A fifty-year journey of China towards the world economy
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Chapter 3
China’s Politics and Bilateral Trade Linkages

China’s position in the international world during the past half-century provides vital information for investigating the relation between politics and trade. Although there is a substantial number of studies in this area, this study extends the literature in at least three ways: (1) it tests the impact of five political arrangements simultaneously, which is, as far as we know, more comprehensive than any former study; (2) it uses trade intensity instead of trade flows as the measurement of trade relations, which better reflects the mutual relationship between politics and trade; and (3) it accounts for zero observations, temporal dynamics and heterogeneity within one framework, and therefore better fits with the characteristics of the data than other models used in previous studies. By using data as to 78 of China’s trade partners over the 1950-2002 period, this study provides strong empirical evidence for the hypotheses that the establishment of diplomatic relations, cooperation, visits of heads of states and similarity of political systems are associated with higher intensities of trade linkages. Weaker empirical evidence is found in favor of Linder’s effect. The hypothesis that member countries of a Preferential Trading Agreement have had lower trade intensities with non-member countries such as China, is rejected.

3.1 Introduction
Over the past half-century, China has experienced great changes in its political and economic relationship to the international world. Few countries have seen such an incredible amount of change in such a short period of history. From an economically backward country it has become an emerging great power whose global integration will have a bigger impact on the world economy than that of any previous emerging
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economy. Therefore, China’s experience may provide vital information for the development and test of a coherent theory of the relationship between politics and trade, applied to a non-democratic (communist) country, along the lines pioneered by such scholars as Hirschman (1945), Savage and Deutsch (1960), and Pollins (1989a, 1989b).

The key argument is that in addition to economic invisible hands, such as comparative advantages, economies of scale and economic welfare, political visible arrangements play an important role in determining and shaping international trade, both in terms of size and direction. Plenty of studies have addressed the impact of political variables, such as military conflict, democracy, alliance and institutionalized political-economic cooperation. Starting from these studies, the contribution of this chapter to the study of political and trade relations is fivefold. First, the importance of China as a major economic and political power in transition deserves in-depth attention. For one, the Chinese case offers ample opportunities to test extant theory in the context of the largest non-democratic economy. Additionally, the study of China is justified by the country’s mere size and growing status in the world.

Second, this chapter uses trade intensity as the measurement of trade relations, which better exposes the intensity of bilateral trade linkages than the absolute value of trade flows. The common approach in the study of trade in the political and economic literatures is the gravity model, which was introduced by Tinbergen (1962). To determine the importance of different trade-driving forces, this model involves the identification of variables explaining the size of trade flows between countries. Usually, it emphasizes the absolute size of bilateral trade flows, producing a good estimation fit (e.g., Bergstrand 1990; Rauch and Trindade 2002). In the present chapter, we employ the trade intensity index, which reformulates the gravity model such that the relative intensity of the bilateral trade linkages across different trade
partners is explicitly measured. In most cases, after all, a large bilateral trade volume does not imply a similarly close trade relationship. For example, the export value from China to the United States is ranked first among China’s trade partners in 1999 (Chinese Ministry of Foreign Trade and Economic Cooperation, or MOFTEC), but the trade linkage between these two countries is not necessarily the most intensive one, given the huge aggregate import value of the US (Zhang and van Witteloostuijn 2004), or Chapter 4 below.

Third, adopting trade intensity as the dependent variable enables us to fully focus on the estimation of political arrangements on bilateral trade. This is so because the main economic determinants in a gravity-type of model, such as economic size, international openness and the exchange rate, can be eliminated from this gravity-based trade intensity specification. By contrast, with absolute trade flows as the dependent variable, all of these variables should be included in the model.

Fourth, we investigate the impact of five political arrangements, which, as far as we know, is more than any former study, to date, has done: diplomatic ties, foreign cooperation (or conflict), high-level visits, political system similarity (or difference), and preferential trading arrangements.

Fifth, we use long-period data with great variation, and appropriate methods for that data in the estimations. The study involves trade between China and 78 trade partners over the 1950-2002 period, which covers more than 90 per cent of Chinese foreign trade over the whole period. This long period of time and wide cross-section together provide substantial and highly relevant variation on all dependent and independent variables, which offers ample opportunities to investigate the impact of political policy changes on trade relations empirically. An interesting but also difficult aspect of our data set is the large number of zero observations – i.e., 18.6 per cent with respect to export and 25.9 per cent with respect to import. These zero
observations mainly occur in the period from 1950 to 1980, when China was isolated from the world economy and foreign trade was conducted strictly to central planning guidelines. To deal with these zero observations, we employ an estimation method based on the Tobit model. Additionally, the common problems of time-series / cross-section (TSCS) data – autocorrelation, heteroskedasticity and panel correct standard errors – are accounted for in a unified approach. In so doing, we offer an estimation strategy that improves upon the methods applied in earlier work.

By way of steppingstone, the next section of this chapter starts with an introduction of Chinese foreign policies and foreign trade from a historical perspective. Subsequently, we give a theoretical overview of the relationship between politics and trade from four different perspectives, and we formulate six hypotheses that can be derived from this theoretical literature review. The purpose of this study is to test whether these hypotheses, and thus whether the described politics-trade relationships, hold for China. After that, we describe the data and the empirical model, as well as our estimation methodology. We proceed by presenting and discussing the results of our empirical analyses. Finally, we give our conclusions, and offer a brief appraisal.

3.2 Chinese Foreign Policy and Foreign Trade

China’s foreign policy widely fluctuated in the post-1949 period. During Mao’s era (1949-1976), China’s foreign policy was characterized by militancy and self-reliance, whereas during Deng’s era (1978-1997), China’s foreign policy was associated with a shift towards peace with and openness to the outside world (Zhang 1998). In the literature,¹ Chinese foreign relations over the past half-century are classified in five

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¹ This classification is quite coherent in different information sources: see the website http://reference.allrefer.com/country-guide-study.
different periods: (1) the Sino-Soviet alliance of the 1950s, which reflects a pattern of intra-communism relationships; (2) isolation and radicalism in the 1960s, in which China adopted an anti-imperialist (against the US) and anti-revisionist (against the Soviet Union) international united-front strategy; (3) increased international involvement in the 1970s, in which China’s relation with the Western world improved; (4) the independent and peace foreign policy in the 1980s, in which China gradually opened up to the world; and (5) world multipolarization in the 1990s, in which China established strategic partnerships with the major powers of the world. During each of these periods, China’s relations with the rest of the world underwent significant changes. In this study, we focus on the effects of these changes on (bilateral) trade. By time period, these effects can be characterized as follows.

