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## **China's Internal Market Integration in the Globalization Era: A Preliminary Analysis**

*Abstract:*

*Observers of China's economic development and its on-going attempts to integrate into the global economy have pointed to a paradoxical situation of international integration coexisting with deep fragmentation of Chinese domestic market. This paper speculates about possible ways of assessing the degree of domestic economic integration in China and presents alternative ways to measure the degree of domestic and international integration. The paper puts forward two hypotheses about possible relationships between the two processes. Results of statistical tests of these hypotheses are mixed. On the one hand, greater international integration is associated with both greater variation in consumer prices across provinces and a larger gap between coastal and interior GDP per capita. On the other hand, an alternative model that operationalized domestic integration in terms of the physical movement of goods in the country supports the hypothesis that international integration has positive effects on the degree of domestic market integration. The paper contributes to the on-going discussions about the possible effects of China's entry into the World Trade Organization (WTO).*

## **I. Introduction: International Economic Integration and its Domestic Counterpart**

For the most part in its modern history China was weakly integrated into the global flows of world trade. After the founding of the People's Republic of China in 1949, Cold War tensions dictated that the little trade that occurred was predominantly with the Soviet bloc. Following the split between China and the USSR in the 1960s China's international trade became even less. Mao's policies of self-reliance were not only aimed at eliminating any potential dependence on foreign trade, but also sought to achieve self-sufficiency at the local level within China. These policies retarded domestic integration of the economy and regional specialization, creating a "cellular economy." (Donnithorne 1972) Starting in the late 1970s the Deng Xiaoping reforms began gradual liberalization of foreign trade which culminated in China's 2001 entry into the World Trade Organization (WTO). Although China has been extraordinarily successful at becoming connected to the world economy, the task of internal economic integration has faced greater difficulties. Due to the legacies of the past provincial self-sufficiency priorities, sheer size of the country, structure of local administration, and existing restrictions on labor mobility China's internal market remains highly fragmented. This paper addresses the emerging concerns about the prospects of international integration in the domestically fragmented economy.

Coexistence of a highly fragmented domestic market with rapid integration into the global economy makes China an exceptional case. The rule for the developed countries, and for many developing countries, was that by the time a country liberalizes its foreign trade, it has an established well-integrated domestic market. The effects of the exposure of a fragmented national economy to the pressures and opportunities of global economic integration have not attracted academic attention in the recent past since for the most part such situations have rarely occurred in the 20th century.<sup>1</sup> Present developments in China call for revisiting the assumptions and predictions of integration theories to incorporate the case of global integration of a domestically fragmented economy. Does liberalization of external trade promote the establishment of an integrated domestic market? Or does it increase regional disparities and lead

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<sup>1</sup> The students of late 19<sup>th</sup> century economic development in the lesser developed countries of Europe observed a similar phenomenon of international economic integration in the emerging national markets of Spain, Italy and the Balkan countries. See Berend and Ranki, 1982 and Lampe and Jackson, 1982.

to greater fragmentation between areas of the county involved intensively in foreign trade and the ones left behind?

Scholars, as well as policy-makers and opponents of globalization, have pointed to several features of China's recent economic developments suggesting that the latter scenario is taking place. The two main cleavages in China's economy and society are between coastal and interior regions, and between urban and rural areas. The benefits of international integration, not to mention the costs, are unevenly distributed across these cleavages, with coastal and urban areas enjoying most of the benefit. Based on extensive interviews with Chinese officials and researchers, Garrett argues that, "The biggest worry of many Chinese reformers, as well as globalization's opponents, is that the disparity of income in different parts of China—coastal and interior, cities and rural areas—will widen rather than narrow as a result of China's further integration into the world economy." (2001: 423)

The conventional wisdom is that increasing openness of the Chinese market is likely to further exacerbate the rural-urban split. China's agricultural sector is expected to bear the largest costs of trade regime liberalization (Zhang et al, 1998). Declining agricultural household incomes combined with policies which continue to limit rural-urban labor mobility will increase inequality. Chang (2001) makes more provocative claims, arguing that the increasing rural-urban gap caused by increased international competition will undermine the stability of China's political system and eventually contribute to economic collapse.

Regional disparities are the second component of China's domestic market segmentation. Coastal regions have grown much faster than China's interior during the reform era. Furthermore, trade and foreign direct investment are concentrated in China's coastal provinces. The possibility of deepening international integration making worse an already large coastal-interior gap is not only an economic, but also a political concern.<sup>2</sup> Despite broad agreement about the low levels of intra-country economic integration in China, the question remains whether the level of China's internal market fragmentation is changing – and in what direction. Some find that local protectionism has subsided in recent years (Naughton 2003, Wedeman 2003), but others find evidence that China's domestic economy is becoming more rather than less fragmented. (Poncet 2003) Our analysis of China's internal economic integration

complements these existing studies by taking a different approach as well as by specifically focusing on the link between international and domestic integration. We argue that a macro-level approach to integration can help to assess some emerging hypotheses about the dangers of foreign trade liberalization in a domestically fragmented economy.

The paper proceeds as follows. The second section uses available macro-level indicators to examine the Chinese economy and discusses alternative methods of assessing the degrees of fragmentation and integration. The third section develops two hypotheses about the long-term effects of international integration on domestic fragmentation. One hypothesis postulates negative effects of international integration on domestic integration, the other claims that these effects are positive. The fourth section puts forward a statistical model to test these hypotheses and presents the results of statistical analysis. We argue that international integration has mixed effects on domestic market integration. On the one hand, greater international integration is associated with both greater variation in consumer prices across provinces and a larger gap between coastal and interior GDP per capita. On the other hand, an alternative model that operationalized domestic integration in terms of the physical movement of goods in the country supports the hypothesis that international integration has positive effects on domestic market integration. The conclusion outlines the prospects for future investigation and speculates about the theoretical significance of present research.

## **II. Assessing the Degrees of Fragmentation and Integration**

### ***International Integration***

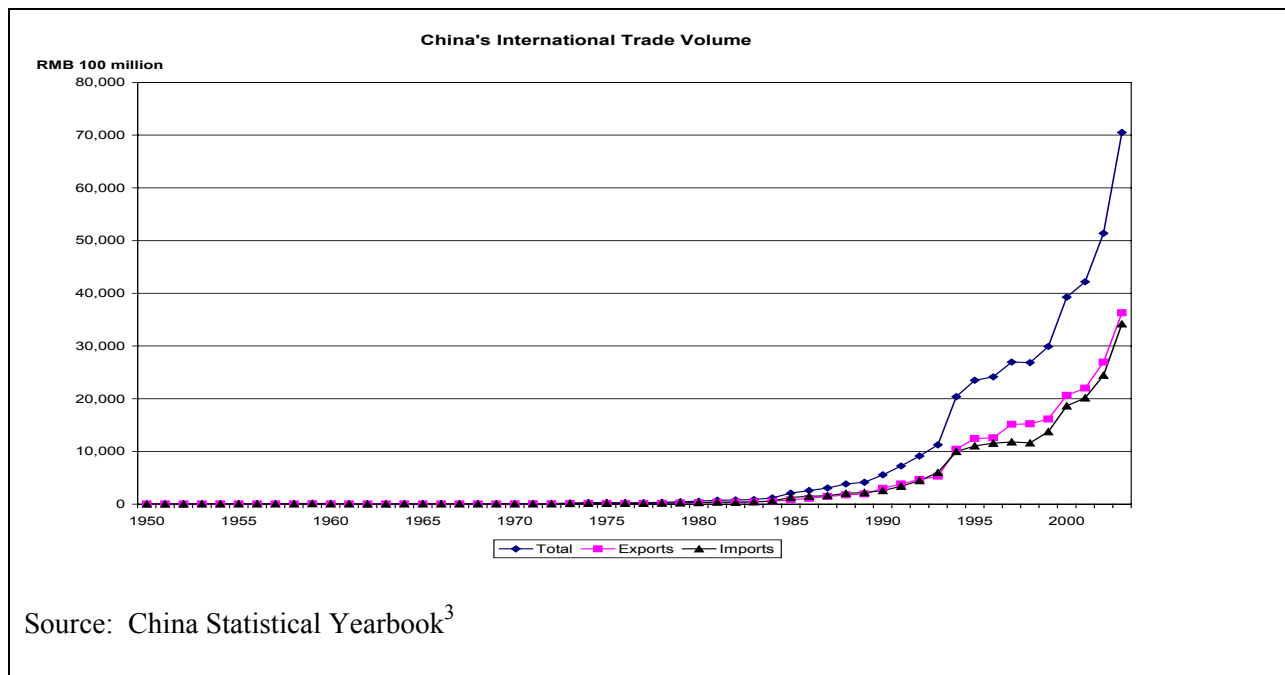
China's recent economic development stands out as a case of rapid integration with the world economy. Deng Xiaoping's reform and opening policies involved greater participation in world trade, opening to foreign direct investment, and increasing participation in international capital markets. (Lardy 1994, 2002b) In a dramatic indication of China's changing foreign trade regime, the volume of trade has tremendously increased since China went on the path of opening up its domestic economy. China went from a negligible participant in world trade in the late 1970s to the world's fourth largest exporter (accounting for 5.8 percent of total world

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<sup>2</sup> Concern about the political ramifications of a potentially widening coastal-interior gap has led the Chinese media to downplay the adjustment costs of WTO accession, and to appeal to national pride by highlighting the ways in

merchandise exports) and the world's third largest importer (accounting for 5.3 percent of total world merchandise imports) by 2003. (WTO data) Figure 1 illustrates the overall trade dynamics from 1950 through 2003. Total trade never exceeded RMB 20 billion a year until 1973. By 1984, total trade had grown to RMB 120 billion (US\$ 54 billion), and by 1993 total trade had already reached RMB 1.1 trillion (US\$ 196 billion). In the next decade trade grew more than six-fold to exceed RMB 7 trillion in 2003. Contrary to the prevailing view China's trade growth was not driven solely by exports. Although the trade balance has been positive since the early 1990s, the volume of imports continued to grow at a rate comparable to the exports' growth.

Figure 1



Growth of international trade volumes is an often cited indicator of China's increasing participation in the global economy. Certainly trade is not the sole factor that represents the degree of a country's international integration. The conventional conceptualizations of globalization entail not only movements of goods across a country's borders but also increasing capital mobility, harmonization of rules and regulations governing the business community, and

which WTO membership will strengthen China's international standing. See Cooper and Landry, forthcoming.  
<sup>3</sup> Unless otherwise noted, data in these figures is from China Statistical Yearbook.

