China's Trade in Crisis

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In December 2008, China celebrated the thirtieth anniversary of reforming and opening up its economy. For international business scholars, this historic event is one of the key milestones of the past half century. In 1978, China took its first cautious steps to set up an export-led growth model by establishing four Special Economic Zones where foreign direct investment received preferential treatment and regulations were streamlined for export promotion. From then on, its economy has witnessed a stunning and highly praised trade expansion that has become one of the most important drivers of the global trading system. Since 1988, China's exports have expanded at an annualized rate of 19 percent, more than twice the growth rate of world exports. Recently, China has surpassed the United States to become the world's second largest exporter behind Germany.

The current economic crisis, however, has dampened the sentiment for celebration. With US, Japanese and European markets in recession, the demand for China's exports has experienced a stunning contraction. In the first quarter of 2009, exports were down 20.1% compared to the previous year, from US$304 billion to US$243 billion. Many observers consider this exports downturn especially worrisome since they believe that China's export-led growth model has rendered its economy excessively dependent on the business cycles of advanced economies. Two trends in China's exports have spurred this apprehension. First, the composition of China's exports has rapidly shifted towards high ticket-item durables such as electronics that are more sensitive to foreign business cycles. Second, China's export dependence seems to have risen rapidly over the reform period, with its exports amounting to 42% of its gross domestic product (GDP) in 2007.

Perhaps surprisingly, the most recent economic indicators suggest that, despite the sharp decline in exports, China's economy is likely to escape the crisis relatively unscathed. In the first and second quarter of 2009, China's GDP has expanded at an annualized rate of 6.1% and 7.9%, respectively. This remarkable resilience of China's economy is generally attributed to its government's massive economic stimulus package and its banking sector's aggressive credit expansion. However, we would like to argue that another key reason is that China's economy is much less dependent on its exports than it is traditionally thought, so that sharp export declines should not have a big effect on China's overall economic performance. Central to our claim is that the empirical data commonly used to analyze China's export dependence are often misinterpreted.

Arguments in favor of China's increasing export dependence

In the past fifteen years, the composition of China's exports has shifted towards high ticket-item durables such as electronics. As it is shown in the left panel of Table 1, between 1992 and 2006, China's electronics exports grew at an annualized rate of 30.3% per year, which is almost double the growth rate of its other manufacturing exports, and almost quadruple the rate of its non-manufacturing exports.[1] As a consequence, electronics exports have grown to more than one third of China's total export value.

Table 1: China's exports statistics, by sector

	Exports (US$ millions)		Annualized growth rate (%)	Exports share (%)		Exports growth (%)
	1992	2006	1992-2006	1992	2006	08Q1/09Q1*
Electronics	8,360	341,000	30.3	9.8	35.2	-24.8
Other manufacturing	72,000	615,000	16.6	84.8	63.4	-17.9
Non-manufacturing	4,600	13,200	7.8	5.4	1.4	3.08
Total	84,960	969,200	19.0	100.0	100.0	-20.1

*08Q1 = First quarter of 2008. 09Q1 = First quarter of 2009.

Source: Authors' calculations using China's Customs Statistics

This increasing specialization in electronics exports has led to the concern that China's exports have become more sensitive to downturns in foreign business cycles. The reason is that, in times of recession, households and companies in advanced economies tend to hold off first and foremost their purchases of durable goods, and especially larger ticket-item goods including electronics products.

> *China's economy is much less dependent on its exports than it is traditionally thought.*

This not only reflects the fact that tightening budget constraints in times of crisis render high ticket-item goods unaffordable for some, but also that consumers and firms in such uncertain times want to wait with their purchases of long-lasting goods until it is known with more certainty whether and when the economic climate will improve. A recent study by Engel and Wang (2008) indeed finds that US durable goods imports are more sensitive to business cycles than nondurable goods imports. Furthermore, Aziz and Li (2008) demonstrate that China's increasing specialization in electronics exports has led to an overall rise in the income elasticity of China's exports.

