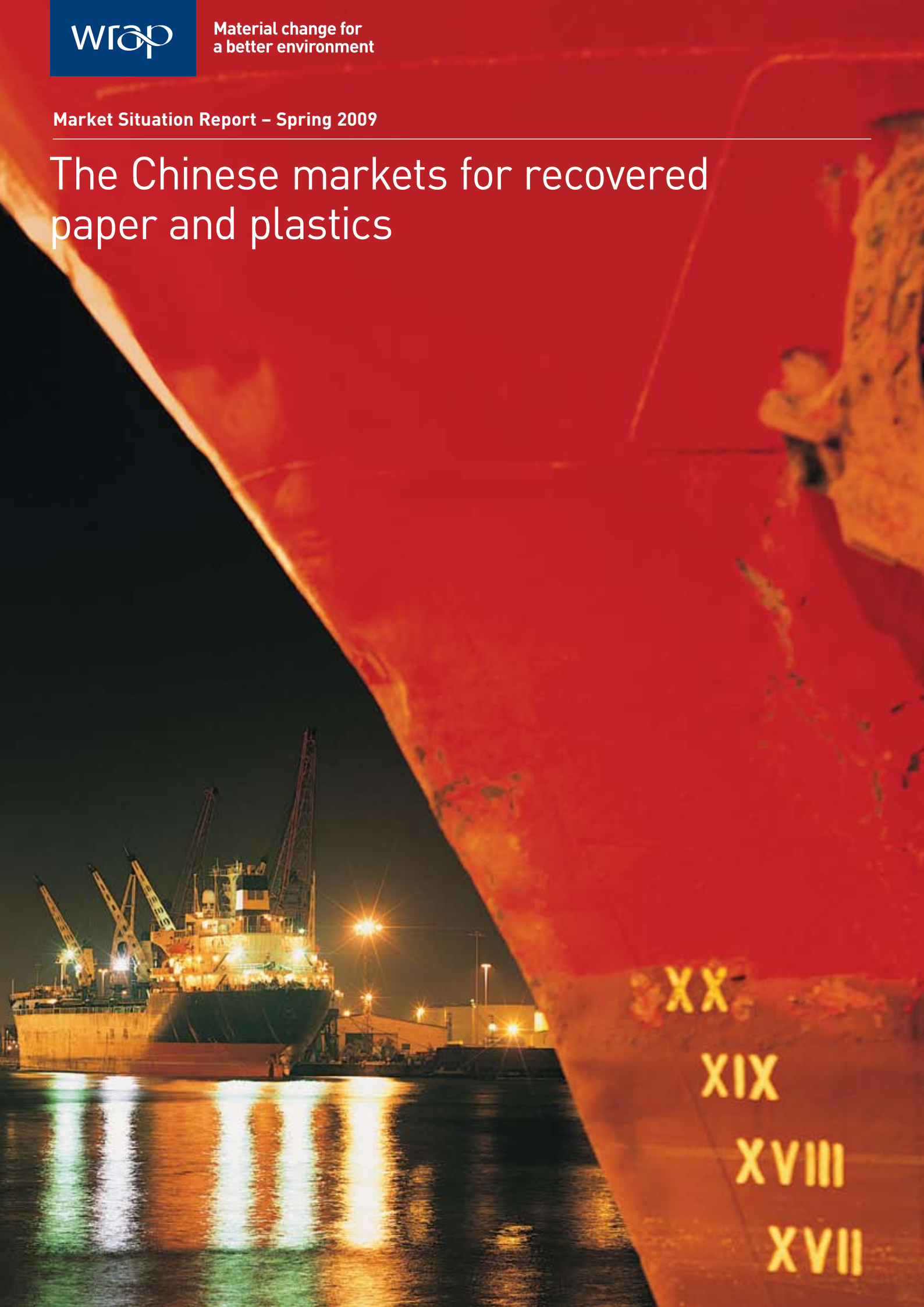


Market Situation Report – Spring 2009

The Chinese markets for recovered paper and plastics



Welcome to the China Market Situation Report, the latest in a series of reports examining economic conditions in the markets for recovered materials.

The focus of this report is on the Chinese market for recovered paper and plastics, two of the main recyclable materials exported from the UK to China for recycling.

In addition, the Special Report explores specifically the downturn in exports and prices of recovered materials to China in the autumn of 2008.

Key themes:

- China is a key trading partner of recovered materials for the UK.
- The Chinese paper industry takes recovered paper sourced in the UK and makes it into new cardboard packaging and newsprint. The recovered plastics are used in a variety of applications such as plastic films, fibre fillings for pillows and anoraks.
- China has been a fast growing economy over the last ten years; this has coincided with a rapidly increasing requirement for raw materials, including virgin and recyclable materials.
- Chinese demand for recovered paper and plastics fell abruptly in the autumn of 2008. A number of factors converged and impacted the market and prices for recovered materials to China fell by between 40% and 60% in one month, from all main countries of origin.
- Looking past the current slowdown, there remains the potential for further growth in Chinese demand for imported recovered paper and plastics.
- From an environmental viewpoint, significant CO₂ savings can be made by shipping recovered paper and plastics from the UK to China to be recycled instead of landfilling them in the UK.

Did you know?

China is the world's largest importer of recovered paper and plastic.

China accounts for more than half of the UK's exports of recovered paper and plastic.

Market Analysis

China as a UK trading partner for recyclable material.