– although this aspect continues to be hotly debated – equalization of living standards. While China’s accession to WTO can be seen as a decisive step in the direction towards increasing globalization, the fact that important sectors of the Chinese economy remain largely state-controlled undermines the foundations for genuine capital mobility and equalization of rules governing China’s economy with those of the outside capitalist world. With respect to income and standards of living, China’s rates of growth and improving living standards are high, but even with the existing rates of growth it will take many years for the country to bridge the gap between itself and the other industrializing countries in the region, let alone the developed industrial nations. This paper, however, does not seek to assess the *extent* of China’s globalization. Instead, we ask a slightly different question, examining the *effects* of globalization on China’s domestic market integration. We focus on the effects of international trade, since it is arguably the most basic component of globalization, and volumes of trade as a percentage of GDP may be considered a good proxy for the overall levels of international integration.

The raw volumes of imports and exports, although clearly indicating rapid growth, are not themselves sufficient to measure international integration. The volume of trade is not very suggestive of the degree of outside economic penetration if the size of the domestic economy is not taken into account. Therefore, total trade as a percentage of GDP is a better indicator.

### ***Domestic Integration***

Integrated domestic markets are characterized by a high degree of regional specialization, high levels of horizontal and vertical industrial integration, low price differentials between regions of the country and simultaneous price fluctuation, non-prohibitive zoning regulations, mobility of goods, capital, and labor, and equalization of wages and incomes across different parts of the country. An integrated market system is also a vital component of economic development and industrialization (Grabowski 1995), and is argued to be “necessary for effective participation in globalization.” (Yang 2002: 58) It is clear that taken in isolation any single element of domestic integration listed above will be insufficient to present the whole picture and capture the phenomenon of integration in its entirety.

In contrast to China’s rapidly progressing integration with the international economy, the process of domestic market integration continues to face obstacles. Maoist policies encouraging

self-reliance generated a pattern of economic development comprising counties and enterprises functioning to the extent possible as independent cells. By the early 1970s, local protectionism was already evidenced by non-tariff barriers to trade across local administrative boundaries. (Donnithorne 1972) Beginning in 1979, a dramatic reversal of policies occurred at the top levels. Provinces, and localities within those provinces, were no longer encouraged to seek self-sufficiency but were instead encouraged to produce for the market. As Wedeman describes, China's reformers sought to not only open China's outer doors, but also the country's "inner doors." (2003: 27-37) As China was moving from a planned toward a market economy, however, local protectionism increased substantially. During the 1980s, provinces and subprovincial units frequently restricted exports of raw materials in order to ensure supplies for their own processing industries, and also restricted imports of manufactured goods from other provinces. (Wedeman 2003, Sheng 2005) In a variety of ways throughout the reform era, incentive structures of the local and provincial governments frequently promoted parochial interests of local bureaucrats (e.g., desire to maximize tax revenue from local industries) at the expense of larger national economic development goals (Blecher and Shue 2001; Koehn 2002; Freeman 2002). Despite the shift in central policy, and a series of central decrees and directives prohibiting local protectionism, domestic market integration remains limited. The debate about the extent of fragmentation continues, as some find that local protectionism has subsided in recent years (Naughton 2003, Wedeman 2003), but others find evidence that China's domestic economy is becoming more rather than less fragmented. (Poncet 2003)

### *Measurement Techniques*

Most studies of integration rely on micro-level data, such as wages or prices of individual commodities. For example, Collins (1999) uses wage and food price data to investigate market integration in India, finding little evidence for wage convergence despite dramatic improvements in transportation during the late 19<sup>th</sup> century. Dobado and Marrero (2005) examine corn prices to establish the integration of domestic markets in late 19<sup>th</sup> century Mexico.

Turning to some recent studies of integration in China, it becomes clear that researchers examining different aspects of integration may reach different conclusions. Yang (2002) has proposed a firm-level index of integration which takes into account the degree of market penetration of existing firms in particular industries. Yang argues that although regional income

differences and low penetration of the nation-wide firms into some local markets still characterize even the most integrated developed economies, in China regional income disparities are extremely high and the extent of firm-level market penetration is low by comparative standards. Leaving aside unavailability of data needed to estimate the degree of integration, the firm-level measures of integration are flawed in that they assume the US-like tendency for horizontal integration. A certain degree of capital concentration is needed to be attained before large firms can come to dominate the entire domestic market. To achieve the same degree of market capture, Chinese firms would require a much larger degree of capital concentration compared to a world's average-size country due to the large size of Chinese market. A firm-level measure of integration as proposed by Yang, if applied cross-nationally would be biased toward capital-abundant economies without necessarily reflecting the degree to which the goods, capital, and labor are mobile across regions. Such a measure would in fact underestimate China's domestic integration.

Poncet (2003) used the border effects method to examine China's domestic and international trade barriers. She found that the share of provincial consumption of goods from other provinces decreased between 1987 and 1997, while the shares of locally produced and imported goods increased. This analysis does capture an important aspect of domestic market fragmentation. Nevertheless, this is not the whole picture. While the share of goods from other provinces may have decreased over the period, due to the overall growth of provincial GDP the absolute amount of inter-provincial trade has increased substantially. Although this paper makes use of the best available data on interprovincial trade flows, unfortunately such data is only available for selected years (1987, 1992, and 1997). Without the availability of a longer and more complete time series, it is impossible to know whether the findings reflect short-term effects. Finally, this model assumes that provinces already consist of internally integrated economies. Given the history of fragmentation at both the provincial and sub-provincial level, however, we think it is more accurate to view integration as an ongoing process both within and between provincial boundaries.

Sheng's (2005) analysis highlights the fact that integration varies both by product, and by province. He used product-specific data to examine the extent of domestic market integration. Based on trends in the number of provinces producing a particular good, the number of provinces producing more than five percent of the national total, and the percentage of national output

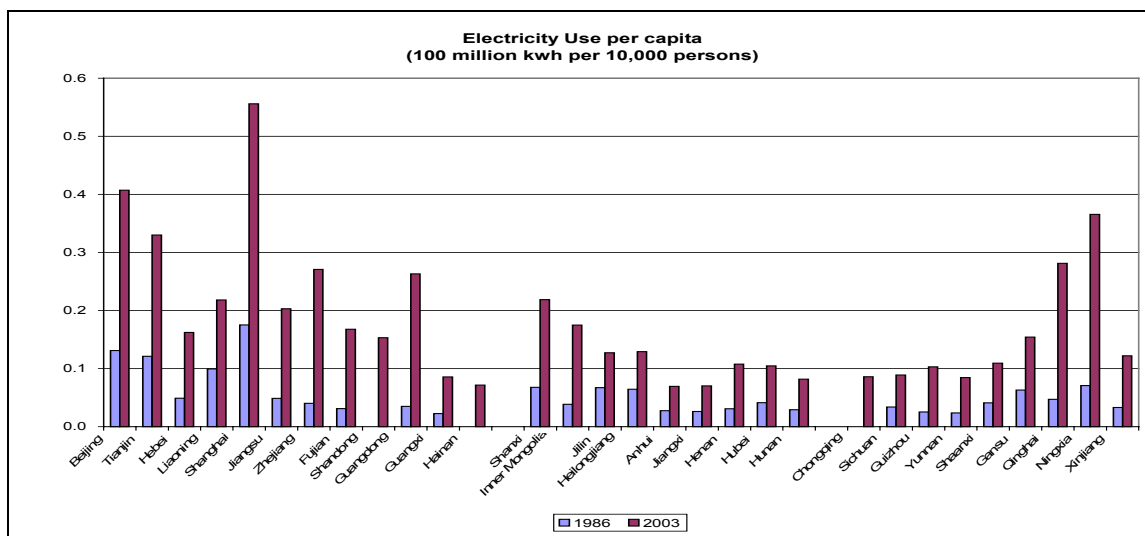
produced by the top three producing provinces, he finds mixed results. While the domestic market for some products has become increasingly fragmented, the market for other products shows evidence of integration. In addition, he examined varying levels of local protectionism among provinces, finding that provinces subject to greater central political control displayed less local protectionism. (2005:202-225)

*A Macro-level Approach*

An alternative way to assess the extent of domestic integration is to step back from a focus on any one sector or product, and try to find indicators that can gauge overall integration. Although admittedly less precise than the micro-level analyses of integration, measures such as the cross-regional differences in income, living standards, and price fluctuation can provide a useful complement to the micro-level analyses. Comparative studies of domestic integration are rare which makes it hard to assess the extent of China’s domestic economic integration in comparison to other countries. However, a longitudinal study can reveal the rates and direction of change on these important indicators of integration. We examine variations among provinces, as well as the politically salient coastal-interior and urban-rural gaps.

The figures below present data on provincial differences for selected years.

Figure 2



Measures of electricity consumption per capita are good proxies for the overall levels of economic development since per capita electricity consumption reflects both the levels of social welfare and industrial needs for production. Figure 2 above groups provinces by region, with coastal provinces on the left, central provinces in the middle, and western provinces on the right of the chart. The data reveal, unsurprisingly, that per capita electricity use increased substantially from 1986 to 2003. In contrast, the data reveal little change in the level of cross-regional disparities over the period. The coefficient of variation (standard deviation / mean) was 0.675 in 1986, falling to 0.591 in 1995, rising to 0.653 in 2001, and falling slightly to 0.649 in 2003.<sup>4</sup> There is not a clear discrepancy between the coastal and interior provinces in terms of the electricity consumption rates. Patterns of electricity consumption alone, however, can not give definitive evidence of market integration. Several factors other than the extent of market integration are likely to influence variations in electricity consumption. Per capita electricity consumption is expected to be higher in regions specializing in resource extraction or industrial production (particularly heavy industry) as compared to the regions of intensive agriculture.<sup>5</sup> In addition, energy consumption in general and electricity consumption in particular depend on climatic conditions, and given the differences in climate between the regions of this vast country, regional energy consumption disparities should increase following improving living standards and diverging demands for electric power for air conditioning. The bottom line is that the data on regional disparities in energy consumption are not necessarily indicative of the level of fragmentation in China's domestic market.

