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Can East Asia be an Engine of Growth for the World Economy?

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Can East Asia be an Engine of Growth for the World Economy?

Abstract: The U.S. functioned as an engine of growth until the financial crisis. Now, U.S. imports have plummeted. This paper considers whether East Asia can be an engine of growth. Using data on consumption imports from 27 countries, the results indicate that income increases in East Asian countries would cause large increases in imports. The evidence also implies that an RMB appreciation would raise China's imports. Thus if domestic markets rather than exports could drive job creation in Asia, not only would Asian consumers enjoy the fruits of their labor but the world economy would have a new locomotive to pull it out of recession.

1. Introduction

The U.S. current account deficit averaged almost 700 billion dollars (more than 5 percent of U.S. GDP) between 2003 and 2008. About 45 percent of the U.S. deficit was with East Asian countries. The U.S. has thus functioned as an engine of growth for Asia and the rest of the world. Since America is the epicenter of the financial crisis, however, private domestic absorption in the U.S. is falling rapidly. Can East Asia take its place as an engine of demand growth?

Previous studies have investigated how an appreciation of East Asian currencies or an increase in East Asian income would affect imports into the region. For imports into China from the world, Cheung, Chinn, and Fujii (2009), Marquez and Schindler (2007), and Garcia-Herrero and Koivu (2007) find that in many specifications an appreciation of the RMB is associated with a decrease in imports (i.e., the coefficient is wrong-signed). Cheung *et al.* report that Chinese imports respond strongly to increases in income, but Garcia-Herrero and Koivu find only a weak relationship between Chinese imports and income. For imports into 10 East Asian countries, Kamada and Takagawa

(2005) report that in most cases the coefficient on the real exchange rate is either of the wrong sign or of the correct sign but not statistically significant. They also find that increases in domestic demand in East Asian countries are associated with increases in imports. For imports into China from the U.S., Cheung *et al.* (2009) and Thorbecke (2006) report that an appreciation of the RMB and of Chinese income would increase imports. For imports into Japan from the U.S., Thorbecke (2008a) does not find evidence of a robust relationship between imports, the yen/dollar exchange rate, and Japanese income.

Kamada and Takagawa (2005) discuss the difficulties of estimating exchange rate elasticities for East Asian countries. Many of the imports into these countries are parts and components or capital goods that are used to assemble goods for re-export to the rest of the world. An exchange rate appreciation that reduces exports will also reduce the demand for imported goods that are used to produce exports. This can cause the estimated exchange rate coefficient in import equations to have the wrong sign.

To correct for this bias, this paper examines the imports of final consumption goods into East Asian countries. These goods are intended primarily for the domestic market rather than for re-export. Thus an appreciation of the currency that raises consumers' purchasing power should increase the demand for consumption imports.

The results indicate that an increase in income would cause a large increase in imports, especially into the more developed economies of the region (Japan, South Korea, and Taiwan). In addition, an appreciation of the exchange rates would cause a large increase of consumption imports into China.

Thus, if domestic markets rather than exports can drive job creation in East Asia, the region will in turn stimulate growth in the rest of the world. In addition, if China allows its currency to appreciate, Chinese consumers would be able to purchase substantially more consumer goods while simultaneously helping to rebalance the Chinese economy.

The next section presents the data and methodology. Section 3 contains the results. Section 4 concludes.

2. Data and Methodology

Import functions in the Bickerdike-Robinson-Metzler imperfect substitutes framework can be represented as:

$$im_t = \beta_0 + \beta_1 rer_t + \beta_2 rgdp_t \qquad (1)$$

where im_t represents real imports, rer_t represents the real exchange rate, $rgdp_t$ represents domestic real income, and all variables are measured in natural logs.

Exchange rate changes affect imports by changing the relative prices of domestic and foreign tradables. For expenditure switching to take place, exchange rate changes must be passed through into import prices and changes in import prices (relative to domestic prices) must affect spending. Chinn (2005) and others have argued that exchange rates are more volatile than other macroeconomic variables and disconnected from the real economy. Thus, exchange rate changes are likely to be exogenous relative

to changes in relative prices and conditioning on the exchange rate in equation (1) is appropriate.