Recent trade data corroborate this concern: the recent downturn of China's exports has predominantly been driven by a contraction of electronics exports. As it is shown in the right panel of Table 1, in the first quarter of 2009, China's electronics exports were down 24.8% compared to the same quarter of the previous year, which is larger than the 20.1% drop of China's total exports.

The higher sensitivity of China's exports to foreign business cycles is considered especially problematic since China's economy appears to have become more dependent on its exports over the reform period. A commonly used measure for a country's export dependence is its export-to-GDP ratio. According to this ratio, China's export dependence has risen rapidly from 15% in 1988 to 42% in 2007. This figure is much higher than for other large economies such as the United States, European Union and Japan which in 2007 had export-to-GDP ratios of 12%, 12% and 18% respectively. This second trend has further fueled the fear that China's export-led growth model has rendered its economy increasingly dependent on the business cycles of advanced economies.

Issues related to the measurement of China's export dependence

Is the Chinese economy's dependence on foreign business cycles real or a statistical mirage? The key issue to bear in mind here is that China's exports do not necessarily depict the value that is produced by its export sector, but rather represent the gross value of the goods that leave its borders. To see how this may create biased perceptions, consider the example of the iPod, which Apple Inc. assembles in China and exports to the rest of the world. In 2006, the export value for a 30GB video model that left China's borders was about US$150. However, Linden et al. (2007) estimate that only US$4 (or 2.6% of the export value) was produced in China, with the large brunt of the export value being produced in and imported into China from the United States, Japan, and Korea.

The difference between China's export value and the share of this value made in China is relevant for understanding its economy's vulnerability to the global economic crisis since, as the iPod example illustrates, China heavily relies on imported inputs for its exports. This hefty dependence on imported inputs is largely driven by China's creation of a processing trade regime in the mid-eighties. Under this export-promotion program, firms are granted duty exemptions on imported inputs as long as they are used solely for export purposes. Many primarily East Asian firms have taken advantage of this regime to slice up their value chains and move their labor-intensive final-assembly plants to China. As a result, the share of processing exports (i.e., exports conducted under the processing regime) in China's total exports has risen from 30 percent in 1988 to 53 percent in 2006. Currently, China thus has a dualistic export regime with about half of its exports consisting of processing exports, and the other half of ordinary exports.

A key difference between the two types of exports is that processing exports rely much more heavily on imported inputs than do ordinary exports. According to a recent study by Koopman, Wang and Wei (2008), only 18.1% of processing exports are made in China, with the remaining 81.9% corresponding to the value of imported inputs. Conversely, a much larger 88.7% of China's ordinary export is produced in China.

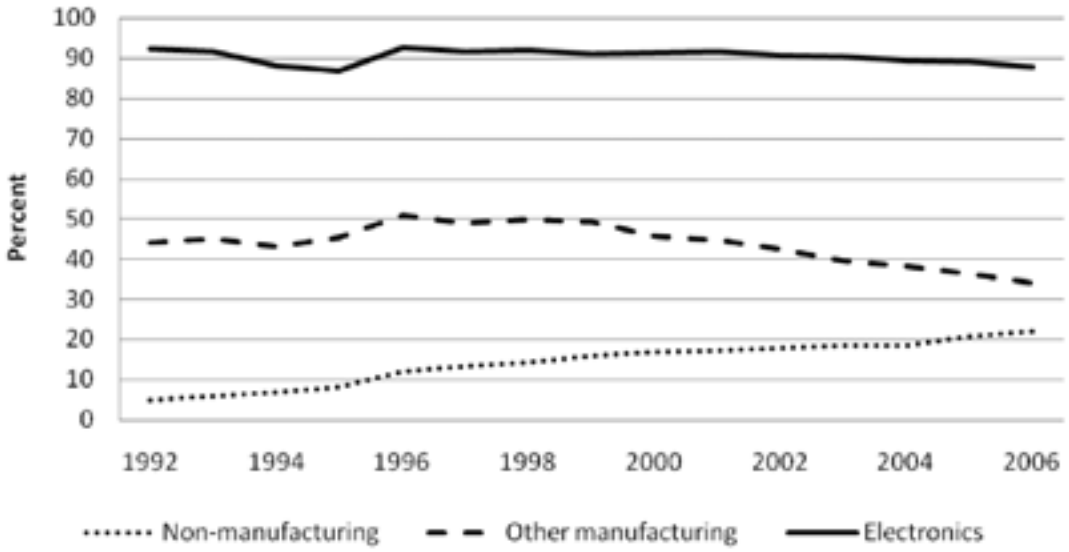
This dualistic feature of China's exports has important implications for understanding China's export dependence. First, since processing exports account for more than half of China's total export value, the share of China's exports that is made in China is much lower than for most other countries, amounting to only 50.8% in 2006 (Koopman, Wang, & Wei, 2008). In other words, approximately half of China's total export value is the value of the imported inputs that are embodied in the export products. This implies that China's export dependence is more limited than its export-to-GDP ratio would suggest. Indeed,