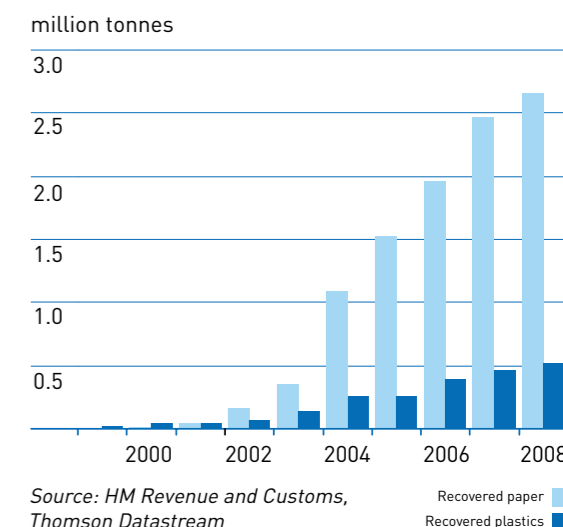
The UK's trade in recovered materials with China has boomed in the last decade. Exports of recovered materials have risen from just a few thousand tonnes ten years ago to 2.7 million tonnes of recovered paper and 517 thousand tonnes of recovered plastics in 2008 (Graph 1).

The trade in recyclable materials with China has benefited from high Chinese demand for raw materials, and also from relatively low shipping costs. This reflects in large part the imbalance of trade in goods between the Far East and Europe, whereby far more container capacity is required to

transport goods from China to the UK than is required in the opposite direction. According to shipping consultants Drewry, the shipping rate for a 40 foot container from the UK to South China mid-2008 was \$1,370¹, less than half the rate of the same container travelling westbound. Assuming 25 tonnes of recovered material per 40 foot container, this amounts to around £28 per tonne of recovered material².

As a result, China's share of the UK's exports has grown steadily and China has become a key end-market for the UK's recovered materials, in particular for paper and plastics, accounting for 55% and 80% respectively of UK exports of the latter two materials in 2008.

Graph 1: UK exports of recovered paper and plastic to China*



Source: HM Revenue and Customs, Thomson Datastream
*including exports to Hong Kong

¹ Rate as of May 2008 rate for full container loads, including the base ocean rate, the terminal handling charge both at origin and at destination, the fuel surcharge and all other surcharges; does not include transport costs.

² Exchange rate in May 2008: USD/GBP = 1.97. The gap between shipping rates for eastbound and westbound routes between China and the UK has narrowed, with westbound rates falling significantly faster than eastbound rates. In January 2009, according to Drewry, the shipping rate for a 40 foot container from the UK to South China mid-2008 was \$960. Assuming 25 tonnes per container (and with the USD/GBP exchange rate in January 2009 at 1.44), this amounts to around £27 per tonne of recovered material.

China accounts for 55% of UK exports of recovered paper and for 80% of recovered plastics.

Contents

Market Analysis	03
Paper Recycling in China	06
Plastics Recycling in China	09
Looking Ahead	11
Special Market Focus	12

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Legal Aspects

UK exports of recovered paper and plastics are regulated. EU regulations require material sent for recycling to be reprocessed in broadly equivalent conditions to those used in the EU and many Chinese facilities are indeed extremely modern.

A 2008 WRAP report³ explored the legal framework and commercial practice underpinning UK exports of recovered materials in detail. Key points include:

- The EU Regulation commonly referred to as the Waste Shipments Regulation (WSR) is the principal legal instrument setting out controls on waste imports and exports from the UK, supplemented by the UK Transfrontier Shipment of Waste Regulations 2007.
- The WSR imposes differing levels of control on different types of waste. Under provisions contained within the WSR, the EU Commission has made an additional “Green List” Regulation. The Green List Regulation specifies the level of control that applies to the export to some non-OECD countries of waste types listed in Annex III to the WSR. This Regulation includes the following entries that may be applicable to a consignment of waste paper or plastic destined for export: B3020 Paper, paperboard and paper product wastes, and B3010 Solid plastic waste.
- In addition, China requires that a number of national provisions must be met before export can take place. This includes: ensuring that the recovery facilities (destinations) have the Chinese SEPA-licence (SEPA is the State Environmental Protection Administration); the exporter obtaining an AQSIQ licence (AQSIQ is the General Administration of Quality Supervision, Inspection and Quarantine); the exporter obtaining a pre-shipment inspection certificate. This also includes certain requirements with respect to the level of contamination and the properties of the materials. For instance, waste plastic bottles are required to be broken into pieces. This means China may refuse shipments of plastic bottles to mainland China ports if the bottles are whole.
- One further restriction concerns Chinese imports of plastics: imports of plastic films from household sources, such as post consumer carrier bags, as well as agricultural films and fishing nets imports have been banned since March 2008.

³ ‘International Trade in Recovered Paper and Plastics: International Regulations and Commercial Practice’, WRAP, October 2008.

China’s economy & demand for raw materials

China has seen rapid economic growth over the last thirty years- 10% a year on average. Underpinning China’s economic growth has been a fundamental reform of the economic system, covering agriculture, industry and then the services sector. Changes have included market oriented reforms, enhancing the role of the private sector. China has also opted for increasing openness to trade and integration in the global economy. This has stimulated both growth in the Chinese domestic markets and export growth. Exports, benefiting in part from the competitive advantage arising from relatively low labour costs⁵, have risen by more than 20% a year on average in the last ten years.