Imports into China, Indonesia, Japan, Malaysia, the Philippines, South Korea, Thailand, and Taiwan are investigated. Because of possible distortions caused by entrepôt trade, Hong Kong and Singapore are not included in the sample of East Asian importers.

For comparison's sake, imports into the U.S. are also investigated. Since the U.S. has functioned as an engine of growth, it may be informative to compare trade elasticities between the U.S. and East Asian countries.

As discussed above, the dependent variable is final consumption goods imports. These goods are primarily intended for the domestic market, unlike parts and components and capital goods that are often used to produce goods for re-export.

For some of the countries in our sample (e.g., China), both the real effective exchange rate and the bilateral exchange rate against the dollar have been relatively stable in recent years. This lack of variation in the explanatory variable reduces the discriminatory power of the statistical tests when trying to explain aggregate imports or imports coming from the U.S. To circumvent this problem this paper examines imports into East Asia from 27 countries over the 1985-2006 period. There has been substantial variation both cross-sectionally and over time in East Asian real exchange rates relative to the 27 different countries. This approach should thus help to identify in an econometric sense how exchange rate changes affect import demand.

Data on final consumption goods imports (im_t) are obtained from the CEPII-CHELEM database. They are measured in U.S. dollars and deflated using three different

indices. The first is the U.S. Bureau of Labor Statistics price index for consumption goods exports, the second is the U.S. consumer price index, and the third is the U.S. Bureau of Labor Statistics price index for consumption goods exports.[1]

Data on the real exchange rate (rer_t) and real income in the importing country ($rgdp_t$) are also obtained from the CEPII-CHELEM database. The CEPII real exchange rate between countries *i* and *j* is calculated by first dividing GDP in dollars for country *i* by GDP in PPP for country *i* and doing the same for country *j*. The resulting ratio for country *i* is then divided by the ratio for country *j*. This variable measures the units of consumer goods in country *i* needed to buy a unit of consumer goods in country *j*. The major advantage of this variable is that it can be compared both across countries and over time. Real income is measured in constant U.S. dollars (base year 2005)

The East Asian Crisis was associated with a marked drop in consumption goods imports in 1998 and 1999. To control for this, a dummy variable is included for crisis-hit economies (Indonesia, Malaysia, the Philippines, South Korea, and Thailand) that equals 1 in 1998 and 1999 and 0 otherwise.

China joined the WTO in 2001. It seems likely that this would lead to an increase in imports. To control for this, a dummy variable is included for Chinese imports that equals 1 beginning in 2001 and 0 before 2001.

The model is estimated separately for each East Asian importing economy using dynamic ordinary least squares (DOLS). DOLS involves regressing the left hand side variable on a constant, the right hand side variables, and lags and leads of the right hand side variables. The individual import equations have the form:

[1] The Bureau of Labor Statistics export and import price indices exclude automobiles.

$$im_{i,t} = \beta_0 + \beta_1 rer_{i,t} + \beta_2 rgdp_t + \beta_3 Time + \beta_4 Crisis + \beta_4 WTO + \sum_{j=-p}^{p} \Delta rer_{i,t-j}$$
$$+ \sum_{j=-p}^{p} \Delta rgdp_{t-j} + \mu_i + u_{i,t}, \qquad (2)$$

Here $im_{i,t}$ represents real consumption goods imports from country i, $rer_{i,t}$ represents the bilateral real exchange rate between exporting country i and the importing country, $rgdp_t$ equals real income in the importing country, *Time* is a time trend, *Crisis* is a dummy variable for East Asian Crisis hit economies that takes on a value of 1 in 1998 and 1999 and 0 otherwise, *WTO* is a dummy variable for China that takes on a value of 1 beginning in 2001 and 0 before 2001, μ_i is a country i fixed effect, and p represents the number of leads and lags. $im_{i,t}$, $rer_{i,t}$, and $rgdp_t$ are measured in natural logs.

