Chinese Newsprint and Printing & Writing Paper Industry

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Abstract

Given its great potential and rapid growth, the Chinese market will have a big impact in the world newsprint and printing & writing paper industry. In this report, we review China's Newsprint and Printing & Writing Paper Industry, focusing on its domestic demand, capacity expansion and international trade. We also forecast the demand for newsprint and for printing and writing paper in China up to 2020, using Autoregressive Integrated Moving Average (ARIMA) models. In 2010, for example, China's demand forecasts for newsprint products and for printing & writing paper reach 1.96 and 13.44 million tons, respectively.

I. INTRODUCTION

In 2000, China consumes 1.7 million tons of newsprint and 7.9 million tons of printing & writing papers, accounting for 33% and 44% consumption of Asia outside Japan. In terms of absolute value, China only consumes a small part of the world wide newsprint or printing & writing papers, only representing 4.2% or 7.9% of the world production. By comparison, North America uses 14 million tons of newsprint and 31 million tons of printing & writing papers. For instance, the United States is the largest consumer of newsprint and consumes over 30% of all the newsprint produced, though it accounts for only 5% of the world's population.

When turning to the growth rate year-on-year, however, we find that China outruns other countries or regions. From 1999 to 2000, China's production of newsprint and printing & writing papers increased with an average growth rate of 45.3% and 6.7%, while the growth rates of world are 3.63% and 3.99%, respectively. The rapid growth of Chinese paper market and the potential it possesses attract the intention not only from domestic producers but also from international companies.

To exploit its own potential, China now is continuing building up its own capacity. From 1995 to 2000, Chinese production of newsprint and printing and writing papers increase to 1.5 and 7 million tons, respectively, which strongly suggests a tremendous growth in its own paper capacity. Taking newsprint industry as example, from 1995 to 2002, 12 machines were imported or rebuilt, adding a 1.3 million tons new capacity, and another 12 new projects are planned for 2002-2004. Over the same period, 10 projects are scheduled in printing & writing paper industry. The extension of anti-dumping duties imposed on newsprint from the United States, Canada, and South Korean provides a favorable environment for domestic newsprint producer. Despite the heavy tariff and rapid expansion of domestic capacity, China's imports of newsprint and printing

& writing papers continues growing, with an average growth rate of 27.9% and 28.9% in the last 10 years, opening up ‘opportunity windows’ to international producers.

Given the bullish of Chinese paper market in a downtrend situation over the world, this study tries to provide forecasts of Chinese production and consumption up to 2020, with an aim to give empirical bases for policy makers and producers. To this end, several industries besides paper industry, such as newspaper industry, information Technology industry, and advertising industry are examined in this research. The impact of technology, especially information technology, on paper industry is also analyzed. And an ARIMA model is used to forecast production and consumption.

