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Jiao Wang and Andy G. Ji

Exchange rate sensitivity of China's bilateral trade flows

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BOFIT Discussion Papers
Editor-in-Chief Iikka Korhonen

BOFIT Discussion Papers 19/2006
22.12.2006

Jiao Wang and Andy G. Ji: Exchange rate sensitivity of China's bilateral trade flows

ISBN 952-462-846-5
ISSN 1456-4564
(print)

ISBN 952-462-847-3
ISSN 1456-5889
(online)

Multiprint Oy
Helsinki 2006

Contents

All opinions expressed are those of the authors and do not necessarily reflect the views of the Bank of Finland.

Jiao Wang [a] and Andy G. Ji [b]

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Abstract

Traditional assessments of the impact of exchange rate depreciation or appreciation on trade have involved estimating the elasticity of trade volume to relative prices. Such studies relied heavily on aggregated trade data. More recent studies employ bilateral trade data and methodologies such as ECM and gravity models. This study uses a generalized gravity model with data panel analysis in assessing the impact of currency depreciation or appreciation on bilateral trade flows between China and its top trading partners. The empirical evidence suggests exchange rates (both real and nominal) do not exert a significant influence on the overall exports from China. Thus, a devaluation or revaluation of the yuan should be expected to have only limited impact on China's trade balance. Moreover, previous studies provide limited evidence of a negative relation between exchange rate volatility and trade flows. Given the current revaluation expectations, we find China's anticipated shift toward a more flexible exchange rate regime fails to address China's trade surplus issues, and thus will merely lead to a revaluation of the nominal exchange rate and increased exchange rate volatility. It appears a major overhaul of the country's heavily subsidized export regime must first occur for the exchange rate to assume a larger role in China's international trade.

Keywords: Exchange Rate, Trade, China, Competition, Gravity Model, Panel
JEL Classification: C22, C23, F14, F31

We thank David Mayes for his helpful comments and support.
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Jiao Wang and Andy G. Ji

Exchange rate sensitivity of China's bilateral trade flows

Tiivistelmä

Valuuttakurssin vaikutusta ulkomaankauppaan on tavallisesti tutkittu estimoimalla kaupan volyymin joustoja suhteellisten hintojen muutoksiin nähden. Näissä tutkimuksissa on yleensä käytetty aggregaattitilastoja. Uudemmissa tutkimuksissa on käytetty myös kahdenvälistä kauppaa koskevaa dataa ja virheenkorjaus- ja gravitaatiomallien tyyppisiä menetelmiä. Tässä tutkimuksessa arvioidaan valuuttakurssin vaikutusta Kiinan ja sen tärkeimpien kauppakumppanien väliseen kauppaan gravitaatiomallin avulla. Tilastoaineisto on paneelimuodossa. Tulosten mukaan valuuttakurssin muutokset (reaaliset tai nimelliset) eivät juuri vaikuta Kiinan vientiin. Valuutan ulkoisen arvon muutokset eivät siten juuri vaikuttaisi Kiinan kauppataseen ylijäämään. Aiempien tutkimusten mukaan myöskään valuuttakurssin volatiilius ei paljon vaikuta kauppavirtoihin. Vaikka Kiinan tällä hetkellä odotetaan jatkavan valuuttansa ulkoisen arvon vahvistamista, tämän vahvistumisen vaikutukset kauppataseeseen ovat pieniä. Jotta valuuttakurssilla olisi suurempi vaikutus kauppavirtoihin, esimerkiksi Kiinan vientituet olisi lopetettava.

Asiasanat: valuuttakurssi, ulkomaankauppa, Kiina, kilpailu, gravitaatiomalli, paneelimenetelmät

1 Introduction

International trade has become a salient feature of Chinese economic growth.[1] Statistics show net exports contributed 10.4 % of GDP growth in 1993-2003, up from -1.1 % in 1983-1993 and -1.4 % in 1973-1983 (Felipe and Lim, 2005). China's current account, which has been in surplus since the early 1990s, saw a sharp rise in 2004 and 2005 due to China's consistently strong export performance. In coming years, China's external balance is expected to increase further, riding on the back of strong export receipts, foreign direct investment, and large capital inflows.

Despite this dynamic shift in trade and a range of studies analyzing underlying balance suggesting that China's exchange rate has departed substantially from its equilibrium value, the yuan's exchange rate has slavishly tracked the US dollar for well over a decade. It was pegged at a rate of 8.28 yuan with the 1994 unification of dual exchange rate systems, and has appreciated only slightly since the abandonment of the dollar peg in July 2005.[2]

In the following discussion, we examine the effects of exchange rate movements on China's external trade in terms of China's bilateral trade flows with its major trading partners. We investigate the impact of both real and nominal effective exchange rate on the China's exports (imports) to (from) top trading partners in 1986-2003 using a generalized gravity model. This paper contributes in a number of ways to research on the relationship between exchange rate and trade flows. First, the data analyzed here make it possible to examine the long-run impact of exchange rate on bilateral trade flows. Second, to our knowledge, this study is the first to employ a generalized gravity model to China's bilateral trade flows within a panel data methodology. Gravity models have a remarkably consistent history of success in explaining bilateral trade flows. The panel data methodology[3] has a number of advantages (such as more accurate inference of model parameters[4], greater capacity of capturing more complicated behavioural hypotheses, controlling the impact of

[1] China became the world's third largest exporter in 2004.
[2] On July 21, 2005, Chinese authorities abandoned the yuan's dollar peg for a currency basket with a fluctuation band of ±0.3%.
[3] Panel data analysis typically refers to the data containing time series observations of a number of individuals. Hence, observations in panel data analysis involve at least two dimensions: a cross-sectional dimension and a time series dimension.

omitted variables, uncovering dynamic relationships and simplifying computation and statistical inference than a single time series or cross-section data[5]) over the standard time-series and cross-section methodologies. Third, we include both nominal and real effective exchange rates as determinants of trade flows. The bilateral real effective exchange rate captures the relative competitiveness of the trading partners: large nominal exchange rate changes affect the behavior of trade flows usually through a real depreciation/appreciation in the exchange rate when the relative level of inflation does not adjust to a similar extent. The nominal exchange rate reveals impacts of revaluation/devaluation. Currently popular discussion focuses heavily, if not exclusively, on the nominal exchange rate as the key to dealing with China's external imbalance problem.

Perhaps the most significant finding in this study is that the exchange rate, real or nominal, apparently has little impact on overall exports from China. We suggest this decoupling of China's exports to exchange rate movements reflects various export-oriented schemes currently in place. For example, the export tax refund has long been credited with jump-starting and promoting China's extraordinary export performance. Moreover, the empirical evidence suggests that a substantial revaluation/devaluation would have only muted success in bringing down China's large trade surplus.

The rest of the paper is organized as follows. Previous literature is surveyed briefly in the next section. We then present the relevant methodologies, the data, and the empirical results. We conclude with suggestions for further research in this area.

2 Literature

Despite decades of studies on the exchange rate's impact on trade flows, the recent large survey of McKenzie (1999) suggests that results have been inconclusive. Economic theories and empirical evidence are ambiguous as to the effect of the exchange rate on exports and export revenue. Junz and Rhomberg (1973) as well as Wilson and Takacs (1979) find that devaluation increases exports for developed countries with fixed exchange rates. Bahmani-Oskooee and Kara (2003) find similar results with flexible rates. In contrast, Athukorala (1991), Athukorala and Menon (1994), Abeysinghe and Yeok (1998), and Wilson

[4] Panel data usually contain more degrees of freedom and more sample variability than corss-sectional data, improving the efficiency of econometric estimates (Hsiao et al., 1995).
[5] Please refer to Nerlove (2002) and Hsiao et al., (2005) for further details.

and Tat (2001) find that appreciation does not lower exports in some Asian countries. More specifically, Abeysinghe and Yeok demonstrate that Singapore's exports are not adversely affected by currency appreciation because lower import prices that are the result of currency appreciation reduce the cost of export production. Fang and Miller (2004), also show depreciation did little to improve Singapore's exports. Similarly, Campa (2001) finds Latin America's exports to industrialized countries are sensitive to changes in the real exchange rate, whereas bilateral import flows do not show much sensitivity to changes in bilateral exchange rates.

An extensive survey of the literature reveals only a few studies relevant to China on this topic. Notably, Dees (2001) takes confronts the subject directly, arguing "firms exporting products that are imported beforehand are less sensitive to relative price changes than firms exporting goods produced with national inputs." Overall, however, the literature provides no consensus on the magnitude of exchange rate impact on trade flows in many countries, including China. Moreover, no study to date considers the impact of the exchange rate in light of time series data for China's bilateral trade.

The volatility in exchange rate represents another channel through which trade flows could be affected. An increase in volatility could theoretically lower both export and imports. In their cross-country study, Frankel and Wei (1995) find evidence of a significant negative impact of exchange-rate volatility on trade across Asian countries. Based on the gravity model, Devlin *et al.* (2001) use a set of 136 countries over 1981-1996. They identify significant impacts of exchange rate volatility on trade, especially in developing countries. Using a gravity model, however, Lahreche-Revil and Benassy-Quere (2001) find no significant evidence that exchange-rate uncertainty has affected development of Chinese trade.

3 Methodology

The two key methods for analyzing the relationship between exchange rate and external trade are the more traditional method, which explains trade volume in terms of world demand and price competitiveness (i.e. exchange rate),[6] and the gravity model, which consid-

[6] The application of this method on the case of China can be found in Cerra and Dayal-Gulati (1999), Song (2000) and Dees (2001).

ers bilateral trade across a wide range of countries using variables such as GDP, population, distance, and trade barriers. The traditional approach uses dummies for reform, while dummies in the gravity model are such factors as common border and language. Compared to the traditional, the gravity model places greater emphasis on the long-run determinants of trade and allows for fundamental analysis of the determinants of trade and the introduction of the exchange rate's role in determining prices. Furthermore, a gravity model is bilateral in nature, so it is good for detailing bilateral features such as trade agreements or choice of specific exchange rate regime, which lie beyond the scope of traditional economic variables such as GDP and population.

4 Bilateral gravity model

Assume trade (exports and imports) from China to its trading partners are dependent on the following main factors under the bilateral gravity model:

(**i**) Level of GDP and population (absolute or per capita) of China and its related trading partners. These account for market power together with endowment differences.

(**ii**) Relative prices (nominal exchange rate, or real exchange rate, or consumer price index). These account for bilateral competitiveness in trade.

(**iii**) Dummies. We use here dummies for policy changes and exchange rate regime changes.

As our analysis concentrates on the impact of exchange rate change on bilateral trade flows,[7] the following exports and imports function are considered:

$$Ln(X_{i,j,t}) = \alpha_0 + \alpha_1 \cdot Ln(RPGDP_{i,t}) + \alpha_2 \cdot Ln(RPGDP_{j,t}) + \alpha_3 \cdot Ln(POP_{i,t}) + \alpha_4 \cdot Ln(POP_{j,t})$$
$$+ \alpha_5 \cdot Ln(NER_{i,j,t}) + \alpha_6 \cdot Ln(\frac{P_j^*}{P_i}) + \alpha_7 \cdot Dummy1_t + \alpha_8 \cdot Dummy2_t + \varepsilon_t$$

Eq.(1)

$X_{i,j,t}$ = Exports or imports fromcountry i to country j

$RPGDP_{i,t}$ ($RPGDP_{j,t}$) = Real per capita GDP

$POP_{i,t}$ ($POP_{j,t}$) = Total population

$Dummy1_t$ = Unification of exchange-rate regime[8]

$Dummy2_t$ = Managed-peg exchange-rate regime[9]

The coefficients of interest in this study are $\alpha_5, \alpha_6, \alpha_7$, and α_8. Traditional trade theory suggests that an appreciation of domestic currency may depress exports and encourage imports, while the opposite would be true for depreciation.[10]

The estimation is carried out on time-series data for China's 37 trading partners in the period 1980-2003.[11]

5 Data description

5.1 Sources

Exchange rate (average local currency/US$ unit), population (person), CPI (2000=100), are taken from International Financial Statistics (IFS). Bilateral trade (exports and imports in current US$) are from Direction of Trade Statistics Yearbook (DOTS). Nominal GDP (current US$), Real GDP (constant 1995 US$), Real Per Capita GDP (constant 1995 US$) are from World Development Indicators (WDI). Taiwan's data are from the Taiwan Statistical Data Book and www.investintaiwan.org.tw. Several variables have been taken from the China Statistical Yearbook, Deutsche Bank AG, www.bradynet.com, and other data sources. Re-exports of Hong Kong are excluded, because the magnitude of this re-exports

[7] Because of the nature of bilateral gravity model, traditional variables like geographic distance as a proxy of transportation costs and relative trade barriers (e.g. dummies for a common border or language) are not included.
[8] This takes the value of one when a unified single exchange-rate regime is in effect during the sample period. Here, we only consider China's side in 1994. It has a value of zero before 1994 and one after 1994.
[9] China eliminates restrictions on current international transactions. Domestic firms are allowed to open foreign exchange accounts for current international transaction. We define a value of zero before 1997 and one after 1997.
[10] Theoretical models from Giovannini (1988), Franke (1991), Sereu and Vanhulle (1992) suggest exchange rate volatility can benefit trade flows, while Baron (1976), Feenstra and Kendall (1991) and Broll (1994) find that exchange rate volatility may have no impact on trade.
[11] This is the maximum period.

would introduce a significant double counting into the trade of the Asian region.[12] Due to political conditions, Hong Kong intermediates trade between China[13] and Taiwan.

5.2 Exchange rate

There are several ways of measuring exchange rates, including price quotation,[14] volume quotation,[15] RER,[16] NEER,[17] and REER.[18] In this paper, we consider both bilateral nominal exchange rate and real exchange rate. REER is the most appropriate measurement reflecting the international competitiveness of domestic goods. The nominal exchange rate, on the other hand, is adopted because the pass-through from nominal exchange rate into inflation (or price by trade) either suffers from large lags or is otherwise distorted by the command economy pricing mechanisms still in use in China.

Broadly speaking, various definitions of the real exchange rate can be grouped under purchasing power parity (PPP) or based on the distinction between the tradable and the non-tradable goods. Due to limited available data, we only use PPP to get the bilateral RER for China against its top trading partners. RER is defined as follows:

$$RER_{i,j} = NER_{i,j} \cdot \frac{P_j^*}{P_i}$$

RER = Real exchange rate

NER = Nominal exchange rate

P_j^* = Foreign price level (or consumer price index)

P_i = Domestic price level

As to the choice of the price index, there are four candidates including Consumer Price Index (CPI), Wholesale Price Index (WPI), Producers Price Index (PPI) and GDP deflator. Here we use CPI.

[12] A large proportion of Hong Kong's re-exports are goods of Chinese origin or have China as final destination. Some 9.8% of total Asian merchandise exports in 2000 were Hong Kong re-exports (Technical Notes, WTO).
[13] For our purposes, China refers to Mainland China.
[14] The exchange rate is expressed in terms of the national currency value of a unit of foreign currency.
[15] The exchange rate is expressed in terms of foreign currency value of a unit of the national currency.
[16] The Real Exchange Rate (RER) is defined as the nominal exchange rate adjusted for inflation.
[17] The Nominal Effective Exchange Rate (NEER) is a weighted average of major bilateral nominal exchange rates, with weights based on the trade shares reflecting the relative importance of each currency in the effective exchange rate basket.

5.3 Trade flows

China's economy has opened up and liberalized extensively in the past two decades. In particular, growth of China's trade has far outstripped the expansion of world trade in this period. This trend is only expected to continue, with the wider implications becoming evident as the adjustment periods following China's WTO accession begin to lapse. Figure 1 and 2 shows the evolution of openness and export growth in China compared to other countries/regions. Figure 3 indicates that over 54% of exports go to industrial countries and about 45% to developing countries. Note that the US takes over 20% of Chinese exports, followed by Hong Kong and Japan at around 17% and 16%, respectively. Note also that China's imports come increasingly from developing countries and decreasingly from industrial countries. The leading importers to China, however, are still Japan, the US and Korea.

6 Bilateral gravity model with time-series data

6.1 Estimation procedure and empirical results

Prior to estimating the bilateral gravity model defined above, the time-series properties of the individual series must be tested. The order of integration of the individual time series is determined using an Augmented Dickey-Fuller (ADF) test. The results indicate that nearly all series are I(1) at a 5% significance level (see Appendix, Table 1).[19]

Four different specifications of Equation (1) are estimated. In **model (1)**, only real exchange rate is included as an exogenous variable. In **model (2)**, only consumer price index and the exchange-rate dummies are included as exogenous variables in the estimation. Finally, in **models (3) and (4)**, the nominal exchange rate and the consumer price index are tested in two separate estimations.

A number of diagnostic tests reported at the bottom of Tables 2–38 are performed to determine the acceptability of the empirical estimates for each version of Equation (1).

[18] The Real Effective Exchange Rate (REER) is calculated by adjusting the NEER for inflation differentials of the countries involved.
[19] Only a few variables have an order of integration larger than one. Detailed ADF results are available upon request.

The adjusted R^2 for all five models in 37 bilateral gravity model equations is very high. The F-statistics overwhelmingly reject the null hypothesis at the 5% level. The Durbin-Watson statistics mostly support acceptance of the null hypothesis that the errors are not positively auto-correlated at the 5% level.

From the results in summary Table A,[20] we find that the standard features of the gravity model work well. However, the coefficient estimates for exporter's (importer's) per capita income, population size and relative price vary in terms of magnitude and sign. This suggests the exchange rate plays a role in determining trade flows that is statistically insignificant for most trading partners. The observation contradicts the prediction by economic theories that exchange rate appreciation (depreciation) depresses exports (imports) and vice versa. The results also indicate that exchange rate regime and related policy do not have a statistically significant effect on China's trade flows to most of its top trading partners. This is consistent with the results in Lahreche-Revil and Benassy-Quere (2001).[21]

One explanation for the lack of sensitivity of China's exports to exchange rate movements could rest on the fact that in order to maintain and increase the market share, China's exporters (first supported by directly by the government, and then indirectly through favorable trade policies such as duty exemptions and tax refunds) are able to adjust their prices and profit margins to movements in exchange rates. Moreover, China's exports consist largely of value-added goods, which require a large import component. These imports contents are either exempt from duties or eligible for refund on the import tax paid. China's export tax refund regime has long known to offer significant incentives to exporter. As tax refund rates run as high as 17 % for electromechanical devices, the strong export performance in these product categories is hardly surprising. Moreover, the value-added component of more than half of China's exports is essentially the labor cost incurred within Chinese borders. While many researchers argue that the large labor overhang determines the magnitude of this value-added component more than exchange rate, the various incentives offered to export processing industries such as tax breaks and free land use in designated processing zones, can readily be seen as part of a heavily subsidized export-oriented regime.