The data set extends from 1985 to 2006. One lead and one lag are used in the DOLS estimation. The panel includes annual imports from 27 countries.[2]

3. Results

Table 1-3 present results for the NIEs and Japan. In Table 1 for South Korea the income elasticities are positive, large, and statistically significant in every specification while the exchange rate elasticities are of the wrong sign. In addition, the Asia Crisis variable indicates that there was a large drop in consumption imports into Korea during the Asia Crisis. Table 2 for Taiwan resembles Table 1 for Korea in that the income elasticities are again positive and statistically significant while the exchange rate

[2] The countries are: Australia, Belgium, Brazil, Canada, Denmark, Finland, France, Germany, Hungary, India, Ireland, Israel, Italy, Japan, Mexico, the Netherlands, New Zealand, Norway, Poland, Singapore, South Korea, Spain, Sweden, Switzerland, Taiwan, the United Kingdom, and the United States.

elasticities are not significant and are often of the wrong sign. Table 3 for Japan reveals the same pattern, with large positive income elasticities and exchange rate elasticities that are of the wrong sign (and even statistically significant). The income elasticities in Tables 1-3 hover around 2 when the trend term is excluded and around 4 when the trend term is included. The exchange rate elasticities for all three economies indicate that currency appreciations are not associated with increases in consumption goods imports.

Tables 4-7 present the results for ASEAN countries. In Table 4 for Indonesia the income elasticities are statistically significant in every specification and vary between 1.45 and 1.84. The exchange rate elasticities are of the wrong sign in every specification. As in the case of South Korea, the Asia Crisis variable suggests that there was a large drop in consumption imports into Indonesia during the Crisis. In Table 5 for Malaysia the income elasticities are again statistically significant in every specification and vary between 1.38 and 2.22. The exchange rate elasticities are close to zero in every case and the Asia Crisis coefficients are smaller in absolute value than they were for Korea and Indonesia. In Table 6 for the Philippines the results are very sensitive to whether the trend term is included or not. This is probably because for the Philippines real GDP resembles a deterministic time trend, causing the coefficient estimates to be imprecise when GDP is included together with a time trend. In Table 7 for Thailand the income elasticities are statistically significant in every specification and vary between 1.39 and 2.11. The exchange rate elasticities again indicate that currency appreciations are not associated with increases in consumption goods imports and the coefficient on the Asia Crisis variable is not statistically significant. Overall the results in Tables 4-7 indicate that increases in income would cause large increases in imports into ASEAN.

Table 8 presents the results for China. As in the case of the Philippines, real income for China resembles a deterministic time trend. This probably explains why the coefficient on income is small and not statistically significant when the time trend is included. When the time trend is excluded the income elasticity is statistically significant and equals 1.49. It is noteworthy that the exchange rate elasticities in Table 8 are of the expected sign and statistically significant in every specification. They indicate that a 10 percent appreciation of the RMB would increase China's consumption imports by about 13 percent. In addition, the results indicate that there was a large increase in consumption imports following China's accession to the WTO.

The findings in Tables 1-8 are robust to excluding the Asian Crisis variable and the WTO variable. They are also robust to using income measured in purchasing power parity dollars.

To gain perspective Table 9 presents results for consumption imports into the U.S. The income elasticity is 2 or higher when the trend term is excluded and exceeds 6 when the trend term is included. The exchange rate elasticities vary between are 0.12 and 0.32 and are not statistically significant. Chinn (2005) reports income elasticities for aggregate U.S. imports and U.S. noncomputer exports of 2 or higher and exchange rate elasticities between 0.1 and 0.3.[3]

Looking at the income elasticities across Tables 1-9 there seems to be a close relationship between a country's per capita income and its income elasticity. The U.S. has the highest income elasticity, followed by Japan, then the NIEs, and finally the ASEAN countries and China.

[3] To obtain meaningful results for aggregate imports, Chinn needs to include an exogenous dummy variable to control for a possible structural break in the first quarter of 1995.

The important implication of these results is that an increase in income in East Asian countries would produce a large increase in imports. The response would be largest for Japan, South Korea, and Taiwan but would remain substantial for the other East Asian countries.

A second implication of these results is that an appreciation of the RMB would lead to a large increase in consumption imports from the rest of the world. The exchange rate elasticity exceeds one. An appreciation of the yuan could thus help to rebalance trade between China and the rest of the world.