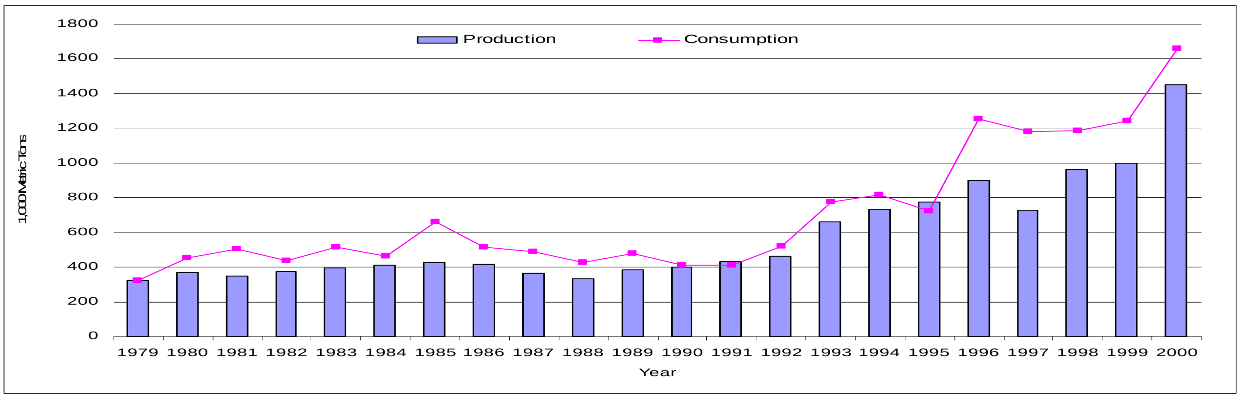
2. INDUSTRY REVIEW

I. Domestic Demand

Significant growth in China’s consumption of papers has occurred in the past decade and is expected to continue growing, due to its improvements in economic conditions and rising level of literacy. Newsprint consumption, for example, jumped four fold from 413 thousand tons in 1990 to 1,659 thousand tons in 2000, and the demand for printing & writing paper increased from 2,147 in 1990 to 7,871 in 2000, a three-fold increase (see Figure 1 and 3). Over the past 10 years, the average annual growth rate of Chinese demand for newsprint almost reaches 14%. By comparison, the growth rate of world in the same period is only 1.9%, as shown in Figure 2.

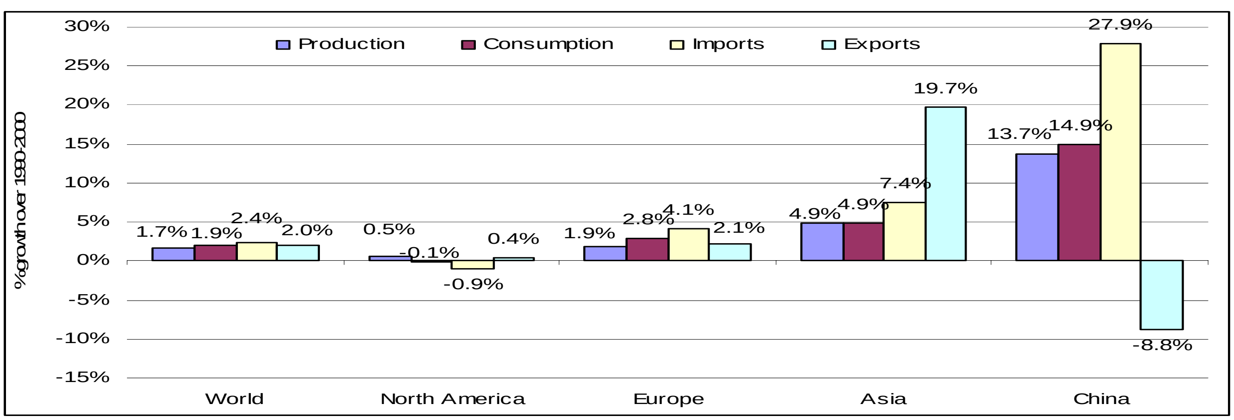
Newsprint industry is unevenly developed around the world. The North American, Western European, and Japanese newsprint markets are considered to be mature with very little growth anticipated in the long term. North America, for example, experienced a year-on-year 0.1% decrease in the last decade. Outside of North America, newsprint demand has continued to grow, but with much slow pace compared with the growth of the demand in China. The ten-year average growth rate is 2.8% for Europe and 4.9% for Asia. Robust consumption in China, which accounts for one third of the Asian demand outside Japan, ensures that the Asian newsprint market will post a higher-than-world-average growth in future.

Figure 1. Newsprint Production and Consumption Growth Trend from 1980-2000



Source: International paper and paperboard Factbook, different issues.

Figure 2. World Newsprint Growth Rate from 1990-2000

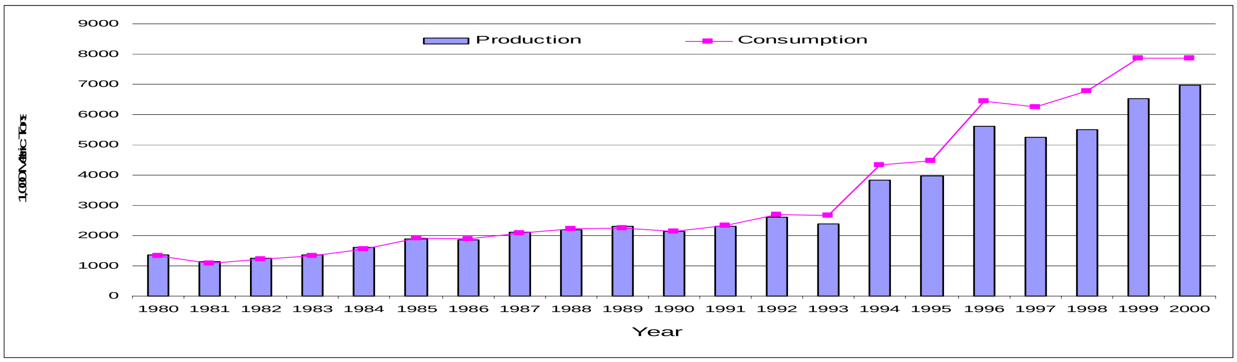


Source: International paper and paperboard Factbook, different issues.