[20] Details of regression results are provided in the Appendix.
[21] Lahreche-Revil and Benassy-Quere (2001) find no evidence of an influence of exchange rate on trade in a gravity model.

Unlike exports, China's imports from its top trading partners are highly sensitivity to exchange rate movements. The impacts are especially evident in bilateral trade flows with China's neighbors in East and South-East Asia (e.g. Hong Kong, Indonesia, Malaysia, and Taiwan). Relative inflation also affect exports from China to the US, Japan, and Germany.

Table A. Exchange rate sensitivity and consumer price index impact on China's exports (imports) to (from) its top trading partners

	China's exports to …				China's imports from …			
	Nominal exchange rate	RER	Inflation		Nominal exchange rate	RER	Inflation	
Regions	M3	M 1	M 2	M 4	M3	M 1	M 2	M 4
	China's exports to European Zone				China's imports from *European Zone*			
Austria	0.18	0.17	-0.52	-0.02	0.30	0.31	-0.20	0.47
Denmark	0.07	0.43**	0.10	0.33	-0.29	-0.11	1.14*	0.64
Finland	0.37**	0.22	0.51	-0.79*	0.41**	0.29*	-0.14	-0.56
France	0.25	-0.07	-1.60**	-1.32**	-0.01	-0.004	-0.03	0.03
Germany	0.23	0.19	0.25	-0.29	0.64**	0.65*	2.35**	0.96
Hungary	0.91**	0.90	-0.89	-1.27*	1.05*	1.17	-0.35	-1.37*
Ireland	0.73	0.29	-1.54	-1.39	-0.98	-1.05	-0.15	-0.67
Italy	0.01	0.006	-1.40**	-1.17**	-0.05*	-0.05*	-0.43	-0.83*
Netherlands	0.12	-0.17	-0.66	-0.53*	0.15	0.07	-0.29	-0.10
Norway	1.00**	1.35**	-0.94	-0.60	-1.06**	-0.36	1.41**	1.53**
Russia	0.49*	0.06	-0.17	-0.26	0.13	0.31	0.04	0.05
Spain	0.005	-0.02	-1.16**	-1.30**	0.07	0.10	2.55**	1.84**
Sweden	-0.17	-0.13	0.11	0.27	0.21	0.14	-0.48	-0.48
Switzerland	0.34	-0.16	-1.75**	-1.55**	0.84**	0.68**	-1.13	0.08
Turkey	1.19**	-1.27**	-1.62**	-1.22**	1.04**	1.59	-0.24	-0.99**
UK	0.50	-0.007	-0.73	-0.79	-0.23	-0.36	0.13	0.05
	China's exports to *North American Zone*				China's imports from *North American Zone*			
Canada	-0.34	-0.10	0.37	0.15	-0.34	0.20	1.14**	0.48
Mexico	0.52	0.05	-0.73	-0.44	0.005	0.11	-0.51	0.03
USA	0.40	-0.51*	-0.61	-0.75**	-0.05	-0.63**	-0.87*	-0.67**
	China's exports to *Asian Zone*				China's imports from *Asian Zone*			
Hong Kong	-0.21	-0.38	-0.59	-0.27	-2.18**	-0.65	1.45	2.89**
India	-0.37	-1.06**	-0.75	-1.27*	-2.37**	-2.55**	-3.77*	-2.42*
Indonesia	0.52**	0.60**	0.40	0.29	1.12**	0.88**	-0.76	-0.87
Iran	0.05	0.07	0.85	1.06	-0.09	-0.10	-3.73	-1.46
Japan	0.03	-0.21	-0.69	-0.96**	0.32	0.48**	0.24	0.36
Korea	0.81	1.60	-0.70	-0.14	1.23	1.32	-2.67	-0.73
Malaysia	-0.27	-0.24	-0.36	-0.22	-1.09*	-1.03**	-1.47	-1.07
Philippines	0.42	0.58	-0.14	-0.80	-0.62	-0.33	2.43*	2.31**
Singapore	-0.01	0.47	1.09	0.98*	-0.28	-1.49**	-3.20**	-2.55**
Taiwan	-0.15	-0.22	-0.01	-0.14	0.93*	1.13**	-1.37	0.20
Thailand	-1.30**	-1.27**	1.80	1.94	-0.67	-0.97*	-0.21	-0.42
Vietnam	-0.44	2.35	5.78**	3.21*	-1.98	0.27	7.73**	5.27**
	China's exports to *Rest of World*				China's imports from *Rest of World*			
Australia	0.56	-0.64	-0.89	-1.00**	-0.17	-0.34	0.06	-0.01
Brazil	0.03	0.20	-0.10	-0.02	0.09	-0.23	-0.17**	-0.07
New Zealand	0.32	0.33	-0.70	-0.45	-0.25	-0.51	-0.97	-0.15
Saudi Arabia	-0.50	-0.31	0.75	0.61	-0.20	-0.66	7.36	-0.37
South Africa	0.88**	1.08	1.09	-2.36**	0.65*	0.76	-1.81	-1.84**
UAE	0.12	0.24	0.05	-0.45	-3.59*	-2.85	2.78	4.38*

Note: M1, M2, M3 and M4 refer to Model 1, 2, 3 and 4, respectively. * and ** denote t-test significance at the 10% and 5% levels, respectively.

7 Bilateral gravity model with panel data

We conduct the panel data analysis on two different sets of samples, namely the full sample and a sub-sample that constitutes China's Asian neighbors. The use of the sub-sample enables us to test the robustness of our estimation models and hopefully shed light on the different features in trade flows in an economic region of importance to China. The panel analysis uses pooled regression, fixed effects (FEM), and random effects methods. The most appropriate method is determined by diagnostic tests (e.g. LM and Hausman tests). The diagnostic tests overwhelmingly reject the pooled regression method, while FEM appears to outperform the random effects model in most model estimations. Five models are run with exactly the same setups as described in the earlier section. The results from pooled regressions are not reported. Full results are provided in the Appendix (Tables 39–41).

In Table B we see that both exchange rates (nominal and real) and relative inflation have significant impacts on imports to China from its trading partners, but no impact on exports from China. Signs of coefficients are as expected with respect to both imports and exports. Similarly, the results suggest that relative inflation has a significant correlation with imports, not exports. Moreover, the empirical evidence from the full sample indicates that China's imports from its trading partners are determined by the relative competitiveness as envisaged by the bilateral exchange rate and relative prices, not exports. The lack of sensitivity of both exchange rate movements and relative price levels on China's exports show that China's export regime is far from market based.

Table B. All countries

	Exports			Imports		
FEM	M1	M3	M4	M1	M3	M4
LEXRATE		0.0191** (1.980)			0.0114 (0.980)	
LCOMPETIT			-0.0082 (-0.778)			-0.0270** (-2.122)
LRER	0.0265 (0.998)			-0.0670** (-2.184)		
D1						
D2						
REM	M1	M3	M4	M1	M3	M4
LEXRATE		0.0220** (2.364)			-0.0022 (-0.198)	
LCOMPETIT			-0.0160 (-1.560)			-0.0151 (-1.233)
LRER	0.0421* (1.833)			-0.0809*** (-3.113)		
D1						
D2						

Note: M1, M3 and M4 refer to Model 1, 3 and 4, respectively. *, **, and *** denote t-test significance at the 10%, 5%, and 1% levels, respectively.

Table C gives the results from the sub-sample, including Asian countries alone. The results again demonstrate that the exchange rate does not influence exports from China. The interesting observation here lies with the relative inflation variable, which has highly significant coefficients. A quick inspection on the empirical results on the individual country by the time-series analysis reveals that Vietnam is a clear outlier in terms of having significant positive correlation between relative inflation and exports. We thus re-estimate the coefficients excluding Vietnam from the sub- sample. The results calculated for exports differ greatly from when Vietnam is included in the sub-sample, whereas the performance on imports remains consistent.

A puzzle emerges here as the exchange rate movements appear to be negatively related to exports. Specifically, our empirical results suggest a devaluation of the nominal exchange rate or depreciation in the real exchange rate causes exports to contract, and vice versa. Abeysinghe and Yeok (1998) find that exchange rate appreciation does not decrease Singapore's exports as predicted under the traditional Mundell-Fleming model. They argue

that the surge in exports during the period of currency appreciation may be attributed to one of four reasons. First, exports have large import contents. Second, external demand may have been rising. Third, productivity may have been rising. Fourth, pricing-to-market ability may offset the negative effects of currency appreciation. They find evidence in support of the first rationale in that Singapore's exports have a large presence of import contents. As mentioned, over half of China's exports involve processing activities. Therefore, the reversed relationship between the exchange rate and the exports in this study can be also explained by the large import contents of China's exports. During depreciation episodes, Chinese exporters especially those in process industries experience rising prices of imported intermediate goods. Since they find it difficult to raise prices of export goods when China's Asian neighbors are producing mostly the same goods domestically, they are forced to cut exports to these markets, and perhaps opt for other less price-sensitive markets.

Table C. Asian countries (excluding Vietnam)

	Exports			Imports		
FEM	M1	M3	M4	M1	M3	M4
LEXRATE		-0.4635*** (-7.647)			-0.4160*** (-4.522)	
LCOMPETIT			0.6235*** (6.173)			0.4477*** (2.959)
LRER	-0.6177*** (-5.810)			-0.6743*** (-4.370)		
D1						
D2						
REM	M1	M3	M4	M1	M3	M4
LEXRATE		-0.3389*** (-6.307)			-0.2220*** (-3.872)	
LCOMPETIT			0.4582*** (4.960)			0.2621** (2.020)
LRER	-0.3624*** (-4.392)			-0.2217*** (-3.385)		
D1						
D2						

Note: M1, M3 and M4 refer to Model 1, 3, and 4, respectively. *. **, and *** denote t-test significance at the 10%, 5%, and 1% levels, respectively.

The overall performance of the gravity model is comparable to previous studies. Both home and destination GDP exert positive impacts on bilateral trade flows, indicating the existence of both pulling and pushing effects. Distance is shown to be negatively related to

the bilateral trade flows in the full sample. However, the significant relationship disappears for the Asian countries, probably because of the geographic proximity of China to countries in the region.

The results from the panel data analysis are largely consistent to those from the earlier time-series analysis. Hence, our empirically results appear to be robust under different methodologies and model specifications.

8 Conclusions and further research suggestions

This paper considered the impact of exchange rate movements and exchange-rate regime changes on China's exports (imports) to (from) 37 top trading partners based on a generalized bilateral gravity model. Using annual data for the sample period of 1980-2003, the empirical findings suggested two basic conclusions. First, the exchange rate (especially the nominal exchange rate) has no significant effect on exports from China to its trading partners. This partly confirms the hypothesis of the importance of nominal exchange rate due to inefficient pass-through from the exchange rate to prices. Echoing previous research on this topic, we further argued that this insulation from exchange-rate effects reflected the large import contents Chinese exports. This unique feature traces back to China's export regime, which remains heavily subsidized by various export-oriented incentives. Second, China's imports exhibit expected patterns toward relative prices. This is indicative of the overall competitiveness of China's trading partners in the export sector. Therefore, the empirical evidence suggests that a mild revaluation in the nominal exchange rate or appreciation in the real exchange rate would only have muted success in bringing down China's trade surplus.

In other words, the revamping of the current export-oriented policy regime should receive greater attention and the precondition for exchange rate to take bigger role in determining China's international balance of payments. China has already moved to this direction with the initiation of reforms in its export tax refund system in 2004. The aim was

to reduce the level of tax refund in general and introduce more fiscal responsibility at the local level. Meanwhile, the unification of the dual income tax regime, which currently offers foreign companies much lower tax rates, will certainly affect the production and export strategies of the foreign companies. Currently, foreign companies account for over half of the all exports from China.

Given the weak evidence of any negative impact on trade from exchange rate volatility (especially exports), further studies might seek to document direct evidence of the impact of export subsidies and processing trade on China's trade flows. Since such data are unavailable in the bilateral setting, efforts should be made to circumvent the problem. Further research could also consider the exchange rate's impact on China's FDI inflows relative to investing in other countries/regions. FDI inflows to China have been concentrated in the trade sector. This obviously affects the composition and distribution of China's bilateral trade flows. Moreover, given the importance of exchange rate in China's imports, research on the exchange rate pass-through could provide interesting insights into China's monetary policy formation. The dynamics of pass-through from the exchange rate to import prices and consumer prices could be analyzed, say, based on the micro-foundations of the exporter's pricing behavior.

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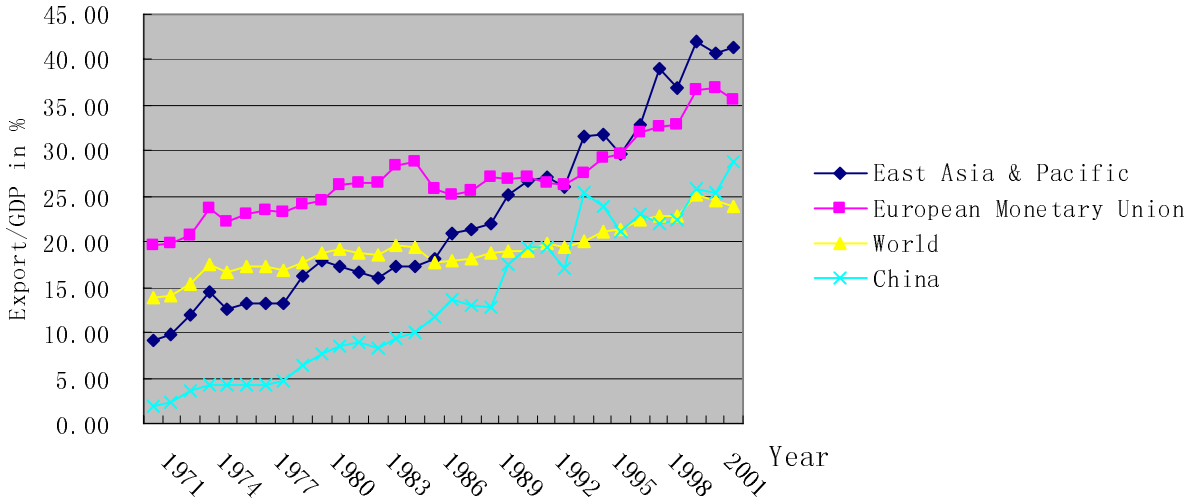
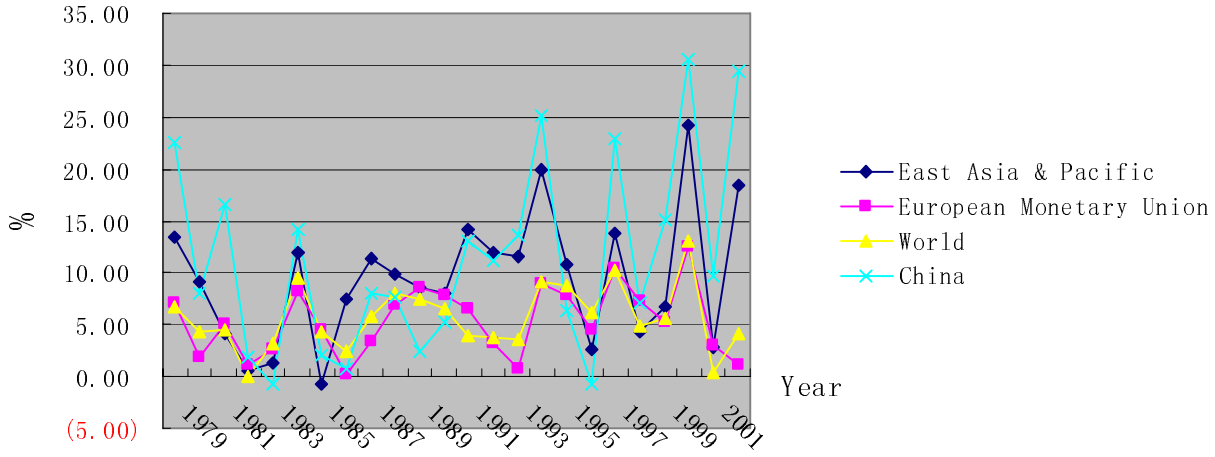
APPENDIX

Figure 1: Openness in China Compared to Other Countries/Regions



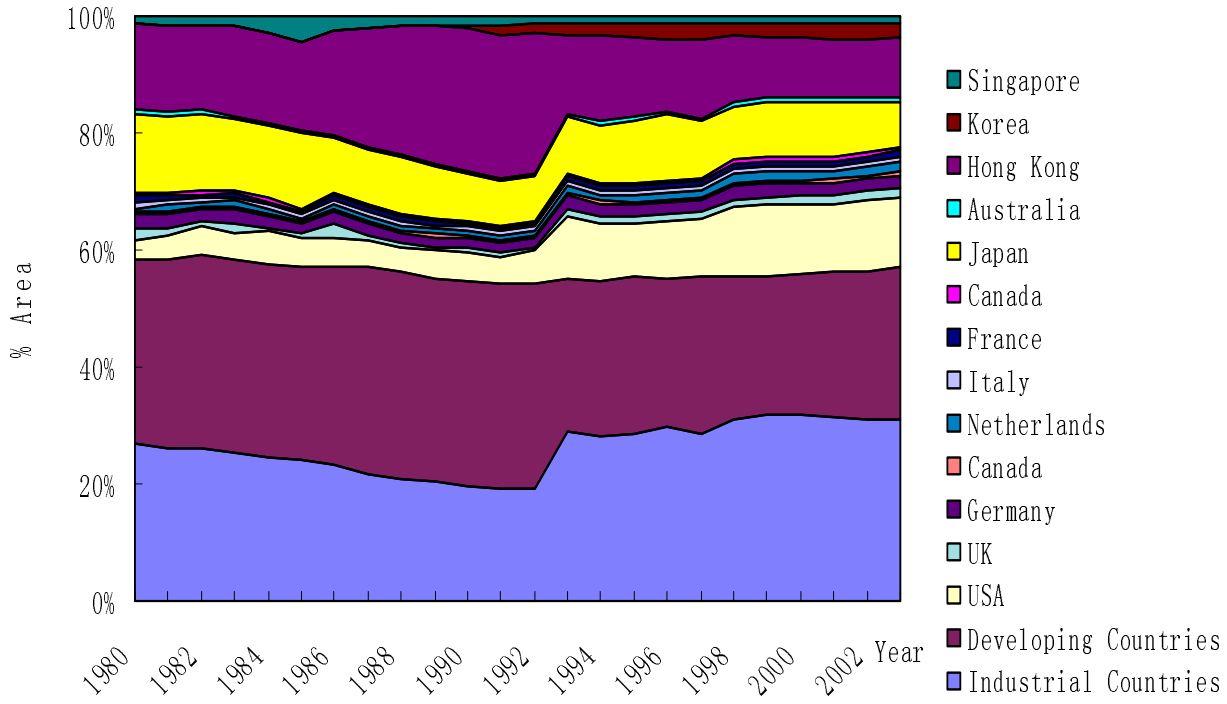
Source: World development indicators 2004