In the 1950s, China took a “lean-to-one-side” foreign policy, as declared by Mao in 1949, resorting to the Soviet Union and the socialist bloc for help in rebuilding and development. In its First Five-Year Plan (1953-1957), China adopted the Soviet economic model, primarily emphasizing industrial development at the expense of agriculture, with a particular focus on heavy industry and capital-intensive technology. In order to spur industrialization, China was keen to import machinery and equipment, which was the single largest import category. During this period, over 90 per cent of all imports were producer goods, leaving less than 10 per cent for consumer goods. The producer goods, including many entire plants and pieces of equipment, were mainly imported from the Soviet Union. In addition, large numbers of Soviet engineers, technicians and scientists were sent to China to assist with the development and instalment of new heavy industrial facilities, which inevitably enhanced the trade relation between the two countries. The Soviet Union was by far the largest trade partner of China, which accounted for half of China’s foreign trade in the 1950s. Consequently, China’s trade intensity with the Soviet Unions was extremely high (see Figure 3.1). The three main reasons for the close relation with
Soviet Union during that period were: (1) the Soviet Union’s relatively advanced industry, which could meet the need of China’s construction; (2) the good political relationship, directed by mutual political sympathy; and (3) the barriers erected by the Western countries’ trade bloc.

The break-up with the Soviet Union in the early 1960s triggered a precipitous decline in Sino-Soviet trade. In order to continue its construction, China started a new, although smaller, program of complete plant import in 1963. These plant imports largely came from Japan, due to the fact that the Sino-Japanese tense relation had been relaxed since 1959, when the former Japanese Prime Minister Tanzan Ishibashi visited China. The Sino-Japanese relation was a subtle one, though. On the one hand, China was using foreign trade as a means of establishing de facto diplomatic relations with Japan (Mah 1971). On the other hand, Japan assured that trade was a private matter, which should be separated from politics. This doctrine of Japan was a successful fiction that made it possible for Japan to adhere to close partnerships with the US and Taiwan, while simultaneously promoting a variety of contacts with China. As a result, China’s trade intensity with Japan significantly increased during the period 1963-1976, while China’s trade intensity with the Soviet Union considerably decreased (see Figures 3.1 and 3.2).

After the Sino-Soviet split, China also embarked on a more open campaign to obtain support from developing countries. At that time, Africa began achieving a degree of national self-determination, which offered fertile ground for China for seeking new

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2 In 1960, due to political conflicts, the Soviet Union scrapped the 600 contracts signed with China, withdrew all the experts and stopped supplying important equipment urgently needed in China’s construction.

3 In general, Sino-Japanese relations were less stable due to the potential political and military threat throughout the Cold War era. However, the two countries had sought to build up a good trade relationship for economic reasons. For example, five non-governmental trade agreements have been signed during the 1952-1962 decade.
friends. The most spectacular diplomatic activity during that period was Prime Minister Zhou Enlai’s goodwill visit to ten African countries between late 1963 and early 1964, which was a milestone in the history of Sino-African friendship. Since then, China has offered favorite terms for loans and aid to African countries so as to build and maintain a good political relationship with the newly rising African nations. As part of the foreign aid, China even bought up African coffee and chocolate, despite lack of demand for these products in China (Segal 1992). China’s African policy was very successful from a political perspective. For instance, Africa gave invaluable support to the restoration of China’s legitimate seat at the United Nations. As a result of China’s Africa policy, the Sino-African trade relation considerably intensified. China became a large trade partner of Africa. China’s trade intensity with Africa reached its highest level during 1965-1978.

In the early 1970s, motivated by geopolitical and strategic considerations, China’s relations with the Western world, especially with the United States, improved. As a consequence, China’s trade intensity with the Western world increased, more than that with the rest of the world (see Figure 3.4). In December 1978, at the milestone Third Plenum of the National Party Congress’ Eleventh Central Committee, the party leaders decided to undertake a program of gradual but fundamental reform of the economic system. They concluded that the Maoist version of the centrally planned economy had failed to produce efficient economic growth and had caused China to fall far behind the industrialized nations in the Western world, as well as the new industrial powers of Asia. Since then, China has shifted toward a more open policy. The political relations with the Western world have been normalized as of the

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4 Among the 76 votes for China, 26 were from African relations (Chinese Ministry of Foreign Affairs).

5 The changes started when president Richard Nixon visited China in 1972. The United States’ trade embargo against China was ended in the same year. The improvement of the relations with the Western world enhanced China’s leverage vis-à-vis the Soviet Union.
1980s, and those with Asian and East-European countries have been significantly improved as of the 1990s. Since 1980, China has established diplomatic relationships with 50 countries (Ministry of Foreign Affairs of People’s Republic of China). In line with the diversification of the foreign political relationship portfolio, China’s foreign trade relations have diversified considerably. The number of trade partners (with trade value more than 10,000 US$) increased from 62 in 1980 to 198 in 2002.

The anecdotal evidence above suggests that political arrangements are an important factor determining China’s foreign trade linkages. Political motives have been the major factor in China’s trade with communist nations and underdeveloped countries in the Third World. Of course, political arrangements are not the one and only factor that can explain trade, especially China’s trade with the Western world. Foreign trade with this part of the world was primarily directed towards breaking economic bottlenecks, and promoting exports to be able to finance imports. The trade system in this period is regarded as an extreme case of import substitution (Lardy 1992). For example, China imported large quantities of food grains from Australia and Canada to alleviate domestic food shortages in the early 1960s, caused by natural and man-made disasters. Simultaneously, China exported large volumes of consumer goods to Hong Kong and Singapore-Malaysia to augment its foreign exchange earnings (Mah 1971). At that time, China had no diplomatic relations with these countries. This example illustrates that both political and economic visible and invisible hands had an impact on China’s trade relations.

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Figure 3.1 China's TI with the USSR

Source: author's calculation.

Figure 3.2: China's import TI with Canada and Japan

Source: authors' calculation.
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Figure 3.3 China's TI with Africa

Source: authors' calculation

Figure 3.4 China's export TI with the US

Source: authors' calculation.
3.3 The Relationship between Politics and Trade

The idea that international political and economic processes are interrelated is not new. Mercantilism, for instance, prevailed in 17th and 18th centuries in the West. Mercantilists advocated a country to export more and to import less in order to enhance its political power. In later centuries, Marxists and imperialists have also been well aware of the fact that foreign trade can be an instrument of national power. Hirschman (1945) is one of the first modern economists who conceptualized the relationship between international trade and politics. He argued that Germany used the structure of its international trade to coerce Bulgaria, Hungary and Romania to support its political objectives. Since the 1970s, particularly in 1980s and 1990s, researchers have attempted to specify and measure the relationships between international trade and politics quantitatively. Many empirical studies have appeared in the literature since then. Four arguments dominate this literature. Below we explain each of these arguments, and formulate the hypotheses that can be derived from these arguments with respect to China.

Political cooperation and conflict

The first argument is that trade flows are significantly influenced by political conflict and cooperation between nations. Savage and Deutsch (1960), and Pollins (1989a, 1989b) formalized the foundations of this approach. Pollins' model is based on the choices of utility-maximizing rational agents at every level of aggregation, from individuals and interest groups to industries and nation-states. Trade flows are affected by the decisions of these agents. Since agents are risk averse, they wish to minimize the risk of disrupting trade flows. Political conditions, therefore, are important, and must be taken into account when taking decisions. Pollins expects that the trade level between two countries will decline when their political relationships are becoming more conflictive, and that the trade level will increase when their political relations become more cooperative. Estimations with data from
25 countries over the period 1960-1975 supports this hypothesis (Pollins 1989b). Recent empirical studies (e.g., Morrow, Siverson and Tabares 1998; Bliss and Russett 1998) also found evidence that supports this argument.