China printing and writing papers consumption also increased dramatically, with a 13.9% average growth rate in the past decade. Now it accounts for 28.2% for Asia. Asia printing & writing market, is the only region that undergoing high speed development, as indicated in

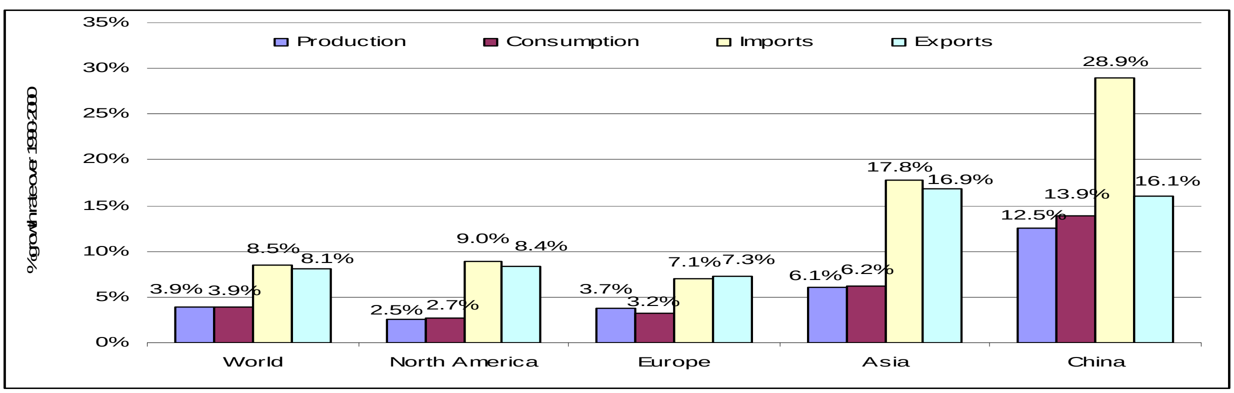
Figure 3. The world's printing and writing consumption was 40 million tons in 2000, up 3.63% from 1999.

Figure 3. Printing and Writing Paper Production and Consumption Growth Trend from 1980-2000



Source: International paper and paperboard Factbook, different issues.

Figure 4. World Printing and Writing Paper Growth Rate from 1990-2000



Source: International paper and paperboard Factbook, different issues.

II. Capacity Expansion

China is continuing building up its own capacity in order to exploit its own demand. Much progress was made in terms of both output and quality in recent years. Almost all the mainstream producers in China geared up technological upgrade activities in the last two years by importing advanced technology and equipments, expanding production and improving product quality.

From 1995, China's paper industry has entered into a dynamic phase. In the past 4 years, there were 8 machines imported from abroad, 4 machines rebuilt, adding a new capacity of 1.3 million metric tons per year to the newsprint industry (See Table 1). Meantime, China's paper industry is growing through the replacement of obsolete capacity by modern capacity, which will offset some of the newly created capacity. More projects are scheduled for the year from 2002 to 2004 (See Appendix I). One may presume that the stage of rapid growth of China's newsprint industry was achieved under government protections. However, with the lifting of the sliding scale duties, Chinese newsprint industry shall face competition from the world.

China's total newsprint production in 2000 reached million 1.5 million tons, making the country the 6th largest newsprint producer in the world. So far China has primarily consumed what it produces rather than becoming a major exporter.

Table 1. Newsprint Capacity Expansion from 1999-2002

Company Name	Machine	Capacity (mtpy)	Start-up Time
Longyan Paper Co. (Fujian)	New	80,000	Jan.1999
Nanping Paper Co. (Fujian)	New	180,000	1999
Yueyang Paper Co. (Hunan)	Rebuilt	60,000	1999
Jinjiang Paper (Zhejiang)	New	51,000	2000
Guangzhou Paper Co. (Guangdong)	Second-hand	180,000	May. 2001
Heilong Paper Co. (Heilongjiang)	New	180,000	Apr. 2001
Jilin Paper Co. (Jilin)	Rebuilt	180,000	Apr. 2001
Huatai Paper Co. (Shanghai)	Second-hand	160,000	Oct. 2001
Wuhan Chenming Paper Co. (Wuhan)	New	150,000	Nov. 2001
Shiyan Bailu Papper Co. (Jilin)	New	180,000	Oct. 2002
Yalujian Paper Co. (Jilin)	Rebuilt (2 machines)	70,000	2002

Source: CIF Consulting Ltd.