Figure 2: Export Annual % Growth



Source: World development iIndicators 2004

Figure 3: Distribution of Chinese Exports to Selected Countries/Regions



Source: World development iIndicators 2004

Table 1. Augmented Dickey-Fuller regressions including an intercept and a linear trend: unit root test (degree of integration)

	LEXPORT	LIMPORT	LRGDP0	LRGDP1	LPOP0	LPOP1	LEXRATE	LRER	LCOMPETIT
Australia	1	0	1	1	1	1	1	1	1
Austria	0	1	1	1	1	1	1	1	1
Belgium	1	1	1	1	1	1	1	1	1
Brazil	1	1	1	1	1	1	1	1	1
Canada	1	1	1	1	1	1	1	1	1
Denmark	1	1	1	1	1	1	1	1	1
Finland	1	1	1	1	1	1	1	1	1
France	1	0	1	1	1	1	1	1	1
Germany	1	1	1	1	1	1	1	1	1
Hong Kong	1	1	1	1	1	1	1	1	1
Hungary	1	1	1	1	1	0	1	1	1
India	0	0	1	1	1	1	1	1	1
Indonesia	1	0	1	1	1	1	1	1	1
Iran	0	1	1	1	1	1	1	1	1
Ireland	1	1	1	1	1	1	1	1	1
Italy	1	1	1	1	1	1	1	1	1
Japan	1	1	1	1	1	1	1	1	1
Korea	1	0	1	1	1	1	1	1	1
Malaysia	1	1	1	1	1	1	1	1	1
Mexico	0	1	1	1	1	1	1	1	1
Netherlands	0	1	1	1	1	1	1	1	1
New Zealand	1	1	1	1	1	1	1	1	1
Norway	1	1	1	1	1	1	1	1	1
Philippines	1	1	1	1	1	1	1	1	1
Russia	1	1	1	1	1	1	1	1	1
Saudi Arabia	0	1	1	1	1	1	1	1	1
Singapore	1	1	1	1	1	1	1	1	1
South Africa	1	1	1	1	1	1	1	1	1
Spain	1	1	1	1	1	0	1	1	1
Sweden	0	1	1	1	1	1	1	1	1
Switzerland	1	1	1	1	1	1	1	1	1
Taiwan	1	1	1	1	1	1	1	1	1
Thailand	1	1	1	1	1	0	1	1	1
Turkey	1	1	1	1	1	1	1	1	1
UK	0	1	1	1	1	0	1	1	1
UAE	1	1	1	1	1	0	1	1	0
USA	1	0	1	1	1	1	1	1	1
Vietnam	0	0	1	1	1	1	0	1	1

Note: 95% critical value for the augmented Dickey-Fuller statistics. I(0) refers to no-unit root; I(1) refers to unit root.

Table 2. Regression estimates for China export (import) function to (from) Australia

Dependent Variable: China Exports to Australia						Dependent Variable: China Imports from Australia				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4		Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	-70.31 (-0.54)	-92.69 (-0.67)	29.29 (0.23)	-71.17 (-0.66)		CONSTANT	69.80 (0.61)	98.19 (0.71)	105.13 (1.00)	111.83 (1.03)
LRPGDP0	0.41 (0.25)	-0.92 (-0.55)	-0.46 (-0.28)	-0.72 (-0.52)		LRPGDP0	1.86 (1.39)	1.51 (0.90)	1.98 (1.42)	1.75 (1.26)
LRPGDP1	-1.62 (-0.55)	1.80 (0.64)	2.65 (0.90)	1.72 (0.78)		LRPGDP1	-0.24 (-0.10)	1.30 (0.46)	-0.03 (-0.01)	0.74 (0.34)
LPOP0	-16.55 (-1.16)	-15.33 (-1.22)	-27.90** (-2.23)	-16.22 (-1.49)		LPOP0	-0.79 (-0.07)	-6.04 (-0.48)	-4.67 (-0.44)	-5.35 (-0.49)
LPOP1	27.42 (1.53)	25.53 (1.59)	32.99* (1.63)	25.37 (1.72)		LPOP1	-2.41 (-0.16)	1.63 (0.10)	0.14 (0.01)	0.20 (0.01)
LEXRATE			0.56 (1.63)			LEXRATE			-0.17 (-0.59)	
LRER	-0.64 (-1.34)					LRER	-0.34 (-0.87)			
LCPI		-0.89 (-1.68)		-1.00** (-3.25)		LCPI		0.06 (0.11)		-0.01 (-0.04)
D1		0.10 (0.27)				D1		0.07 (0.20)		
D2		0.005 (0.02)				D2		-0.08 (-.32)		
DIAGNOSTIC TEST						DIAGNOSTIC TEST				
Adj. R^2	0.958	0.968	0.960	0.971		Adj. R^2	0.922	0.909	0.920	0.919
F-STAT.	106.381	98.881	111.163	154.992		F-STAT.	55.240	33.898	53.980	52.876
DW[a]	0.988	1.268	1.277	1.264		DW[a]	2.016	2.187	2.059	2.099
OBSERVATION	24	24	24	24		OBSERVATION	24	24	24	24

Note: The figures in parentheses are the absolute t-statistics. * and ** denote significance at the 10% and 5% levels, respectively.

[a] Durbin-Watson Statistic

Table 3. Regression estimates for China export (import) function to (from) Austria

Dependent Variable: China Exports to Austria				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	-349.84 (-0.98)	55.02 (0.09)	-308.08 (-0.97)	-160.92 (-0.34)
LRPGDP0	0.69 (0.43)	2.67 (1.10)	0.70 (0.44)	1.29 (0.91)
LRPGDP1	3.29 (0.44)	9.46 (1.26)	3.40 (0.46)	7.29 (1.29)
LPOP0	-10.11 (-0.73)	-29.47 (-1.38)	-10.50 (-0.79)	-16.97 (-1.49)
LPOP1	34.10** (2.38)	29.50 (1.16)	31.91** (2.45)	28.42 (1.24)
LEXRATE			0.18 (0.75)	
LRER	0.17 (0.74)			
LCPI		-0.52 (-0.31)		-0.02 (-0.01)
D1		-0.41 (-0.54)		
D2		-0.26 (-0.48)		
DIAGNOSTIC TEST				
Adj. R^2	0.876	0.861	0.876	0.872
F-STAT.	33.534	21.336	33.564	32.447
DW[a]	2.49	2.548	2.500	2.431
OBSERVATION	24	24	24	24

Dependent Variable: China Imports from Austria				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	-140.47 (-0.44)	604.25 (1.18)	-55.33 (-0.19)	63.87 (0.15)
LRPGDP0	-0.01 (-0.01)	3.36 (1.62)	0.06 (0.04)	0.98 (0.74)
LRPGDP1	-6.35 (-0.94)	7.60 (1.19)	-5.87 (-0.89)	0.19 (0.04)
LPOP0	17.32 (1.41)	-18.02 (-0.99)	16.15 (1.35)	6.67 (0.63)
LPOP1	-8.60 (-0.67)	-19.24 (-0.89)	-12.75 (-1.09)	-12.22 (-0.57)
LEXRATE			0.30 (1.43)	
LRER	0.31 (1.48)			
LCPI		-0.20 (-0.14)		0.47 (0.34)
D1		-0.17 (-0.26)		
D2		-0.86* (-1.88)		
DIAGNOSTIC TEST				
Adj. R^2	0.703	0.696	0.701	0.699
F-STAT.	11.890	8.526	11.788	10.311
DW[a]	1.862	2.231	1.852	1.725
OBSERVATION	24	24	24	24

Note: The figures in parentheses are the absolute t-statistics. * and ** denote significance at the 10% and 5% levels, respectively.

[a] Durbin-Watson Statistic

Table 4. Regression estimates for China export (import) function to (from) Brazil

Dependent Variable: China Exports to Brazil				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	1480.90** (4.96)	691.09** (2.30)	1331.7** (5.83)	1336.9** (5.63)
LRPGDP0	16.85** (6.22)	10.26** (2.90)	17.17** (5.82)	16.91** (6.02)
LRPGDP1	-7.28** (-2.29)	-7.83** (-2.47)	-8.05** (-2.21)	-7.81** (-2.20)
LPOP0	-12.05 (-0.46)	13.58 (0.48)	5.28 (0.17)	3.03 (0.10)
LPOP1	-66.42** (-2.82)	-50.58* (-1.83)	-77.47** (-2.59)	-75.26** (-2.57)
LEXRATE			0.03 (0.48)	
LRER	0.20 (0.41)			
LCPI		-0.10 (-1.48)		-0.02 (-0.38)
D1		1.59** (2.78)		
D2		0.23 (0.57)		
DIAGNOSTIC TEST				
Adj. R^2	0.813	0.863	0.813	0.813
F-STAT.	20.964	21.664	21.047	20.939
DW[a]	1.721	2.504	1.734	1.730
OBSERVATION	24	24	24	24

Dependent Variable: China Imports from Brazil				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	7.67 (0.02)	25.46 (0.09)	-46.90 (-0.20)	-58.25 (-0.24)
LRPGDP0	-2.04 (-0.72)	5.51 (1.60)	0.72 (0.24)	0.25 (0.09)
LRPGDP1	1.71 (0.51)	-3.26 (-1.05)	-0.83 (-0.23)	-0.47 (-0.13)
LPOP0	-43.80 (-1.58)	1.80 (0.07)	-19.66 (-0.62)	-21.64 (-0.68)
LPOP1	49.14* (1.98)	-2.61 (-0.10)	25.45 (0.84)	28.28 (0.95)
LEXRATE			0.09 (1.34)	
LRER	-0.23 (-0.45)			
LCPI		-0.17** (-2.66)		-0.07 (-1.27)
D1		0.25 (0.45)		
D2		-1.26** (-3.26)		
DIAGNOSTIC TEST				
Adj. R^2	0.783	0.864	0.801	0.799
F-STAT.	17.624	21.883	19.486	19.263
DW[a]	1.193	1.697	1.032	1.038
OBSERVATION	24	24	24	24

Note: The figures in parentheses are the absolute t-statistics. * and ** denote significance at the 10% and 5% levels, respectively.

[a] Durbin-Watson Statistic

Table 5. Regression estimates for China export (import) function to (from) Canada

Dependent Variable: China Exports to Canada						Dependent Variable: China Imports from Canada				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4		Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	30.55 (0.38)	3.17 (0.04)	-14.16 (-0.17)	46.71 (0.69)		CONSTANT	11.43 (0.09)	-160.05 (-1.27)	-86.08 (-0.64)	-27.70 (-0.26)
LRPGDP0	1.91** (2.86)	1.69* (2.07)	1.96** (3.10)	2.04** (3.06)		LRPGDP0	-0.02 (-0.01)	-0.94 (-0.83)	-0.12 (-0.11)	-0.14 (0.13)
LRPGDP1	-0.51 (-0.59)	-0.43 (-0.40)	-1.21 (-1.18)	-0.71 (-0.75)		LRPGDP1	1.23 (0.89)	1.16 (0.76)	0.37 (0.22)	0.31 (0.21)
LPOP0	-12.59 (-1.69)	-15.49** (-2.31)	-9.73 (-1.58)	-16.44** (-3.17)		LPOP0	-18.53 (-1.56)	-15.22 (-1.62)	-8.27 (-0.82)	-18.13** (-2.26)
LPOP1	14.36 (1.71)	19.41** (2.32)	13.90* (1.96)	18.13** (2.36)		LPOP1	22.41 (1.68)	28.42** (2.42)	16.18 (1.40)	24.56* (2.07)
LEXRATE			-0.34 (-1.25)			LEXRATE			-0.34 (-0.77)	
LRER	-0.10 (-0.42)					LRER	0.20 (0.53)			
LCPI		0.37 (1.05)		0.15 (0.61)		LCPI		1.14** (2.32)		0.48 (1.27)
D1		0.20 (0.90)				D1		0.59* (1.95)		
D2		-0.06 (-0.40)				D2		-0.17 (-0.87)		
DIAGNOSTIC TEST						DIAGNOSTIC TEST				
Adj. R^2	0.986	0.985	0.987	0.986		Adj. R^2	0.790	0.829	0.794	0.804
F-STAT.	327.249	223.053	352.548	330.798		F-STAT.	18.334	16.942	18.695	19.918
DW[a]	1.544	1.826	1.652	1.629		DW[a]	1.865	2.396	1.981	2.021
OBSERVATION	24	24	24	24		OBSERVATION	24	24	24	24

Note: The figures in parentheses are the absolute t-statistics. * and ** denote significance at the 10% and 5% levels, respectively.

[a] Durbin-Watson Statistic

Table 6. Regression estimates for China export (import) function to (from) Denmark

Dependent Variable: China Exports to Denmark						Dependent Variable: China Imports from Denmark				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4		Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	-406.65** (-2.68)	-399.45** (-2.21)	-293.24* (-1.83)	-320.80** (-2.10)		CONSTANT	414.05 (1.29)	134.97 (0.40)	433.85 (1.48)	302.94 (1.06)
LRPGDP0	0.02 (0.02)	0.57 (0.65)	0.18 (0.21)	0.63 (0.76)		LRPGDP0	3.13* (1.96)	3.02* (1.86)	3.55** (2.23)	3.72 (2.40)
LRPGDP1	5.26** (3.51)	4.88** (2.24)	5.04** (2.78)	3.42* (1.91)		LRPGDP1	1.45 (0.46)	-0.41 (-0.10)	0.09 (0.03)	-0.87 (-0.26)
LPOP0	-0.88 (-0.26)	-0.18 (-0.04)	1.12 (0.31)	1.92 (0.57)		LPOP0	-11.55 (-1.63)	-7.63 (-1.01)	-10.22 (-1.52)	-11.54* (-1.82)
LPOP1	25.17** (3.31)	23.77** (2.67)	15.22** (2.22)	16.74** (2.63)		LPOP1	-12.15 (-0.75)	1.52 (0.09)	-14.47 (-1.15)	-3.85 (-0.32)
LEXRATE			0.07 (0.49)			LEXRATE			-0.29 (-1.09)	
LRER	0.43** (2.21)					LRER	-0.11 (-0.26)			
LCPI		0.10 (0.30)		0.33 (1.45)		LCPI		1.14* (1.80)		0.64 (1.53)
D1		-0.20 (-0.92)				D1		0.41 (0.99)		
D2		-0.19 (-1.07)				D2		-0.22 (-0.66)		
DIAGNOSTIC TEST						DIAGNOSTIC TEST				
Adj. R^2	0.988	0.986	0.985	0.986		Adj. R^2	0.900	0.911	0.906	0.911
F-STAT.	371.684	226.780	295.301	325.666		F-STAT.	42.379	34.673	45.241	48.128
DW[a]	1.638	1.817	1.342	1.398		DW[a]	2.249	2.782	2.394	2.445
OBSERVATION	24	24	24	24		OBSERVATION	24	24	24	24

Note: The figures in parentheses are the absolute t-statistics. * and ** denote significance at the 10% and 5% levels, respectively.

[a] Durbin-Watson Statistic

Table 7. Regression estimates for China export (import) function to (from) Finland

Dependent Variable: China Exports to Finland						Dependent Variable: China Imports from Finland				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4		Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	1699.20** (3.34)	2220.90** (4.90)	1593.1** (3.41)	1846.1** (3.87)		CONSTANT	47.18 (0.09)	179.28 (0.31)	-41.14 (-0.08)	241.65 (0.44)
LRPGDP0	6.39** (4.42)	5.40** (4.14)	5.71** (4.17)	5.99** (4.22)		LRPGDP0	3.42** (2.24)	2.53 (1.50)	2.74* (1.86)	3.39* (2.08)
LRPGDP1	0.09 (0.07)	0.27 (0.21)	-0.09 (-0.08)	1.74 (1.45)		LRPGDP1	-0.87 (-0.62)	-0.67 (-0.41)	-0.90 (-0.73)	0.81 (0.58)
LPOP0	10.47 (1.40)	36.48** (3.63)	10.37 (1.53)	14.57* (2.04)		LPOP0	-15.92* (-2.02)	-2.94 (-0.23)	-15.68** (-2.15)	-11.93 (-1.45)
LPOP1	-125.65** (-3.12)	-194.57** (-5.01)	-118.25** (-3.21)	-141.39** (-3.76)		LPOP1	18.97 (0.45)	-6.89 (-0.14)	24.66 (0.62)	0.07 (0.002)
LEXRATE			0.37** (2.43)			LEXRATE			0.41** (2.51)	
LRER	0.22 (1.41)					LRER	0.29* (1.74)			
LCPI		0.51 (0.87)		-0.79* (-1.93)		LCPI		-0.14 (-0.18)		-0.56 (-1.20)
D1		1.05** (2.60)				D1		0.17 (0.33)		
D2		0.30 (1.23)				D2		0.50 (1.62)		
DIAGNOSTIC TEST						DIAGNOSTIC TEST				
Adj. R^2	0.962	0.973	0.968	0.965		Adj. R^2	0.953	0.951	0.959	0.949
F-STAT.	116.562	120.61	140.208	127.075		F-STAT.	93.530	64.153	108.707	86.221
DW[a]	1.089	1.811	1.363	1.250		DW[a]	1.295	1.505	1.628	1.233
OBSERVATION	24	24	24	24		OBSERVATION	24	24	24	24

Note: The figures in parentheses are the absolute t-statistics. * and ** denote significance at the 10% and 5% levels, respectively.