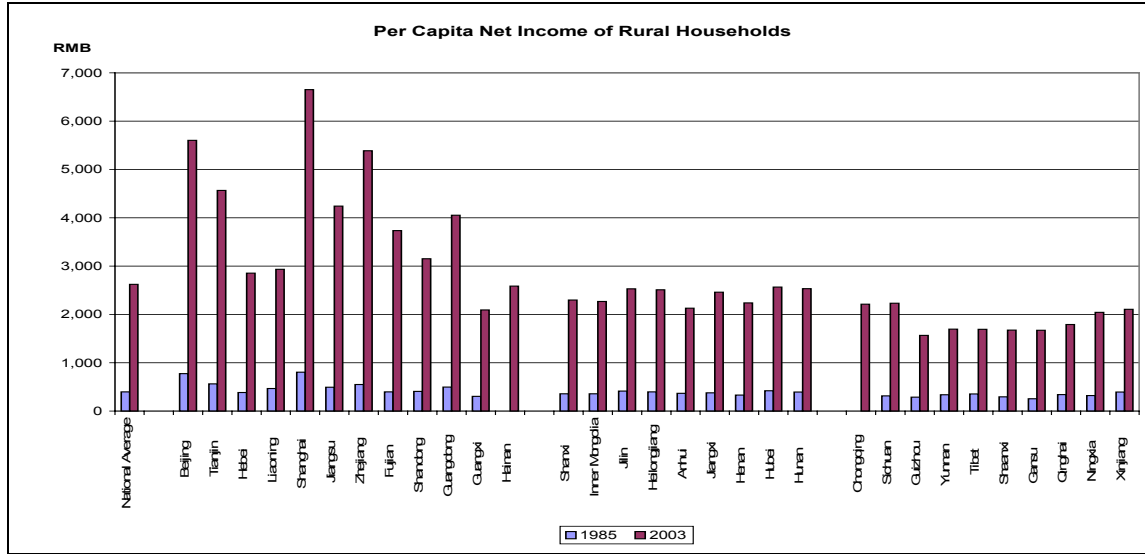
A more direct indicator of well-being is household incomes. We briefly examine the two most politically important aspects of fragmentation in contemporary China: the coastal-interior and urban-rural gaps. Since the majority of China's population remains rural, we will also focus on the variation within rural incomes.

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<sup>4</sup> The coefficient of variation is an appropriate indicator for comparing variation of a distribution over time, since it controls for the size of the mean. If the mean of a distribution is increasing over time, the variance or standard deviation will also tend to increase, making it difficult to ascertain whether increasing variance over time truly reflects increasing dispersion.

<sup>5</sup> As a very rough estimate of this effect, there is a small positive correlation (0.3) between shares of manufacturing in provincial GDP and provincial electricity use per capita in 2003. This "back of the envelope" calculation does not include resource extraction, and does not distinguish between energy-intensive and non energy-intensive manufacturing industry.

Figure 3



A glance at Figure 3 above presenting the provincial differences of rural household incomes suggests two things: the overall levels of income have increased across the board with differences between the regions also increasing.<sup>6</sup> The coefficient of variation increased from 0.31 in 1985, to 0.39 in 1990, to 0.46 in 1995, then fell slightly to 0.43 in 2000, and reached 0.44 in 2003. The mean per capita net income for rural households in coastal provinces (on the left side of Figure 3) was RMB 3988 in 2003, as compared to RMB 2392 for central and RMB 1869 for western provinces.

<sup>6</sup> For similar evidence of the increase in both the level and the inequality of urban wages see Knight, John and Lina Song. The authors compare cross-section household data for 1988 and 1995 to find the increase in wage inequality from an initially low level in urban China over this period. The rapid growth of wage inequality and the sharp widening of the wage structure in urban China are attributed by the authors among other things to the high degree of labor market fragmentation and discrimination against migrant labor. The authors conclude that “The move towards a fully-fledged labor market was by no means complete” in the late 1990s.

Figure 4

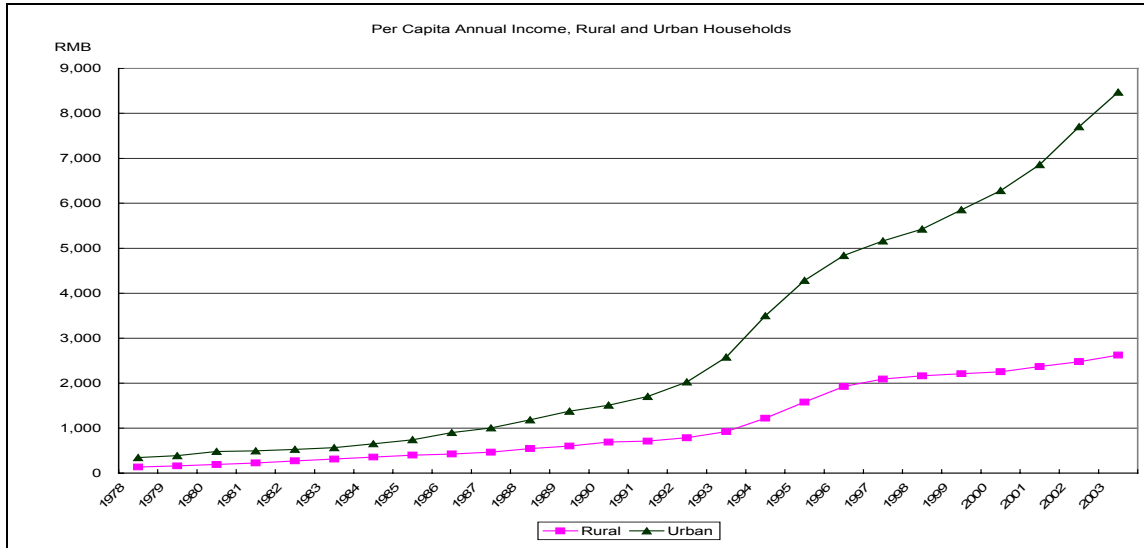
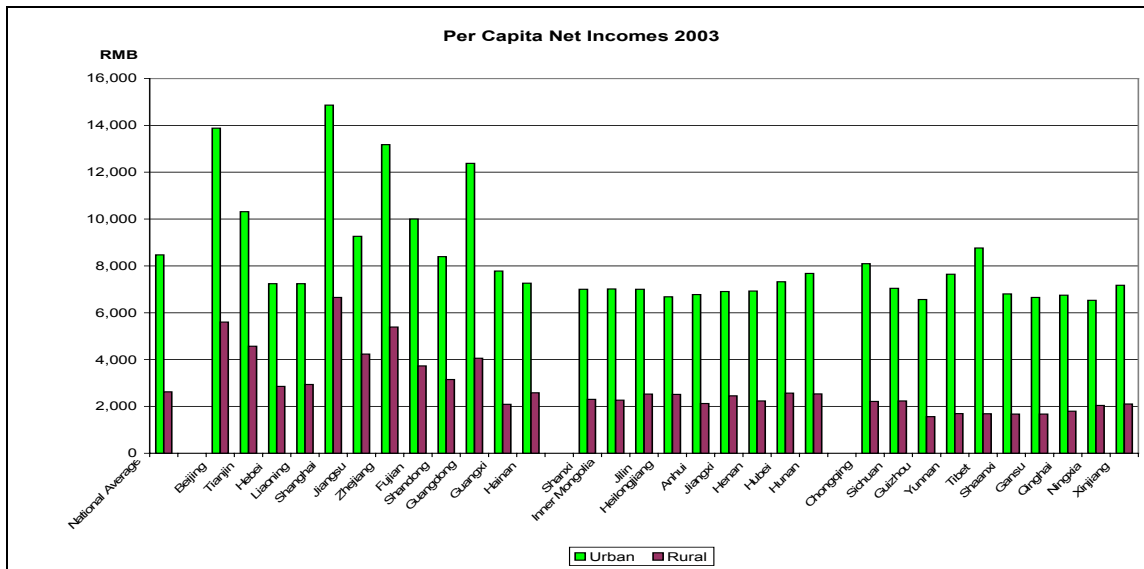


Figure 4 shows that although both urban and rural residents have seen gains in per capita income, the gap between urban and rural incomes has been rising steadily since the 1980s. Figure 5 below illustrates the variation in incomes as of 2003. In every province, urban incomes are higher than rural incomes. Across provinces, incomes are higher on the coast than in the interior.

Figure 5

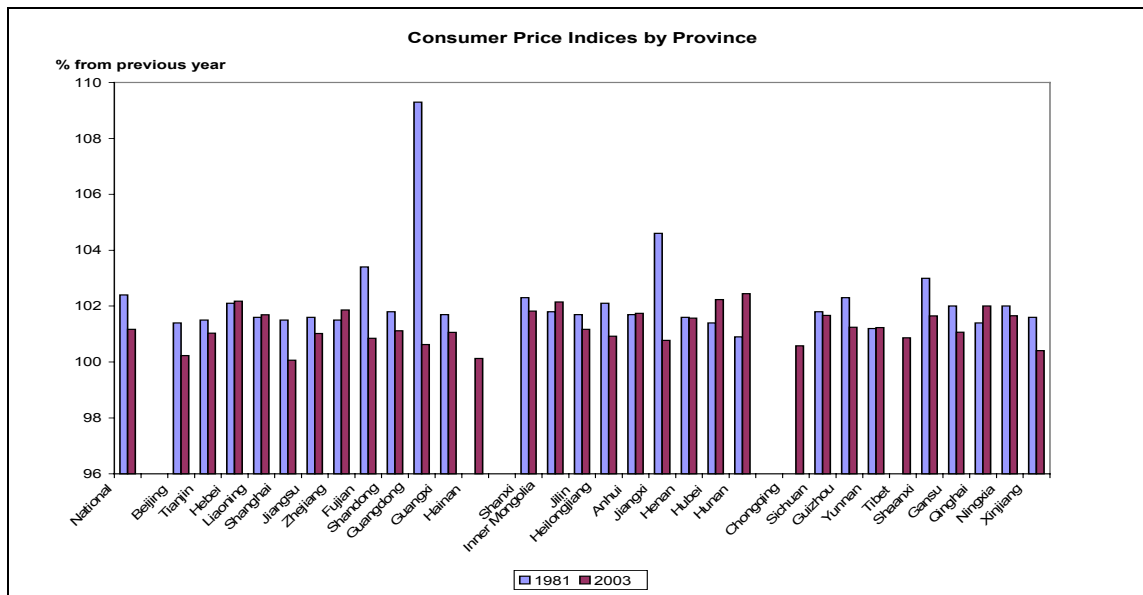


While clearly indicating a widening gap between coastal and interior incomes, these data alone can tell us little about the real extent of economic integration within China. Convergence in incomes does not inevitably result from integration. For example, despite the fact that the

United States has a well-integrated domestic market, the fifty states continue to exhibit substantial variation in per capita income and unemployment rates. (Kenworthy 1999)

Another possible way of assessing the degree of domestic market fragmentation is to look at the price levels and cross-regional price fluctuation. Figure 6 below presents data for 1981 and 2003.