In the present study, it is assumed that political relations have three dimensions. The first dimension pertains to the establishment of diplomatic ties, which are a precondition for a good political relationship. The second dimension relates to cooperation and conflict, which reveal what actually happened between two countries in the political arena. The third dimension focuses on high-level visits, which show what heads of states do for bilateral relationships. Accordingly, the following three hypotheses are used to test the first argument.

HYPOTHESIS 3.1a: Diplomatic relationships have a positive effect on trade intensities.

HYPOTHESIS 3.1b: Foreign cooperation (conflict) has a positive (negative) effect on trade intensities.

HYPOTHESIS 3.1c: High-level visits have a positive effect on trade intensities.

Joint political regimes

The second argument is that shared democratic policies are associated with higher values of trade. Specifically, two countries that are both democratic will trade more than two countries of which at least one is not democratic, ceteris paribus. The reason behind this can be classified into two sub-arguments. First, from the perspective of state safety, it is less likely that a democratic trade partner will use its gains from trade to endanger their partners’ security (Oneal and Russett 1997). A pair of democratic countries can enter into relationships of economic interdependence for absolute welfare gains, without any worry about the hazard of relative economic gains as much as they might with non-democratic partners (Powell 1991).
Accordingly, governments of democratic countries may construct policies to encourage their private economic actors to trade with people in other democratic countries (Bliss and Russett 1998).

Second, from the perspective of a private actor, trading with a democracy is less risky than trading with an autocracy. One reason is that the likelihood of conflict and the probability of war or threat of war between democratic countries tend to be lower than between non-democratic nations. Another reason is that entrepreneurs are more confident to do business in a country ruled by law than in a country ruled by people. A shared democracy, therefore, will likewise promote trade agreements. Empirical studies have found evidence supporting this argument (Bliss and Russett 1998; Dixon and Moon 1993; Morrow, Siverson and Tabares 1998; Remmer 1998; Verdier 1998).7

Since China was and still is not a democracy, we cannot test whether democratic dyads enjoy higher trade intensities than other dyads. Instead, we investigate whether similarity in political regimes encourages trade. This argument is in line with Oneal and Ray (1997), who have stated that governments usually take effective steps to prevent their citizens trading with enemy countries and to promote them trading with allies.

HYPOTHESIS 3.2: Similarity in political regimes has a positive effect on trade intensities.

*Preference Trading Arrangements*

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7 Most of those empirical studies have been reviewed elsewhere. Bliss and Russett (1998), for example, have reviewed studies on trade flows and political systems.
The third argument is that institutionalized political-economic cooperation increases international trade. The Preferential Trading Arrangement (PTA) is the major manifestation of institutionalized political-economic cooperation, which may take the form of free trade areas, such as customs, unions or common markets (Anderson and Blackhurst 1993). According to the theory of PTA, pioneered by Viner (1953), a PTA is likely to trigger trade-creation effects for its member states (Bhagwati and Panagariya 1996). Empirical studies in both politics and economics have found evidence for this. Aitken (1973) examined the effect of the European Free Trade Area (EFTA) and the European Economic Community (EEC) on trade over the 1951-1967 period. Pelzman (1977) measured the impact of the Council for Mutual Economic Assistance (CMEA) on the trade among the seven communist members. Brada and Mendez (1983) investigated the impact of five regional integration schemes (EEC, EFTA, CACM, LAFTA and Andean Pact) on trade. Krueger (2000) reported a preliminary assessment of the effect of NAFTA on the trade of the US and Mexico. Pollins (1989a, 1989b) investigated this impact with emphasis on dyadic political relations. Mansfield and Bronson (1997) estimated the effects of PTAs on bilateral trade flows from 1960 to 1990. Martinez-Zarzoso (2003) reported the effect of six PTAs (EU, NAFTA, CARICOM, CACM, MAGREB and MASHREK) on trade.

China has not joined any formal PTA. Hence, the argument as to the direct trade impact of a PTA does not apply to China. However, if PTAs are expected to trigger trade-creation effects for its member countries, the trade intensity of non-member countries with these countries will fall. This indirect effect is the basis for our third hypothesis.

HYPOTHESIS 3.3: Countries that are member of a PTA have lower trade intensities with China.
Military alliances

The fourth argument is that military alliances influence the direction of trade (Gowa 1989, 1994; Gowa and Mansfield 1993; Mansfield 1994). The causal relation between military capability and international trade is reciprocal. According to standard trade theory, trade increases both countries’ wealth. Furthermore, if one country invests its gains from trade to increase its military power, its trade partners will also gain from this increase in military power so long as the military alliance pursues similar ends. Conversely, a country might impede trade with enemy nations for fear that these countries would use the benefits of trade to build up their military capability and hence pose a greater threat. Accordingly, free trade is more likely within than across military alliances. Recent studies have found empirical evidence that supports this political argument (Gowa and Mansfield 1993; Mansfield and Bronson 1997; Morrow, Siverson and Tabares 1998). In addition, it has been found that military alliances are more likely to evolve into free-trade coalitions when embedded in a bipolar rather than a multipolar system (Gowa 1994: 31).

China’s involvement in military alliances has been limited in the 1950-2002 period to the Sino-Soviet alliance in the 1950s. The relationship between China and the Soviet Union during the 1950s can be characterized as a bipolar military alliance, which suggests our fourth hypothesis.

HYPOTHESIS 3.4: The military alliance between China and the Soviet Union has had a positive effect on China’s trade intensity with the Soviet Union.

3.4 An Empirical Model for Trade Intensity

Dependent variables

The dependent variables in this study are China’s export and import intensity indices. Although we have no a priori reason to expect that export and import react
differently to political arrangements, we would like to test whether the results are indeed symmetrical. The trade intensity index (TI), developed by Kojima (1968), Roemer (1976), Kunimoto (1977) and Drysdale and Garnaut (1982), measures the degree to which two countries trade more or less intensively with each other than they do with the rest of world. For export, the trade intensity of country c with country f is defined as a ratio with in the numerator c’s export share in f’s total import and in the denominator c’s export share in total world import. For import, an equivalent ratio can be calculated. This study’s dependent variables are the export trade intensity index (ETI) and the import trade intensity index (MTI) of China. Since China cannot export to (or import from) itself, the denominator must be modified by using overall world trade reduced by China’s import (export). This gives the trade intensity indices

\[
\text{ETI}_{cf} = \frac{E_{cf}}{E_c/(m_w - m_c)} \quad \text{and} \quad \text{MTI}_{cf} = \frac{m_{cf}}{m_c/(E_w - E_c)},
\]

where \(E_{cf}\) is Chinese export to country f, \(m_{cf}\) is total import of country f, \(E_c\) is Chinese total export, \(m_w\) is world import, and \(m_c\) is Chinese total import. Similarly, \(m_{cf}\) is Chinese import from country f, \(E_f\) is total export of country f, \(m_c\) is Chinese total import, \(E_w\) is world export, and \(E_c\) is Chinese total export. A value of TI greater than one indicates that China exports to (or imports from) country f more intensively than it does to (or from) the rest of the world. Conversely, a value of TI less than one reflects that China exports to (or imports from) country f less intensively than it does to (or from) the rest of the world.