Despite of the rapid development in China's paper making industry in recent years, China's producers are still in developing stage compared with their counterpart of North America and West Europe. The average size of newsprint plant is 107,409 tons per year; while in North America, the size of newsprint machines varies from 60,000 tons to 290,000 tons, with the average size being 150,000 tons. The average newsprint machine in Western Europe is even bigger than that in North America.[1] As a result, the domestic market demand can not be met in both quantity and quality. Large volume of imported newsprint and printing and writing paper are needed to fill the gap between domestic output and demand.

III. International Trade

Despite heavy tariff barriers, Imports have traditionally held significant market share in China's paper market. In 2000, when a sliding scale tariff on newsprint imports was still imposed, China imported a total of 211,000 tons of newsprint, making up 13% of its newsprint consumption.

China has also begun lowering import tariffs unilaterally after its entry to WTO. As shown in Table 2, tariff will eventually fall to 5% in newsprint, and coated paper. On Jan. 1 2002, China has abolished the sliding scale tariffs on newsprint imports, replacing with a flat import duty of 8.5%. This rate will remain in place during 2003-2004, dropping to 7.5% in 2005 and 5% in 2006. The sliding scale duties levied a higher duty on cheaper priced imports in order to curb imports of low-priced newsprint and protect China's domestic market. The elimination of the tariffs means that importers can now sell their goods at a cheaper price without attracting higher duties.

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[1] North American Newsprint Producers Association, Pulp and Paper Products Council: 'Overview of the Newsprint Industry', available at http://www.pppc.org/en/1_0/index.html.

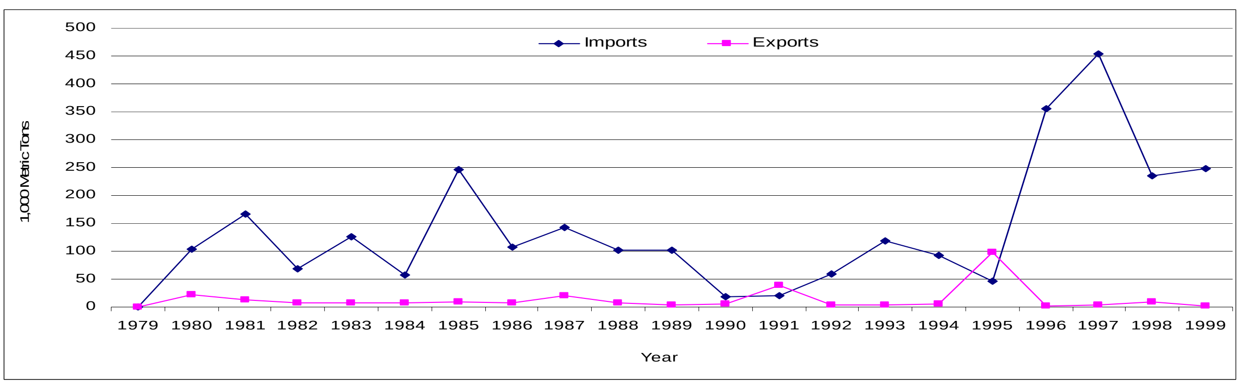
Table 2. Chinese Import Tariffs

Grade	Pre-WTO Tariff (%)	Jan. 1 2002 (%)	2002*(%)	2003*(%)	2004*(%)
Newsprint	Sliding scale	12.0	11.0	8.5	8.5**
LWC	15.0	11.0	9.0	7.0	5.0
Coated Woodfree	15.0	11.0	9.0	7.0	5.0
Uncoated Woodfree	12.0	9.0	7.5	-	-

* Target to be reached during the year; ** Newsprint tariff will be reduced to 5% by 2006. -: not available.
Source: China's Ministry of Foreign Trade and Economic Cooperation and Guangzhou Customs.