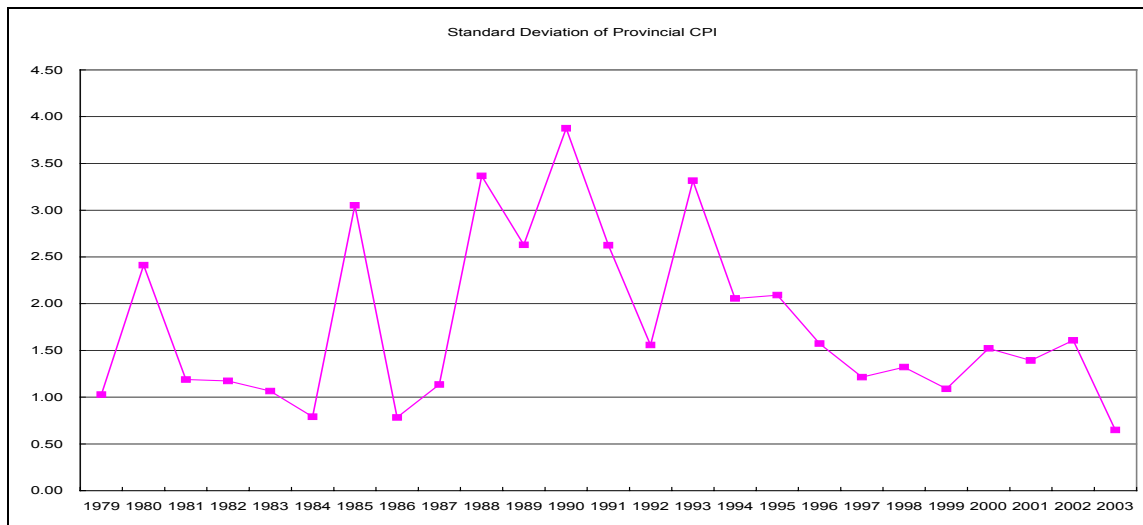
Figure 6



Clearly, by 2003, variations in consumer prices across provinces had become smaller. Looking at only selected points in time, however, may not give a clear impression of the overall trend. A longer term perspective on cross-regional price fluctuations shown in Figure 7 below reveals that provincial consumer price indices diverged in the 1980s and show a trend toward convergence since 1990.<sup>7</sup>

<sup>7</sup> The data for factory prices on industrial products available for the longer time span also shows low overall cross-regional disparities in price fluctuation. This might be indicative of the price controls and administrative interest rate setting rather than degree of economic integration.

Figure 7



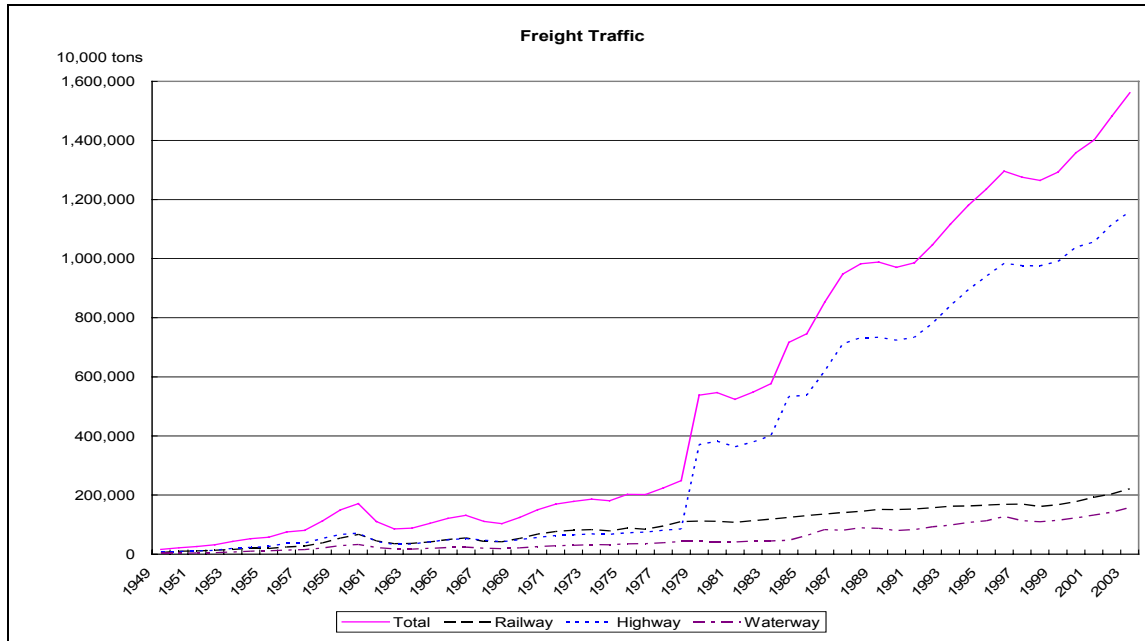
The available cross-regional comparative data presents mixed evidence about the extent of domestic fragmentation. On one hand, trends towards decreasing price disparities can be detected in the most recent time period. On the other hand, household income disparities across provinces and between urban and rural households have increased over the studied period. Finally, the level of variation in electricity consumption per capita has remained essentially unchanged.

Yet another set of possible indicators for domestic economic integration is available. Similar to our understanding of international economic integration, the domestic market integration presupposes regional specialization and a resulting increase in the volumes of inter-regional trade. A well-integrated domestic economy lacks internal impediments to trade, facilitating inter-regional movements of goods and services. In addition, equalization of prices cannot be achieved without extensive trade networks. Analogous to the existing operationalisations of international integration based on volumes of foreign trade, this paper proposes an operational definition of domestic integration based on domestic trade.

Unfortunately detailed annual data on inter-provincial trade is not reported by China's statistical agencies. However, China keeps statistical records for volumes of freight traffic and average distances of commercial transportation. These data are very suggestive for our purposes. Figure 8 below graphically presents the patterns of freight transportation growth from 1949 to 2003. The tonnage of waterway and railway traffic experienced a minuscule increase over the period compared to the overall growth of cargo movement. The overall growth is mainly driven

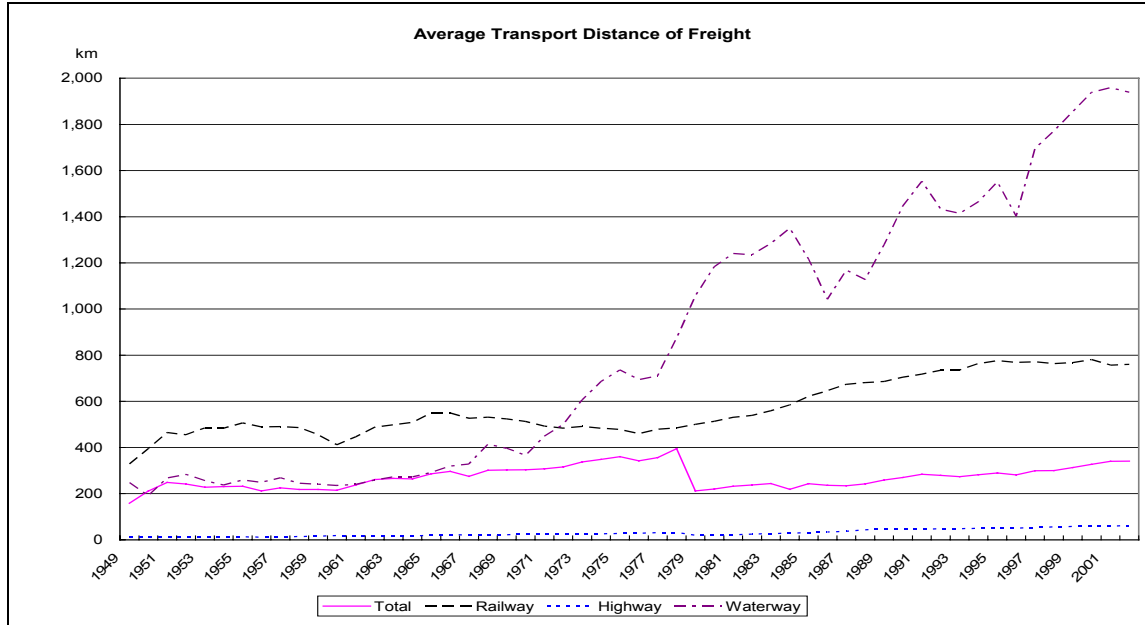
by sharp increases of highway freight traffic. Increasing volumes of highway cargo transportation might suggest an increasing degree of internal movements of goods, thus domestic trade and market integration.

Figure 8



Yet a different picture emerges from Figure 9 presenting the average distances of freight transport. During this period the overall average distances approximately doubled from 158km in 1949 to 341km by 2002. Highway transportation distances remained quite short, reaching an average of only 61km by 2002. Railroad transport distances also grew at a relatively slow rate. The average water transport distances, in contrast, increased from 248km to 1940km.