[a] Durbin-Watson Statistic

Table 8. Regression estimates for China export (import) function to (from) France

Dependent Variable: China Exports to France						Dependent Variable: China Imports from France				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4		Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	-408.20 (-0.44)	-1118.70* (-1.86)	-242.87 (-0.28)	-1069.9* (-1.86)		CONSTANT	10.58 (0.01)	-31.83 (-0.04)	9.54 (0.01)	32.35 (0.04)
LRPGDP0	1.16 (0.51)	-1.32 (-0.80)	1.06 (0.49)	-1.48 (-1.01)		LRPGDP0	0.57 (0.31)	0.47 (0.21)	0.58 (0.32)	0.64 (0.33)
LRPGDP1	3.85 (0.91)	2.04 (0.79)	-0.39 (-0.10)	3.19 (1.53)		LRPGDP1	1.77 (0.52)	0.90 (0.26)	1.88 (0.55)	1.70 (0.62)
LPOP0	-16.16 (-1.35)	-23.37** (-3.01)	-6.38 (-0.58)	-21.50** (-3.44)		LPOP0	8.87 (0.93)	9.93 (0.94)	8.65 (0.94)	9.20 (1.13)
LPOP1	40.33 (0.62)	90.85** (2.26)	22.07 (0.37)	85.25** (2.18)		LPOP1	-10.97 (-0.21)	-9.30 (-0.17)	-10.72 (-0.21)	-12.58 (-0.25)
LEXRATE			0.25 (1.36)			LEXRATE			-0.01 (-0.08)	
LRER	-0.07 (-0.36)					LRER	-0.004 (-0.03)			
LCPI		-1.60** (-4.49)		-1.32** (-5.55)		LCPI		-0.03 (-0.06)		0.03 (0.10)
D1		-0.29 (-1.14)				D1		-0.08 (-0.22)		
D2		0.08 (0.42)				D2		0.09 (0.34)		
DIAGNOSTIC TEST						DIAGNOSTIC TEST				
Adj. R^2	0.938	0.976	0.943	0.977		Adj. R^2	0.945	0.938	0.945	0.945
F-STAT.	70.230	135.504	77.250	194.963		F-STAT.	79.604	51.120	79.631	79.650
DW[a]	0.793	2.038	0.876	2.091		DW[a]	3.043	3.024	3.050	3.051
OBSERVATION	24	24	24	24		OBSERVATION	24	24	24	24

Note: The figures in parentheses are the absolute t-statistics. * and ** denote significance at the 10% and 5% levels, respectively.

[a] Durbin-Watson Statistic

Table 9. Regression estimates for China export (import) function to (from) Germany

Dependent Variable: China Exports to Germany						Dependent Variable: China Imports from Germany				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4		Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	80.62 (0.27)	188.78 (0.33)	-289.53* (-2.01)	373.17 (0.75)		CONSTANT	407.17 (0.65)	-438.68 (-0.81)	395.49 (1.65)	168.67 (0.14)
LRPGDP0	1.89 (1.77)	2.04 (1.53)	1.27** (2.87)	2.29* (1.93)		LRPGDP0	2.15 (0.96)	2.11 (1.67)	2.35** (3.20)	2.49 (0.88)
LRPGDP1	-8.86** (-3.87)	-8.27** (-2.71)	-2.59 (-1.23)	-8.61** (-3.48)		LRPGDP1	-14.41** (-3.00)	-6.88* (-2.39)	-1.34 (-0.38)	-12.57* (-2.14)
LPOP0	13.54 (1.62)	14.35 (1.41)	-0.66 (-0.14)	13.82 (1.52)		LPOP0	20.92 (1.19)	14.52 (1.51)	-7.84 (-0.97)	19.23 (0.89)
LPOP1	-14.41 (-1.25)	-21.72 (-0.76)	18.89** (3.93)	-30.98 (-1.24)		LPOP1	-37.79 (-1.55)	11.19 (0.41)	-11.58 (-1.45)	-24.10 (-0.41)
LEXRATE			0.23 (1.34)			LEXRATE			0.64** (2.21)	
LRER	0.19 (1.24)					LRER	0.65* (2.04)			
LCPI		0.25 (0.27)		-0.29 (-0.48)		LCPI		2.35** (2.65)		0.96 (0.65)
D1		0.17 (0.78)				D1		0.37 (1.78)		
D2		-0.04 (-0.31)				D2		-0.49** (-4.44)		
DIAGNOSTIC TEST						DIAGNOSTIC TEST				
Adj. R^2	0.982	0.975	0.982	0.979		Adj. R^2	0.915	0.976	0.932	0.872
F-STAT.	133.079	69.167	252.934	112.563		F-STAT.	26.848	72.092	63.749	17.367
DW[a]	2.663	2.543	1.156	2.200		DW[a]	1.953	3.334	1.354	1.254
OBSERVATION	13	13	13	13		OBSERVATION	13	13	13	13

Note: The figures in parentheses are the absolute t-statistics. * and ** denote significance at the 10% and 5% levels, respectively.

[a] Durbin-Watson Statistic

Table 10. Regression estimates for China export (import) function to (from) Hong Kong

Dependent Variable: China Exports to Hong Kong						Dependent Variable: China Imports from Hong Kong				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4		Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	-238.63** (-2.11)	-181.61 (-1.47)	-214.51* (-1.88)	-236.86* (-2.00)		CONSTANT	-513.56* (-1.75)	-165.92 (-0.71)	-438.17* (-1.86)	-284.29 (-1.15)
LRPGDP0	-0.52 (-0.40)	-0.61 (-0.43)	-0.43 (-0.30)	-1.11 (-0.80)		LRPGDP0	-4.67 (-1.41)	-1.25 (-0.47)	-1.12 (-0.38)	-2.07 (-0.72)
LRPGDP1	1.45 (1.01)	1.73 (1.19)	1.42 (0.96)	1.64 (1.12)		LRPGDP1	5.85 (1.58)	5.40* (1.97)	4.63 (1.52)	5.02 (1.64)
LPOP0	13.89** (2.27)	10.06 (1.59)	12.37* (2.05)	11.92* (2.03)		LPOP0	22.67 (1.43)	2.41 (0.20)	28.69** (2.30)	12.91 (1.05)
LPOP1	-2.48 (-0.45)	-0.97 (-0.15)	-2.01 (-0.34)	0.23 (0.04)		LPOP1	2.14 (0.15)	5.53 (0.45)	-11.40 (-0.92)	-0.85 (-0.07)
LEXRATE			-0.21 (-0.62)			LEXRATE			-2.18** (-3.13)	
LRER	-0.38 (-1.11)					LRER	-0.65 (-0.73)			
LCPI		-0.59 (-1.07)		-0.27 (-0.60)		LCPI		1.45 (1.40)		2.89** (3.01)
D1		-0.26 (-1.25)				D1		-1.03** (-2.56)		
D2		0.13 (0.56)				D2		-0.25 (-0.57)		
DIAGNOSTIC TEST						DIAGNOSTIC TEST				
Adj. R^2	0.959	0.958	0.957	0.957		Adj. R^2	0.760	0.869	0.840	0.836
F-STAT.	108.74	75.375	103.753	103.613		F-STAT.	15.600	22.864	25.200	24.473
DW[a]	1.794	1.949	1.569	1.473		DW[a]	0.847	1.868	1.628	1.080
OBSERVATION	24	24	24	24		OBSERVATION	24	24	24	24

Note: The figures in parentheses are the absolute t-statistics. * and ** denote significance at the 10% and 5% levels, respectively.

[a] Durbin-Watson Statistic

Table 11. Regression estimates for China export (import) function to (from) Hungary

Dependent Variable: China Exports to Hungary				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	1001.40 (1.70)	1502.80** (2.34)	1348.8** (2.38)	1503.5** (2.51)
LRPGDP0	8.49** (4.74)	9.72** (3.86)	9.87** (5.41)	10.04** (5.32)
LRPGDP1	2.15 (1.31)	1.49 (0.86)	1.79 (1.37)	0.64 (0.49)
LPOP0	-49.83** (-4.48)	-54.48** (-3.98)	-57.07** (-5.19)	-54.63** (-5.18)
LPOP1	-0.53 (-0.02)	-25.67 (-0.84)	-13.04 (-0.46)	-25.11 (-0.85)
LEXRATE			0.91** (2.12)	
LRER	0.90 (1.09)			
LCPI		-0.89 (-1.12)		-1.27* (-2.05)
D1		0.17 (0.33)		
D2		-0.46 (-0.82)		
DIAGNOSTIC TEST				
Adj. R^2	0.882	0.890	0.899	0.898
F-STAT.	35.455	27.711	42.135	41.571
DW[a]	1.194	1.314	1.311	1.196
OBSERVATION	24	24	24	24

Dependent Variable: China Imports from Hungary				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	-204.47 (-0.29)	784.87 (1.22)	197.41 (0.29)	339.83 (0.47)
LRPGDP0	-2.15 (-1.01)	3.05 (1.21)	-0.62 (-0.28)	-0.56 (-0.24)
LRPGDP1	9.66** (4.97)	8.07** (4.68)	9.08** (5.78)	7.80** (4.89)
LPOP0	3.59 (0.27)	-22.12 (-1.61)	-3.94 (-0.30)	-0.38 (-0.03)
LPOP1	5.15 (0.14)	-24.14 (-0.78)	-10.36 (-0.30)	-22.99 (-0.64)
LEXRATE			1.05* (2.03)	
LRER	1.17 (1.20)			
LCPI		-0.35 (-0.44)		-1.37* (-1.82)
D1		-1.02* (-1.97)		
D2		-1.11* (-1.97)		
DIAGNOSTIC TEST				
Adj. R^2	0.561	0.708	0.614	0.599
F-STAT.	6.888	8.984	8.317	7.881
DW[a]	2.014	2.492	2.308	2.111
OBSERVATION	24	24	24	24

Note: The figures in parentheses are the absolute t-statistics. * and ** denote significance at the 10% and 5% levels, respectively.

[a] Durbin-Watson Statistic

Table 12. Regression estimates for China export (import) function to (from) India

Dependent Variable: China Exports to India						Dependent Variable: China Imports from India				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4		Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	313.62* (2.01)	93.75 (0.51)	313.87* (1.76)	243.46 (1.62)		CONSTANT	105.26 (0.48)	138.92 (0.41)	180.43 (0.68)	-9.34 (-0.03)
LRPGDP0	3.62 (1.73)	0.02 (0.01)	3.42 (1.24)	0.41 (0.19)		LRPGDP0	2.25 (0.76)	-2.34 (-0.58)	5.03 (1.23)	-3.17 (-0.83)
LRPGDP1	8.00** (2.68)	7.27** (2.49)	8.78** (2.64)	7.50** (2.61)		LRPGDP1	6.43 (1.52)	6.32 (1.17)	8.26 (1.67)	6.57 (1.27)
LPOP0	8.60 (0.68)	2.13 (0.11)	9.33 (0.51)	-16.94 (-1.20)		LPOP0	11.02 (0.62)	-44.74 (-1.23)	37.24 (1.38)	-29.33 (-1.16)
LPOP1	-26.42 (-1.50)	-7.68 (-0.37)	-27.29 (-1.14)	4.44 (0.23)		LPOP1	-18.04 (-0.72)	39.29 (1.01)	-49.59 (-1.39)	30.73 (0.90)
LEXRATE			-0.37 (-0.52)			LEXRATE			-2.37** (-2.26)	
LRER	-1.06** (-2.18)					LRER	-2.55** (-3.70)			
LCPI		-0.75 (-0.72)		-1.78** (-2.61)		LCPI		-3.77* (-1.93)		-2.42 (-1.99)
D1		0.57 (1.31)				D1		-0.72 (-0.89)		
D2		0.17 (0.55)				D2		0.13 (0.23)		
DIAGNOSTIC TEST						DIAGNOSTIC TEST				
Adj. R^2	0.952	0.957	0.940	0.957		Adj. R^2	0.932	0.893	0.905	0.900
F-STAT.	88.89	70.354	69.882	97.874		F-STAT.	61.149	27.180	43.076	40.669
DW[a]	1.749	1.454	0.325	1.537		DW[a]	1.583	1.473	1.199	1.542
OBSERVATION	23	23	23	23		OBSERVATION	23	23	23	23

Note: The figures in parentheses are the absolute t-statistics. * and ** denote significance at the 10% and 5% levels, respectively.

[a] Durbin-Watson Statistic

Table 13. Regression estimates for China export (import) function to (from) Indonesia

Dependent Variable: China Exports to Indonesia						Dependent Variable: China Imports from Indonesia				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4		Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	-176.63** (-2.41)	-183.65 (-1.38)	-197.31** (-2.49)	-172.30* (-1.86)		CONSTANT	-596.99** (-4.89)	-430.38** (-2.35)	-637.66** (-6.22)	-636.03** (-4.46)
LRPGDP0	1.45 (1.51)	0.57 (0.38)	1.33 (1.28)	0.69 (0.59)		LRPGDP0	-6.05** (-3.77)	-5.16** (-2.48)	-5.76** (-4.28)	-7.18** (-3.98)
LRPGDP1	-0.31E-3 (-0.47E-3)	1.59 (1.12)	-1.25 (-1.17)	1.84 (1.36)		LRPGDP1	-0.52 (-0.47)	-1.49 (-0.77)	-3.99** (-2.88)	-1.37 (-0.66)
LPOP0	8.47 (0.95)	8.57 (0.65)	2.01 (0.21)	9.86 (0.81)		LPOP0	-24.39 (-1.64)	-49.29** (-2.74)	-36.97** (-2.92)	-37.51* (-2.00)
LPOP1	0.78 (0.08)	0.47 (0.03)	9.39 (0.90)	-1.64 (-0.12)		LPOP1	61.59** (3.94)	80.08** (4.17)	78.70** (5.85)	78.56** (3.79)
LEXRATE			0.52** (2.63)			LEXRATE			1.12** (4.42)	
LRER	0.60** (3.32)					LRER	0.88** (2.89)			
LCPI		0.40 (0.90)		0.29 (0.70)		LCPI		-0.76 (-1.25)		-0.87 (-1.34)
D1		0.15 (0.57)				D1		-0.27 (-0.74)		
D2		-0.24 (-1.05)				D2		-0.60* (-1.94)		
DIAGNOSTIC TEST						DIAGNOSTIC TEST				
Adj. R^2	0.989	0.981	0.987	0.982		Adj. R^2	0.966	0.962	0.976	0.954
F-STAT.	403.909	174.898	346.131	256.147		F-STAT.	129.916	83.281	186.411	96.686
DW[a]	2.494	2.406	2.471	2.095		DW[a]	1.188	1.653	1.878	1.073
OBSERVATION	24	24	24	24		OBSERVATION	24	24	24	24

Note: The figures in parentheses are the absolute t-statistics. * and ** denote significance at the 10% and 5% levels, respectively.

[a] Durbin-Watson Statistic

Table 14. Regression estimates for China export (import) function to (from) Iran

Dependent Variable: China Exports to Iran						Dependent Variable: China Imports from Iran				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4		Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	-327.20 (-1.18)	-281.76 (-0.97)	-332.47 (-1.19)	-325.52 (-1.21)		CONSTANT	-617.39 (-0.75)	-497.13 (-0.61)	-601.77 (-0.73)	-686.16 (-0.84)
LRPGDP0	-0.10 (-0.05)	-0.49 (-0.16)	-0.09 (-0.05)	-2.03 (-0.93)		LRPGDP0	-0.42 (-0.11)	11.81 (1.51)	-0.52 (-0.13)	2.48 (0.49)
LRPGDP1	2.12* (1.84)	1.30 (0.93)	2.14* (1.82)	1.44 (1.14)		LRPGDP1	-0.46 (-0.17)	-0.77 (-0.27)	-0.47 (-0.17)	0.05 (0.02)
LPOP0	21.31 (1.25)	19.52 (1.12)	21.39 (1.25)	19.45 (1.17)		LPOP0	18.95 (0.31)	32.11 (0.51)	17.75 (0.29)	28.57 (0.45)
LPOP1	-6.31 (-1.04)	-6.47 (-0.88)	-6.13 (-0.98)	-3.53 (-0.62)		LPOP1	13.69 (0.48)	-11.63 (-0.35)	14.27 (0.50)	5.43 (0.17)
LEXRATE			0.05 (0.29)			LEXRATE			-0.09 (-0.25)	
LRER	0.07 (0.44)					LRER	-0.10 (-0.32)			
LCPI		0.85 (0.66)		1.06 (1.09)		LCPI		-3.73 (-1.23)		-1.46 (0.63)
D1		-0.43 (-0.75)				D1		-1.97 (-1.55)		
D2		-0.08 (-0.13)				D2		-0.10 (-0.09)		
DIAGNOSTIC TEST						DIAGNOSTIC TEST				
Adj. R^2	0.763	0.756	0.762	0.775		Adj. R^2	0.888	0.893	0.888	0.890
F-STAT.	15.820	11.180	15.702	16.879		F-STAT.	31.070	23.710	30.985	31.796
DW[a]	2.374	2.375	2.359	2.328		DW[a]	2.845	2.816	2.848	2.759
OBSERVATION	24	24	24	24		OBSERVATION	20	20	20	20

Note: The figures in parentheses are the absolute t-statistics. * and ** denote significance at the 10% and 5% levels, respectively.

[a] Durbin-Watson Statistic

Table 15. Regression estimates for China export (import) function to (from) Ireland

Dependent Variable: China Exports to Ireland				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	235.76 (0.95)	-428.56 (-0.81)	-37.62 (-0.14)	-463.16 (-0.651)
LRPGDP0	2.47 (1.71)	-0.39 (-0.16)	0.77 (0.43)	-0.586 (-0.24)
LRPGDP1	3.82** (2.69)	1.64 (0.65)	3.30** (3.33)	0.62 (0.31)
LPOP0	-13.26 (-1.42)	1.81 (0.13)	-8.84 (-1.15)	6.02 (0.45)
LPOP1	0.39 (0.06)	26.67 (1.25)	13.35 (1.21)	23.80 (1.40)
LEXRATE			0.73 (1.48)	
LRER	0.29 (0.58)			
LCPI		-1.54 (-1.07)		-1.39 (-1.50)
D1		-0.09 (-0.16)		
D2		-0.65* (-1.83)		
DIAGNOSTIC TEST				
Adj. R^2	0.969	0.974	0.972	0.972
F-STAT.	146.239	124.887	161.319	161.894
DW[a]	1.094	1.350	1.065	0.837
OBSERVATION	24	24	24	24

Dependent Variable: China Imports from Ireland				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	-1286.50** (-4.10)	-1304.10 (-1.58)	-809.60** (-2.22)	-1427.0* (-2.06)
LRPGDP0	-2.43 (-1.33)	-3.74 (-0.97)	-0.24 (-0.10)	-4.06 (-1.15)
LRPGDP1	-3.27* (-1.82)	-1.65 (-0.42)	-1.27 (-0.95)	-2.51 (-0.87)
LPOP0	34.35* (2.89)	30.12 (1.44)	21.96** (2.10)	32.14 (1.69)
LPOP1	42.09** (4.92)	48.47 (1.45)	25.44 (1.70)	54.67** (2.25)
LEXRATE			-0.98 (-1.46)	
LRER	-1.05 (-1.67)			
LCPI		-0.15 (-0.06)		-0.67 (-0.51)
D1		0.24 (0.29)		
D2		-0.08 (-0.14)		
DIAGNOSTIC TEST				
Adj. R^2	0.956	0.944	0.954	0.950
F-STAT.	100.672	56.289	97.262	87.945
DW[a]	2.167	2.089	2.054	2.060
OBSERVATION	24	24	24	24

Note: The figures in parentheses are the absolute t-statistics. * and ** denote significance at the 10% and 5% levels, respectively.