Following gravity-type of logic, determinants of bilateral trade (export or import) can be classified into three categories of variables: (1) total potential supply of the
exporting country c, $P_c$; (2) total potential demand of importing country f, $P_f$ and (3) “resistance” to trade from potential supplier c to potential buyer f, $D_{cf}$. The first two categories of variables offer proxies for the trade potential of the countries c and f, respectively, which are determined by a set of characteristics of c and f, such as economic size, international openness and the exchange rate. Prominent examples of resistance variables are (a) discriminatory trade integration, (b) geographical distance, (c) historical and political affinities, (d) cultural (dis)similarity, and (e) economic structure overlap (Linnemann 1966; Parsley and Wei 2001).

In the international trade linkages literature, the common approach to determine the impact of these three categories of variables is the gravity model, which takes the following functional form:

$$ E_{cf} = \frac{P_c^\alpha P_f^\beta}{P_{P_{PE}}} D_{cf}^\gamma \quad \text{and} \quad m_{cf} = \frac{P_c^\alpha P_f^\beta}{P_{P_{Pe}}} D_{cf}^\gamma, $$

(3.2)

where $\alpha$, $\beta$ and $\gamma$ represent unknown parameters to be estimated. Starting from this model, China’s total export can be written as

$$ E_c = \sum_{i=1}^{n} E_{ci} = \sum_{i=1}^{n} \left( \frac{P_c^\alpha P_i^\beta}{D_{ci}^\gamma} \right) = \frac{P_c^\alpha}{\beta} \left( \sum_{i=1}^{n} \frac{P_i^\beta}{D_{ci}^\gamma} \right), $$

(3.3)

where $n$ represents the number of countries in the world, except China. Similarly, total import of a particular country f (except f itself) can be rewritten as

$$ m_f = \sum_{i=1}^{n} m_{if} = \sum_{i=1}^{n} \left( \frac{P_i^\alpha P_f^\beta}{D_{if}^\gamma} \right) = \frac{P_f^\beta}{\gamma} \left( \sum_{i=1}^{n} \frac{P_i^\alpha}{D_{if}^\gamma} \right), $$

(3.4)

On substituting (3.2), (3.3) and (3.4) into (3.1), we get
\[
\text{ETI}_{cf} = \left( \frac{p_\alpha^c p_\beta^{cf} / D_{cf}^\gamma}{p_\alpha^{cf} \sum_{i=1}^{n} p_\beta^{ci} / D_{ci}^\gamma} \right) \times \left( \frac{p_\beta^{cf} \sum_{i=1}^{n} p_\alpha^{ci} / D_{cf}^\gamma}{\sum_{i=1}^{n} (p_\beta^{ci} / D_{ci}^\gamma)} \right) \times \left( \frac{1 / D_{cf}^\gamma}{m_w - m_c} \right) \times \left( \frac{\sum_{i=1}^{n} (p_\alpha^{ci} / D_{cf}^\gamma)}{m_w - m_c} \right). \tag{3.5}
\]

In logarithmic form, this formula can be rewritten as

\[
\log\text{ETI}_{cf} = -\gamma \log D_{cf}^{\gamma} + \left[ \log(m_w - m_c) - \log \sum_{i=1}^{n} \left( p_\beta^{ci} / D_{ci}^\gamma \right) \right] - \log \sum_{i=1}^{n} \left( p_\alpha^{ci} / D_{cf}^\gamma \right). \tag{3.6a}
\]

Similarly, China’s import intensity index is

\[
\log\text{MTI}_{cf} = -\gamma \log D_{cf}^{\gamma} + \left[ \log(m_w - m_c) - \log \sum_{i=1}^{n} \left( p_\beta^{ci} / D_{ci}^\gamma \right) \right] - \log \sum_{i=1}^{n} \left( p_\alpha^{ci} / D_{cf}^\gamma \right). \tag{3.6b}
\]

Equations (3.6a) and (3.6b) show that both the export and import intensity index are a function of three groups of determinants, and that both functions are identical to each other. The first term at the right-hand side of Equations (3.6a) and (3.6b), \(D_{cf}^{\gamma}\), represents the “resistance” to trade between China and its trade partner \(f\). The second term includes total world import (except for China) minus China’s export potential. The latter is determined by demand factors in other countries, weighted by distance. Importantly, this term is independent of \(f\). If China’s trade intensity index is regressed on a variable from this group of determinants using TSCS data, this variable will be country-invariant. This implies that time dummy variables may be used to control for this group of determinants. The third term in equation 3.6 measures the export potential of other countries than China. Note that this term is independent of focal country \(c\) (here, China); it measures the linkages of China’s trade partners with the rest of the world. For that reason, data on these determinants are often difficult to obtain. If China’s trade intensity index were regressed on a variable from this group of determinants using TSCS data, this variable would still vary over space and time. In this context, country and time dummy variables may
used to control for these determinants at least partially.

In sum, the trade intensity index primarily depends on the first group of determinants, provided that the second and the third group of determinants are controlled for by country and time dummy variables. This is an extremely important observation, because it offers the opportunity to restrict the analysis on “resistance” to trade between China and its trade partners and, more specifically, on the estimation of political determinants of bilateral trade, which is the purpose of this study. By contrast, the main economic determinants in a gravity-type of model, such as economic size, international openness and the exchange rate, can be eliminated from the trade intensity model.

Independent variables

To test our hypotheses, the trade intensity indices are taken to depend on six political variables. In addition, we control for key economic factors, as well as time and country dummy variables. Below, we introduce all our independent variables and measures, one by one.

The first political variable, DIPLO, reflects whether China and its trade partner had a diplomatic relationship at time point t. Since the trade intensity index measures a country’s import share from China (or China’s import share from a particular country) to its import share from the rest of the world, this 0-1 variable must be taken relative to the total number of countries with which China had a diplomatic relationship at time point t. This set-up implies “decreasing returns to scale”; the greater the number of countries with which China has a diplomatic relationship, the smaller the impact of establishing a diplomatic relationship with another country on the trade intensity with that country. After all, if China would have diplomatic relationships with all countries in the world, this type of political arrangement can no
longer explain any cross-sectional differences among trade intensity indices. A similar set-up is used for the other political variables.

The second political variable, COOP, measures whether and to which extent China and its trade partner cooperate or are in conflict. Following Goldstein (1992), daily events as to conflict and cooperation are weighted and aggregated into annual numbers for each (potential) trade partner. Events (with their weights in parentheses, adopted from Goldstein 1992) included are: military attack or assault (-2); break-up of diplomatic relation (-1.4); non-military sanction (-1.1); expel organization or person (-1); formal complaint or protest (-0.5); apologize (0.25); suspend sanctions (0.3); agreement (1); and economic aid (1.1).

The third political variable, VISI, represents the annual number of high-level visits of heads of states and other influential politicians, the first weighted by 2 and the second by 1. The fourth political variable, SYST, pertains to the political system similarity and reflects whether (1) or not (0) China’s trade partner is a socialist or a transition country. With the latter coding rule, we avoid a discontinuity in our time series, as many former communist countries turned into transition economies in the years after the collapse of the Berlin Wall in 1989.