Figure 9

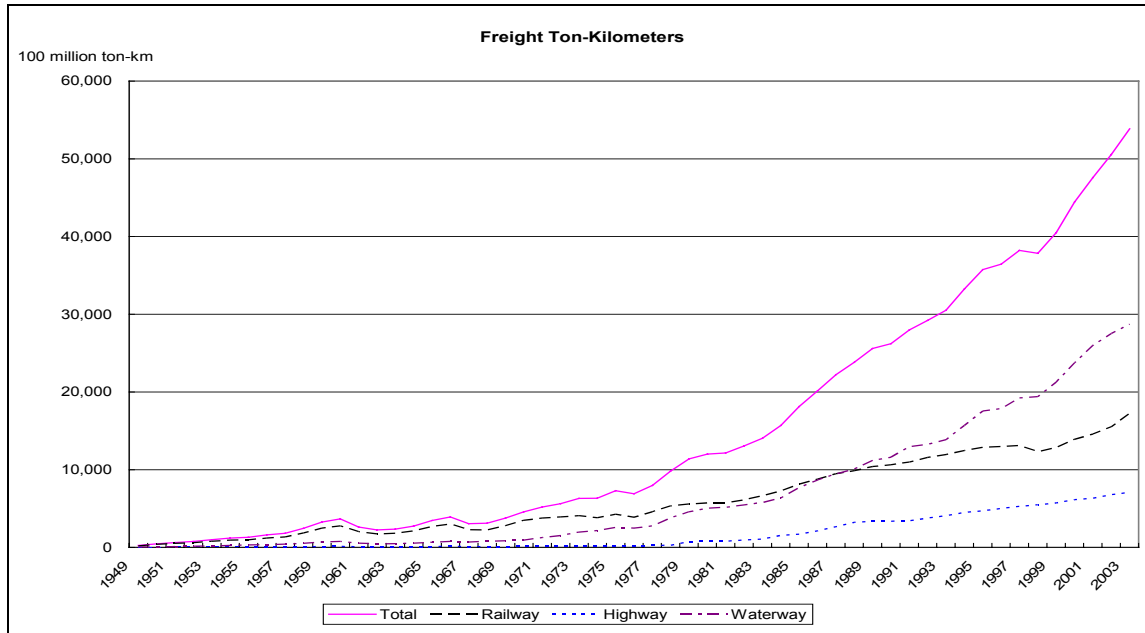


The above figures reveal important trends. While the overall volumes of freight have increased dramatically in the 1990s, the largest increase is observed in highway transportation, which for the most part is domestically oriented. Yet the short average distance of highway freight transport might mean that such transportation is confined to the intra-provincial movements of goods. The other types of land transportation volumes grew at much lower rate suggesting that in fact inter-provincial trade did not experience such a remarkable increase. The overall volumes of water transportation did not experience dramatic increase. However, the average distances of water freight transport increased considerably, especially in the late 1990s.

A better account for volumes of domestic trade can be provided by looking at data for both the tonnage and average distances of freight traffic. Figure 10 shows the overall growth of volume/distance of trade with the largest increase found in water transportation and more moderate increases in highway and railway transport. Increases in water ton-kilometer transportation measures, as the previous discussion of the volumes and distances of trade suggests, are mainly driven by the long-distance trade, which is predominantly the foreign trade. We argue that the increases in railroad and highway transportation in terms of freight ton-kilometers provide a good proxy to capture the intensity of domestic trade. As will be discussed below, the fact that water transportation data includes both domestic and international trade calls

for the exclusion of data on water transport from the overall measure of domestic economic integration based on freight traffic volumes.

Figure 10



### III. The Relationship between International and Domestic Integration

Returning to the initial puzzle of the paper, what is the relationship between international and domestic aspects of economic integration? Two possible scenarios emerge. According to the first scenario, international integration might undermine domestic integration. As many critics of China's open-door policy have argued, the benefits of international integration are concentrating in the South-Eastern coastal regions exacerbating both the regional and the urban-rural split. Regional concentration of investment and trade benefits, it is argued, leads to misbalanced domestic development and increasing social tensions. Figures 11 and 12 illustrate this point about the cross-regional impact of international integration. Whether categorized by the origin or destination of goods, or by the location of the trading units (companies and state agencies), it is clear that China's central and western provinces are barely participating in international trade. Of China's thirty-one provinces and provincial-level cities, three – Guangdong, Jiangsu, and Shanghai -- are the origin or destination for more than 60 percent of the country's total foreign

trade. Guangdong province's share of trade alone is more than a third of the national volume. Geographical locations of the trading units are a little more diversified due to the somewhat larger share of Beijing.

Figure 11

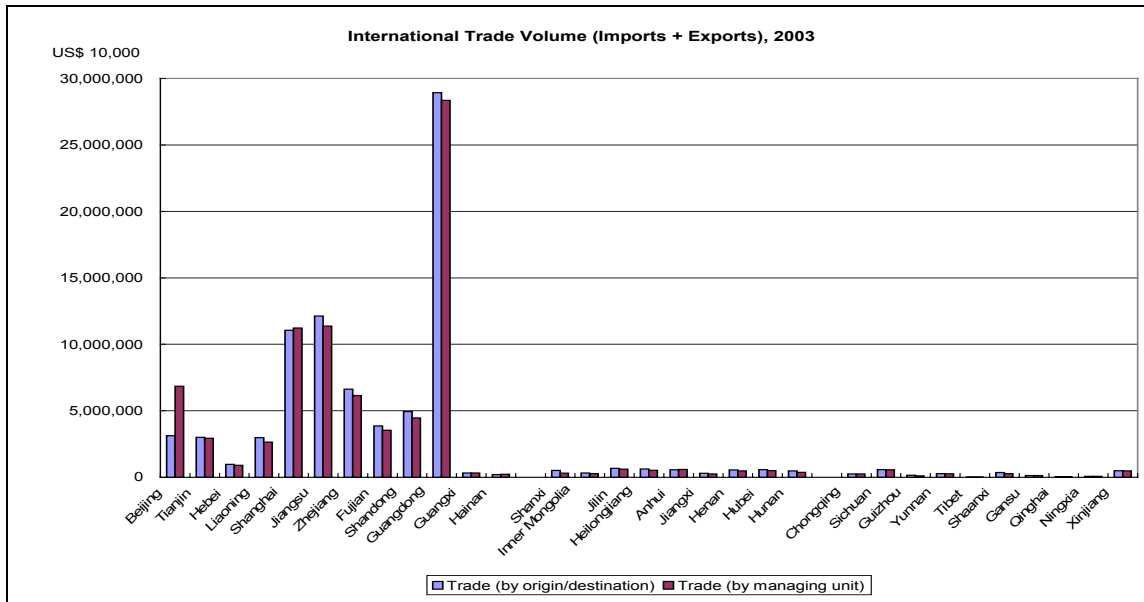
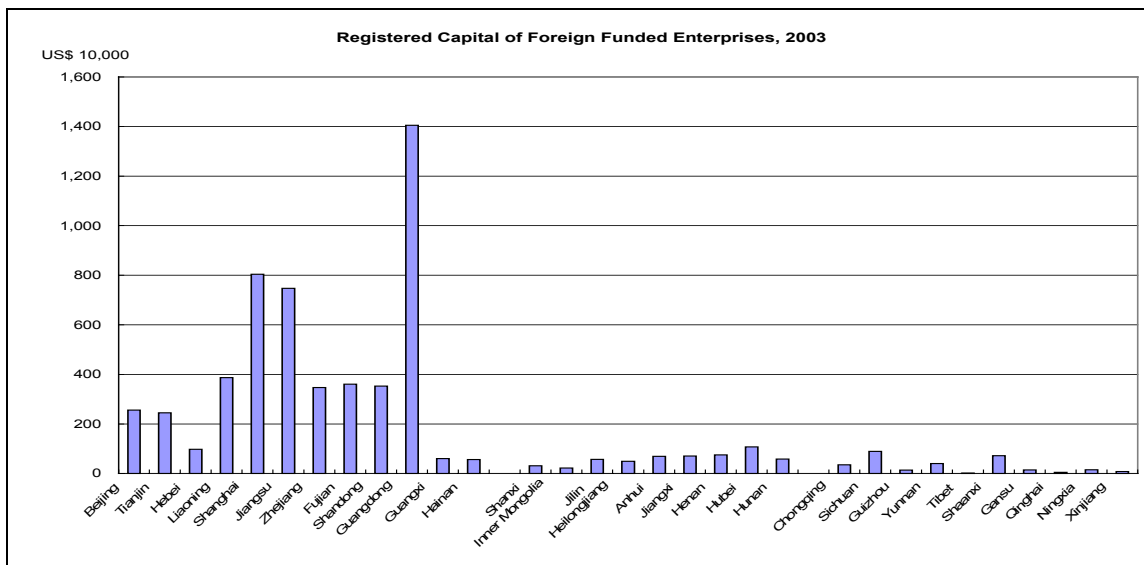


Figure 12



A similar pattern is observed with respect to foreign direct investment. Although initially the concentration of FDI along the coast was the deliberate result of state policy, since the mid-1990s both central and local governments have been attempting to create preferential policies to attract greater investment into China's interior. These efforts have been intensified as part of the "Develop the West" campaign since 2000.<sup>8</sup> Nevertheless, it is clear that to date only limited foreign investment has been attracted into China's interior provinces. Based on this evidence, one could argue that promotion of international integration is likely to lead to increasing fragmentation of China's poorly integrated domestic market.

The second scenario for the relationship between international and domestic economic integration is more optimistic. One of the lessons from the economic history of lesser developed European countries is that domestic market integration comes hand in hand with economic and industrial development. As increasing international integration instigates higher rates of growth, integration of the domestic market should follow. This kind of argument was first applied to the European periphery's development in the 19<sup>th</sup> century, when pressures from the fast-growing international capitalist economy promoted development of national markets on the Iberian peninsula, and in Italy, Scandinavia, and the Balkans (Berend and Ranki 1982, Lampe and Jackson 1982). In the late 19<sup>th</sup> century, market integration also occurred in many Latin American countries in concert with expansion of world trade.<sup>9</sup> International capitalism, according to this argument, can "pull" economic development on its periphery and promote formation of viable integrated national economies in the peripheral countries. The European economy of the Gold Standard is in many respects similar to the current globalization era. Goods and capital move freely and many countries' domestic economies depend to a large extent on international markets. The global capitalist economy can perform the tasks accomplished earlier by the European international capitalism. It can "pull" capitalist development in "peripheral" countries and promote domestic market formation in the new-comers to the capitalist economy.

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<sup>8</sup> For example, see Jiang (2002). For a more detailed discussion of all aspects of the Western Development Program, see Naughton (2004).

<sup>9</sup> Domestic market integration, however, does not necessarily imply greater equality within these newly integrated markets. Latin American countries have had relatively high levels of inequality dating from colonization in the 16<sup>th</sup> century. By the late 19<sup>th</sup> century, falling transport costs for agricultural exports further increased returns to large landholders and reinforced existing patterns of inequality (de Ferranti et. al. 2004: 109-120).

