments in agriculture or real estate may yield higher or lower than economy-wide average returns due to good or bad years for key variables that are difficult to forecast.

shows less consistency, with a sharp export rise in China, an export drop in the Philippines, and small changes elsewhere. The impact of the most modest adjustment, in Japan, confers an increase in GDP of nearly 0.2 percent, with almost a 1 percent increase in investment. International linkages transmit these shocks to the US and EU economies, where GDP is again largely unaffected, but imports again rise, by about one-third of a percent in each.

Scenario 6a involves a significant reallocation of global investment to developing Asia. Investment levels shoot up throughout the region, about 15 percent on average. Not all of the foreign capital inflow goes into new investment; exports fall and imports rise in all countries. The export declines are quite substantial, ranging from 19 percent in Indonesia and 12 percent in the Philippines to 4-5 percent in the NICs, China, and Malaysia/Singapore. Import growth is generally of similar magnitude to the export declines, ranging from nearly 24 percent in Indonesia to less than 3 percent in Malaysia/Singapore. Naturally these large trade effects have substantial impacts on the developing countries. The rises in US and EU exports of 4.3 and 1.4 percent more than offset the declines in scenarios 1 and 2; likewise the declines in imports of 5 and 2 percent, respectively, dwarf the combined increases in scenarios 1 and 2. The investment and mild GDP declines in the two regions are somewhat misleading, since they don't reflect the increase in foreign investment and the repatriation of profits from those investments that will occur over time.

***“Dynamic” Modeling Results of Financial Liberalization
(Scenarios 4b, 5b, and 6b)***

Scenarios 4b, 5b, and 6b result in a level of GDP that is about the same as that of the base for most countries, in a comparative static sense. Yet the higher investment rates in these two scenarios would result in higher real income over time, as investment leads to more rapid growth. In this section we present counterfactual GDP levels as if the liberalization efforts had taken place a decade earlier and the economy in question had grown faster due to the higher investment rates. These estimates, in percent and dollar values, are presented in Tables 7 and 8. Note that two sets of estimates are presented. The first are computed using the incremental capital/output ratio (ICOR) methodology. These should be interpreted as upper bounds on the possible impact. The second set of estimates are derived from a simple Cobb-Douglas macroeconomic production function, and can be interpreted as a lower bound. A more complex production function, perhaps taking into account linkages between investment and technological progress (Kim and Lau 1994), would yield estimates in between these extremes.

The dynamic results are presented country by country. Indonesia sees a 1.56 percent increase in investment from scenario 1, a 1.29 percent increase in scenario 2, and a 30.5 percent increase in scenario 3. Using the ICOR methodology, these increases in investment would raise the growth rate by 0.19, 0.16, and 3.81 percentage points, respectively, for a total growth boost of a whopping 4.16 percentage points. In other words, if Indonesia's growth rate would have been 4 percent, with no financial

liberalization, the growth rate after full financial liberalization would be over 8 percent! The Cobb-Douglas estimates, though much smaller, are still quite significant. In each case, the attendant growth would be just under half that predicted by ICOR, for a total increase in the growth rate of 2 percentage points. Certainly capital inflow which boost investment by 30 percent would not be sustained for any significant period of time, but even for just one year, the addition to GDP would be large, dwarfing the static gains of 0.64 percent in the three scenarios combined.

Thailand is the second largest gainer from financial liberalization in a static sense, with a total gain of 1.72 percent of GDP. Investment increases of 3, 0.04, and 15.74 percent in the three scenarios would generate additional growth of 0.3, 0.04, and 1.7 percentage points, or just over 2 percent per year combined, using the ICOR method. The conservative method yields numbers just over half those generated using ICOR, for a total growth rate increase of nearly 1.1 percentage points.

China, with its initial large distortions, gains the most from financial liberalization. The static gains of nearly 3 percent of GDP, are clearly the largest. On the other hand, its large size means that even a greater capital inflow in dollar terms results in a smaller percentage boost to investment. The growth effect is also substantial, 0.6 from scenario 1, -0.2 from scenario 2, and 1.6 from scenario 3, for a growth rate that is 2 percentage points higher, using the ICOR method. The Cobb-Douglas method yields numbers just one third as large, for a growth rate almost two-thirds of a percentage point higher.