As our fifth political variable, to investigate the political impact of institutionalized political-economic cooperation, seven PTAs are considered: Central American Common Market (CACM), European Free Trade Area (EFTA), the European Union (EU), the North-American Free Trade Agreement (NAFTA), the Association of Southeast Asian Nations (ASEAN), Council for Mutual Economic Assistance (CMEA), and the Latin-American MERCOSUR. Each PTA variable reflects whether (1) or not (0) China’s trade partner was member of a PTA at time point t.

The sixth and last political variable, ALLI, is a dummy variable that takes the value of 1 during the years that the relationship between China and the Soviet Union can be
characterized as a bipolar military alliance, and 0 otherwise. This dummy variable affects only a single bilateral trade relationship directly – the Sino-Soviet trade linkage –, since China’s post-1949 history witnessed only one formal military alliance (during the 1950s).

To collect the information necessary to construct these political variables for the 78 countries under study over the period 1950-2002, we developed our own database (available upon request). COPDAB and WEIS, two existing data sources that are commonly used in the political science literature, fall short for our purposes mainly because of incomplete records with respect to China. Admittedly, our database is not complete either, but much more so than COPDAB or WEIS. Information about diplomatic relations, high-level visits, cooperation and conflict are obtained from China’s Ministry of Foreign Affairs, the Chinese embassies, Xinhua News Agency, and the relevant Chinese law and regulation websites.8 Trade data are obtained from the IMF, and completed by data from Eurostat and the National Bureau of Statistics of China. Eventually, we were able to collect 3,830 observations with respect to export and 3,786 observations with respect to import. Finally, GDP data are obtained from the World Bank, and completed by either Penndata or information from the Groningen Growth and Development Center.

To control for economic “resistance” variables, we consider two economic variables. The first economic variable, DIST, measures the geographical great-circle distance between the economic center of China and that of its trade partner. In line with the gravity model, a lower trade intensity is expected, the longer this distance. The second economic variable is based on Linder’s theory (Linder 1961). Linder concluded that the closer trade partners are in their demand patterns, the more similar will be their trade commodities composition and the larger will be their

8 For example, http://www.hotlong.com/lawv2.
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volume of bilateral trade. Specifically, the Linder effect refers to the impact of income level similarity on how a country distributes international trade across foreign partners. Because most finished and many intermediate goods are produced in and traded from developed countries, a long list of empirical studies have reported strong evidence for the existence of Linder’s effect among developed countries, but very weak or no evidence for less developed countries (LDCs) (e.g., Thursby and Thursby 1987; Hanink, 1990). In the 1980s and 1990s, however, along with rapid economic transformation in a number of developing countries, a positive Linder effect was also found for intra-LDC trade (Weinblatt and Schrager 1985; Arnon and Weinblatt 1998). In the current study, the income difference between China and its trade partner, GDPdif, is measured by the relative difference of GDP per capita (in absolute value), \( \text{GDP}_{\text{dif}} = \frac{|\text{GDP}_c - \text{GDP}_f|}{\text{GDP}_c} \). A negative sign of this variable indicates Linder’s effect.

3.5 Estimation Strategy

The purpose of this study is to determine the impact of political arrangements on China’s trade performance. For this purpose, the dependent variables, both the export and import trade intensity index, are regressed on the independent variables using time-series / cross-section (TSCS) data on 78 countries for the 1950-2002 period, with a maximum of 53 time points for those countries having complete data. One of the central research questions in modeling TSCS data relates to selecting the right econometric model, which is anything but easy. A series of papers in the political science literature has discussed how to treat TSCS data and the problems that must be investigated (e.g., Beck and Katz 1995; Beck 2001): (1) Panel Correct Standard Errors (PCSE), (2) temporal dynamics, (3) limited dependent variables, and (4) heterogeneity. Below we discuss these problems in more detail and explain how
they have been dealt with in this study. The main methodological innovation of the empirical analysis in the present study is its novel treatment of zero observations in combination with PCSE, temporal dynamics and heterogeneity.

**Panel Correct Standard Errors**

The analysis starts from a simple linear model between a dependent variable $Y$ and a set of $K$ independent variables $X$:

$$Y_{it} = \beta_1 X_{1it} + \beta_2 X_{2it} + \ldots + \beta_K X_{Kit} + \epsilon_{it} = \beta' X_{it} + \epsilon_{it}, \quad (3.7)$$

where $i (= 1, \ldots, N)$ refers to a country, $t (= 1, \ldots, T)$ to a given time period, $\beta_1, \ldots, \beta_K$ are fixed but unknown parameters, and $\epsilon_{it}$ are independently and identically distributed error terms for all $i$ and $t$, with zero mean and variance $\sigma^2$. If the errors are “spherical”, we can get optimal estimates of $\beta$ using OLS. However, if the errors would be non-spherical, e.g., due to heterogeneity, spatial dependence among the observations at each point in time, and/or serial dependence among the observations on each country over time, then the OLS estimator loses its property of being efficient. To deal with this problem, one could correct for panel-heteroskedastic, contemporaneously correlated and/or temporary correlated errors. The problem with this approach is that the number of observations is generally too small relative to the number of parameters to be estimated and that the standard errors are underestimated by 50 to 200 per cent, depending on $T$ (Beck and Katz 1995). Instead, Beck and Katz propose to use Panel Correct Standard Errors (PCSE), with the square roots of the diagonal elements of

$$\text{Cov} (\hat{\beta}_{PCSE}) = (X'X)^{-1}[X'\Omega X](X'X)^{-1}, \quad (3.8a)$$
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where, 

\[ \begin{bmatrix}
\sigma_1^2 & \sigma_{12} & \cdots & \sigma_{1N} \\
\sigma_{12} & \sigma_2^2 & \cdots & \sigma_{2N} \\
\vdots & \vdots & \ddots & \vdots \\
\sigma_{1N} & \sigma_{2N} & \cdots & \sigma_N^2 \\
\end{bmatrix} \otimes I_T, \]  

(3.8b)

and where \( \sigma_g \) measures the interaction between countries. PCSE computed according to this set-up correct for panel-heteroskedastic and contemporaneously correlated errors, but not for temporary correlated errors.

Temporal dynamics

TSCS data often reveal dynamics. The old-fashioned treatment is to think of these dynamics as a nuisance – that is, to model them as serially correlated errors – so that

\[ \varepsilon_{i,t} = \rho \varepsilon_{i,t-1} + v_{i,t}, \]  

(3.9)

where \( v_{i,t} \) replaces \( \varepsilon_{i,t} \) as the white noise error term. This correction can also be used to determine PCSE (Beck and Katz 1995). However, this approach has been highly criticized. Hendry and Mizon (1978) were among the first to point out that serial autocorrelation correction cannot be considered a serious effort to find the ‘correct’ equation (cf. Hendry 1995, Chapter 7; Mizon 1995). Instead of improving an initial econometric model when it appears to be unsatisfactory, one better starts with a more general model containing, nested within it as special cases, a series of simpler models that ideally should represent all the alternative hypotheses requiring consideration. The general model Hendry and Mizon have recommended as a generalization of the first-order serial autocorrelation model, is the first-order serial autoregressive distributed lag model; a linear dynamic regression model in which \( Y_{i,t} \) is regressed on \( Y_{i,t-1}, X_{i,t} \) and \( X_{i,t-1} \). This model is also adopted in this study.