Extending this line of arguments to China, one can predict that the long-term domestic impact of increasing international integration will be a gradual extension of the benefits of trade and investment beyond the South-East coastal provinces into China's interior. Regions which are more integrated into world trade will act as agents of the global economy, penetrating the interior regions and "pulling" the development throughout China. Greater domestic integration will result from such increasing penetration. We might not see the end results of such a process at the present stage, but in the long run the degree of domestic economic fragmentation should decline following the increasing degrees of international integration.

Which of the two outlined scenarios is taking place in China? This paper proposes an empirical test of the following two hypotheses:

**Hypothesis 1:** Increasing degrees of international economic integration have negative effects on China's domestic economic integration.

**Hypothesis 2:** International economic integration has positive effects on China's domestic economic integration.

#### **IV. Statistical Analysis**

##### ***Operationalization and Data***

To investigate the effects of international integration on the development of China's domestic market we consider the effects of international trade (share of imports and exports in GDP) on four different aspects of domestic integration:

1. Homogeneity in consumer prices across regions, expressed as variance of provincial CPI at the year end;
2. Coastal-Interior GDP per capita gap measured as a ratio of average GDP per capita in coastal provinces to the GDP per capita in interior provinces;
3. Rural-Urban per capita consumption gap measured as a ratio of urban to rural per capita household consumption;
4. Domestic trade volumes operationalized as physical domestic movement of goods and measured as domestic freight volume (ton/km) excluding ocean shipments.

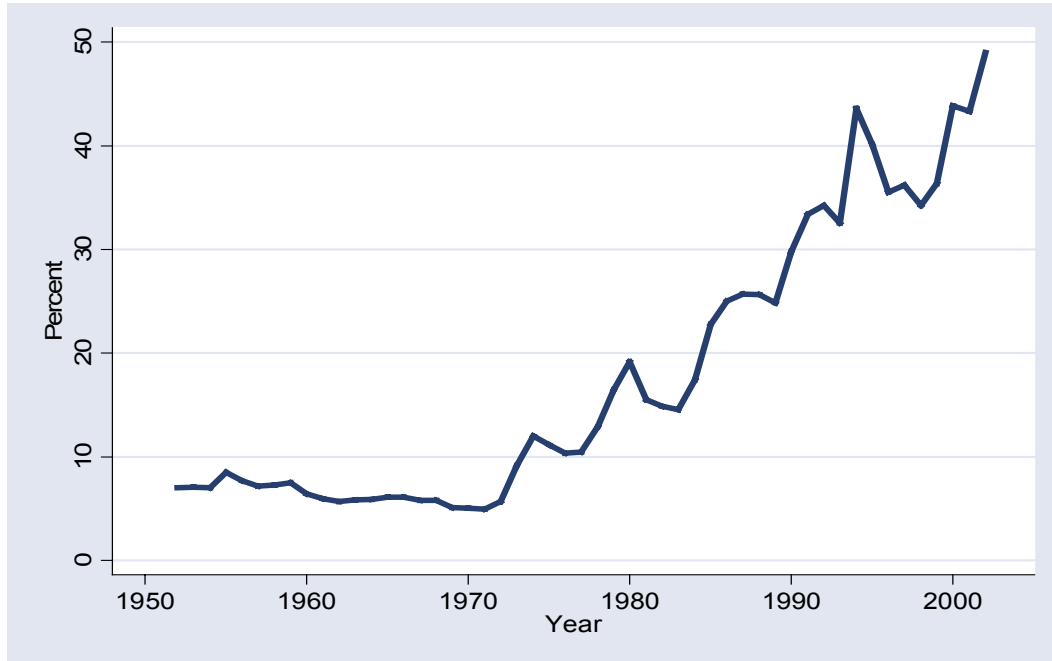
Although none of these indicators is an ideal proxy for market integration, we argue that the fourth indicator, domestic trade volumes, comes closest. And taken together, these four indicators provide an evocative sketch of developments in the Chinese economy.

From China Statistical Yearbooks we obtained longitudinal data covering the period from 1952 to 2003. All data are expressed in current prices. Our independent variable is international trade as a percentage of GDP. International trade data are expressed in US dollars as reported by Chinese sources.<sup>10</sup> We converted the GDP data reported in Chinese Yuan using the official conversion rate for a given year. If, as Rawski and others argue, China's official statistics overestimate GDP, then this trade as percentage of GDP series is biased downwards, underrepresenting the true volume of international trade. As a result we end up with a conservative estimation of the extent of trade openness and China's integration into the global economy. Figure 13 summarizes the independent variable. In 1952 trade amounted to 7 percent of China's GDP. After reaching its lowest point of 4.9 percent of GDP in 1971, total trade grew steadily to nearly 50 percent of GDP by 2003. The overall degree of international integration as measured by this variable increased by more than twofold from 1985 to 2002.

**Figure 13. Trade as % of GDP**

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<sup>10</sup> Aside from being an appropriate measure of global integration, trade volumes are regarded as among the most reliable data for China. (For debates about reliability of Chinese data see Rawski 2001, Waldron 2002, Zhu 2002a, 2002b.) Trade volumes data are regarded as fairly reliable because they can be cross-checked against trade volumes reported by foreign trade partners. In contrast, data on foreign direct investment is known to contain a significant amount of "fake foreign investment" – that is, Chinese capital routed through Hong Kong to take advantage of preferential policies for foreign-invested enterprises.



To measure our first three dependent variables we constructed series reflecting the disparities between provincial CPIs, regional GDP per capita, and between urban and rural per capita household consumption. The CPI disparities are expressed as the variance of reported CPIs for all China’s provinces in a given year. The urban-rural and coastal-interior disparities are captured by the ratio of the higher (urban, coastal) to the lower (rural, interior) levels. To construct these series we used China’s national statistics expressed in Yuan. Since we are interested not in the absolute values, but in the differences between the categories, any potential biases in the consumption and GDP per capita data should not constitute a problem.

For our fourth dependent variable, we hesitate to use data on the monetary value of domestic trade due to the fact that our series incorporate earlier periods for the Peoples’ Republic of China. In the state-planned economy prices are poor indicators of economic value, thus domestic trade data expressed in monetary values are questionable.<sup>11</sup> As described above, we believe that a proxy for the intensity of domestic trade may be constructed from data on domestic freight traffic volumes expressed in tons per kilometer of railroads, highways, waterways,

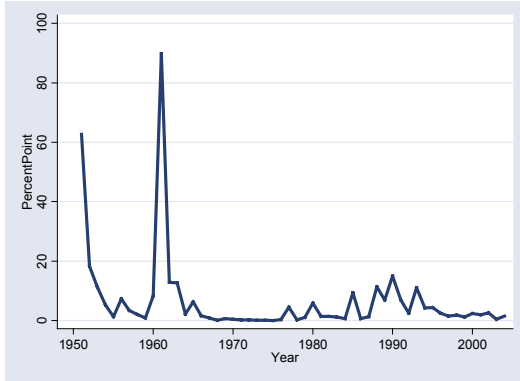
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<sup>11</sup> It should be obvious that this is not a serious problem for the CPI data. Unreliability of monetary values also does not present a big problem for our data on income and consumption gaps because we use not the true figures, but ratios. Assuming that the distortions created by bureaucratic interference in the economy have been of a similar magnitude in rural and urban areas and in coastal and interior provinces, our measures of urban/rural and coastal/interior gaps should reflect the true discrepancies regardless of whether or not monetary values are believed to be biased for certain time periods.

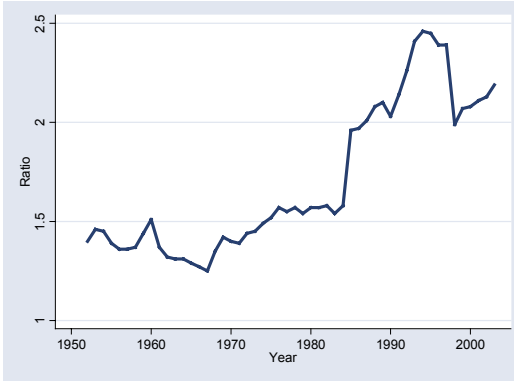
pipelines, and domestic cargo aviation. Such data include all freight originating in China and carried out by Chinese carriers. Unfortunately shipments to foreign destinations are included in this statistic whenever transported by domestic carriers. Subtracting the ocean freight traffic data removes most, although not all of the foreign destination traffic. We were able to obtain data for the series spanning from 1951 to 1992 resulting in 41 usable annual observations. Since a large portion of the shipment of goods between coastal provinces is carried out by ocean shipments, removing this part from the freight data would result in underestimation of the movements of goods between coastal provinces. Given the theoretical problem at hand, such underestimation, however, should not bias our results. Although the variable for the freight traffic volume excluding ocean shipments is not a perfect measure for the density of domestic trade, we believe it to be the best measure available. A longer series is available for the data on the land and air traffic. Such data covers the period from 1951 to 2003 giving us 52 valid observations. We use the longer series on domestic traffic excluding water shipments (including inland waterways) to confirm the results of our analysis. Figure 14 plots our four dependent variables reflecting different aspects of the extent of domestic market integration. For domestic freight volume we report both the longer and the shorter available series.

When trying to isolate the effect of international integration on domestic integration, we need to control for other factors known to affect domestic market integration. The two most important factors promoting market integration are economic development and the availability of transportation and communications infrastructure. Therefore, we use the following control variables: the country's GDP expressed in current US dollars, GDP per capita, and the length of the transportation routes in operation including the railroads, highways, in-land water routes, pipelines, and domestic civil aviation. The GDP variable is introduced to capture the size of the economy. The GDP per capita is used to control for the overall level of wealth. The length of transportation routes captures the relative ease of transport and communications between different parts of the country.