[a] Durbin-Watson Statistic

Table 16. Regression estimates for China export (import) function to (from) Italy

Dependent Variable: China Exports to Italy						Dependent Variable: China Imports from Italy				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4		Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	-234.24 (-0.57)	1279.60** (2.53)	-237.50 (-0.59)	1130.1** (2.79)		CONSTANT	1794.00** (3.74)	1432.00* (1.87)	1731.4** (3.61)	2571.8** (3.67)
LRPGDP0	1.15 (1.51)	2.26** (3.58)	1.09 (1.45)	2.10** (4.12)		LRPGDP0	2.73** (3.07)	3.38** (3.53)	2.68** (3.01)	2.61** (2.95)
LRPGDP1	7.48** (2.20)	0.49 (0.15)	7.16* (2.08)	2.73 (1.14)		LRPGDP1	-6.94* (-1.75)	-5.01 (-0.99)	-6.79 (-1.67)	-13.86** (-3.35)
LPOP0	-8.74 (-1.41)	-0.98 (-0.15)	-7.97 (-1.27)	-4.00 (-1.09)		LPOP0	12.65* (1.74)	4.23 (0.43)	12.57 (1.69)	25.09** (3.94)
LPOP1	20.00 (0.88)	-69.99** (-2.19)	19.48 (0.86)	-59.34** (-2.54)		LPOP1	-111.18** (-4.18)	-82.20 (-1.69)	-107.66** (-4.02)	-165.20** (-4.09)
LEXRATE			0.01 (0.45)			LEXRATE			-0.05* (-1.91)	
LRER	0.006 (0.25)					LRER	-0.05* (-2.00)			
LCPI		-1.40** (-4.40)		-1.17** (-4.55)		LCPI		-0.43 (-0.90)		-0.83* (-1.86)
D1		-0.17 (-0.79)				D1		-0.20 (-0.62)		
D2		0.13 (0.79)				D2		-0.64** (-2.61)		
DIAGNOSTIC TEST						DIAGNOSTIC TEST				
Adj. R^2	0.969	0.985	0.969	0.986		Adj. R^2	0.944	0.955	0.943	0.942
F-STAT.	144.570	218.914	145.691	313.545		F-STAT.	78.259	70.068	76.907	76.226
DW[a]	0.852	1.250	0.858	1.224		DW[a]	1.815	1.948	1.778	1.899
OBSERVATION	24	24	24	24		OBSERVATION	24	24	24	24

Note: The figures in parentheses are the absolute t-statistics. * and ** denote significance at the 10% and 5% levels, respectively.

[a] Durbin-Watson Statistic

Table 17. Regression estimates for China export (import) function to (from) Japan

Dependent Variable: China Exports to Japan						Dependent Variable: China Imports from Japan				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4		Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	364.17*	128.61	456.41**	116.50		CONSTANT	371.02	416.27	191.32	295.23
	(1.76)	(0.68)	(2.26)	(0.65)			(1.37)	(1.47)	(0.71)	(0.90)
LRPGDP0	2.08**	1.02	2.24**	0.98		LRPGDP0	3.46**	4.53**	2.90**	3.53**
	(3.10)	(1.48)	(3.27)	(1.57)			(3.95)	(4.36)	(3.18)	(3.09)
LRPGDP1	1.94	-1.29	1.33	-1.87		LRPGDP1	-1.46	-1.14	-2.25	0.82
	(1.04)	(-0.62)	(0.63)	(-1.09)			(-0.60)	(-0.36)	(-0.80)	(0.26)
LPOP0	-0.50	4.53	-0.18	4.63		LPOP0	-12.16	-13.26	-10.63	-14.40
	(-0.07)	(0.71)	(-0.02)	(0.75)			(-1.22)	(-1.37)	(-1.00)	(-1.28)
LPOP1	-19.53*	-10.14	-24.52**	-9.18		LPOP1	-5.31	-7.10	3.30	-0.16
	(-1.82)	(-1.08)	(-2.34)	(-1.03)			(-0.38)	(-0.50)	(0.24)	(-0.01)
LEXRATE			0.03			LEXRATE			0.32	
			(0.17)						(1.52)	
LRER	-0.21					LRER	0.48**			
	(-1.25)						(2.17)			
LCPI		-0.69		-0.96**		LCPI		0.24		0.36
		(-1.45)		(-3.65)				(0.33)		(0.75)
D1		0.15				D1		-0.12		
		(0.68)						(-0.36)		
D2		-0.04				D2		-0.52**		
		(-0.36)						(-2.94)		
DIAGNOSTIC TEST						DIAGNOSTIC TEST				
Adj. R^2	0.973	0.982	0.971	0.983		Adj. R^2	0.942	0.948	0.935	0.929
F-STAT.	165.70	176.927	152.367	267.034		F-STAT.	75.720	61.150	67.311	61.259
DW[a]	1.256	1.628	1.378	1.534		DW[a]	1.749	2.087	1.467	1.324
OBSERVATION	24	24	24	24		OBSERVATION	24	24	24	24

Note: The figures in parentheses are the absolute t-statistics. * and ** denote significance at the 10% and 5% levels, respectively.

[a] Durbin-Watson Statistic

Table 18. Regression estimates for China export (import) function to (from) Korea

Dependent Variable: China Exports to Korea						Dependent Variable: China Imports from Korea				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4		Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	-195.65 (-0.12)	-14.97 (-0.01)	-81.72 (-0.05)	998.68 (0.78)		CONSTANT	1878.20 (0.82)	1282.50 (0.49)	1163.00 (0.47)	2465.8 (1.40)
LRPGDP0	0.47 (0.06)	0.24 (0.02)	-0.01 (0.001)	5.27 (0.64)		LRPGDP0	16.71 (1.39)	12.86 (0.84)	12.28 (0.88)	18.24 (1.61)
LRPGDP1	2.36 (0.51)	5.38 (1.35)	3.97 (0.96)	5.79 (1.62)		LRPGDP1	-3.12 (-0.46)	-0.74 (-0.14)	-3.05 (-0.53)	-0.33 (-0.07)
LPOP0	-37.09 (-1.15)	-33.82 (-0.81)	-21.27 (-0.62)	-27.34 (-0.73)		LPOP0	-34.68 (-0.74)	-25.90 (-0.47)	-15.95 (-0.34)	-17.64 (-0.34)
LPOP1	55.42 (0.52)	39.55 (0.31)	29.28 (0.28)	-27.85 (-0.35)		LPOP1	-68.14 (-0.44)	-44.22 (-0.26)	-48.25 (-0.33)	-123.88 (-1.15)
LEXRATE			0.81 (0.79)			LEXRATE			1.23 (0.86)	
LRER	1.60 (1.06)					LRER	1.32 (0.60)			
LCPI		-0.70 (-0.36)		-0.14 (-0.13)		LCPI		-2.67 (-1.05)		-0.73 (-0.49)
D1		-0.26 (-0.31)				D1		-1.03 (-0.93)		
D2		-0.49 (-0.73)				D2		-0.60 (-0.69)		
DIAGNOSTIC TEST						DIAGNOSTIC TEST				
Adj. R^2	0.884	0.840	0.877	0.868		Adj. R^2	0.879	0.865	0.884	0.877
F-STAT.	20.824	10.776	19.580	18.094		F-STAT.	19.804	12.861	20.784	19.480
DW[a]	1.854	1.930	1.714	1.844		DW[a]	1.340	1.516	1.308	1.332
OBSERVATION	14	14	14	14		OBSERVATION	14	14	14	14

Note: The figures in parentheses are the absolute t-statistics. * and ** denote significance at the 10% and 5% levels, respectively.

[a] Durbin-Watson Statistic

Table 19. Regression estimates for China export (import) function to (from) Malaysia

Dependent Variable: China Exports to Malaysia						Dependent Variable: China Imports from Malaysia				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4		Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	106.57 (1.24)	196.00 (1.30)	93.58 (0.96)	136.74 (1.61)		CONSTANT	-141.15 (-1.21)	141.61 (0.65)	-189.37 (-1.37)	-5.72 (-0.46)
LRPGDP0	-0.52 (-0.35)	-1.56 (-0.93)	-0.16 (-0.09)	-1.22 (-0.81)		LRPGDP0	0.29 (0.14)	-3.13 (-1.27)	1.66 (0.63)	-2.87 (-1.30)
LRPGDP1	1.57** (2.20)	0.92 (0.78)	0.96* (1.89)	1.16 (1.11)		LRPGDP1	0.75 (0.78)	-1.37 (-0.80)	2.33 (1.58)	-1.19 (-0.78)
LPOP0	-14.47** (-2.32)	-25.53** (-2.30)	-12.34 (-1.30)	-19.14** (-3.40)		LPOP0	4.38 (0.52)	-29.51* (-1.82)	12.32 (0.91)	-16.59* (-2.01)
LPOP1	12.33* (1.86)	21.58** (2.43)	10.12 (1.04)	16.86** (2.61)		LPOP1	3.79 (0.42)	31.82** (2.46)	-4.52 (-0.33)	24.20** (2.55)
LEXRATE			-0.27 (-0.64)			LEXRATE			-1.09* (-1.85)	
LRER	-0.24 (-0.75)					LRER	-1.03** (-2.38)			
LCPI		-0.36 (-0.55)		-0.22 (-0.41)		LCPI		-1.47 (-1.53)		-1.07 (-1.36)
D1		-0.06 (-0.17)				D1		-0.27 (-0.56)		
D2		-0.21 (-0.81)				D2		-0.30 (-0.81)		
DIAGNOSTIC TEST						DIAGNOSTIC TEST				
Adj. R^2	0.968	0.965	0.968	0.968		Adj. R^2	0.961	0.950	0.957	0.953
F-STAT.	142.264	92.106	141.111	139.163		F-STAT.	113.417	63.579	102.336	94.586
DW[a]	0.718	1.043	0.707	0.727		DW[a]	1.099	1.407	1.086	1.126
OBSERVATION	24	24	24	24		OBSERVATION	24	24	24	24

Note: The figures in parentheses are the absolute t-statistics. * and ** denote significance at the 10% and 5% levels, respectively

[a] Durbin-Watson Statistic

Table 20. Regression estimates for China export (import) function to (from) Mexico

Dependent Variable: China Exports to Mexico						Dependent Variable: China Imports from Mexico				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4		Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	-391.93 (-1.60)	-773.69** (-2.26)	-636.72** (-2.70)	-703.78** (-2.45)		CONSTANT	244.78 (0.78)	281.28 (0.68)	216.72 (0.68)	
LRPGDP0	2.24 (0.76)	1.28 (0.36)	0.28 (0.09)	0.07 (0.02)		LRPGDP0	2.15 (0.58)	6.17 (1.42)	2.01 (0.50)	
LRPGDP1	13.49** (5.81)	8.80 (2.13)	8.97** (2.43)	10.37** (3.33)		LRPGDP1	2.22 (0.75)	1.73 (0.35)	2.35 (0.47)	
LPOP0	32.13 (1.58)	46.03* (2.01)	33.63* (1.90)	38.62* (2.10)		LPOP0	-18.77 (-0.72)	-14.48 (-0.52)	-17.50 (-0.73)	
LPOP1	-20.98 (-0.96)	-13.42 (-0.56)	-6.66 (-0.29)	-9.15 (-0.40)		LPOP1	7.39 (0.27)	-0.50 (-0.02)	7.46 (0.24)	
LEXRATE			0.52 (1.46)			LEXRATE			0.005 (0.01)	
LRER	0.05 (0.07)					LRER	0.11 (0.12)			
LCPI		-0.73 (-1.60)		-0.44 (-1.32)		LCPI		-0.51 (-0.92)		
D1		-0.61 (-1.01)				D1		-1.43* (-1.96)		
D2		0.08 (0.16)				D2		-0.47 (-0.74)		
DIAGNOSTIC TEST						DIAGNOSTIC TEST				
Adj. R^2	0.948	0.950	0.954	0.953		Adj. R^2	0.626	0.673	0.625	
F-STAT.	85.647	63.804	96.209	94.208		F-STAT.	8.693	7.770	8.682	
DW[a]	1.234	1.310	1.182	1.215		DW[a]	0.956	1.040	0.947	
OBSERVATION	24	24	24	24		OBSERVATION	24	24	24	

Note: The figures in parentheses are the absolute t-statistics. * and ** denote significance at the 10% and 5% levels, respectively

[a] Durbin-Watson Statistic

Table 21. Regression estimates for China export (import) function to (from) Netherlands

Dependent Variable: China Exports to Netherlands						Dependent Variable: China Imports from Netherlands				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4		Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	-494.14** (-2.57)	-566.98** (-3.00)	-426.78** (-2.16)	-441.92** (-2.57)		CONSTANT	280.66 (1.45)	491.63** (2.81)	302.91 (1.55)	268.36 (1.42)
LRPGDP0	0.52 (0.66)	-0.12 (-0.14)	0.63 (0.79)	0.52 (0.71)		LRPGDP0	1.91** (2.39)	3.40** (4.05)	1.93** (2.43)	1.87** (2.34)
LRPGDP1	1.15 (0.69)	-1.75 (-0.80)	0.86 (0.50)	0.59 (0.39)		LRPGDP1	1.55 (0.92)	4.91** (2.42)	1.37 (0.81)	1.50 (0.89)
LPOP0	-13.81** (-3.26)	-12.63 (-1.74)	-15.03** (-3.25)	-17.19** (-4.11)		LPOP0	8.74* (2.04)	-5.84 (-0.87)	7.72 (1.69)	8.27* (1.81)
LPOP1	47.73** (3.30)	52.83** (3.59)	45.30** (3.13)	49.32** (3.72)		LPOP1	-28.45* (-1.95)	-25.30* (-1.85)	-28.41* (-1.98)	-27.04 (-1.86)
LEXRATE			0.12 (0.50)			LEXRATE			0.15 (0.65)	
LRER	-0.17 (-0.83)					LRER	0.07 (0.32)			
LCPI		-0.66 (-1.56)		-0.53* (-2.01)		LCPI		-0.29 (-0.73)		-0.10 (-0.36)
D1		0.01 (0.05)				D1		-0.34 (-1.41)		
D2		0.33 (1.53)				D2		-0.52** (-2.58)		
DIAGNOSTIC TEST						DIAGNOSTIC TEST				
Adj. R^2	0.979	0.982	0.978	0.982		Adj. R^2	0.957	0.970	0.958	0.957
F-STAT.	214.318	185.089	209.170	253.146		F-STAT.	102.929	106.508	104.835	103.063
DW[a]	1.993	2.372	1.989	2.367		DW[a]	1.241	1.865	1.297	1.187
OBSERVATION	24	24	24	24		OBSERVATION	24	24	24	24

Note: The figures in parentheses are the absolute t-statistics. * and ** denote significance at the 10% and 5% levels, respectively

[a] Durbin-Watson Statistic

Table 22. Regression estimates for China export (import) function to (from) New Zealand

Dependent Variable: China Exports to New Zealand						Dependent Variable: China Imports from New Zealand				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4		Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	-361.83** (-2.16)	-289.37* (-1.80)	-336.20** (-2.11)	-272.77 (-1.65)		CONSTANT	577.28** (2.71)	528.25** (2.39)	518.43** (2.42)	507.77** (2.29)
LRPGDP0	-1.51 (-1.04)	-0.67 (-0.51)	-1.41 (-1.03)	-0.72 (-0.53)		LRPGDP0	5.69** (3.07)	4.90** (2.71)	5.12** (2.78)	4.67** (2.58)
LRPGDP1	-1.66 (-1.09)	-0.06 (-0.03)	-0.69 (-0.40)	-0.67 (-0.34)		LRPGDP1	-0.11 (-0.06)	2.79 (0.98)	-0.60 (-0.26)	0.98 (0.38)
LPOP0	-8.25 (-1.60)	-6.57 (-1.10)	-5.77 (-1.20)	-2.93 (-0.51)		LPOP0	-13.17* (-2.00)	-15.31* (-1.87)	-16.54** (-2.55)	-14.99* (-1.95)
LPOP1	38.34** (4.86)	30.10** (3.08)	32.53** (5.50)	24.27** (2.66)		LPOP1	-20.95* (-2.09)	-15.99 (-1.19)	-11.86 (-1.49)	-14.11 (-1.16)
LEXRATE			0.32 (1.58)			LEXRATE			-0.25 (-0.94)	
LRER	0.33 (1.24)					LRER	-0.51 (-1.47)			
LCPI		-0.70 (-1.27)		-0.45 (-1.15)		LCPI		-0.97 (-1.28)		-0.15 (-0.29)
D1		-0.31 (-1.02)				D1		-0.63 (-1.51)		
D2		-0.31* (-1.76)				D2		-0.08 (-0.32)		
DIAGNOSTIC TEST						DIAGNOSTIC TEST				
Adj. R^2	0.976	0.978	0.978	0.976		Adj. R^2	0.863	0.849	0.853	0.847
F-STAT.	191.637	146.730	201.318	189.561		F-STAT.	29.891	19.493	27.748	26.429
DW[a]	1.191	1.617	1.162	1.189		DW[a]	1.400	1.734	1.375	1.364
OBSERVATION	24	24	24	24		OBSERVATION	24	24	24	24

Note: The figures in parentheses are the absolute t-statistics. * and ** denote significance at the 10% and 5% levels, respectively

[a] Durbin-Watson Statistic

Table 23. Regression estimates for China export (import) function to (from) Norway