Limited dependent variables

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A serious problem of our data set is that a large number of observations is censored at zero: 711 observations with respect to export trade intensity and 981 observations with respect to import trade intensity are zero, because export or import is smaller than the minimum value of 10,000 US$. These zero observations mainly occur in the first three decades (1950-1980), when China was isolated from the world economy and foreign trade was conducted strictly according to central planning guidelines. Under this closed planning system, Chinese foreign trade was concentrated in a limited number of countries.

If the zero observations would be excluded from the sample, this creates a sample selection bias – and hence the regression parameters are likely to be biased. This treatment of zero observations assumes that these countries have zero import demand for Chinese commodities or that China has zero import demand for commodities from these countries indeed, which is not necessarily the case; some countries may have decided not to trade on political grounds. It would be more appropriate to assume that, in choosing not to trade, countries with zero trade intensities are still displaying market behavior, and for this reason it is important to include both zero and non-zero observations whilst estimating trade models. Furthermore, to eliminate zero observations or to shorten the observation period to get rid of the zero-observations problem is really a waste of data that may well yield important information.

It is evident, then, that trade involves the ‘decision’ whether or not to trade and, if the decision is to do so, what the intensity of trade should be. A statistical model that has often been used to deal with this two-stage ‘decision’ is the Tobit model. Define $Y_u^*$ to be the desired but unobservable trade intensity index and $Y_u$ the observed trade intensity index with a particular country. We then have
\[ Y_i^* = C \quad \text{if } Y_i^* < C, \text{ and} \]
\[ Y_i^* = Y_i^* \quad \text{if } Y_i^* \geq C, \]  
\hspace{1cm} (3.10)

where \( C \) denotes the limiting value of the model at hand, which in the case of trade intensity indices seems to take the value of zero at first glance.

We deliberately used the verb ‘seem’, because an additional problem which has to be solved is that the typical gravity model is in a double-log form, expressing the variables as \( \log(Z) \), where \( Z \) represents any of the dependent or independent variables. The problem is that \( \log(Z) \) is not defined for values of \( Z \) equal to zero. To preserve the double-log form, the variables can be expressed as \( \log(1+Z) \). This adjustment yields results similar to a standard double-log form, since for large values of \( Z \), \( \log(1+Z) \approx \log(Z) \), whereas for values of \( Z \) approaching zero, \( \log(1+Z) \approx Z \), approximating a semi-log relationship (e.g., Eichengreen and Irwin 1998; Coughlin and Wall 2003). This adjustment has also been applied in the current study to the political variables.\(^9\) Importantly, in the case of the trade intensity index, this adjustment has only been applied to its numerator, because the problem of zero observations is limited to \( E_{cf} \) (or \( m_i \)). The log of the export trade intensity index defined in (3.1) can be rewritten as

\[ \log(\text{exTL}_{cf}) = \log\left(\frac{E_{cf}/m_f}{E_{cf}/(m_w - m_c)}\right) = \log(E_{cf}) - \log(m_f) - \log(E_c) + \log(m_w - m_c). \]  
\hspace{1cm} (3.11)

Therefore, \( Y, Y^* \) and the limiting value \( C \) in the Tobit model (3.10) can best be specified as (including the +1-adjustment discussed above)

\[ Y_{cf}^* = -\log(m_f) - \log(E_c) + \log(m_w - m_c) \quad \text{if } E_{cf}^* < 0, \text{ and} \]  
\hspace{1cm} (3.12a)

\(^9\) It has not been applied to the economic variables, because none of these variables have zero values.
A similar set-up is adopted for the import trade intensity index. Note that instead of being zero and constant, the limiting value determining $Y_{cf}$ when $E_{cf}$ is zero is now different for different countries and different time periods. The strength of this approach is that we still utilize the information recorded by the variables $m_f$, $E_c$ and $m_r-m_c$. The larger a country’s total import or the larger China’s total export, both relative to world trade, the less likely it is that China and this country do not trade. If we would adopt a zero and constant limiting value, this information is not utilized.

**Heterogeneity**

A TSCS model, even if it is dynamic, still treats the countries as completely homogeneous, differing only in their explanatory variables. The PCSE were designed to guard against one type of heterogeneity – i.e., unequal variances between countries. A panel data approach would presume that heterogeneity is a feature of the data, and would attempt to model that heterogeneity. The simplest way of doing so is to assume that each country and each time period has its own intercept, thus changing the error structure to $\epsilon_{i,t} = \rho \epsilon_{i,t-1} + \mu_i + \lambda_t + v_{i,t}$, where $\mu_i$ denotes a set of country dummy variables, one for every country, and $\lambda_t$ indicates a set of time dummy variables, one for every time period. Note that if both sets are included, one dummy should be dropped to avoid the dummy variable trap.

**Estimation method**

Methods to estimate a dynamic Tobit model with fixed effects in both the cross-section and time-series domain are not yet available. Dynamic Tobit models without fixed effects have been studied by Lee (1999). The problem of this class of models is that the distinction between an observed and a latent variable not only has to be
made at the left-hand side of the regression equation, as we did for the trade intensity index in Equations (3.12), but also at the right hand-side for the lagged value of this trade intensity index. This complicates the analysis considerably. LIMDEP is an econometric software package that can be used to estimate Tobit models with fixed effect (Greene 2002, Chapter E21: 80-85). If the lagged value of the trade intensity index is included among the regressors, one naturally obtains a coefficient estimate of this variable. However, this coefficient is likely to be biased, because this routine ignores that the lagged value of the trade intensity index is censored.

Another problem is how to determine PCSE for a Tobit specification. Although software for heteroskedastic Tobit models is now widely available (e.g., LIMDEP; see Greene 2002, Chapter E21: 41-53), this type of heteroskedasticity is not suitable to deal with panel-heteroskedasticity and contemporaneous spatial correlation. Huang (1999) has developed an algorithm to estimate SUR Tobit models, but not for models containing lagged dependent variables.

An alternative to Tobit is scaled OLS, which is based on the striking empirical regularity that the maximum likelihood coefficient estimates of the Tobit model can be approximated by dividing the least-squares estimates by the proportion of non-zero observations. This estimation method is quite popular in the trade literature (see, e.g., Eichengreen and Irwin 1998; Coughlin and Wall 2003). Its advantage is that it can easily be extended with serial dependence among the observations over time, panel-heteroskedasticity (country and time dummy variables), and contemporaneous spatial correlation (via PCSE) within one framework, three phenomena which in the political science literature have recently received such a prominent place (Beck 2001).