4. Conclusion

The U.S. current account deficit averaged almost 700 billion dollars per year between 2003 and 2008, and about 45 percent of the U.S. deficit was with East Asia. The U.S. thus acted as an engine of growth for Asia and the rest of the world. With the U.S. reeling from the financial crisis, it is questionable whether the U.S. can continue to play the same role in the future. This paper considers whether East Asia could function as an engine of growth.

The results indicate that an increase in income in East Asia would produce a large increase in imports. This is especially true for Japan, South Korea, and Taiwan, but it is also true for other East Asian countries. Thus, if East Asia can successfully implement a domestic demand-led growth strategy, it can stimulate growth in the rest of the world.

To be sure, East Asia cannot contribute as much to world demand as the U.S. did during the bubble years. Since Houthakker and Magee (1969), researchers have found that income elasticities for U.S. imports substantially exceed income elasticities for U.S.

exports. The results here similarly suggest that the income elasticity for U.S. imports is higher than the income elasticity for East Asian imports. In addition, U.S. consumption goods imports in 2006 equaled $430 billion while East Asian consumption goods imports equaled $220 billion. Thus Asia would not be able to import as much as the U.S. did during the first half of this decade.

Any increase in imports from Asia would nevertheless be helpful to the world economy, and an Asian engine of growth would be more likely to be sustainable than an American engine. U.S. imports were financed by massive inflows of private capital and official purchases by foreign central banks. Economists warned for years that this arrangement was unsustainable (see, e.g., Obtsfeld and Rogoff, 2004). Asia, by contrast, is less reliant on borrowing from abroad to finance spending.

Concerning exchange rates, the results reported here indicate that an appreciation of the RMB would substantially increase China's imports of consumer goods. Consumption in China is less than 40 percent of GDP, and Chinese consumers would benefit substantially from being able to purchase more from abroad. Much of the discussion of China's exchange rate policy has focused on the harm that an RMB appreciation would do to China. It is important to also consider the benefits that would accrue to Chinese consumers and firms from being able to import more from abroad.[4]

In the late 1950s and early 1960s, Japan, Taiwan, and South Korea chose export-oriented strategies to promote economic growth. ASEAN countries and China later adopted similar approaches. These strategies helped raise living standards and reduce

[4] Thorbecke (2008a,b) reports that an appreciation of the RMB and of ASEAN currencies would substantially increase the amount of capital goods that China and ASEAN could purchase from Japan, South Korea, and Taiwan.

poverty to such an extent that economists refer to the episode as the “East Asian Miracle.”

However, as exports from Asia have multiplied and growth abroad has stagnated, the ability of the rest of the world to absorb Asian exports has decreased. It may be time for policy makers in the region to shift towards a domestic demand-oriented strategy. For example, production could be redirected from tradable goods to services. Priority could be given to providing education and healthcare, protecting the environment, and promoting research. Attention could be focused on preparing for the large number of people about to retire in countries like Japan. If domestic markets rather than exports can drive job creation in Asia, not only would consumers in the region enjoy more of the fruits of their labor, but the world economy would have a new engine of growth to help pull it out of recession.

Table 1. Panel DOLS Estimates of Consumption Goods Imports into South Korea over the 1987-2005 Period

	Imports Deflated by:					
	BLS Consumption Goods Exports Price Index	BLS Consumption Goods Exports Price Index	U.S. CPI	U.S. CPI	BLS Consumption Goods Imports Price Index	BLS Consumption Goods Imports Price Index
Real GDP	2.28***	3.55***	2.03***	3.82***	2.35***	3.48***
	(0.08)	(0.43)	(0.09)	(0.42)	(0.27)	(0.42)
Bilateral RER	-0.14	-0.38	-0.04	-0.38	-0.17	-0.38
	(0.27)	(0.31)	(0.27)	(0.31)	(0.27)	(0.31)
Trend		-0.09***		-0.12***		-0.08***
		(0.03)		(0.03)		(0.03)
Asia Crisis Dummy	-0.42***	-0.57***	-0.35	-0.57***	-0.43***	-0.57***
	(0.07)	(0.09)	(0.27)	(0.09)	(0.07)	(0.09)
Adjusted R-squared	0.95	0.95	0.95	0.95	0.95	0.95
No. of observations	486	486	486	486	486	486