Dependent Variable: China Exports to Norway						Dependent Variable: China Imports from Norway				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4		Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	-339.94 (-0.88)	142.96 (0.25)	-11.22 (-0.03)	96.49 (0.22)		CONSTANT	216.01 (0.55)	12.65 (0.03)	87.99 (0.30)	-264.10 (-0.90)
LRPGDP0	0.93 (0.37)	2.90 (0.84)	1.99 (0.83)	2.52 (0.91)		LRPGDP0	1.29 (0.51)	1.08 (0.49)	1.06 (0.54)	-0.22 (-0.12)
LRPGDP1	1.96 (0.48)	-0.03 (-0.004)	0.62 (0.16)	-0.30 (-0.07)		LRPGDP1	2.52 (0.61)	1.13 (0.29)	2.59 (0.81)	4.41 (1.46)
LPOP0	-16.63* (-1.78)	-5.07 (-0.45)	-12.94 (-1.61)	-1.99 (-0.25)		LPOP0	8.38 (0.88)	8.96 (1.24)	16.30** (2.46)	4.82 (0.92)
LPOP1	44.50* (1.78)	-2.03 (-0.06)	18.45 (0.95)	-2.98 (-0.13)		LPOP1	-26.58 (-1.05)	-13.49 (-0.58)	-28.99* (-1.81)	8.55 (0.54)
LEXRATE			1.00** (2.62)			LEXRATE			-1.06** (-3.41)	
LRER	1.35** (2.39)					LRER	-0.36 (-0.62)			
LCPI		-0.94 (-1.00)		-0.60 (-1.05)		LCPI		1.41** (2.35)		1.53** (4.01)
D1		-0.31 (-0.49)				D1		0.11 (0.28)		
D2		-0.02 (-0.04)				D2		0.47 (1.31)		
DIAGNOSTIC TEST						DIAGNOSTIC TEST				
Adj. R^2	0.938	0.915	0.941	0.923		Adj. R^2	0.887	0.938	0.930	0.939
F-STAT.	70.910	36.371	74.507	56.381		F-STAT.	37.002	50.602	61.778	71.640
DW[a]	1.884	1.947	2.085	1.876		DW[a]	0.904	1.810	1.660	1.823
OBSERVATION	24	24	24	24		OBSERVATION	24	24	24	24

Note: The figures in parentheses are the absolute t-statistics. * and ** denote significance at the 10% and 5% levels, respectively

[a] Durbin-Watson Statistic

Table 24. Regression estimates for China export (import) function to (from) Philippines

Dependent Variable: China Exports to Philippines						Dependent Variable: China Imports from Philippines				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4		Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	534.36** (5.22)	368.97** (2.83)	528.75** (5.39)	494.89** (5.19)		CONSTANT	469.34** (2.35)	507.75** (2.22)	418.58** (2.25)	432.19** (2.70)
LRPGDP0	6.34** (3.49)	3.48 (1.38)	5.09** (2.58)	4.06 (1.62)		LRPGDP0	0.60 (0.17)	8.05* (1.82)	2.63 (0.70)	7.71 (1.83)
LRPGDP1	3.81** (3.50)	1.65 (0.86)	2.54** (2.27)	1.17 (0.64)		LRPGDP1	1.47 (0.69)	8.67** (2.58)	2.90 (1.37)	8.00** (2.62)
LPOP0	-21.17* (-1.88)	-19.19 (-1.15)	-27.45** (-2.17)	-30.17* (-2.03)		LPOP0	-49.02** (-2.23)	-15.26 (-0.52)	-34.24 (-1.43)	-8.83 (-0.35)
LPOP1	-7.60 (-0.66)	1.08 (0.06)	0.90 (0.07)	7.00 (0.42)		LPOP1	31.12 (1.39)	-16.15 (-0.54)	15.50 (0.62)	-19.02 (-0.67)
LEXRATE			0.42 (1.72)			LEXRATE			-0.62 (-1.34)	
LRER	0.58 (1.54)					LRER	-0.33 (-0.45)			
LCPI		-0.14 (-0.20)		-0.80 (-1.45)		LCPI		2.43* (1.92)		2.31** (2.51)
D1		0.51 (1.46)				D1		-0.01 (-0.02)		
D2		0.11 (0.46)				D2		-0.37 (-0.84)		
DIAGNOSTIC TEST						DIAGNOSTIC TEST				
Adj. R^2	0.943	0.943	0.945	0.942		Adj. R^2	0.882	0.905	0.891	0.911
F-STAT.	77.062	55.378	79.425	75.992		F-STAT.	35.332	32.161	38.759	48.332
DW[a]	2.197	2.451	2.288	2.312		DW[a]	1.311	1.312	1.366	1.300
OBSERVATION	24	24	24	24		OBSERVATION	24	24	24	24

Note: The figures in parentheses are the absolute t-statistics. * and ** denote significance at the 10% and 5% levels, respectively

[a] Durbin-Watson Statistic

Table 25. Regression estimates for China export (import) function to (from) Russia

Dependent Variable: China Exports to Russia						Dependent Variable: China Imports from Russia				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4		Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	798.90 (1.05)	484.32 (0.66)	-129.22 (-0.17)	359.97 (0.46)		CONSTANT	-41.02 (-0.08)	36.82 (0.08)	-234.22 (-0.33)	117.22 (0.18)
LRPGDP0	-3.77 (-0.72)	0.33 (0.08)	-2.01 (-0.49)	-1.92 (-0.40)		LRPGDP0	-1.97 (-0.56)	1.51 (0.55)	-0.57 (-0.15)	-1.34 (-0.34)
LRPGDP1	0.51 (0.27)	-1.33 (-0.93)	-0.03 (-0.02)	-0.51 (-0.31)		LRPGDP1	1.75 (1.40)	0.49 (0.55)	0.86 (0.72)	1.15 (0.85)
LPOP0	16.20 (0.44)	10.86 (0.39)	34.40 (1.15)	21.34 (0.65)		LPOP0	17.57 (0.72)	3.42 (0.19)	17.79 (0.64)	11.25 (0.42)
LPOP1	-58.29 (-1.63)	-36.18 (-1.11)	-29.58 (-0.94)	-40.84 (-1.16)		LPOP1	-16.24 (-0.68)	-5.29 (-0.26)	-6.34 (-0.22)	-17.61 (-0.61)
LEXRATE			0.49* (1.95)			LEXRATE			0.13 (0.58)	
LRER	0.06 (0.17)					LRER	0.31 (1.25)			
LCPI		-0.17 (-0.69)		-0.26 (-1.19)		LCPI		0.04 (0.27)		0.05 (0.30)
D1		-0.79 (-1.66)				D1		-0.55 (-1.85)		
D2		-0.43 (-1.44)				D2		-0.52** (-2.81)		
DIAGNOSTIC TEST						DIAGNOSTIC TEST				
Adj. R^2	0.427	0.676	0.648	0.534		Adj. R^2	0.693	0.846	0.633	0.618
F-STAT.	2.641	4.271	5.046	3.522		F-STAT.	5.969	9.601	4.796	4.563
DW[a]	2.201	2.209	2.685	2.061		DW[a]	2.451	1.936	1.948	1.914
OBSERVATION	12	12	12	12		OBSERVATION	12	12	12	12

Note: The figures in parentheses are the absolute t-statistics. * and ** denote significance at the 10% and 5% levels, respectively

[a] Durbin-Watson Statistic

Table 26. Regression estimates for China export (import) function to (from) Saudi Arabia

Dependent Variable: China Exports to Saudi Arabia						Dependent Variable: China Imports from Saudi Arabia				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4		Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	-151.98 (-0.86)	-275.42 (-1.24)	-272.83 (-1.45)	-290.40 (-1.42)		CONSTANT	509.14 (1.61)	625.57 (1.51)	468.37 (1.30)	606.58 (1.58)
LRPGDP0	1.10* (1.85)	1.48 (1.35)	1.08* (1.97)	1.32** (2.41)		LRPGDP0	5.09** (4.74)	5.39** (2.64)	5.32** (5.10)	5.34** (5.20)
LRPGDP1	1.19 (1.57)	1.39 (1.70)	1.11 (1.54)	1.25 (1.72)		LRPGDP1	0.32 (0.24)	0.86 (0.57)	0.43 (0.31)	0.50 (0.37)
LPOP0	8.24 (0.72)	14.69 (1.07)	14.90 (1.25)	15.91 (1.25)		LPOP0	-29.29 (-1.43)	-36.87 (-1.45)	-26.82 (-1.19)	-34.34 (-1.44)
LPOP1	-1.03 (-0.28)	-2.20 (-0.51)	-2.08 (-0.58)	-2.65 (-0.70)		LPOP1	5.31 (0.79)	7.36 (0.92)	4.49 (0.65)	5.68 (0.80)
LEXRATE			-0.50 (-1.46)			LEXRATE			-0.20 (-0.31)	
LRER	-0.31 (-0.67)					LRER	-0.66 (-0.80)			
LCPI		0.75 (1.16)		0.61 (1.25)		LCPI		7.36 (0.92)		-0.37 (-0.41)
D1		0.05 (0.16)				D1		0.25 (0.41)		
D2		-0.10 (-0.47)				D2		-0.22 (-0.56)		
DIAGNOSTIC TEST						DIAGNOSTIC TEST				
Adj. R^2	0.946	0.943	0.950	0.949		Adj. R^2	0.962	0.957	0.960	0.961
F-STAT.	81.094	55.640	88.889	86.272		F-STAT.	116.119	74.065	112.632	113.132
DW[a]	1.356	1.444	1.570	1.418		DW[a]	1.670	1.407	1.513	1.489
OBSERVATION	24	24	24	24		OBSERVATION	24	24	24	24

Note: The figures in parentheses are the absolute t-statistics. * and ** denote significance at the 10% and 5% levels, respectively

[a] Durbin-Watson Statistic

Table 27. Regression estimates for China export (import) function to (from) Singapore

Dependent Variable: China Exports to Singapore						Dependent Variable: China Imports from Singapore				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4		Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	21.54 (0.20)	6.58 (0.04)	-0.26 (-0.002)	41.23 (0.39)		CONSTANT	-109.27 (-0.93)	63.43 (0.51)	-40.53 (-0.27)	-148.65 (-1.52)
LRPGDP0	1.39 (1.07)	2.64* (1.86)	1.97 (1.27)	2.80** (2.24)		LRPGDP0	6.98** (5.02)	3.79** (3.39)	5.81** (2.80)	3.01** (2.60)
LRPGDP1	-1.23 (-1.41)	0.50 (0.40)	-0.81 (-0.62)	0.65 (0.59)		LRPGDP1	0.46 (0.49)	-3.81** (-3.87)	-0.09 (-0.05)	-4.65** (-4.52)
LPOP0	-1.40 (-0.27)	1.71 (0.20)	1.71 (0.33)	-0.04 (-0.01)		LPOP0	20.32** (3.66)	3.47 (0.51)	12.07 (1.73)	15.14** (3.67)
LPOP1	2.15 (0.53)	-3.16 (0.64)	-1.18 (-0.24)	-3.15 (-1.01)		LPOP1	-22.59** (-5.27)	-5.58 (-1.44)	-14.98** (-2.24)	-7.06** (-2.45)
LEXRATE			-0.01 (-0.03)			LEXRATE			-0.28 (-0.49)	
LRER	0.47 (1.24)					LRER	-1.49** (-3.65)			
LCPI		1.09 (1.66)		0.98* (1.88)		LCPI		-3.20** (-6.21)		-2.55** (-5.28)
D1		0.11 (0.31)				D1		-0.66** (-2.41)		
D2		-0.02 (-0.07)				D2		0.007 (0.03)		
DIAGNOSTIC TEST						DIAGNOSTIC TEST				
Adj. R^2	0.938	0.937	0.933	0.944		Adj. R^2	0.978	0.988	0.962	0.985
F-STAT.	70.942	50.269	65.108	78.533		F-STAT.	202.883	265.345	116.631	298.737
DW[a]	1.811	1.832	1.704	1.798		DW[a]	1.286	2.587	1.118	2.573
OBSERVATION	24	24	24	24		OBSERVATION	24	24	24	24

Note: The figures in parentheses are the absolute t-statistics. * and ** denote significance at the 10% and 5% levels, respectively

[a] Durbin-Watson Statistic

Table 28. Regression estimates for China export (import) function to (from) South Africa

Dependent Variable: China Exports to South Africa				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	79.89 (0.13)	6.58 (0.04)	172.37 (0.41)	698.33** (3.35)
LRPGDP0	0.45 (0.07)	2.64* (1.86)	3.29 (0.80)	11.57** (5.00)
LRPGDP1	7.92 (0.71)	0.50 (0.40)	4.36 (0.58)	-6.67 (-1.56)
LPOP0	-28.04 (-1.66)	1.71 (0.20)	-17.63 (-1.25)	-5.20 (-0.56)
LPOP1	26.15 (1.09)	-3.16 (-0.64)	9.07 (0.65)	-32.96** (-3.46)
LEXRATE			0.88** (2.89)	
LRER	1.08 (1.72)			
LCPI		1.09 (1.66)		-2.36** (-5.74)
D1		0.11 (0.31)		
D2		-0.02		
DIAGNOSTIC TEST		-0.07		
Adj. R^2	0.926	0.937	0.956	0.984
F-STAT.	25.990	50.269	44.397	127.956
DW[a]	2.453	1.832	2.889	3.262
OBSERVATION	11	11	11	11

Dependent Variable: China Imports from South Africa				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	58.10 (0.11)	474.29 (1.71)	98.79 (0.26)	480.00* (2.36)
LRPGDP0	1.16 (0.20)	9.16* (2.70)	2.98 (0.80)	9.23** (4.08)
LRPGDP1	7.08 (0.74)	-3.58 (-0.62)	4.84 (0.70)	-3.45 (-0.83)
LPOP0	-12.67 (-0.87)	5.44 (0.46)	-4.62 (-0.36)	5.94 (0.66)
LPOP1	9.19 (0.44)	-33.59* (-2.40)	-2.34 (-0.18)	-34.59** (-3.72)
LEXRATE			0.65* (2.33)	
LRER	0.76 (1.39)			
LCPI		-1.81 (-2.18)		-1.84** (-4.58)
D1		-0.003 (-0.01)		
D2		-0.03 (-0.17)		
DIAGNOSTIC TEST				
Adj. R^2	0.908	0.960	0.939	0.976
F-STAT.	20.856	35.015	31.850	80.862
DW[a]	2.218	3.332	2.581	3.181
OBSERVATION	11	11	11	11

Note: The figures in parentheses are the absolute t-statistics. * and ** denote significance at the 10% and 5% levels, respectively

[a] Durbin-Watson Statistic

Table 29. Regression estimates for China export (import) function to (from) Spain

Dependent Variable: China Exports to Spain						Dependent Variable: China Imports from Spain				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4		Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	818.14*	-116.90	863.29*	-61.35		CONSTANT	-127.27	862.39	-238.13	970.41*
	(1.85)	(-0.27)	(1.99)	(-0.16)			(-0.22)	(1.73)	(-0.41)	(1.96)
LRPGDP0	3.38**	1.27	3.37**	1.47*		LRPGDP0	1.29	2.98**	1.18	4.01**
	(3.65)	(1.24)	(3.62)	(1.78)			(1.08)	(2.52)	(0.96)	(3.78)
LRPGDP1	4.99**	2.96	4.42*	2.32		LRPGDP1	-9.96**	-2.14	-9.42**	-4.41**
	(2.12)	(1.62)	(1.80)	(1.56)			(-3.27)	(-1.01)	(-2.90)	(-2.30)
LPOP0	0.14	-3.90	2.53	-2.38		LPOP0	22.24*	17.78	19.13	18.29**
	(0.02)	(-0.44)	(0.29)	(-0.51)			(1.99)	(1.73)	(1.67)	(3.03)
LPOP1	-49.70	10.73	-54.82*	6.06		LPOP1	-13.14	-69.98*	-3.35	-75.67**
	(-1.56)	(0.34)	(-1.77)	(0.24)			(-0.32)	(-1.89)	(-0.08)	(-2.28)
LEXRATE			0.005			LEXRATE			0.07	
			(0.07)						(0.91)	
LRER	-0.02					LRER	0.10			
	(-0.33)						(1.34)			
LCPI		-1.16**		-1.30**		LCPI		2.55**		1.84**
		(-2.19)		(-4.04)				(4.15)		(4.45)
D1		0.15				D1		0.68*		
		(0.48)						(1.86)		
D2		-0.11				D2		-0.26		
		(-0.44)						(-0.91)		
DIAGNOSTIC TEST						DIAGNOSTIC TEST				
Adj. R^2	0.970	0.983	0.970	0.984		Adj. R^2	0.822	0.918	0.813	0.907
F-STAT.	151.252	189.141	150.382	289.846		F-STAT.	22.298	37.767	21.041	45.887
DW[a]	0.946	1.603	0.937	1.498		DW[a]	1.154	2.689	1.058	2.308
OBSERVATION	24	24	24	24		OBSERVATION	24	24	24	24

Note: The figures in parentheses are the absolute t-statistics. * and ** denote significance at the 10% and 5% levels, respectively

[a] Durbin-Watson Statistic

Table 30. Regression estimates for China export (import) function to (from) Sweden

Dependent Variable: China Exports to Sweden						Dependent Variable: China Imports from Sweden				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4		Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	511.98** (-2.91)	-526.99* (-1.96)	-561.36** (-2.73)	-550.58** (-2.19)		CONSTANT	273.73 (1.65)	362.86 (1.43)	340.36* (1.77)	363.56 (1.55)
LRPGDP0	0.59 (0.67)	1.01 (0.95)	0.58 (0.67)	0.88 (1.10)		LRPGDP0	3.85** (4.63)	3.46** (3.43)	3.91** (4.87)	3.50** (4.68)
LRPGDP1	4.10** (2.12)	4.37 (1.57)	4.38** (2.36)	4.94* (2.03)		LRPGDP1	-1.69 (-0.93)	-3.13 (-1.19)	-1.98 (-1.14)	-2.98 (-1.31)
LPOP0	-10.79 (-1.68)	-15.68 (-1.56)	-11.71** (-2.32)	-15.81* (-1.93)		LPOP0	-10.14 (-1.68)	-2.56 (-0.27)	-9.45* (-2.00)	-3.05 (-0.40)
LPOP1	44.52** (3.82)	51.49** (2.15)	48.64** (3.95)	52.77** (2.34)		LPOP1	-3.00 (-0.27)	-17.28 (-0.76)	-7.80 (-0.69)	-16.79 (-0.80)
LEXRATE			-0.17 (-0.66)			LEXRATE			0.21 (0.88)	
LRER	-0.13 (-0.54)					LRER	0.14 (0.61)			
LCPI		0.11 (0.12)		0.27 (0.37)		LCPI		-0.48 (-0.58)		-0.48 (-0.70)
D1		-0.16 (-0.46)				D1		-0.14E-3 (-0.43E-3)		
D2		0.09 (0.40)				D2		0.03 (0.14)		
DIAGNOSTIC TEST						DIAGNOSTIC TEST				
Adj. R^2	0.961	0.957	0.961	0.961		Adj. R^2	0.971	0.967	0.971	0.971
F-STAT.	114.320	73.978	115.259	113.322		F-STAT.	152.903	97.856	156.303	153.937
DW[a]	1.138	1.263	1.183	1.258		DW[a]	1.738	1.756	1.775	1.734
OBSERVATION	24	24	24	24		OBSERVATION	24	24	24	24