if only the share of exports that is made in China is considered, then China's export-to-GDP ratio drops to 21%, which is only slightly higher than that of Japan.

Second, it also allows us to reconsider the claim that China's increasing specialization in the more volatile electronics exports has rendered its economy more vulnerable to foreign business cycles. This is not necessarily the case since electronics exports are almost entirely conducted under the processing trade regime. As it is shown in Figure 1, almost 90% of China's electronics exports are processing exports, whereas this portion is much lower for other manufacturing exports (30-50%) and non-manufacturing exports (5-20%). As a result, a significantly smaller portion of the value of electronics exports is made in China than for other sectors. So even if the increasing specialization in electronics exports has made China's exports more volatile, it is not necessarily the case that its export production activities have become more vulnerable to foreign business cycles.

In sum, these considerations imply that, due to the large role of processing exports, China's economy is much less export dependent than it is thought traditionally. As a result, the sharp export decline in the realm of the current economic crisis should not necessarily have a big negative effect on its overall economic performance.

Figure 1: Processing exports as a share of total exports (percent), by sector, 1992-2006



Source: Authors' calculations using China's Customs Statistics Data.

> *Is the Chinese economy's dependence on foreign business cycles real or a statistical mirage?*

Processing trade and business cycle pass-through

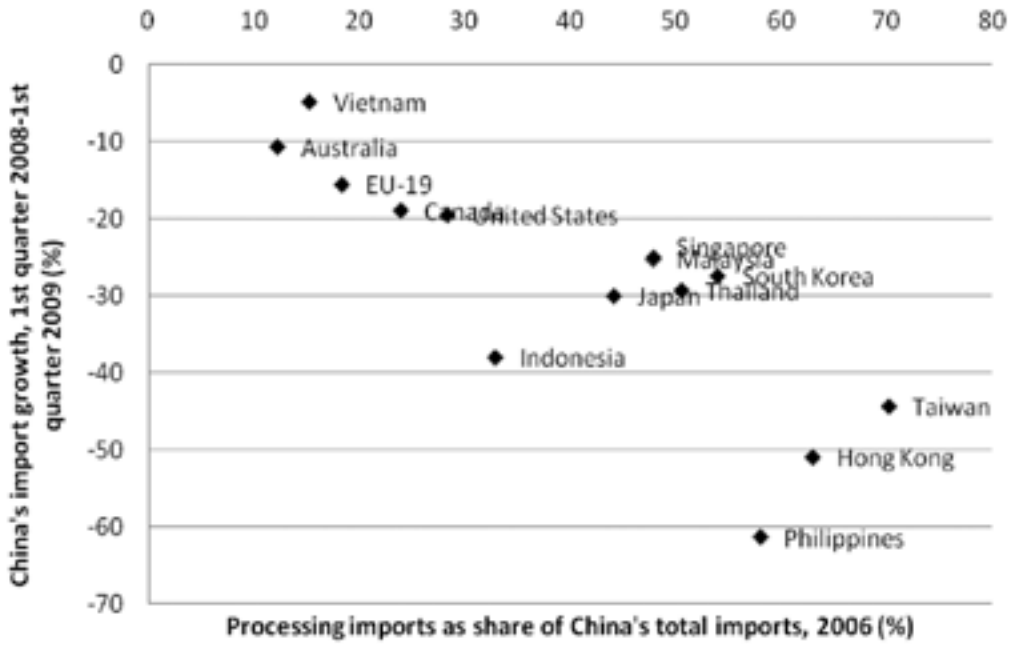
If the sharp decline in China's exports does not have a big impact on its own economy, then who bears the economic burden of the drop in exports? In Ma and Van Assche (2009), we show that China transfers a large portion of its negative export demand shocks to the countries that intensively supply China with its processing inputs by reducing its demand for their processing imports. Two recent indicators corroborate this business cycle pass-through effect. First, despite relatively robust economic growth, China's imports have dropped 31.1% in the first quarter of 2009. Commodity price declines played a large role in the contraction of imports (Petri & Plummer, 2009), but electronics imports also dropped a sizeable 30.5%.