Notes: DOLS(1,1) estimates. Heteroskedasticity-consistent standard errors are in parentheses. The data extend from 1985 to 2006. Since the DOLS estimation uses one lead and lag of the first difference of the right-hand side variables the actual sample period is from 1987-2005. The Asia Crisis Dummy takes on a value of 1 in 1998 and 1999 and zero otherwise.
*** (**) denotes significance at the 1 percent (5 percent) level.

Table 2. Panel DOLS Estimates of Consumption Goods Imports into Taiwan over the 1987-2005 Period

	Imports Deflated by:					
	BLS Consumption Goods Exports Price Index	BLS Consumption Goods Exports Price Index	U.S. CPI	U.S. CPI	BLS Consumption Goods Imports Price Index	BLS Consumption Goods Imports Price Index
Real GDP	1.78***	3.93***	1.56***	4.31***	1.85***	3.81***
	(0.15)	(0.53)	(0.17)	(0.53)	(0.14)	(0.49)
Bilateral RER	0.20	-0.33	0.34	-0.34	0.16	-0.32
	(0.18)	(0.19)	(0.19)	(0.19)	(0.17)	(0.19)
Trend		-0.14***		-0.18***		-0.12
		(0.03)		(0.03)		(0.03)
Adjusted R-squared	0.96	0.96	0.96	0.96	0.96	0.96
No. of observations	494	494	494	494	494	494

Notes: DOLS(1,1) estimates. Heteroskedasticity-consistent standard errors are in parentheses. The data extend from 1985 to 2006. Since the DOLS estimation uses one lead and lag of the first difference of the right-hand side variables the actual sample period is from 1987-2005.
*** (**) denotes significance at the 1 percent (5 percent) level.

Table 3. Panel DOLS Estimates of Consumption Goods Imports into Japan over the 1987-2005 Period

	Imports Deflated by:					
	BLS Consumption Goods Exports Price Index	BLS Consumption Goods Exports Price Index	U.S. CPI	U.S. CPI	BLS Consumption Goods Imports Price Index	BLS Consumption Goods Imports Price Index
Real GDP	2.53***	4.10***	1.56***	4.49***	2.81***	3.84***
	(0.36)	(0.64)	(0.46)	(0.66)	(0.33)	(0.62)
Bilateral RER	-0.51***	-0.67***	-0.37	-0.66***	-0.57***	-0.67***
	(0.20)	(0.19)	(0.23)	(0.19)	(0.19)	(0.19)
Trend		-0.03***		-0.05***		-0.02
		(0.01)		(0.01)		(0.01)
Adjusted R-squared	0.97	0.97	0.97	0.97	0.97	0.97
No. of observations	494	494	494	494	494	494

Notes: DOLS(1,1) estimates. Heteroskedasticity-consistent standard errors are in parentheses. The data extend from 1985 to 2006. Since the DOLS estimation uses one lead and lag of the first difference of the right-hand side variables the actual sample period is from 1987-2005.
*** (**) denotes significance at the 1 percent (5 percent) level.

Table 4. Panel DOLS Estimates of Consumption Goods Imports into Indonesia over the 1987-2005 Period

	Imports Deflated by:					
	BLS Consumption Goods Exports Price Index	BLS Consumption Goods Exports Price Index	U.S. CPI	U.S. CPI	BLS Consumption Goods Imports Price Index	BLS Consumption Goods Imports Price Index
Real GDP	1.75***	1.53***	1.44***	1.70***	1.84***	1.45***
	(0.06)	(0.29)	(0.06)	(0.29)	(0.06)	(0.28)
Bilateral RER	-0.51	-0.50	-0.51	-0.52	-0.51	-0.50
	(0.29)	(0.29)	(0.29)	(0.29)	(0.29)	(0.29)
Trend		0.01		-0.01		-0.05**
		(0.02)		(0.02)		(0.02)
Asia Crisis Dummy	-0.61***	-0.48	-0.29	-0.44	-0.72***	-0.48
	(0.21)	(0.32)	(0.20)	(0.32)	(0.22)	(0.32)
Adjusted R-squared	0.92	0.92	0.92	0.92	0.92	0.92
No. of observations	503	503	503	503	503	503