Consequently, China’s demand for raw materials, needed for the domestic and the export markets supporting the growth boom, has also risen rapidly. China has become one of the largest – often the largest – consumers of most primary commodities. This has extended beyond demand for virgin raw materials to demand for recyclable materials, which provide a key additional input resource. For many materials, including recovered paper and plastics, the amount of domestically recovered materials is not sufficient to meet the demand and China relies also on imports.

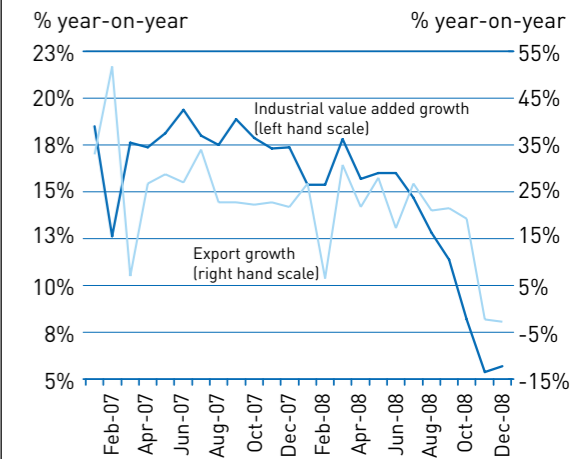
In 2008, following five years of double digit growth, economic

growth in China slowed from 13% in 2007 to 9%, with a sharp downturn in industrial production and export growth in the second half of the year (Graph 2). The economy has entered a phase of “double deceleration”⁶ characterised by both decelerating economic growth and efficiency improvements. This is expected to drive down the resource intensity of growth and lead to industry consolidation across many sectors, with factories already closing in the Pearl River Delta region.

The World Bank forecasts economic growth in 2009 of 6.5%⁷ which, whilst much higher than in western economies, is a considerable slowdown for the Chinese economy. The Chinese government has taken various steps to support the economy through the current slowdown, including a RMB 4 trillion stimulus package.

There are some significant challenges around the overall economic growth profile in the longer term, for instance, how the export sector emerges from the current global slowdown and China’s ability to boost domestic demand. Nevertheless, several key aspects – such as the process of industrialisation and urbanisation being far from complete and, despite fast growth, the income per head in China being relatively low – suggest there remains the potential in the long term for continued economic growth in China.

Graph 2: China: Industrial production and exports



Source: Dragonomics Research

The Chinese domestic recovery system does not yield sufficient quantities of recovered paper to satisfy demand and China relies to a large extent on imports.

Environmental Impact

A 2008 WRAP report⁴ found that despite the distances involved, there are net CO₂ benefits from shipping UK recovered paper and plastic bottles to China to be recycled, compared with landfilling them in the UK.

The report calculated carbon dioxide emissions of real-life routes for recovered paper and plastic bottles, from the UK to China. The report concluded that these represent less than a third of the carbon savings from recycling (identified by a majority of the life cycle assessments reviewed in the study), indicating considerable net carbon savings when recovered materials are shipped to China for recycling.

⁴ ‘CO₂ impacts of transporting the UK’s recovered paper and plastic bottles to China’, WRAP, August 2008.

⁵ Nevertheless, it is worth noting that labour costs have increased, reflecting wage pressure and the impact of a number of labour laws such as requirements on employers regarding long-term contracts with workers, social security benefits and redundancy payments to workers.

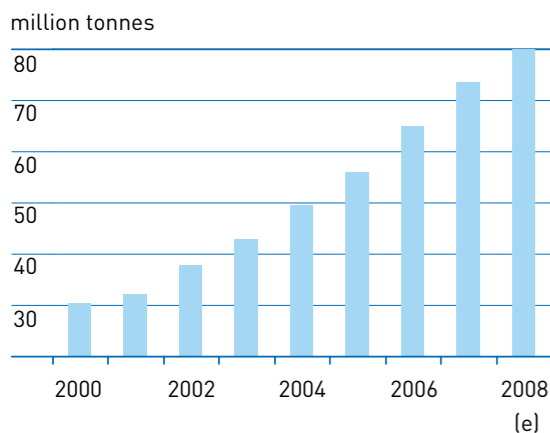
⁶ China Economic Quarterly, December 2008, Dragonomics Research.

⁷ February 2009 ‘Consensus Forecasts’ place China growth at 7.0% in 2009 and 8.3% in 2010. The January 2009 forecasts from the International Monetary Fund see Chinese growth at 6.7% in 2009 and 8% in 2010.

Trends in paper recovery in China

There are several factors affecting the prospects for China's domestic paper recovery. On the one hand, collection tends to be small scale and sorting is essentially manual, hence these costs are low. In addition, legislation encouraging recycling (e.g. Circular Economy Law) and issues with growing waste loads and landfill capacity are likely to provide incentives for increased materials recovery. On the other hand, there are several potentially limiting factors. Demand for locally recovered material is still hampered by its quality, perceived to be lower than imported recovered fibres: grades tend to be mixed and local paper still contains weaker non-wood pulp such as straw and bagasse. Furthermore, the logistics and costs of transport over the vast distances within mainland China need to be considered. Finally, a significant proportion of paper consumed in China (to make cardboard boxes) leaves China in the form of packaging around export goods and therefore does not enter the domestic waste stream - although it is worth noting that the current trend towards rebalancing packaging production of domestic goods packaging may attenuate this effect. The forecast of an increase in the recovery rate to 43% by 2020 reflects the overall impact of these factors.