Second, the recent economic crisis is hitting most severely China's imports from countries that more intensively supply China with its processing inputs, that is, its East Asian neighbors. As it is shown in Figure 2, with the exception of Vietnam and Indonesia, more than 40% of China's imports from its major East Asian trading partners were processing imports in 2006, which is a significantly higher share than for countries outside of East Asia. These East Asian countries have witnessed the largest import decline in the realm of the current economic crisis. Compared to the previous year, China's imports from its major East Asian trading partners have all declined between 25% and 61% in the first quarter of 2009. In contrast, China's imports from its major non-Asian trading partners have dropped less than 20%.

Conclusion

China's rapid emergence as an export powerhouse has largely been driven by multinational firms that have offshored a slice of their value chain—labor-intensive final assembly—to China for export purposes. It is often neglected, however, that these firms' assembly plants heavily rely on imported inputs, while only a relatively small portion

Figure 2: Intensity of processing imports (2006) versus severity of imports contraction (08Q1-09Q1), by country.



Source: Authors' calculations using China's Customs Statistics.

of the export value is produced in China. In the media and even in academic work, this often leads to misinterpretations of China's role in the world economy.

The misconception that we attempted to demystify here is that China's economy has become excessively export dependent, and thus particularly vulnerable to the current economic crisis. We showed that, due to China's heavy reliance on imported inputs from within the East Asian region, China's economy is actually less export-dependent than it is traditionally thought. By doing so, we also provided evidence that China effectively transfers a large portion of its negative export demand shocks to its East Asian neighbors by reducing its demand for their processing imports. During the current economic crisis, this business-cycle pass-through effect implies that the large brunt of the burden of China's export decline falls upon its East Asian neighbors.

These findings complement our earlier work, which has focused on two other misconceptions about China's role in the world economy. First, in many advanced economies, a key public concern related to China's economic rise is that its export mix is upgrading rapidly to high-technology products such as electronic and telecommunications equipment. This has created the fear that China is rapidly moving up the technology ladder and becoming competitive in technology-intensive areas where advanced economies should have a comparative advantage. Van Assche (2009) and Van Assche and Gangnes (2009), however, show that this is largely due to a misinterpretation of exports statistics, and that China's production activities are generally not more sophisticated than one would expect from its level of development. Second, China's dramatic export rise is generally attributed to features of its domestic environment: its relatively low labor costs and its aggressive export promotion policies. Ma, Van Assche and Hong (2009), however, find that another driving force behind the success of China's trade expansion is its geographic location within the East Asian region. They show that multinational firms generally use China as an export-processing platform (i) because it is located close to East Asian input suppliers and (ii) because it is in the vicinity of large East Asian markets. This suggests that the success of China's export-led growth model is crucially linked to the economic development of the East Asian region as a whole. Overall, this line of research thus highlights the importance of better understanding the configuration of global production networks for analyzing China's role in the world economy.

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Endnotes

1 Following Reed Electronics Research (2007), electronics include the following categories: electronics data processing, office equipment, radar communications & radar, telecommunications, video equipment, audio equipment, active components, passive components and other components.

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