In addition to the static gains of 0.7 percent of GDP, the Philippines also will grow faster. Its growth rate is estimated to be from 0.8 to 2.4 percentage points higher, with the inflow of foreign capital in scenario 3 responsible for three-fourths of that growth increase.

Korea and Taiwan could hike their growth rates by about 1.5 percentage points, using the ICOR estimate, 80 percent of which is attributable to scenario 3. The alternative estimate yields a growth rate increase of 0.8 percentage points. The static GDP gains sum to two-thirds of a percent of their 1992 GDP.

We predict that Malaysia and Singapore also will grow faster, despite their lack of static gains. Investment increases in all three scenarios imply a growth rate 3.3 percentage points higher, using ICOR, or 1.3 percentage points higher using the more conservative Cobb-Douglas method. In both cases, about three-fourths of the gains come from the third scenario.

Thus we see that the growth effect is likely to far outweigh the static impact of financial liberalization. But the interpretation of the static and dynamic estimates of GDP growth are not strictly comparable. The static GDP increase represents an efficiency gain to society, making people better off. The dynamic growth is the result of a change in incentives making savings more attractive relative to consumption, thus only a fraction of the increased growth can be called a net gain to society. Particularly in the third scenario,

repayments on foreign loans (or more broadly speaking, repatriation of profits on investments) must be subtracted out and other adjustments made before the remainder can be called a benefit to society.

IV. Conclusions

The key point made in this study is that financial sector liberalization is actually an important part of the solution towards a more sustained economic recovery in the Pacific Rim. Based on the large modeling efforts and data bases we have developed with the NAID Center APEC CGE model, the study substantiates the follow key points necessary for the general argument:

(1) Financial liberalization produces substantial benefits for a wide range of countries, but especially for developing countries. In this paper, we expand the analysis we did on China and India to include other countries which will be key in the WTO negotiations. The model provides results on a global as well as regional level, including results for countries in East Asia such as Indonesia, Philippines and South Korea, as well as other parts of the world, such as South America and Eastern Europe.

(2) Compared to trade liberalization, financial liberalization is potentially much more important in terms of overall growth, economy-wide structural productivity and improved income distribution. Having developed global models of trade liberalization for the World Bank and the OECD, we can say that based our recent results from modeling financial sector liberalization, a comparison shows the significantly higher importance of financial liberalization for real GDP growth. The CGE framework is unique in that it can further allow for an analysis of the benefits of this GDP growth to specific sectors and income groups, as well as decompose the components of this growth in terms of increased investment and productivity impacts.

Strong as the trade liberalization impacts may be in once-and-for-all increases in exports (including 18% for the Philippines and 12% for Thailand), as well as significant once-off increases in GDP (ranging from 3.25% for Thailand, to 2.2% for China/Hong Kong and to %1.1 for the Philippines), these impacts are still significantly less than the positive long run “dynamic” effects of financial liberalization. The positive “dynamic” effects of financial liberalization range from additional annual rates of growth for a country like the Indonesia of 2 to 4 percent of GDP to a still impressive 2 to 0.6 percent increase in annual growth rates for China and Hong Kong.

(3) Financial and trade liberalization together have the potential to dramatically improve the context for sustained macro-economic stability by enhancing overall growth, while maintaining a more stable share of the trade and capital account relative to GDP. These issues were an important part of the discussions at the World Bank-IMF Meetings in Hong Kong. This study is one of the first and only empirical statement on the positive

impacts of financial sector liberalization on the relative magnitudes of key macro variables show important improvements.

Multi-country regional efforts to push forward on WTO oriented financial liberalization in conjunction with trade liberalization will substantially increase the share of intra-regional trade and thus improve the ability of countries in the region to coordinate regional macro-economic cooperation mechanisms. In line with our previous trade and financial liberalization work, the results of this study make the case that further liberalization within a global WTO framework will result in an increased range of policy options for regional cooperation and development, not less as is being suggested in many circles

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Appendix