Graph 3: China paper production



Source: "Annual Report on China's Paper Industry 2007", May 2008, China Paper Association. 2008: Poyry estimate.

Table 1: Chinese paper production, 2007

	million tonnes	%
Packaging material*	42.8	58%
Newsprint	4.5	6%
Other**	26.2	36%
Total	73.5	100%

Paper Recycling in China

High Chinese demand for recovered paper

China is the world's largest importer of recovered paper. Shortage of domestic wood resources, and, increasingly, the will to move away from non-wood fibres such as straw due to quality and environmental reasons, have been key drivers behind the large proportion of recovered paper used in the papermaking industry. In 2007, pulp from recovered paper accounted for as much as 60% of pulp consumption⁸.

China's paper mills produced 73.5 million tonnes of paper in 2007, making China the second largest paper producer after the US. 64% of China's paper production is packaging material and newsprint (Table 1), which rely heavily on Old Corrugated Containers (OCC), Old newspapers and magazines (ONP/OMG) and mixed grades of recovered paper as feedstock.

The domestic recovery system does not yield sufficient quantities of recovered paper to satisfy demand and China relies to a large extent on imports. In 2007, China's paper sector consumed 50 million tonnes of recovered paper, of which 22.6 million tonnes were imported, with

27.4 million tonnes stemming from the domestic collection systems in China. Chinese imports of recovered paper rose to 24.2 million tonnes in 2008.

Notwithstanding the current market volatility, long term, the combination of overall economic growth potential and factors such as the upward trend in paper production (Graph 3), together with low rates of consumption of paper per head (50kg in China in 2006 compared with 300kg for the US⁹) suggest significant development potential for the Chinese paper sector.

Accordingly, Pöyry, management consultants in this supply chain, forecast further steady growth in Chinese consumption of paper and paperboard from 73 million tonnes in 2007 to 138 million tonnes by 2020. To meet this demand, Pöyry estimates that Chinese paper producers will be using around 95 million tonnes of recovered paper by 2020, given the current fibre composition. With the Chinese paper recovery rate projected to increase from 34% to 43% by 2020, this means potential demand for imported recovered paper of around 37 million tonnes by 2020.

⁸ In comparison, wood pulp accounted for 22% for wood pulp and non-wood pulp for 19%. Source: China Paper Association.

⁹ Source: ChinaPaperOnline.com

* Packaging paper, white board, container board, corrugated board

** Other: Uncoated and coated printings & writings, specialty paper and tissue.

Source: "Annual Report on China's Paper Industry 2007", May 2008, China Paper Association.

The UK: a relatively marginal supplier

China is a key destination for UK exports of recovered paper but the UK is a relatively small supplier for China.

China sources recovered paper primarily from the US (42%) (Graph 4). The EU, as a region, is a key source of recovered paper for China (33%) although the share of each individual country is relatively small. Of China's suppliers from the EU, the UK is by far the largest: accounting for 11% of China's recovered paper imports¹⁰.

Main Chinese import grade: OCC

According to Her Majesty's Revenue and Customs (HMRC) data, recovered cardboard packaging (OCC) is the largest

recovered paper grade exported to China from the UK. Its share of UK recovered paper exports reached 60% in 2008, up from 20% in 2003. Recovered newspapers and magazines, account for 22% of exports, followed by 15% mixed grades and a relatively small volume of high grades¹¹ (Graph 5).

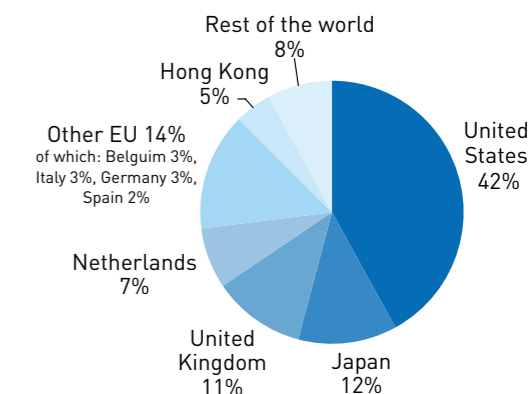
The composition by fibre type of recovered paper imported from the UK broadly mirrors the pattern of paper imports that China sources from other countries: 56% is OCC, 27% old newspapers and magazines, 16% mixed grades¹².

¹⁰ This figure underestimates the total amount originating from the UK, as it omits some of the UK materials that transit via Dutch ports.

¹¹ There is some discussion in the industry on the respective shares of each exported grade; some estimate that the proportion of OCC exports is overstated. A Defra report 'Paper packaging waste fact finding mission report', dated 2006, highlighted that some paper packaging waste was exported using incorrect codes, which would result in incorrect distribution of exports by grade. A report by the Confederation of Paper Industries (CPI) assesses that the tonnage reported for corrugated and kraft packaging board exports (not specifically to China) is likely to be overstated at the expense of other grades ('Corrugated Report on Material flows 2007' September 2008, CPI).