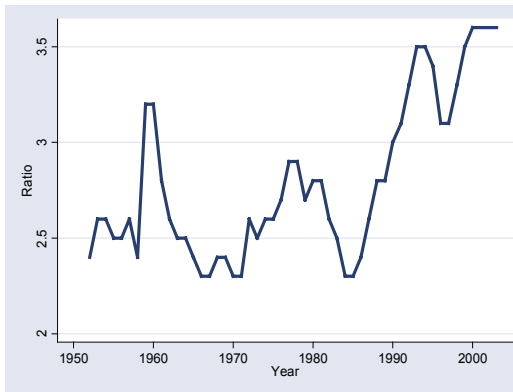
#### **Figure 14. Dependent Variables**



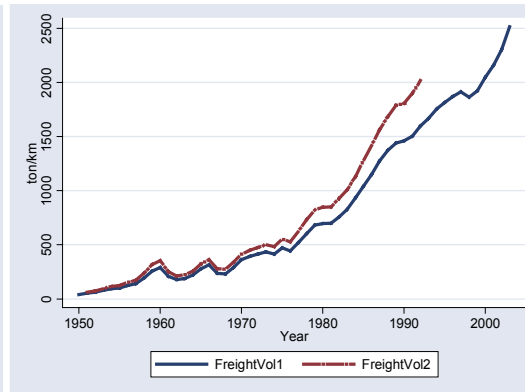
a. Provincial Inflation Variance



b. Coastal-Interior Gap



c. Urban-Rural Gap



d. Freight Volume:  
 FreightVol1 = Total – Water Shipment  
 FreightVol2 = Total – Ocean Shipment

### *Analysis*

If China's integration into the global economy has a positive effect on the domestic market integration we should be able to observe a negative relationship between our measure of trade openness and the variance in the provincial inflation rates, as well as the coastal-interior and urban-rural gaps. The relationship between trade openness and domestic freight volumes should be positive. If, on the other hand, we observe a positive relationship between openness and inflation variance, coastal-interior and urban-rural gaps, we should conclude that integration into the global market leads to domestic market fragmentation. Similarly, a negative relationship between openness and domestic freight volumes should indicate domestic market fragmentation. As a first cut at measuring the relationships between these variables, Table 1 provides bi-variate correlations for each of the dependent variables with the independent variable measuring the extent of international trade (trade as % of GDP) as well as with measures of GDP and GDP per

capita. For the three out of four dependent variables the relationship is positive and statistically significant.

**Table 1. Summary statistics: Bi-variate correlations**

	Trade ( % of GDP)	GDP	GDP per capita
1. Provincial inflation (variance)	-.118	-.149	-.154
2. Coastal-interior GDP per capita gap	.936***	.799***	.808***
3. Urban-Rural consumption Gap	.804***	.805***	.801***
4. Domestic freight volume	.966 ***	.982***	.973***

\*\*\* -- significant at .001 level in two-tail test

To test the alternative hypotheses about the effects of trade openness on China's domestic market integration we want to isolate the effects of wealth and the size of the economy as well as the time-dependency in the dependent variables. We first use the OLS regression to estimate the following dynamic regression equation, which incorporates a lagged endogenous variable on the right hand side together with other independent variables:

$$y_t = \alpha + \beta y_{t-1} + \sum \gamma_k x_{kt} + v_t$$

Where

$x_{kt}$  -- independent and control variables.<sup>12</sup> The actual models to be estimated are provided by the following functional forms:

$$(InflationVariance)_t = b_0 + b_1(InflationVariance)_{t-1} + b_2(Trade\%GDP)_t + b_3(GDPperCapita)_t + b_4(1961Dummy)^{13} + u_t;$$

$$(Coast/InteriorGap)_t = b_0 + b_1(Coast/InteriorGap)_{t-1} + b_2(Trade\%GDP)_t + b_3(GDPperCapita)_t + b_4(GDP)_t + u_t;$$

$$(Urban/RuralGap)_t = b_0 + b_1(Urban/RuralGap)_{t-1} + b_2(Trade\%GDP)_t + b_3(GDPperCapita)_t + b_4(GDP)_{t-1} + u_t;$$

$$(DomesticFreight)_t = b_0 + b_1(DomesticFreight)_{t-1} + b_2(Trade\%GDP)_t + b_3(GDP)_t + b_4(TransportRoutesLength)_t + u_t;^{14}$$

<sup>12</sup> We also estimated different model specifications lagging independent variables, estimating two time periods (pre-1978 and post-1978), and dropping one of the control variables. Alternative models have similar or weaker results.

<sup>13</sup> We include the dummy for 1961 to control for the spike in the provincial CPI time series in that year. We believe that the value for 1961 is questionable, reflecting weakened data collection capacity and/or economic chaos in the aftermath of the Great Leap Forward. We also estimated the model excluding all observations prior to 1962. This did not change the results.

<sup>14</sup> To model different aspects of domestic market integration we considered the effects of international trade volume (imports plus exports) as well as trade as percentage of GDP. Although models perform similarly for other series, we obtained stronger positive results for the domestic freight model by using the international trade volume rather than trade as % of the GDP.

Table 2 reports the OLS estimation results as well as Durbin-Watson and Durbin-H statistic. Although all models have high R-square and statistically significant regression coefficients, caution should be exercised accepting these results. Frequently, in the time-series models disturbances ( $u_t$ ) are interdependent: the error term from one period ( $t$ ) is carried over to the next period ( $t + 1$ ). When the error terms are auto-correlated (serial correlation in residuals is present) the OLS tends to produce spurious estimates of coefficient variance and standard errors as well as R-square. In the presence of positively correlated residuals the OLS estimates will be inefficient. They will underestimate true variance and standard errors which will lead to overstating the statistical significance of the estimates as well as the goodness of fit (Hibbs 1973-74, Enders 2003).

**Table 2. OLS Regression Estimates**

	Provincial inflation (variance)	Coastal-interior GDP per capita gap	Urban-Rural consumption Gap	Domestic freight volume (2)
Constant	1.829 (.951)	.317** (.106)	.963 **(.306)	-57.354(35.320)
Lagged DV	.166*** (.035)	.648***(.084)	.666***(.105)	.742*** (.009)
Trade % GDP	.229* (.105)	.016***(.003)	.010*(.005)	7.498* (3.497)
GDP	...	.00018 (.0001)	0.0003(.0002)	.061*(.027)
GDP per capita	-.011*(.006)	.002 (.001)	-.004 (.003)	...
Transport Routes Length	...	...	...	.789 (.532)
Dummy for 1961	86.141*** (3.684)	...	...	...
R <sup>2</sup>	.927	.960	.837	.994
Durbin-Watson	2.291	2.154	1.703	1.279
T	51	51	51	41
Durbin-H <sup>15</sup>	-1.07314	-.35114	1.6029	2.3122

Significant at: \* .05; \*\* .01; \*\*\* .001 confidence levels in two-tail test

The second and a more serious problem associated with using the OLS regression to estimate dynamic models is coming from the lagged endogenous variable on the right hand side of the equation. It has been shown that such inclusion not only leads to the underestimation of the true variance, but also to the biased coefficients (Hibbs 1973-74, Enders 2003). Hibbs proposed a two-stage instrumental variable solution for this problem. In the first stage the lagged dependent variable is transformed to remove the systematic element correlated with the disturbance terms. We first regress the lagged dependent variable on all the exogenous variables and their first lags:

$$y_{t-1} = \sum \alpha_k x_{kt} + \sum \delta_k x_{k,t-1} + v_{t-1}$$

We construct a “purified”  $y^{\wedge}_{t-1} = y_{t-1} - v^{\wedge}_{t-1} = \sum \alpha^{\wedge}_k x_{kt} + \sum \delta^{\wedge}_k x_{k,t-1}$ . We then can obtain consistent estimates of the original model by replacing  $y_{t-1}$  with  $y^{\wedge}_{t-1}$ :

$$y_t = \beta y^{\wedge}_{t-1} + \sum \gamma_k x_{kt} + v_t$$

where,

$$v_t = u_t + \rho^{\wedge} u^{\wedge}_{t-1}; \quad -1 < \rho^{\wedge} < 1.$$

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<sup>15</sup> We estimate Durbin-H statistic using the Durbin-Watson statistic as  $h = [(1-(DW/2)] \sqrt{T/1 - T[ \text{Var}(\beta^{\wedge}) ]}$ , following Pindyck & Rubinfeld, 2000, p 169. Durbin-H is derived in Durbin, 1970. Durbin-H is normally distributed with unit variance. The critical value for the normal distribution at the .05 level is 1.645.

Table 3 reports the results of the second stage estimation. Before proceeding with the interpretation of the results we test for the presence of autocorrelation. The DW statistic for the inflation model is higher than the upper bound given by Savin and White tables (1977) for 50 observations, 4 regressors and an intercept term ( $DU = 1.528$ ), suggesting no serial correlation. The DW statistics for the coastal-interior and urban-rural gaps fall below the lower bound ( $DL = 1.206$ ), suggesting presence of the first-order serial correlation. For the sample size of 40 observations, four regressors, and an intercept the low bound for Durbin-Watson statistic ( $DL = 1.098$ ), thus, we reject the null of no autocorrelation for the domestic freight model.<sup>16</sup>

**Table 3. Second Stage Pseudo-GLS Regression Estimates**

	Provincial inflation (variance)	Coastal-interior GDP per capita gap	Urban-Rural consumption Gap	Domestic freight volume (2) <sup>17</sup>
Constant	1.976* (.972)	.319 (.200)	.033 (1.625)	-84.867(66.976)
Transformed DV <sub>t-1</sub>	.116** (.043)	.647***(.175)	1.015^ (.606)	.600**(.231)
Trade (% GDP)	.237*(.107)	.016** (.006)	.006 (.011)	10.221(7.181)
GDP	...	-0.00018 (0.00013)	0.00015 (.0004)	.078(.052)
GDP per capita	-.012* (.006)	.002(.002)	-.002 (.005)	...
Transport Routes Length	...	...	...	1.077(.971)
Dummy for 1961	86.393*** (3.749)			
R <sup>2</sup>	.924	.923	.710	.988
Durbin-Watson	1.894	1.184	.752	.346
T	50	50	50	40

Significant at: \* .05; \*\* .01; \*\*\* .001 confidence levels in two-tail test; ^ .05 in one tail.

Visual examination of the residuals from the CPI variance model also supports the conclusion that the residuals are the “white noise”.<sup>18</sup> Thus, we can proceed with interpretation. Our examination revealed a positive relationship between China’s openness to international trade and increasing divergence in the regional price levels. Controlling for the per capita wealth, the 1961 spike in the price differences, as well as the time dependency of the dependent variable,

<sup>16</sup> We also perform the Breusch-Godfrey general test for autocorrelation. For the procedure see Godfrey, 1978 and Breusch, 1978 and Gujarati, 2002. The estimated statistic for the urban-rural gap ( $BG=21.67$ ) and the freight volume ( $BG=32.51$ ) models fall outside of the .5 confidence limit ( $\chi^2_{df=4} = 9.49$ ). Thus we reject the null of no autocorrelation. For the inflation and coastal-interior gap the test does not reject the null hypothesis of no autocorrelation, although the BG statistic for the coastal-interior gap ( $BG=9.2$ ) is close to the critical value.