This extension is possible as follows. The standard estimation method for the fixed-effects model is to eliminate $\mu_i$ and $\lambda_t$ from the regression equation by demeaning.
the Y and X variables and then estimate the resulting demeaned equation by OLS. The demeaned variable of Y is obtained by

\[ Y_{it} = \bar{Y}_t - \bar{Y}_i + \bar{Y}, \]

where \( \bar{Y}_t = \frac{1}{T} \sum_{t=1}^{T} Y_{it}, \bar{Y}_i = \frac{1}{N} \sum_{i=1}^{N} Y_{it}, \text{ and } \bar{Y} = \frac{1}{NT} \sum_{i=1}^{N} \sum_{t=1}^{T} Y_{it}. \) (3.13)

Similar transformations apply to the X variables. To correct the demeaned equation for zero observations, we may use scaled OLS instead of OLS, and to correct the demeaned equation for contemporaneous spatial correlation, we may compute PCSE using Equation (3.8). These extensions are relatively simple to implement. A final reflection is that the OLS estimator of the response coefficients in the demeaned equation is inconsistent if T is fixed (read: small) (Baltagi 2001, Chapter 8), but in this study this problem is of minor importance, since the average number of observations for each country is greater than 48.

### 3.6 Empirical Results

Table 3.1 reports the means of the variables and their correlation coefficients. The mean reported for the political variables and trade intensity indices reflects the average relative non-zero value. The mean value of the DIPLO variable (0.0212), for example, indicates that the average number of countries with which China has established diplomatic relationships over the observation period amounts to \( \frac{1}{0.0212} = 47 \) countries. In other words, the lower the mean value of a political variable, the more countries are involved.

Table 3.1 makes clear that the variables DIPLO, SYST and GDPdif changed so slowly over time that their observed values at time point t-1 and time point t are

10 Software written in Matlab is available upon request.
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highly correlated (over 0.87). For this reason, their lagged values have been eliminated from the regression equation. The lagged values of the seven separate PTA variables have been eliminated, too, because when taken together into one variable, PTA, this variable also appears to have changed slowly over time. The mutual correlation coefficients of the remaining independent variables are rather limited, except for the correlation coefficient between the CMEA (Council for Mutual Economic Assistance) and the SYST variables. This is because the countries involved partly overlap. By eliminating the first variable, multicollinearity is not expected to be a problem anymore.

From Table 3.1 it can also be seen that the partial correlation coefficients of the independent variables with the current and lagged values of the export and import trade intensity indices have the expected sign: DIPLO (+), SYST (+), COOP and COOP\(_1\) (+), VISI and VISI\(_1\) (+), ALLI (+), DIST (–) and GDPdif (–). Only the signs of the partial correlation coefficients of the PTA variables tend to be inconsistent with Hypothesis 3.3.

Despite its positive correlation coefficient with the trade intensity indices, the ALLI variable has been dropped from the regression equations because it only takes the value of 1 with respect to the Soviet Union during the 1950s. This is too little to find any empirical evidence in favor of our Hypothesis 3.4. As an alternative, we could estimate a separate trade intensity model of China for the Soviet Union, but this would be no more than a reconfirmation of Figure 3.1 or of the partial correlation coefficients in Table 3.1.

A general problem of country dummy variables is that they are perfectly collinear with any independent variables that do not change over time, so they force us to drop such variables from the regression equation. This happens to the DIST variable. From Table 3.1 it can be seen that this variable is negatively correlated with the trade
intensity indices, as expected. This negative relationship also appeared to be significant when the model was estimated by (scaled) OLS without country dummy variables. Unfortunately, when country dummies are included in the regression equations, the DIST variable becomes part of them, as a result of which its separate effect can no longer be estimated. This is acceptable, however, because its coefficient is not of main interest in this study anyway.

The estimation results are recorded in Table 3.2, in panel A with respect to China’s export intensity index and in panel B with respect to China’s import intensity index. The first two columns of both panels contain the coefficient estimates and their t-values. Basically, the coefficient estimates reflect elasticities. That is, each coefficient of a particular variable reflects the percentage change in the associated trade export or import intensity index when this variable rises by 1 per cent.

The coefficients in the first column reflect short-term effects. Long-term effects can be obtained from the short-term estimated effects by multiplying the latter by \(1/(1 - \hat{\tau})\), where \(\hat{\tau}\) is the coefficient estimate of the lagged trade intensity index. In case of the COOP and VISI variables, the long-term effects can be obtained by \((\beta_1 + \beta_{1-1})/(1 - \hat{\tau})\), where the \(\beta_s\) are the coefficient estimates of the current and lagged values of these variables. The last two columns of both panels report these long-run effects and their corresponding t-values.

The first thing to note is that the fit of the models in view of the number of observations is quite high. The R-squared is 0.75 for the export equation and 0.60 for the import equation. Part of this result is explained by the 78 country and 53 time dummies, of course. When these are excluded so that only the explanatory power of the 14 political and economic variables is measured, the R-squared reduces to 0.59 for the export equation and 0.41 for the import equation, which is still more than
reasonable, indicating that our set of economic and political variables explains substantial variance.

The second thing to note is that the results obtained for the export intensity index and for the import intensity index are not fully symmetrical. Although there is no a priori reason to expect export and import to react differently to political arrangements, in practice they appear to do so, to some extent. Generally, export needs more time than import does to adjust itself to its new equilibrium value after a change in one of its determinants. This follows from the coefficient of the lagged dependent variable, which is 0.853 for export and 0.756 for import. By contrast, the short-run responses of export to cooperation and conflict (COOP) and high-level visits (VISI) exceed those of import. The results also show that there is hardly any difference in the long-term effects: the size and significance level of the DIPLO, COOP and SYST variables in both equations is comparable. The long-term effect of the GDPdif variable appears to be significantly different from zero in the import equation, but not so in the export equation: their mutual difference is not significantly different, though. Only some of the short-term and long-term effects of the PTA variables (MERCO, EU, CACM) differ from each other.

Strong empirical evidence is found in favor of the Hypotheses 3.1a, 3.1b, 3.1c and 3.2. The short-term as well as the long-term effects of any of the DIPLO and COOP variables are positive and significant in both the export and the import equation. The long-term effect of the VISI variable is also positive and significant in both the export and the import equation, but its short-term effect is only significant in the export regression.
Table 3.1: Means and correlation coefficients of the variables

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<th>ASEAN</th>
<th>NAFTA</th>
<th>EU</th>
<th>EFTA</th>
<th>CACM</th>
<th>CMEA</th>
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### Table 3.2: Estimation results of China’s trade intensity indices over 1950-2002

<table>
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<tr>
<th>Explanatory variables</th>
<th>A. Export</th>
<th>B. Import</th>
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<tr>
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<td>Short run</td>
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</table>

**Notes:**

1. Both equations also include 78 country dummies and 53 time dummies.
2. The t-values are based on panel correct standard errors.
3. R-squared of the export equation is 0.75 if country and time dummies are included, and 0.59 if excluded.
4. R-squared of the import equation is 0.60 if country and time dummies are included, and 0.41 if excluded.
The confirmation of Hypothesis 3.1a implies that without diplomatic relationships the economic driving forces of trade may not grow to full stature. China’s government has made great efforts to establish diplomatic ties with the rest of the world. During the first upsurge in the establishment of diplomatic relations from 1949 to 1955, China established diplomatic ties with 23 countries, such as the USSR, the East-European socialist states and some neighboring Asian nationalist countries. From the latter half of the 1950s to the end of the 1960s, China launched diplomatic ties with many more countries, forming a second upsurge in the establishment of diplomatic relations. At the end of 1969, there were 50 countries that had diplomatic ties with China. All the newly added countries, except France, were developing nations from Asia, Africa and Latin America. In the 1970s, another 70 countries, from both the developing and developed world, established diplomatic ties with China. In 1979, China had diplomatic relations with 120 countries. As of 2003, this number had increased to 165.