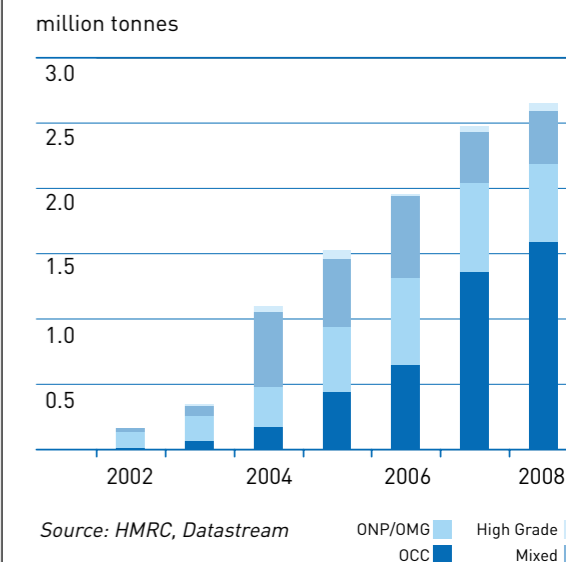
¹² Source: China customs, 2008.

Graph 4: China's imports of recovered paper by country of origin



Source: China Customs, 2008

Graph 5: UK exports of recovered paper to China by grade



Source: HMRC, Datastream



Graph 6: Chinese imports of UK recovered paper by province in 2008

Source: Chinese Customs Statistics

Journey to China, reprocessing and end-markets

Typically, recovered paper destined for China is baled and transported by road or rail in a 40 foot container (which holds around 25 tonnes) from consolidation centres throughout the UK to a load port, such as Southampton or Felixstowe. The majority of recovered paper is shipped directly to a port in China in large container ships. However, a small percentage travels by small feeder vessels to larger hub ports (such as Rotterdam) for onward shipping¹³.

The paper industry in China is concentrated in six provinces on the east coast: Shandong, Zhejiang, Guangdong, Jiangsu, Fujian and Hebei (Graph 6). Shandong's paper industry is the largest in China by capacity and turnover followed by Zhejiang. However, the paper industry in Zhejiang has a more fragmented structure and Guangdong, currently ranked third, has seen rapid growth which suggests it may in future become the largest papermaking province in China. These six provinces are the

destination of the vast majority of recovered paper sourced in the UK, the main destination being Guangdong which alone accounts for almost half of the recovered paper exported to China from the UK.

Recovered paper is typically reprocessed in medium/large modern paper mills. In 2008, more than 70% of UK recovered paper processed in Guangdong was procured by major Chinese paper producers with capacities in excess of 350,000 tonnes a year - much larger in the case of Nine Dragons (the biggest packaging paper and board producing group in China) and Lee & Man (the second biggest).

Some recovered paper is used to make newsprint. However, most of it is reprocessed into various grades of packaging materials (for instance linerboard and fluting), which are used to make boxes and packaging for producers of consumer goods, like textiles and electronics who in turn supply domestic and export markets.

¹³ Source: 'CO2 impacts of transporting the UK's recovered paper and plastic bottles to China', WRAP, 2008.



Plastics Recycling in China

High Chinese demand for recovered plastics

China is the world's largest importer of recovered plastics. China's demand for recovered plastics grew rapidly during the last decade with total consumption rising to 15 million tonnes in 2007 from 4 million tonnes in 2000. Imports of recovered plastics are estimated to account for around 45% of the total consumption and rose from 200 thousand tonnes in the mid-1990s to close to 7 million tonnes in 2007.

This is attributed in part to the fast pace of economic growth and industrialisation of the country, resulting in strong demand across a number of sectors, in particular packaging. Other factors include: rising prices for oils and plastic resins leading China to use the less expensive recovered plastics, and insufficient supply of virgin plastics resin domestically.

Against these high levels of demand, the UK is a relatively marginal supplier of recovered plastics to China, accounting for 9% of Chinese imports, compared with 26% from Japan and 21% from the US (Graph 7).

Notwithstanding the current market volatility, Pöyry forecast high growth in demand for recovered plastics in the long term with demand expected to rise from 15 million in 2007 to around 45 million tonnes in 2015 and 85 million tonnes in 2020. On the supply side, by 2020, 37 million tonnes is seen as coming from imports with 48 million tonnes recovered from the waste stream in China.

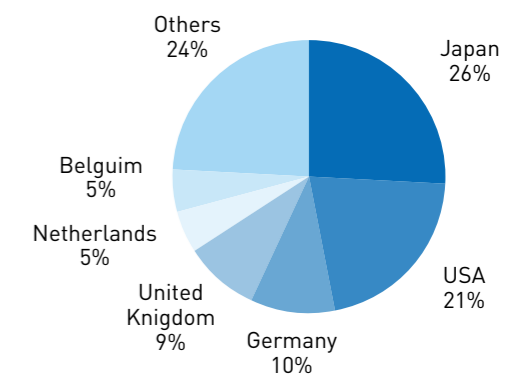
UK exports of recovered plastics to China

The vast majority (55%) of UK recovered plastics exported to China is polyethylene (Graph 8) largely comprising plastic bottles and packaging films. For plastic bottles, for instance, the Chinese export market has acted to bridge the gap between plastic bottle collections being established in the UK and the development of domestic reprocessing capacity. UK reprocessing capacity has increased, notably with the launch in 2008 of Closed Loop London's PET and HDPE food grade recycling plant in June 2008, with annual reprocessing capacity of 35,000 tonnes. Five more plants are planned in the UK which could lead to a smaller fraction of the 182,000 tonnes of plastic bottles collected in the UK (in 2007) going to exports in the future. However, further growth in bottle collections is also anticipated.