<sup>17</sup> As mentioned earlier a longer series for total volume of freight traffic excluding all water freights is available and includes 50 observations. We perform the same analysis on the longer series (Domestic Freight Volume 1). Results are similar to those reported for Domestic Freight Volume 2 and are available upon request.

<sup>18</sup> The Box-Ljung statistics for 16 lags is 13.892 and is not statistically significant supporting the conclusion of no serial correlation in the residuals.

increasing international openness is associated with greater disparity between regional price levels. This finding supports the disintegration hypothesis.

Turning to our other three dependent variables, our examination of data reveals the presence of autocorrelation in the models evaluating the effects of trade openness on the coastal-interior and urban-rural disparities as well as on the freight volumes.<sup>19</sup> This means that the stochastic elements  $\varepsilon_t$  are correlated with  $\varepsilon_{t-1}$  rendering the application of the ordinary least squares regression unsuitable. As we discussed above, application of the linear regression models to such data will result in unbiased coefficients, but the t-statistics will be too large and the model will seem to fit the data better than it actually does (Enders, 2003). Since the exact structure (autoregressive or moving average) and order (number of lags) of the error process is not known we examine the residuals from the models estimated in the second stage using the ARIMA methodology.

First we pre-test the data to identify the error structure (whether we are dealing with the autoregressive or moving average processes, or both). We start by examining the autocorrelation functions (ACF) and partial autocorrelation functions (PACF) of the regression residuals. Although visual patterns support serial autocorrelation, the structure of the error process is not clear from examining ACF and PACF. After the examination of several possible error structures – AR(1), AR(2), AR(5), MA(1), ARMA(1,1) – <sup>20</sup> we conclude that the AR(1) process best describes the patterns in the errors for the coastal-interior gap model, while the AR(2) process is most applicable for describing the urban-rural gap data. The AIC and BIC select the ARMA(1,1) process for the domestic freight model. We re-estimate regressions reported in Table 2 using

<sup>19</sup> There are two possible ways in which past observations can affect the present values of the dependent variable. The short-term effects of past observations (a random shock enters the system and then persists for limited number of observations before its effect disappears) are captured by a moving average (MA) processes. The long-term effects are observed when the weighted sum of all past observations never ceases to influence the series. In this case we deal with the auto-regressive (AR) processes.

<sup>20</sup> To determine the structure of error process we ran ARMA model and examined the residuals and residual mean square statistics. We also considered whether the estimates are significant and fall within the limits of stationarity-convertibility. Below we report the Akaike Information Criteria (AIC) and Schwartz-Bayesian Criteria (SBC).

Model	Coastal-interior GDP per capita gap		Urban-Rural consumption Gap		Domestic freight volume 2	
	AIC	SBC	AIC	SBC	AIC	SBC
AR(1)	<u>-94.936</u>	-83.464	-25.219	-13.747	409.269	419.402
AR(2)	-92.811	-.79.427	<u>-27.536</u>	<u>-14.152</u>	393.470	405.292
MA(1)	-86.889	-75.417	-25.628	-14.156	411.458	421.592
ARMA(1,1)	-92.809	-79.425	-27.137	-13.748	<u>390.930</u>	<u>402.752</u>

maximum likelihood estimation (ARIMA models) to correct for the temporal autocorrelation in the residuals. Table 4 reports the results.

**Table 4. ARIMA (Maximum Likelihood) Estimation**

	Coastal-interior GDP per capita gap	Urban-Rural consumption Gap	Domestic freight volume (2)
AR(1)	.759***(.092)	.842***(.144)	.641***(.125)
AR (2)	...	-.311* (.142)	...
MA(1)	...	...	-.659**(.221)
Constant	.791***(.232)	1.361 (1.212)	-110.410 <sup>^</sup> (56.000)
Transformed DV <sub>t-1</sub>	.161(.141)	.877 (1.160)	.534***(.067)
Trade (% GDP)	.017***(.005)	.006 (.007)	8.427***(2.985)
GDP	-.001* (.000)	.0002 (.0003)	.089***(.020)
GDP per capita	.007*(.003)	-.002 (.005)	...
Transport Routes Length	...	...	1.857* (.902)
Log-Likelihood	53.468	20.768	-188.465
Box-Ljung, 16 lags (sig.)	18.964 (.271)	12.458 (.712)	20.788 (.187)
RSS	.343	1.267	29354.902
T	50	50	40

Approximately significant at: \* -.05; \*\* -.01; \*\*\* -.001 confidence levels  
Melard's algorithm was used for estimation.

We perform the post-estimation diagnostic to make sure that the autocorrelation has been successfully removed. The Ljung-Box (LB) statistics<sup>21</sup> for the three estimated models are not significant. This together with the visual examination of the residual ADF and PACF suggest that the residuals are white noise. In neither model do we find the presence of autocorrelation among the residuals. We conclude that our models correctly identified the underlying patterns of autocorrelations and that the detected autocorrelation in the instrumental GLS regression equations has been successfully removed by the maximal likelihood estimation. Confident that the obtained estimates are now efficient and unbiased, we proceed to the interpretation of the results.

The model operationalizing the extent of domestic market integration in terms of the ratio of urban to rural per capita household consumption does not support any of our expectations about the effects of international trade openness. After we account for the effects of the preexisting levels of rural-urban inequality, wealth, and the size of the economy no statistically significant relationship between international trade and the urban-rural gap can be detected. Although the bivariate correlation as well as the OLS regression estimates might have suggested the presence of a positive relationship, once biases associated with model specification and

<sup>21</sup> The LB statistic is defined by Ljung & Box, 1978.

inefficiencies arising from the longitudinal nature of the data are corrected for, the independent variable gives no purchase in explaining patterns of urban-rural inequality.

The model predicting the coastal-interior gap performs much better. After controlling for the effects of the lagged dependent variable, wealth, and the size of the economy, the effects of international trade openness retain their significance. The positive sign on the coefficient supports the hypotheses about negative effects of trade openness on the extent of domestic market integration. *Ceteris paribus* increasing levels of trade openness result in an increasing coastal-interior GDP per capita gap.

Lastly, the positive correlation between trade openness and domestic freight volumes persisted after the adjustments for the auto-regressive (dynamic) and auto-correlated error processes were introduced. After we transformed the lagged dependent variable and adjusted for the temporal dependence in the residuals, *Trade%GDP* remained statistically significant; suggesting that the correlation has not been driven by the fact that two series both grow over the examined period.<sup>22</sup> The coefficient for the trade openness variable is positive. This means that increasing international trade openness has a positive effect on domestic market integration approximated by the domestic freight volumes. In this case, our analysis supports the domestic market integration hypothesis.

## **V. Conclusion**

This paper presented a preliminary analysis of China's paradoxical pattern of economic development in which international integration rates surpass the rates of domestic market integration. Two hypotheses about the effects of the former on the latter were examined.

The results of our analysis of the dynamic time-series models are mixed. First, with respect to the urban-rural gap, our analysis does not find support for either the integration or the disintegration hypothesis. Despite the prevailing belief in both academic and popular circles that globalization, WTO entry and increasing international trade are harmful to China's farmers, we find that international trade openness does not explain the urban-rural household consumption differences. The continuing disparity in incomes and consumption between urban and rural households, as well de-facto discrimination faced by rural migrant workers, is better explained

by restrictive labor market and migration policies (Zhang 2000; Thiers 2002, Solinger 2003; Liew 2001). These policies reflect concern with social dislocations and possible political instability which might result from massive migration to urban centers and more prosperous regions of the country (Fewsmith, 2001).

For two other dependent variables, our analysis found support for the disintegration hypothesis. The models operationalizing domestic integration in terms of the geographic disparities in per capita wealth and price levels suggest that greater international integration is associated with both greater variation in consumer prices across provinces and a larger gap between coastal and interior GDP per capita.

Finally, an alternative model that operationalized domestic integration in terms of the physical movement of goods in the country indicates support for the opposite hypothesis of integration. This finding supports the theory of the homogenizing “pull” of the global capitalist economy. If the above presented model estimates are correct, the development of an integrated domestic market in China is likely to follow the path of the late-developing countries of the European periphery in the 19<sup>th</sup> century. **This is the best of our variables**

How can we interpret these apparently contradictory findings? We conclude that the notion of domestic integration and its relation to integration into the global economy requires further theoretical and empirical investigation. There are at least two hypotheses consistent with our results. One hypothesis is that domestic market integration is a process that may proceed through stages. The development of an integrated market takes time. It is possible that increasing volumes of domestic trade represent only the first stage of integration, and will be followed by convergence in price fluctuations across regions, and eventually by some degree of convergence in incomes across regions (although full convergence of incomes is not necessary to achieve an integrated market). A second, less optimistic, hypothesis is that market integration is occurring within but not across regions. In other words, the coastal region is becoming more integrated – both with other coastal provinces and with the international market – as a result of globalization, and there may also be some progress toward integration among interior provinces, but links between coastal and interior provinces are not (yet?) being built. If this hypothesis is correct, China may be following not the path of the European periphery, but the path of Latin

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<sup>22</sup> This result holds for the alternative operationalization of the dependent variable (FreightVolume1) that has 10 additional time point observations. The results are available upon request.

America -- toward domestic market integration combined with high and persistent levels of inequality.

There are many promising avenues for further investigation of the dynamics of domestic market integration. For example, one possible direction for future research is to assess the effects of labor market fragmentation on the overall process of domestic economic integration in China. Another possible direction for future research comprises the impact of local government policies on the process of domestic economic integration, as well as interaction effects between the former and the increasing international integration.

In reconciling our results with the micro-level research on China's domestic market fragmentation, there is some common ground. Although Poncet (2003) finds that overall barriers to interprovincial trade grew between 1987 and 1997, she finds that such barriers are much lower in coastal provinces than in interior provinces (14-15). Again, such a result might be indicative of market integration as a process in its initial stages. It appears that the bulk of the data is suggestive of this dynamic. Nevertheless, the ultimate test for the hypotheses developed in this paper will be presented by future developments in China's economy. As international integration deepens and more time elapses from the initial opening up of the country to the pressures of the international market, its long-term effects on the levels of domestic integration will become more apparent.

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