Note: The figures in parentheses are the absolute t-statistics. * and ** denote significance at the 10% and 5% levels, respectively

[a] Durbin-Watson Statistic

Table 31. Regression estimates for China export (import) function to (from) Switzerland

Dependent Variable: China Exports to Switzerland						Dependent Variable: China Imports from Switzerland				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4		Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	281.98** (2.25)	387.06** (3.22)	446.81** (3.29)	368.54** (5.54)		CONSTANT	219.74 (1.68)	349.97** (2.32)	286.53* (2.04)	4.97 (0.05)
LRPGDP0	3.82** (4.40)	2.54** (2.82)	4.20** (5.53)	2.49** (3.48)		LRPGDP0	1.82* (2.02)	2.79** (2.47)	1.20 (1.54)	0.94 (0.84)
LRPGDP1	4.70 (1.39)	2.18 (0.73)	4.87 (1.48)	2.99 (1.15)		LRPGDP1	-1.26 (-0.36)	-1.89 (-0.50)	-2.10 (-0.62)	-1.94 (-0.48)
LPOP0	-31.38** (-2.74)	-16.96 (-1.70)	-32.34** (-2.96)	-17.13* (-1.82)		LPOP0	5.75 (0.48)	6.28 (0.50)	12.90 (1.14)	10.87 (0.74)
LPOP1	20.30* (1.94)	-2.75 (-0.25)	10.80 (0.88)	-1.94 (-0.21)		LPOP1	-20.22* (-1.86)	-28.68* (-2.11)	-33.13** (-2.61)	-12.52 (-0.85)
LEXRATE			0.34 (1.07)			LEXRATE			0.84** (2.56)	
LRER	-0.16 (-0.57)					LRER	0.68** (2.27)			
LCPI		-1.75** (-2.72)		-1.55** (-3.74)		LCPI		-1.13 (-1.41)		0.08 (0.13)
D1		-0.16 (-0.55)				D1		-0.45 (-1.26)		
D2		0.06 (0.32)				D2		-0.67** (-2.81)		
DIAGNOSTIC TEST						DIAGNOSTIC TEST				
Adj. R^2	0.907	0.942	0.911	0.947		Adj. R^2	0.914	0.922	0.919	0.890
F-STAT.	45.916	54.024	48.147	82.871		F-STAT.	49.919	39.795	53.167	38.081
DW[a]	1.646	1.823	1.697	1.879		DW[a]	1.560	1.676	1.603	1.018
OBSERVATION	24	24	24	24		OBSERVATION	24	24	24	24

Note: The figures in parentheses are the absolute t-statistics. * and ** denote significance at the 10% and 5% levels, respectively

[a] Durbin-Watson Statistic

Table 32. Regression estimates for China export (import) function to (from) Taiwan

Dependent Variable: China Exports to Taiwan				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	-161.33* (-2.09)	-144.15 (-1.71)	-133.81* (-1.89)	-141.01* (-1.75)
LRPGDP0	-0.68 (-1.36)	-0.68 (-1.10)	-0.41 (-1.03)	-0.52 (-0.90)
LRPGDP1	2.01** (7.30)	1.92** (4.40)	2.04** (5.62)	1.74** (5.65)
LPOP0	4.57 (0.86)	5.47 (0.95)	4.98 (0.93)	5.67 (1.06)
LPOP1	4.27 (0.75)	2.20 (0.38)	2.01 (0.41)	1.85 (0.34)
LEXRATE			-0.15 (-0.73)	
LRER	-0.22 (-1.01)			
LCPI		-0.01 (-0.02)		-0.14 (-0.38)
D1		0.04 (0.19)		
D2		0.11 (0.93)		
DIAGNOSTIC TEST				
Adj. R^2	0.992	0.991	0.992	0.992
F-STAT.	586.718	374.346	571.329	559.271
DW[a]	2.005	1.974	1.935	1.854
OBSERVATION	24	24	24	24

Dependent Variable: China Imports from Taiwan				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	210.34 (1.19)	96.85 (0.49)	80.26 (0.49)	56.95 (0.28)
LRPGDP0	2.07* (1.82)	1.52 (1.05)	0.77 (0.83)	0.72 (0.50)
LRPGDP1	1.73** (2.75)	1.50 (1.47)	1.33 (1.57)	2.75** (3.54)
LPOP0	-1.07 (-0.09)	-9.42 (-0.70)	-2.40 (-0.19)	-6.66 (-0.49)
LPOP1	-11.44 (-0.88)	6.31 (0.46)	-1.39 (-0.12)	4.37 (0.32)
LEXRATE			0.93* (1.90)	
LRER	1.13** (2.22)			
LCPI		-1.37 (-0.96)		0.20 (0.22)
D1		-0.58 (-1.30)		
D2		-0.45 (-1.64)		
DIAGNOSTIC TEST				
Adj. R^2	0.970	0.965	0.968	0.962
F-STAT.	151.29	92.880	142.374	118.389
DW[a]	2.041	1.903	1.821	1.630
OBSERVATION	24	24	24	24

Note: The figures in parentheses are the absolute t-statistics. * and ** denote significance at the 10% and 5% levels, respectively

[a] Durbin-Watson Statistic

Table 33. Regression estimates for China export (import) function to (from) Thailand

Dependent Variable: China Exports to Thailand						Dependent Variable: China Imports from Thailand				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4		Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	-50.64 (-0.30)	185.89 (0.71)	43.71 (0.28)	219.86 (1.13)		CONSTANT	93.46 (0.59)	80.07 (0.32)	174.44 (1.13)	165.05 (0.90)
LRPGDP0	-0.28 (-0.16)	2.87 (1.22)	0.75 (0.58)	4.04** (2.43)		LRPGDP0	3.17* (2.03)	4.13* (1.82)	4.35** (3.34)	4.88** (3.12)
LRPGDP1	3.15** (2.59)	4.06** (2.20)	4.53** (3.17)	3.46* (2.06)		LRPGDP1	-0.08 (-0.07)	-1.84 (-1.03)	0.23 (0.16)	-1.82 (-1.15)
LPOP0	5.27 (0.28)	25.80 (1.17)	11.01 (0.65)	30.33 (1.55)		LPOP0	0.97 (0.05)	14.12 (0.67)	7.83 (0.46)	11.34 (0.61)
LPOP1	-3.55 (-0.17)	-42.70 (-1.71)	-16.52 (-0.94)	-50.08** (-2.16)		LPOP1	-6.35 (-0.32)	-20.44 (-0.85)	-19.44 (-1.09)	-22.15 (-1.02)
LEXRATE			-1.30** (-2.81)			LEXRATE			-0.67 (-1.45)	
LRER	-1.27** (-2.30)					LRER	-0.97* (-1.88)			
LCPI		1.80 (1.28)		1.94 (1.52)		LCPI		-0.21 (-0.16)		-0.42 (-0.35)
D1		-0.02 (-0.04)				D1		0.22 (0.49)		
D2		0.38 (0.98)				D2		0.03 (0.08)		
DIAGNOSTIC TEST						DIAGNOSTIC TEST				
Adj. R^2	0.905	0.885	0.915	0.891		Adj. R^2	0.946	0.929	0.942	0.936
F-STAT.	44.785	26.218	50.265	38.630		F-STAT.	82.096	44.294	76.288	68.470
DW[a]	1.665	1.285	1.799	1.303		DW[a]	1.674	1.470	1.549	1.433
OBSERVATION	24	24	24	24		OBSERVATION	24	24	24	24

Note: The figures in parentheses are the absolute t-statistics. * and ** denote significance at the 10% and 5% levels, respectively

[a] Durbin-Watson Statistic

Table 34. Regression estimates for China export (import) function to (from) Turkey

Dependent Variable: China Exports to Turkey				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	-50.64 (-0.30)	106.73 (0.34)	435.88 (1.61)	218.76 (0.87)
LRPGDP0	-0.28 (-0.16)	17.54** (3.35)	14.90** (3.27)	12.31** (2.84)
LRPGDP1	3.15** (2.59)	-1.61 (-0.41)	-0.32 (-0.08)	1.21 (0.33)
LPOP0	5.27 (0.28)	23.01 (0.59)	-7.14 (-0.19)	-7.85 (-0.21)
LPOP1	-3.55 (-0.17)	-36.93 (-0.87)	-19.39 (-0.52)	-6.67 (-0.17)
LEXRATE			1.19** (3.49)	
LRER	-1.27** (-2.30)			
LCPI		-1.62** (-3.11)		-1.22** (-3.37)
D1		-0.80 (-1.25)		
D2		0.97 (1.29)		
DIAGNOSTIC TEST				
Adj. R^2	0.905	0.935	0.930	0.928
F-STAT.	44.785	45.950	59.49	57.735
DW[a]	1.665	2.297	1.851	1.928
OBSERVATION	24	23	23	23

Dependent Variable: China Imports from Turkey				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	-116.09 (-0.26)	278.45 (0.91)	-45.41 (-0.14)	-247.99 (-0.82)
LRPGDP0	11.41* (1.75)	21.29** (4.18)	14.23** (2.66)	11.68** (2.25)
LRPGDP1	-7.12 (-1.44)	-8.63** (-2.26)	-10.94** (-2.42)	-9.28* (-2.09)
LPOP0	89.91* (1.93)	84.43** (2.22)	52.91 (1.23)	55.00 (1.23)
LPOP1	-97.11* (-1.89)	-116.38** (-2.82)	-57.74 (-1.32)	-49.12 (-1.06)
LEXRATE			1.04** (2.59)	
LRER	1.59 (1.01)			
LCPI		-0.24 (-0.48)		-0.99** (-2.29)
D1		-2.21** (-3.52)		
D2		-1.02 (-1.39)		
DIAGNOSTIC TEST				
Adj. R^2	0.284	0.651	0.456	0.419
F-STAT.	2.742	6.850	4.688	4.176
DW[a]	0.888	1.724	1.095	0.960
OBSERVATION	23	23	23	23

Note: The figures in parentheses are the absolute t-statistics. * and ** denote significance at the 10% and 5% levels, respectively

[a] Durbin-Watson Statistic

Table 35. Regression estimates for China export (import) function to (from) UK

Dependent Variable: China Exports to UK				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	-588.65 (-1.11)	-576.91 (-0.97)	-622.69 (-1.21)	-575.37 (-1.14)
LRPGDP0	2.41 (1.37)	1.74 (0.88)	2.32 (1.39)	1.81 (1.07)
LRPGDP1	-2.13 (-0.64)	-1.19 (-0.33)	-1.81 (-0.57)	-1.27 (-0.40)
LPOP0	-11.59 (-1.21)	-11.03 (-1.11)	-16.63* (-2.07)	-11.43* (-1.78)
LPOP1	48.05 (1.68)	46.63 (1.37)	55.64* (2.09)	47.05* (1.86)
LEXRATE			0.50 (1.08)	
LRER	-0.007 (-0.01)			
LCPI		-0.73 (-0.78)		-0.79 (-1.40)
D1		0.05 (0.08)		
D2		-0.003 (-0.008)		
DIAGNOSTIC TEST				
Adj. R^2	0.911	0.910	0.917	0.920
F-STAT.	48.179	34.187	51.522	53.819
DW[a]	2.468	2.608	2.727	2.608
OBSERVATION	24	24	24	24

Dependent Variable: China Imports from UK				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	400.60 (1.14)	287.66 (0.69)	389.05 (1.11)	372.82 (1.05)
LRPGDP0	0.84 (0.72)	1.01 (0.73)	1.10 (0.97)	1.10 (0.92)
LRPGDP1	4.33* (1.98)	4.53* (1.78)	4.01* (1.83)	4.10* (1.82)
LPOP0	2.89 (0.46)	-1.95 (-0.28)	1.43 (0.26)	-0.87 (-0.19)
LPOP1	-27.25 (-1.44)	-15.51 (-0.65)	-24.83 (-1.36)	-21.33 (-1.19)
LEXRATE			-0.23 (-0.72)	
LRER	-0.36 (-0.83)			
LCPI		0.13 (0.20)		0.05 (0.12)
D1		0.05 (0.12)		
D2		-0.13 (-0.47)		
DIAGNOSTIC TEST				
Adj. R^2	0.917	0.905	0.916	0.914
F-STAT.	51.867	32.162	51.351	49.853
DW[a]	1.867	1.966	1.915	1.927
OBSERVATION	24	24	24	24

Note: The figures in parentheses are the absolute t-statistics. * and ** denote significance at the 10% and 5% levels, respectively

[a] Durbin-Watson Statistic

Table 36. Regression estimates for China export (import) function to (from) UAE

Dependent Variable: China Exports to UAE				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	463.01 (1.57)	440.34 (1.21)	-515.64** (-3.33)	551.49 (1.78)
LRPGDP0	13.81** (3.59)	13.64 (1.94)	0.56 (0.85)	17.07** (3.17)
LRPGDP1	0.37 (0.36)	0.54 (0.37)	0.19 (0.34)	0.84 (0.65)
LPOP0	-2.09 (-0.17)	-1.75 (-0.13)	28.18** (3.07)	0.27 (0.02)
LPOP1	-33.27** (-3.42)	-31.25 (-1.45)	-4.00 (-1.40)	-44.19** (-2.70)
LEXRATE			0.12 (0.27)	
LRER	0.24 (0.36)			
LCPI		0.05 (0.04)		-0.45 (-0.65)
D1		0.03 (0.11)		
D2		-0.16 (-0.88)		
DIAGNOSTIC TEST				
Adj. R^2	0.968	0.962	0.979	0.969
F-STAT.	67.55	41.256	202.605	70.764
DW[a]	2.360	3.322	1.195	2.635
OBSERVATION	12	12	12	12

Dependent Variable: China Imports from UAE				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	-624.34 (-0.61)	-1579.20 (-1.66)	-379.04 (-1.03)	-1513.1 (-1.61)
LRPGDP0	14.90 (1.12)	-20.86 (-1.14)	0.90 (0.84)	-18.27 (-1.12)
LRPGDP1	1.36 (0.39)	-4.03 (-1.05)	-0.67 (-0.74)	-3.08 (-0.79)
LPOP0	65.79 (1.54)	36.39 (1.01)	15.81 (0.70)	41.56 (1.12)
LPOP1	-57.00 (-1.70)	67.61 (1.17)	4.75 (0.63)	53.46 (1.08)
LEXRATE			-3.59** (-4.09)	
LRER	-2.85 (-1.26)			
LCPI		2.78 (0.95)		4.38* (2.08)
D1		-1.12 (-1.41)		
D2		-0.50 (-1.06)		
DIAGNOSTIC TEST				
Adj. R^2	0.818	0.878	0.919	0.866
F-STAT.	10.909	12.277	44.157	15.270
DW[a]	2.644	3.056	2.682	3.060
OBSERVATION	12	12	12	12

Note: The figures in parentheses are the absolute t-statistics. * and ** denote significance at the 10% and 5% levels, respectively.

[a] Durbin-Watson Statistic

Table 37. Regression estimates for China export (import) function to (from) USA

Dependent Variable: China Exports to USA				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	-202.83 (-1.64)	-307.69** (-2.43)	-267.86* (-1.86)	-290.46** (-2.57)
LRPGDP0	2.40** (2.59)	0.77 (0.75)	1.22 (0.90)	0.94 (1.05)
LRPGDP1	-6.24** (-3.75)	-4.83** (-2.64)	-5.36** (-2.80)	-5.15** (-3.42)
LPOP0	2.62 (0.72)	-2.15 (-0.40)	-6.20 (-1.13)	-3.20 (-1.27)
POP1	11.40 (1.69)	21.82** (2.65)	24.08** (2.36)	22.22** (3.88)
LEXRATE			0.40 (0.93)	
LRER	-0.51* (-1.94)			
LCPI		-0.61 (-1.44)		-0.75** (-3.07)
D1		0.11 (0.44)		
D2		-0.03 (-0.14)		
DIAGNOSTIC TEST				
Adj. R^2	0.989	0.990	0.987	0.991
F-STAT.	404.239	328.453	349.932	509.993
DW[a]	1.816	1.963	1.427	1.936
OBSERVATION	24	24	24	24

Dependent Variable: China Imports from USA				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	-45.81 (-0.36)	-174.02 (-1.27)	-54.22 (-0.35)	-128.34 (-1.00)
LRPGDP0	1.20 (1.26)	-0.57 (-0.52)	0.92 (0.63)	-0.22 (-0.21)
LRPGDP1	-0.71 (-0.42)	1.41 (0.71)	-0.51 (-0.24)	0.34 (0.20)
LPOP0	2.65 (0.72)	-9.74 (-1.67)	-2.38 (-0.40)	-4.10 (-1.43)
POP1	0.75 (0.11)	20.32** (2.28)	6.52 (0.59)	12.28* (1.88)
LEXRATE			-0.05 (-0.11)	
LRER	-0.63** (-2.35)			
LCPI		-0.87* (-1.88)		-0.67** (-2.41)
D1		-0.09 (-0.34)		
D2		-0.27 (-1.38)		
DIAGNOSTIC TEST				
Adj. R^2	0.955	0.955	0.941	0.955
F-STAT.	98.187	71.059	74.320	99.376
DW[a]	1.670	2.027	1.254	1.600
OBSERVATION	24	24	24	24

Note: The figures in parentheses are the absolute t-statistics. * and ** denote significance at the 10% and 5% levels, respectively.