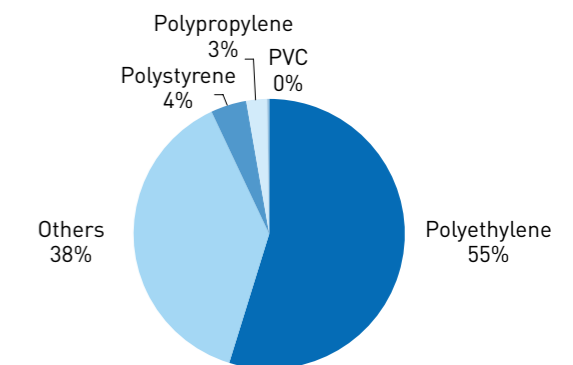
The established route to China for UK recovered plastics is via Hong Kong: in 2008, 78% of the UK's exports of recovered plastics were shipped to China via Hong Kong, up from 74% in 2007¹⁴. In part, this route is preferred because of the less stringent customs regulations and faster customs clearance, but it might also be because it is easier to establish direct relationships with Hong Kong based customers than those on the Chinese mainland.

Bottles shipped directly to China tend to have been sorted into separate polymer types, while those shipped via Hong Kong are likely to be mixed bales of PET and HDPE bottles.

¹⁴ There was a short trend in the second half of 2007 towards a greater proportion exported from the UK directly to mainland China, with the percentage of exports to China via Hong Kong falling steadily from around 80% in H1 2007 to 64-65% in October-November 2007. This was mostly reversed in 2008, with the percentage of exports passing through Hong Kong rising back to 78%.

Graph 7: World exports of recovered plastics to China and Hong Kong

Source: UNComtrade, 2007

Graph 8: UK exports of recovered plastics to China

Source: HM Revenue and Customs, January-December 2008

The established route to China for UK recovered plastics is via Hong Kong: in 2008, 78% of the UK's exports of recovered plastics were shipped to China via Hong Kong, up from 74% in 2007.

Environmental standards

China has a number of measures and regulations in place that are relevant to recovered materials. Under the Packaging Recycling Master Plan, China has, since January 2008, introduced restrictions on plastic shopping bags and bans on the import of certain types of post-consumer waste plastic. In September 2008, the China Circular Economy Law was signed, with an emphasis, amongst other things, on developing systems for recycling and improving energy-saving and waste re-utilisation.

Further to the closure of many small paper mills since the mid 1990s due to pollution concerns, a number of regulations have been introduced to impose tighter environmental standards on the plastics industry, for instance, the 'Technical specifications for pollution control during collection and recycling of waste plastics' (2007).

In the plastics sector, the application of controls over the recycling industry has become much tighter and many of the smaller companies have been forced to shut down as a result. According to a report by BCC Research¹⁶, the government of the Nanhai District in Fuoshan City in the Guangdong Province has closed all of the plastic recycling companies in the district.

The plastics reprocessing industry in China is highly fragmented with a very large number of companies of varying degrees of both operational sophistication and balance between mechanical and manual processing. According to the China Plastic Processing Industrial Association (CPPIA), there are some 10,000 facilities registered to process plastic waste material in mainland China; some of these have been challenged by the introduction of stricter environmental standards. The key province involved in the reprocessing of UK recovered plastics is Guangdong, the closest province to Hong Kong. Taking the bottle reprocessing industry as an example, Guangdong has in total around 54 operations with bottle reprocessing facilities¹⁵ and the industry is characterised by a large number of small operations: only 7 operations have capacity in excess of 5,000 tonnes (the largest alone accounts for 37% of the capacity in the province).

¹⁵ Accounting for 95% of the province's industry, source: PCI.

¹⁶ 'Recycling Markets in China', BCC Research, 2008.

End markets vary by plastic grade. The proportion of recovered PET bottles destined for applications such as bottles and sheet is relatively small with the market dominated by the usage for fibres. Polyester fibre manufactured from reclaimed materials has certain performance characteristics, namely dyeability, strength and tenacity, which, in general, limit its potential in many fibre markets. As a result, recovered PET has tended to be used mostly in fibre applications where the products are not normally dyed and where heavier denier fibres are used. Some of the principal applications are for fillings and certain nonwoven products, in particular as fillings for anoraks, sleeping bags, toys, upholstery and applications such as insulation, roofing felt, rope and automobile lining.

Other end uses for UK recovered plastics in China include: plastic film and toys, shoe material, basins, pipes, auto parts and components.

Looking Ahead

In the autumn of 2008, demand from China slowed abruptly. In October, the paper sector reported two weeks of zero new orders, and prices and volumes of exports of recovered paper and plastics to China from the UK fell by between 40% and 60% between October and November. The 'Special Report' below elaborates on these events.