To test Hypothesis 3.1b, the following aspects of cooperation and conflict have been investigated: (1) economic cooperation, international aid, scientific and technological exchange and cooperation, military exchange and cooperation, and culture exchange, and (2) military attacks and assaults, break-up of diplomatic relations, non-military sanctions, expulsion of organizations or persons, and formal complains or protests. The estimation results imply that if politicians in China and its trade partner put more effort in encouraging cooperation and diminishing conflict, the two countries are likely to enjoy higher trade intensities. This result is very intuitive for the situation before 1979 when China’s foreign trade was conducted strictly according to central planning guidelines. Politicians completely controlled the direction of trade, which enabled China to use foreign trade as a strong weapon in international political struggles. From 1980 to 1992, the regime of exclusively mandatory trade was replaced with a system of combined mandatory and advisory planning. After 1992,
administrative control was further reduced, and gradually trade management was removed altogether. However, effects of political relations on trade, although not so direct as before, still exist. According to Pollins (1989b: 741), economic agents incorporate all kinds of risk-avoiding concerns into their trade decisions and therefore tend to decrease trade with a particular country if the political relation with their country is becoming more conflictive.

High-level visits have always been seen as important events in China’s foreign relations. A few historical diplomatic visits indeed changed China’s position in the international system. One example is Premier Zhou Enlai’s goodwill visit to ten African countries in the 1960s, which helped China to gain more friends in the Third World. Another famous example is the visit of US President Richard Nixon to China in 1972, which dramatically improved China’s relation with the Western World. The objectives of high-level visits are to promote bilateral foreign relations by enhancement of understanding and improvement of cooperation between the countries involved. The confirmation of Hypothesis 3.1c shows that China has indeed benefited from these high-level visits in terms of trade.

The confirmation of Hypothesis 3.2 implies that China’s close, historical contacts with most of the communist countries during the past half-century have contributed to the intensification of its trade exchange network. Previous studies mainly focused on the effect of democracy on trade, assuming that democratic dyads have greater trade flows than non-democratic dyads (e.g., Morrow, Siverson and Tabares 1998). In addition to that, the present study reveals that similarity of the political system between non-democratic dyads also has a positive impact on bilateral trade.

The results with respect to the PTA variables are rather mixed, but generally do not favor Hypothesis 3.3. Of the seven PTA variables only the short-term effects of EU
in the export equation and of MERCO and CACM in the import equation appear to be negative, albeit neither of these effects is significant statistically. The fact that during the past half-century many countries were member of a PTA, while China was not, apparently did not have a negative effect on China’s trade linkages to these countries. The reason might be that China is an attractive trade partner for all member countries from PTAs anyway, because of its mere size: the Chinese market is so huge that no country is willing to sacrifice the associated market opportunities just because China is not a member of a PTA.

With regard to our economic control variables, our findings only weakly indicate that Linder’s effect applies to China and its trade partners. The short-term as well as the long-term effect of the GDPdif variable is negative in both the export and the import equation, but only one of these four effects is significant statistically. Again, as suggested above, the reason for this rather weak Linder’s effect might well be the mere size of the Chinese economy, making the economic “resistance” variables much less important than they have proven to be for smaller countries in earlier work.

Finally, the estimation results in Table 3.2 offer the opportunity to compare the relative importance of different political arrangements. The results indicate that the establishment of diplomatic relationships and similarity in political systems have had a greater impact on trade intensities than cooperation (and conflict) and visits of heads of states or other influential politicians. An explanation may be that the latter are the more accidental manifestations of the former.

### 3.7 Conclusion

Our empirical analysis on trade intensities between China and 78 trade partners over 1950-2002 has shown that political arrangements play an important role in shaping
international trade. By covering a long time window with much variation and more appropriate methods for analyzing that data, and by using a relative rather than absolute bilateral trade measure, this study has been able to find strong empirical evidence in favor of our four Hypotheses: diplomatic relationships have a positive effect on trade intensities (Hypothesis 3.1a); foreign cooperation has a positive effect on trade intensities (Hypothesis 3.1b); high-level visits have a positive effect on trade intensities (Hypothesis 3.1c); and similarity in political regimes has a positive effect on trade intensities (Hypothesis 3.2). Of these four political arrangements, the establishment of bilateral relationships and similarity of political systems appeared to have the strongest impact.

The results are less strong for Hypotheses 3.3 and 3.4. The estimation strategy employed in this study was not able to produce empirical evidence in favor of Hypothesis 3.4 that the military alliance between China and the Soviet Union had a positive effect on China’s trade intensity with the Soviet Union. Although Hypothesis 3.4 is confirmed by Figure 3.1 and the partial correlation coefficients of the ALLI variable with the export and import trade intensity indices in Table 3.1, the variation in this variable appeared to be too low to find any empirical evidence in favor of this Hypothesis 3.4 in Table 3.2. However, the pattern in Figure 3.1 does provide supportive anecdotal evidence, as the Sino-Soviet trade intensity flourished in the 1950s when China and the USSR were involved in a military alliance. Finally, although the results are mixed, Hypothesis 3.3 that member countries of a PTA (Preferential Trading Agreement) have had lower trade intensities with China must be rejected. Apparently, China is too important for the members of PTAs to have their trade intensities affected.

The findings for our two economic control variables seem to suggest that, in the case of China, politics is more important than economics. For one, only weak empirical
evidence has been found in favor of Linder’s economic effect, according to which
the closer China and its trade partners are in their demand patterns, the more similar
will be their trade commodities composition and the larger will be their volume of
bilateral trade. Although the negative sign of the GDPdif variable in both the export
and the import equation is in line with the existence of Linder’s effect, only the long-
term effect of this variable in the import equation appeared to be significant
statistically. Similarly, we could not find evidence for the argument that the greater
the geographical distance between China and its trade partner, the lower will be their
mutual trade intensity indices. Although the expected relationship between distance
and trade is confirmed by the negative partial correlation coefficients of the DIST
variable and the trade intensity indices in Table 3.1, its separate effect could not be
estimated in Table 3.2 due to the inclusion of country dummy variables.

Of course, the current study is characterized by a number of limitations that point
the way to future work. One methodological challenge is to develop an algorithm
able to produce the maximum likelihood estimates of our dynamic Tobit model with
fixed effects in both the cross-section and time-series domain. Although our
approach comes a long way, this would further improve the quality of the estimation
strategy. One challenge from an economic and political viewpoint, next to replicating
this study in different settings, is to extend the analysis with the reversal relationship
between politics and trade. Using cointegration and Granger-causality methods, as
done in earlier work, might be instrumental in unraveling the politics-trade causality
relationships. Here, it would be interesting to find out how causality linkages run for
different aspects of politics (as well as among them), and whether or not the causality
chain is different for export vis-à-vis import.
Chapter 3 China's Politics and Bilateral Trade Linkages