[a] Durbin-Watson Statistic

Table 38. Regression estimates for China export (import) function to (from) Vietnam

Dependent Variable: China Exports to Vietnam						Dependent Variable: China Imports from Vietnam				
Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4		Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
CONSTANT	7.01 (0.01)	2042.20* (2.33)	81.108 (0.11)	1365.7 (1.59)		CONSTANT	439.62 (0.56)	3571.90** (3.99)	1249.10 (1.41)	2837.1** (3.14)
LRPGDP0	14.04 (1.62)	26.30** (3.61)	22.83** (2.29)	29.15** (3.82)		LRPGDP0	28.67** (2.38)	39.88** (5.37)	40.20** (3.50)	43.73** (5.45)
LRPGDP1	-22.00 (-1.53)	2.34 (0.15)	-39.17** (-5.38)	-20.27* (-1.93)		LRPGDP1	-33.78 (-1.69)	19.98 (1.23)	-38.39** (-4.57)	-5.67 (-0.51)
POP0	-47.51 (-0.96)	15.49 (0.32)	-85.20* (-1.95)	-39.81 (-0.95)		POP0	-35.57 (-0.52)	83.11 (1.67)	-43.35 (-0.86)	33.39 (0.76)
POP1	58.54 (1.08)	-141.05 (-1.56)	99.15* (2.05)	-33.02 (-0.44)		POP1	18.50 (0.25)	-314.48** (-3.40)	-20.73 (-0.37)	-209.13** (-2.62)
LEXRATE			-0.44 (-0.38)			LEXRATE			-1.98 (-1.48)	
LRER	2.35 (1.30)					LRER	0.27 (0.11)			
LCPI		5.78** (2.93)		3.21* (2.09)		LCPI		7.73** (3.84)		5.27** (3.26)
D1		1.19 (1.83)				D1		0.96 (1.45)		
D2		-0.29 (-0.57)				D2		-0.81 (-1.59)		
DIAGNOSTIC TEST						DIAGNOSTIC TEST				
Adj. R^2	0.963	0.975	0.957	0.970		Adj. R^2	0.910	0.967	0.928	0.959
F-STAT.	73.706	78.049	62.838	92.823		F-STAT.	29.472	59.738	37.072	66.408
DW[a]	2.359	2.268	1.872	1.423		DW[a]	2.077	2.769	1.876	1.702
OBSERVATION	15	15	15	15		OBSERVATION	15	15	15	15

Note: The figures in parentheses are the absolute t-statistics. * and ** denote significance at the 10% and 5% levels, respectively.

[a] Durbin-Watson Statistic

Table 39. All trading partners

	Exports					Imports				
FEM	Case 1	Case 2	Case 3	Case 4	Case 5	Case 1	Case 2	Case 3	Case 4	Case 5
POP0	-7.9044E-10 (-0.849)					-3.5561E-09*** (-2.975)				
POP1	8.8018E-10** (2.052)					1.9036E-09*** (3.456)				
LPOP0		-9.7418*** (-5.996)	-9.7201*** (-5.950)	-9.4974*** (-5.868)	-9.3246*** (-5.823)		-5.6804*** (-2.878)	-5.5988*** (-2.843)	-6.1944*** (-3.167)	-6.0586*** (-3.158)
LPOP1		0.1111 (.0363)	0.1390 (0.451)	0.0431 (0.147)	0.8191*** (3.108)		3.9348*** (10.611)	4.0261*** (10.811)	4.2831*** (12.072)	4.0539*** (12.124)
LRPGDP0	1.6164*** (3.935)	3.0666*** (12.797)	3.0686*** (12.801)	3.0700*** (12.807)	2.9884*** (12.578)	3.1594*** (5.989)	1.6402*** (5.663)	1.6466*** (5.698)	1.6429*** (5.671)	1.6212*** (5.696)
LRPGDP1	1.1909*** (8.330)	1.2746*** (9.031)	1.2549*** (8.745)	1.2428*** (8.692)	1.0731*** (7.893)	1.2566*** (6.828)	1.5969*** (9.343)	1.5297*** (8.824)	1.5619*** (9.019)	1.6109*** (9.544)
LDIST										
LEXRATE	0.0348 (1.371)		0.0264 (0.997)		0.0191** (1.980)	-0.1704*** (-5.223)		-0.0708** (-2.213)		0.0114 (0.980)
LCOMPETI	0.0247 (0.887)		0.0183 (0.641)	-0.0082 (-0.778)		-0.1886*** (-5.286)		-0.0981*** (-2.841)	-0.0270** (-2.122)	
LRER		0.0265 (0.998)					-0.0670** (-2.184)			
D1	0.1520*** (4.238)					-0.1191*** (-2.585)				
D2	0.0581* (1.906)					-0.0677* (-1.730)				
Adjusted R2	92.92	92.85	92.83	93.84	92.67	87.93	89.21	89.26	89.20	89.37
F value	236.22	250.01	244.22	249.88	249.83	131.55	159.35	156.56	159.29	165.87
REM	Case 1	Case 2	Case 3	Case 4	Case 5	Case 1	Case 2	Case 3	Case 4	Case 5
POP0	-6.1799E-10 (-0.665)					-3.4927E-09*** (-2.929)				
POP1	1.3175E-09*** (3.902)					2.0314E-09*** (5.145)				
LPOP0		-10.0171*** (-6.177)	-9.9590*** (-6.138)	-9.6642*** (-5.985)	-9.3169*** (-5.836)		-4.4870** (-2.292)	-4.4342** (-2.269)	-4.9898** (-2.558)	-4.8494** (-2.535)
LPOP1		0.7314*** (7.073)	0.7257*** (7.028)	0.6884*** (6.540)	0.7604*** (7.559)		1.1069*** (11.322)	1.1001*** (11.295)	1.1667*** (11.750)	1.1671*** (12.259)
LRPGDP0	1.6355*** (3.982)	3.0925*** (13.032)	3.0954*** (13.041)	3.0782*** (12.972)	3.0330*** (12.899)	3.1642*** (5.999)	1.9498*** (6.811)	1.9515*** (6.833)	1.9811*** (6.923)	1.9560*** (6.958)
LRPGDP1	0.8455*** (8.413)	0.9791*** (10.476)	0.9665*** (10.320)	0.9895*** (10.340)	0.9310*** (10.095)	1.0588*** (9.208)	1.3134*** (13.787)	1.3064*** (13.751)	1.2707*** (13.192)	1.2629*** (13.645)

LDIST	-1.3046*** (-4.892)	-1.3402*** (-6.731)	-1.3452*** (-6.773)	-1.2932*** (-6.300)	-1.2949*** (-6.571)	-0.9730*** (-3.584)	-1.1246*** (-6.175)	-1.1323*** (-6.244)	-1.2361*** (-6.680)	-1.2155*** (-6.783)
LEXRATE	0.0264 (1.114)		0.0420* (1.829)		0.0220** (2.364)	-0.1483*** (-5.049)		-0.0807*** (-3.116)		-0.0022 (-0.198)
LCOMPETI	0.0082 (0.316)		0.0261 (1.033)	-0.0160 (-1.560)		-0.1713*** (-5.325)		-0.0959*** (-3.350)	-0.0151 (-1.233)	
LRER		0.0421* (1.833)					-0.0809*** (-3.113)			
D1	0.1530*** (4.266)					-0.1155** (-2.509)				
D2	0.0615** (2.021)					-0.0647* (-1.656)				
Constant	6.5332*** (6.373)	87.1826*** (6.179)	86.7051*** (6.144)	84.1356*** (5.991)	80.7814*** (5.816)	4.2249*** (3.990)	35.1249** (2.063)	34.9387** (2.057)	39.8052** (2.347)	38.5209** (2.316)
LM	6338.67	4619.39	4603.62	4848.46	4769.88	4408.79	2375.64	2308.55	2697.82	2401.98
Hausman	14.30	16.28	14.64	13.06	4.79	13.45	84.06	88.28	87.55	90.41

Note: The figures in parentheses are the absolute t-statistics. *, ** and *** denote significance at the 10%, 5% and 1% levels, respectively.

Table 40. Euro countries

	Exports					Imports				
FEM	Case 1	Case 2	Case 3	Case 4	Case 5	Case 1	Case 2	Case 3	Case 4	Case 5
POP0	5.1977E-10 (0.497)					-2.4533E-09 (-1.600)				
POP1	-6.2577E-09 (-0.455)					-9.3260E-08*** (-4.619)				
LPOP0		-6.0968*** (-3.490)	-5.3926*** (-3.299)	-5.7423*** (-3.501)	-6.4431*** (-3.763)		-1.7471 (-0.689)	-2.2738 (-0.907)	-0.9452 (-0.355)	-2.8444 (-1.166)
LPOP1		0.3703 0.442	0.8276 (1.053)	0.1781 (0.246)	1.3787* (1.668)		-4.0908*** (-3.363)	-4.4315*** (-3.675)	-1.9640* (-1.671)	-3.6792*** (-3.124)
LRPGDP0	0.7476* (1.707)	2.2587*** (8.181)	1.7520*** (6.363)	1.9570*** (7.576)	2.1213*** (7.689)	2.7693*** (4.309)	1.5557*** (3.880)	1.9336*** (4.578)	1.1545*** (2.754)	1.6931*** (4.308)
LRPGDP1	2.7831*** (11.025)	2.7903*** (11.945)	2.8770*** (13.169)	2.8208*** (12.902)	2.8987*** (12.337)	2.4819*** (6.700)	3.0309*** (8.934)	2.9666*** (8.853)	3.1803*** (8.963)	3.0747*** (9.187)
LDIST										
LEXRATE	0.0216 (1.301)		0.0349** (2.025)		0.0287 (1.596)	-0.0982*** (-4.031)		-0.1324*** (-5.016)		-0.1120*** (-4.369)
LCOMPETI	-0.3176** (-2.082)		-0.5694*** (-5.098)	-0.5234*** (-4.743)		0.2178 (0.973)		0.3182* (1.857)	0.1433 (0.800)	
LRER		0.0042 (0.240)					-0.1096*** (-4.352)			
D1	0.1242**					-0.0211				

	(2.502)					(-0.289)				
D2	0.0408					-0.0930*				
	(1.217)					(-1.889)				
Adjusted R2	98.26	98.02	98.28	98.25	97.89	95.98	95.54	95.68	95.07	95.50
F value	620.47	663.57	713.99	751.23	655.93	263.77	287.30	276.89	258.73	301.38
REM	Case 1	Case 2	Case 3	Case 4	Case 5	Case 1	Case 2	Case 3	Case 4	Case 5
POP0	3.6680E-10					-3.4401E-09**				
	(0.354)					(-2.262)				
POP1	9.2631E-09**					6.7013E-09				
	(2.190)					(1.359)				
LPOP0		-6.1169***	-5.4098***	-5.7955***	-6.4885***		-1.7350	-2.1475	-1.1524	-2.5638
		(-3.499)	(-3.310)	(-3.536)	(-3.792)		(-0.684)	(-0.857)	(-0.433)	(-1.052)
LPOP1		0.8220***	0.8523***	0.7882***	0.9015***		0.8392***	0.8195***	0.9558***	0.8729***
		(4.224)	(4.407)	(4.132)	(4.788)		(3.932)	(3.812)	(4.598)	(4.236)
LRPGDP0	0.7232*	2.2320***	1.7594***	1.9304***	2.1750***	2.6091***	1.2035***	1.4799***	1.0523**	1.3328***
	(1.653)	(8.328)	(6.617)	(7.538)	(8.170)	(4.065)	(3.099)	(3.640)	(2.534)	(3.524)
LRPGDP1	2.9053***	2.7712***	2.8589***	2.8013***	2.6777***	3.2392***	2.8987***	2.8546***	2.9571***	2.9169***
	(12.813)	(12.114)	(13.329)	(13.050)	(12.538)	(9.844)	(8.867)	(8.827)	(8.670)	(9.067)
LDIST	4.7143	2.4226	2.4050	2.4248	2.2658	2.5864	-0.5910	-0.5584	-0.5589	-0.7751
	(1.571)	(1.037)	(1.035)	(1.046)	(1.001)	(0.750)	(-0.231)	(-0.217)	(-0.222)	(-0.313)
LEXRATE	0.0238		0.0340**		0.0236	-0.0772***		-0.0874***		-0.0759***
	(1.469)		(2.160)		(1.424)	(-3.257)		(-3.661)		(-3.248)
LCOMPETI	-0.3423**		-0.5700***	-0.5220***		0.1443		0.2693	0.1415	
	(-2.155)		(-5.111)	(-4.734)		(0.646)		(1.575)	(0.791)	
LRER		0.0069					-0.0716***			
		(0.433)					(-3.133)			
D1	0.1209**					-0.0429				
	(2.439)					(-0.590)				
D2	0.0342					-0.1371***				
	(1.039)					(-2.839)				
Constant	-2.7944	30.7716*	26.3432	29.9247*	33.9192**	-18.6695	5.0062	7.6375	-1.4181	12.5796
	(-1.469)	(1.746)	(1.574)	(1.786)	(1.971)	(-1.359)	(0.207)	(0.319)	(-0.057)	(0.541)
LM	1712.38	1536.10	1595.10	1604.00	1521.68	1515.47	836.78	817.90	861.74	835.31
Hausman	0	1.08	3.79	4.36	0.91	0	24.35	28.51	13.81	20.69

Note: The figures in parentheses are the absolute t-statistics. *, ** and *** denote significance at the 10%, 5% and 1% levels, respectively.

Table 41. Asian countries

	Exports					Imports				
FEM	Case 1	Case 2	Case 3	Case 4	Case 5	Case 1	Case 2	Case 3	Case 4	Case 5
POP0	1.2822E-09					-2.2638E-09				
	(1.134)					(-1.289)				
POP1	6.7015E-10**					7.9328E-10				
	(2.060)					(1.570)				
LPOP0		2.0581	0.4692	-4.4305**	0.6242		1.5947	0.7823**	-5.6146*	-1.0168
		(0.838)	(0.197)	(-2.066)	(0.286)		(0.446)	(0.217)	(-1.748)	(-0.307)
LPOP1		-0.5792	-0.8021	-0.3645	-0.8082*		2.0004***	1.8759**	2.4473***	1.9469***
		(-1.146)	(-1.648)	(-0.739)	(-1.669)		(2.720)	(2.548)	(3.315)	(2.648)
LRPGDP0	0.6326	1.2114***	1.4437***	1.9667***	1.4258***	2.9066***	0.8944*	1.0146**	1.6974***	1.2222***
	(1.297)	(3.678)	(4.524)	(6.466)	(4.766)	(3.838)	(1.871)	(2.102)	(3.726)	(2.692)
LRPGDP1	1.6541***	1.3348***	1.7112***	1.8022***	1.7010***	1.7205***	1.6865***	1.8892***	2.0080***	2.0079***
	(9.268)	(7.726)	(9.291)	(9.500)	(9.839)	(6.207)	(6.726)	(6.782)	(7.006)	(7.652)
LDIST										
LEXRATE	-0.4109***		-0.4488***		-0.4635***	-0.8680***		-0.5860***		-0.4160***
	(-3.560)		(-4.451)		(-7.647)	(-4.841)		(-3.583)		(-4.522)
LCOMPETI	0.0721		0.0284	0.6235***		-0.7639***		-0.3293	0.4477***	
	(0.402)		(0.164)	(6.173)		(-2.743)		(-1.256)	(2.959)	
LRER		-0.6177***					-0.6743***			
		(-5.810)					(-4.370)			
D1	0.1628***					-0.1100				
	(3.568)					(-1.552)				
D2	-0.0605					-0.1979***				
	(-1.415)					(-2.979)				
Adjusted R2	96.90	96.33	96.65	96.39	96.66	92.99	92.75	92.81	92.41	92.79
F value	396.81	399.48	411.47	406.76	440.91	169.05	195.41	184.94	186.07	196.63
REM	Case 1	Case 2	Case 3	Case 4	Case 5	Case 1	Case 2	Case 3	Case 4	Case 5
POP0	1.3610E-09					-2.0564E-09				
	(1.214)					(-1.190)				
POP1	9.4014E-10***					7.3107E-10***				
	(3.678)					(3.010)				
LPOP0		-0.3472	-0.7270	-3.8134*	-0.2838		-0.3227	0.2713	-2.1935	0.2717
		(-0.150)	(-0.328)	(-1.812)	(-0.134)		(-0.104)	(0.087)	(-0.706)	(0.088)
LPOP1		-0.0517	0.1016	0.4175**	0.0434		0.2190*	0.2442*	0.5010***	0.2392**
		(-0.279)	(0.547)	(2.566)	(0.255)		(1.756)	(1.937)	(4.206)	(2.033)
LRPGDP0	0.6245	1.4704***	1.5266***	1.8612***	1.4750***	2.7722***	1.6938***	1.6793***	1.9259***	1.6783***
	(1.282)	(4.656)	(5.040)	(6.234)	(5.008)	(3.668)	(3.828)	(3.809)	(4.314)	(3.811)
LRPGDP1	1.3643***	1.1583***	1.3538***	1.3610***	1.3383***	1.1484***	1.0793***	1.0928***	1.1348***	1.0891***
	(10.696)	(8.191)	(9.417)	(9.301)	(9.545)	(9.788)	(9.045)	(9.112)	(8.520)	(9.142)

LDIST	0.3484	0.4295	0.6429	0.2508	0.6638	0.0351	-0.0209	0.0147	-0.2271	0.0123
	(0.786)	(0.926)	(1.360)	(0.561)	(1.425)	(0.120)	(-0.074)	(0.052)	(-0.746)	(0.044)
LEXRATE	-0.2736***		-0.2919***		-0.3389***	-0.3039***		-0.2201***		-0.2220***
	(-3.695)		(-3.547)		(-6.307)	(-5.261)		(-3.345)		(-3.872)
LCOMPETI	0.1336		0.0963	0.4582***		-0.1623		0.0131	0.2621**	
	(1.078)		(0.703)	(4.960)		(-1.151)		(0.091)	(2.020)	
LRER		-0.3624***					-0.2217***			
		(-4.392)					(-3.385)			
D1	0.1601***					-0.0851				
	(3.538)					(-1.218)				
D2	-0.0365					-0.1000*				
	(-0.926)					(-1.712)				
Constant	-0.9122	2.8917	3.4844	28.9134	0.1299	0.0453	1.9570	-3.7949	16.2804	-3.7096
	(-0.528)	(0.146)	(0.184)	(1.598)	(0.007)	(0.036)	(0.073)	(-0.141)	(0.605)	(-0.138)
LM	1320.61	1603.16	1288.37	1331.35	1599.59	214.51	177.62	182.30	298.32	182.61
Hausman	19.19	17.82	27.30	20.55	21.81	26.56	28.94	28.49	22.53	26.94

Note: The figures in parentheses are the absolute t-statistics. *, ** and *** denote significance at the 10%, 5% and 1% levels, respectively.

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