The situation has improved with Chinese buyers returning to the market since December. Looking ahead, a period of adjustment is likely. The landscape of the market has changed with much lower prices and signs of industry consolidation in the recovered paper and plastics

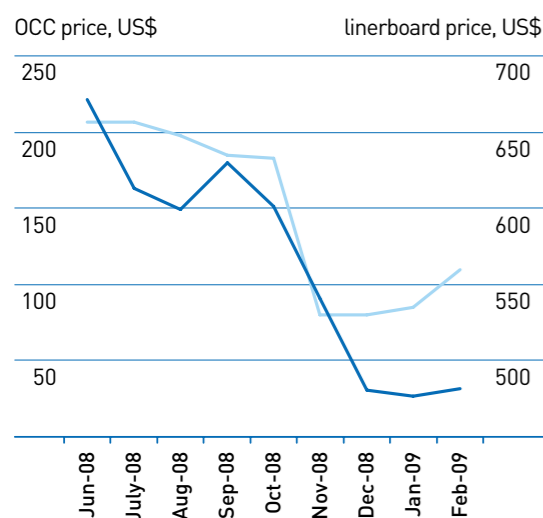
industries in China. Current market conditions are likely to lead to changes in these industries including rebalancing in end markets, with some paper producers already reporting a shift towards greater emphasis on domestic demand relative to export demand.

Demand appears to be progressing along a recovery path, but the market remains vulnerable and its short term sustainability hinges upon support from a wider economic recovery, in order to drive demand in end-markets for recovered materials, and consolidate the tentative recovery underway in early 2009.

In the longer term, there may be risks, partly as the sustainability of Chinese demand for recovered materials is linked to its ability to continue on a path of relatively rapid growth over the next two decades. Nevertheless, currently the longer term prospects (both from a wider economic perspective – such as positive economic growth potential, and from paper and plastics specific factors – such as currently low paper consumption per head) suggest there is potential for further growth in demand for imported recovered paper and plastics in China.



Graph 9: Chinese linerboard price and Chinese imported OCC price



Source: prices from China Pulp & Paper Report, ChinaPaperOnline.com; exchange rate from Datastream

11# OCC (Europe 90/10) Lee&Man Class A linerboard (right hand scale)

Special Market Focus

The autumn 2008 market downturn: what happened?

By way of introduction, it is worth highlighting that the sharp downturn in exports and prices of recovered paper and plastics to China in the autumn of 2008 was not unique to UK recovered materials. Prices for many

different types of commodities, including oil prices and virgin raw materials have seen a significant decline and materials exported for recycling from other countries were also similar affected.

Recovered Paper

Sharp falls in demand in the autumn

Chinese demand for recovered paper fell sharply in the autumn of 2008. This reflected a significant downward adjustment in domestic and foreign demand for goods in China, spilling over to related sectors such as packaging, as the impacts of the domestic and global economic slowdown, the credit crunch and the end of the Olympic Games converged.

In particular, the global economic slowdown has resulted in slowing demand for Chinese goods, first in the US and then in Europe, with Chinese export trends worsening significantly in November 2008. The slowing demand for these goods affected demand for packaging and this filtered through to a sharp fall in the prices at which paper manufacturers have been able to source feedstock and still maintain sustainable profit margins. Market intelligence suggests that operating rates of Chinese paper mills were much

reduced and profitability, even for the larger players, was sharply down.

Graph 9 illustrates how the recent price trends of OCC imported into China closely mirror that of linerboard, a key end-user of OCC.

UK exports of recovered paper to China benefited in the downturn from the relative weakness of the pound and rising PRN/PERN¹⁷ prices, both contributing to enhance the competitiveness of UK exports relative to some of the other suppliers to China. Nevertheless, the decline in traded volumes has been significant. UK Customs statistics show that UK exports of recovered paper to China fell by 40% between October and November 2008, reaching their lowest level since September 2005 (Graph 10). The falls were widespread across the grades with exports of OCC falling by 33% and exports of ONP/OMG falling by 60% between October and November.

¹⁷ The packaging regulations place an obligation on certain businesses to recover and recycle specified tonnages of packaging waste each year. In order to demonstrate that the required amount of recovery and recycling has been carried out, the producer (or a compliance scheme on their behalf) must purchase evidence of compliance from an accredited reprocessor or exporter. These businesses will issue, respectively, Packaging Waste Recovery Notes (PRNs) and Packaging Waste Export Recovery Notes (PERNs). Source: <http://www.defra.gov.uk/environment/waste/topics/packaging/>

Signs of demand recovery

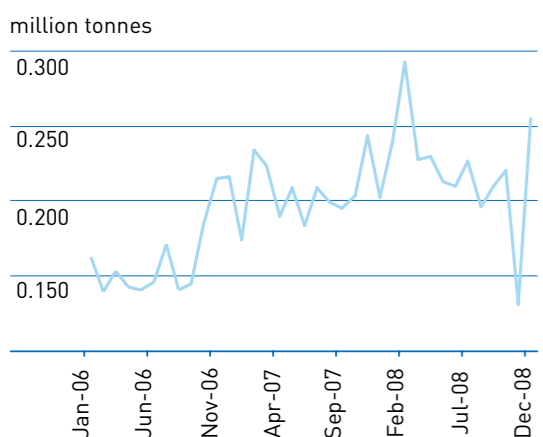
UK exports of recovered paper to China rebounded by nearly 100% between November and December according to UK customs statistics, from 131 thousand tonnes to 255 thousand tonnes (Graph 10). WRAP's Materials Pricing Reports (MPR) for January and February both suggest that Chinese buyers continued to return to the market to procure UK materials.