Notes: DOLS(1,1) estimates. Heteroskedasticity-consistent standard errors are in parentheses. The data extend from 1985 to 2006. Since the DOLS estimation uses one lead and lag of the first difference of the right-hand side variables the actual sample period is from 1987-2005. The Asia Crisis Dummy takes on a value of 1 in 1998 and 1999 and zero otherwise.
*** (**) denotes significance at the 1 percent (5 percent) level.

Table 5. Panel DOLS Estimates of Consumption Goods Imports into Malaysia over the 1987-2005 Period

	Imports Deflated by:					
	BLS Consumption Goods Exports Price Index	BLS Consumption Goods Exports Price Index	U.S. CPI	U.S. CPI	BLS Consumption Goods Imports Price Index	BLS Consumption Goods Imports Price Index
Real GDP	1.38***	2.05***	1.15***	2.22***	1.46***	2.01***
	(0.08)	(0.34)	(0.09)	(0.33)	(0.08)	(0.33)
Bilateral RER	0.07	-0.04	0.13	-0.05	0.05	-0.04
	(0.21)	(0.18)	(0.21)	(0.18)	(0.20)	(0.18)
Trend		-0.05**		-0.07***		-0.04
		(0.02)		(0.02)		(0.02)
Asia Crisis Dummy	-0.07	-0.23**	0.06	-0.19**	-0.11	-0.24
	(0.08)	(0.09)	(0.09)	(0.09)	(0.08)	(0.29)
Adjusted R-squared	0.95	0.95	0.95	0.95	0.95	0.95
No. of observations	500	500	500	500	500	500

Notes: DOLS(1,1) estimates. Heteroskedasticity-consistent standard errors are in parentheses. The data extend from 1985 to 2006. Since the DOLS estimation uses one lead and lag of the first difference of the right-hand side variables the actual sample period is from 1987-2005. The Asia Crisis Dummy takes on a value of 1 in 1998 and 1999 and zero otherwise.
*** (**) denotes significance at the 1 percent (5 percent) level.

Table 6. Panel DOLS Estimates of Consumption Goods Imports into the Philippines over the 1987-2005 Period

	Imports Deflated by:					
	BLS Consumption Goods Exports Price Index	BLS Consumption Goods Exports Price Index	U.S. CPI	U.S. CPI	BLS Consumption Goods Imports Price Index	BLS Consumption Goods Imports Price Index
Real GDP	2.66***	-7.83***	2.17***	-8.24***	2.84***	-7.76***
	(0.15)	(1.78)	(0.16)	(1.87)	(0.15)	(1.72)
Bilateral RER	0.61***	-0.04	0.61***	-0.04	0.62***	-0.04
	(0.20)	(0.22)	(0.21)	(0.22)	(0.20)	(0.22)
Trend		0.36***		0.36***		0.37***
		(0.06)		(0.06)		(0.06)
Asia Crisis Dummy	0.06	0.11**	0.08	0.14***	0.05	0.11**
	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
Adjusted R-squared	0.95	0.95	0.95	0.95	0.95	0.95
No. of observations	494	494	494	494	494	494

Notes: DOLS(1,1) estimates. Heteroskedasticity-consistent standard errors are in parentheses. The data extend from 1985 to 2006. Since the DOLS estimation uses one lead and lag of the first difference of the right-hand side variables the actual sample period is from 1987-2005. The Asia Crisis Dummy takes on a value of 1 in 1998 and 1999 and zero otherwise.
*** (**) denotes significance at the 1 percent (5 percent) level.

Table 7. Panel DOLS Estimates of Consumption Goods Imports into Thailand over the 1987-2005 Period

	Imports Deflated by:					
	BLS Consumption Goods Exports Price Index	BLS Consumption Goods Exports Price Index	U.S. CPI	U.S. CPI	BLS Consumption Goods Imports Price Index	BLS Consumption Goods Imports Price Index
Real GDP	1.63***	2.11***	1.39***	2.27***	1.69***	2.07***
	(0.11)	(0.29)	(0.11)	(0.29)	(0.10)	(0.27)
Bilateral RER	0.10	-0.12	0.26	-0.12	0.04	-0.12
	(0.21)	(0.29)	(0.20)	(0.29)	(0.22)	(0.29)
Trend		-0.03***		-0.06***		-0.03
		(0.02)		(0.02)		(0.02)
Asia Crisis Dummy	0.00	-0.15	0.14	-0.12	-0.06	-0.17
	(0.13)	(0.09)	(0.13)	(0.09)	(0.13)	(0.10)
Adjusted R-squared	0.95	0.95	0.92	0.95	0.95	0.95
No. of observations	513	513	503	513	513	513

Notes: DOLS(1,1) estimates. Heteroskedasticity-consistent standard errors are in parentheses. The data extend from 1985 to 2006. Since the DOLS estimation uses one lead and lag of the first difference of the right-hand side variables the actual sample period is from 1987-2005. The Asia Crisis Dummy takes on a value of 1 in 1998 and 1999 and zero otherwise.
*** (**) denotes significance at the 1 percent (5 percent) level.

Table 8. Panel DOLS Estimates of Consumption Goods Imports into China over the 1987-2005 Period

	Imports Deflated by:					
	BLS Consumption Goods Exports Price Index	BLS Consumption Goods Exports Price Index	U.S. CPI	U.S. CPI	BLS Consumption Goods Imports Price Index	BLS Consumption Goods Imports Price Index
Real GDP	1.49***	0.61	1.33***	0.56	1.56***	0.56
	(0.16)	(1.63)	(0.16)	(1.63)	(0.16)	(1.62)
Bilateral RER	1.26***	1.30**	1.23***	1.27**	1.28***	1.33**
	(0.49)	(0.53)	(0.49)	(0.53)	(0.49)	(0.53)
Trend		0.08		0.07		0.10
		(0.15)		(0.15)		(0.15)
WTO Dummy	0.42***	0.38**	0.38***	0.34**	0.42***	0.37**
	(0.15)	(0.16)	(0.14)	(0.16)	(0.15)	(0.16)
Adjusted R-squared	0.90	0.90	0.90	0.90	0.91	0.91
No. of observations	508	508	508	508	508	508

Notes: DOLS(1,1) estimates. Heteroskedasticity-consistent standard errors are in parentheses. The data extend from 1985 to 2006. Since the DOLS estimation uses one lead and lag of the first difference of the right-hand side variables the actual sample period is from 1987-2005. The WTO Dummy takes on a value of one starting in 2001 and zero before 2001.
*** (**) denotes significance at the 1 percent (5 percent) level.

Table 9. Panel DOLS Estimates of Consumption Goods Imports into the United States over the 1987-2005 Period

	Imports Deflated by:					
	BLS Consumption Goods Exports Price Index	BLS Consumption Goods Exports Price Index	U.S. CPI	U.S. CPI	BLS Consumption Goods Imports Price Index	BLS Consumption Goods Imports Price Index
Real GDP	2.55***	6.76***	1.97***	6.23***	2.74***	7.20***
	(0.11)	(1.48)	(0.10)	(1.23)	(0.11)	(1.49)
Bilateral RER	0.30	0.12	0.27	0.09	0.32	0.13
	(0.25)	(0.27)	(0.24)	(0.27)	(0.26)	(0.17)
Trend		-0.13***		-0.13***		-0.14***
		(0.05)		(0.14)		(0.05)
Adjusted R-squared	0.96	0.96	0.96	0.96	0.96	0.97
No. of observations	494	494	494	494	494	494

Notes: DOLS(1,1) estimates. Heteroskedasticity-consistent standard errors are in parentheses. The data extend from 1985 to 2006. Since the DOLS estimation uses one lead and lag of the first difference of the right-hand side variables the actual sample period is from 1987-2005.
*** (**) denotes significance at the 1 percent (5 percent) level.

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