The renewed demand partly reflected buyers refilling their stocks further to the 2009 import allocation

and permit process. Some short notice orders on the linerboard market, also echoed in the stabilisation of linerboard prices, and buyers taking advantage of particularly low recovered paper prices were also likely contributory factors. The end of the 10% VAT rebate for Chinese domestic recovered paper in January 2009 may also have had a positive impact on imported material. It is also worth noting that China has implemented a number of policy initiatives to help support its domestically focused and export oriented industries through

the economic slowdown. A number of these could benefit sectors that are key end users of recovered paper and plastics, such as the packaging sector. The measures include: a 17% export tax rebate on textiles - a sector which is one of the key consumers of corrugated boxes made from recovered paper - and the home appliances scheme: a 13% discount, in rural areas, on purchases of some home appliances such as TVs and fridges, another key end-use market for containerboard made from recovered paper.

Graph 10: UK exports of recovered paper to China



Source: HMRC, Datastream



Sharp falls in prices in the autumn – some recovery in early 2009

Prices of imports of recovered paper in China fell across the board in the autumn 2008: down by between 40% and 70% across the main supplier countries and across grades. Prices have recovered some ground since the beginning of the year but were still as much as 60% below their October 2008 level for some grades in February 2009 (Table 2). The gap between OCC and ONP prices seen in late summer 2008 narrowed significantly over

the autumn/winter of 2008 and the differential in supply prices between countries was also affected, with prices for European material in February the lowest amongst key supplier countries across ONP and OCC grades (prices are in US\$ and so reflect partly exchange rate movements). The prices reported in the MPR (which reflect a mix of UK domestic and export prices, the latter largely driven by the Chinese market) in January and February 2009 confirmed that prices were recovering at the beginning of the year but still nowhere near pre-October 2008 levels.

Table 2: Recovered fibre import prices (Prices in US\$ per metric ton, CIF, to a Chinese main port)

Prices 'early in the month'	Mixed		ONP			OCC		
	#3 Mixed (USA)	#3 Mixed (Japan)	#8 ONP (USA)	#8 ONP (Europe)	#8 ONP (Japan)	#11 OCC (USA)	#11 OCC (Europe)	#11 OCC (Japan)
June 08	210	245	285	263	282	235	207	250
July 08	211	242	300	274	290	245	207	227
August 08	206	214	295	280	285	234	198	220
September 08	202	225	281	272	285	220	185	215
October 08	199	240	265	250	282	205	183	212
November 08	80	115	105	85	130	85	80	110
December 08	80	115	105	75	115	95	80	97
January 09	84	115	110	76	130	110	85	100
February 09	102	135	132	92	155	132	110	121
Sharp falls between Oct and Nov 2008:								
Change Nov 08 v Oct 08	-60%	-52%	-60%	-66%	-54%	-59%	-56%	-48%
By February, some recovery compared to the November 2008 lows:								
Change Feb 09 v Nov 08	28%	17%	26%	8%	19%	55%	38%	10%
But still not back at the pre-autumn 2008 levels:								
Change Feb 09 v Oct 08	-49%	-44%	-50%	-63%	-45%	-36%	-40%	-43%

Source: China Pulp and Paper report, Chinapaperonline.com



Plastics

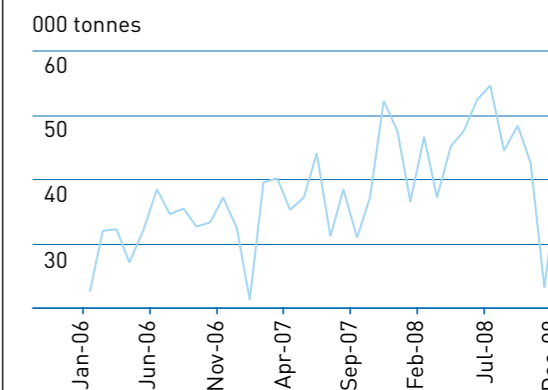
As with many other commodities, Chinese demand for recovered plastics slowed sharply in the autumn of 2008. UK exports of recovered plastics to China/Hong Kong fell for two consecutive months, down from 48,000 tonnes in September to 43,000 tonnes in October and 23,000 tonnes in November 2008, less than half their level in November 2007 (Graph 11).

The Chinese demand downturn is attributed to lack of demand in both domestic and export end-markets on the back of the spreading global economic slowdown. Plastics analysts report some fibre producers' operating rates being at around 45% in December and this rate slowed even further in the run up to the Chinese New Year, with extended shut down periods for many companies on the back of fast declining profit margins and, for some, cash flow difficulties. The slowdown in demand and the falls in virgin raw material prices contributed to sharp declines in the prices for recovered plastics¹⁸. Prices for Chinese

imports of baled bottles for instance fell by 66% between Q3 and Q4 2008.

Demand has started to pick up again. In December 2008, UK exports of recovered plastics bounced back by 66% compared with November 2008. In January and February the MPR highlighted that overseas buyers for plastic bottles, Hong Kong in particular, were returning to the market. Lower import costs at the beginning of 2009 are likely to have also contributed to demand. Notably, costs for recovered plastic material imported via Hong Kong were reported to have been cut, albeit temporarily, by as much as 30% in some cases. MPR prices for plastic bottles, which cover a mix of UK domestic and export materials, showed a slight recovery in January and February compared with their low level towards the end of the year, but were still more than 40% below their pre-October 2008.

Graph 11: UK exports of recovered plastics to China & Hong Kong



Source: HMRC, Datastream

¹⁸ The linkages between the oil price, the virgin and the recovered plastics prices are explored in a 2008 WRAP report: 'The determinants of recovered plastics prices in the UK', October 2008.

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