Figure 5 shows that imports of newsprint vacillate dramatically from year to year. It peaked at 450,000 tons in 1997, but has since fallen back to 211,000 tons in 2000. The erratic pattern of imports is the results of purchasing practices of Chinese buyers, and the newsprint anti-dumping duties introduced in 1997, according to the American Forest & Paper Assn. It is generally believed that Chinese buyers tend to come into the market one or two times a year and stock up. When prices go up, it is hard to see them in the international market.[2]

Figure 5. Newsprint Imports and Exports from 1980-2000



Source: International paper and paperboard Factbook, different issues.

The anti-dumping duties, which range from 9% to 78%, were imposed against newsprint imports from Canada, the US and Korea on July 10, 1998, following complaints from nine

[2] Paperloop: 'China's newsprint tariffs expected to stop U.S., Canada exports', available at: www.paperloop.com.

Chinese firms. Shipments from the targeted countries to China already dropped dramatically from 453 thousand tons in 1997 to 236 thousand tons in 1998, following the establishments of anti-dumping duties in 1998. The imports from U.S. decreased from 119 in 1997 to 32 thousand tons following the establishment of temporary anti-dumping tariffs in Oct. 1997, and further dropped to less than 1 thousand tons after 1999 (see Table 3). Canadian export to China also underwent the same pattern. Anti-dumping duties were supposed to expire in July 2003. However, apart from the original nine Chinese petitioners who submitted the dumping complaint five years ago, 3 more producers joined and asked of extending the anti-dumping measures. The 12 companies have more than 73 percent of the local newsprint industry's annual output. The petitioners argued that the dumping may resume if the duties are lifted. They argue that the domestic industry is still fragile and heavily susceptible to dumping, thus eliminating anti-dumping duties would do substantial harm to China's newsprint producers.[3] On July 1, the Chinese Ministry of Commerce initiated a review of its anti-dumping measures against imported newsprint from Canada, US, and South Korea. During the investigation, China will go on levying anti-dumping taxes, according to the Ministry of Commerce's 29th bulletin of 2003 issued in July 4th. The investigation is expected to be concluded before June 30, 2004.[4]

[3] "Milestone Anti-dumping Duties Reviewed", available at http://test.china.org.cn/english/BAT/68656.htm.
[4] "Imported Newsprint Continues Be Levied on Anti-dumping Taxes", available at http://test.china.org.cn/english/BAT/68969.htm.

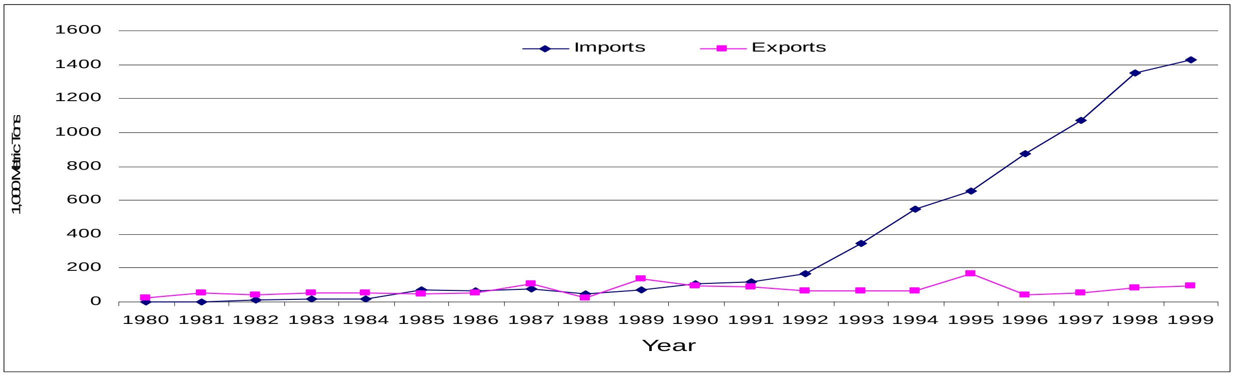
Table 3. Chinese Anti-dumping Duties and Newsprint Export

Year	Canadian newsprint export to China (1,000 Metric Tons)	U.S. newsprint export to China (1,000 Metric Tons)
1995	5	2
1996	152	119
1997	118	32
1998	7	8
1999	4	<1
2000	<1	<1

Source: International paper and paperboard Factbook, different issues.

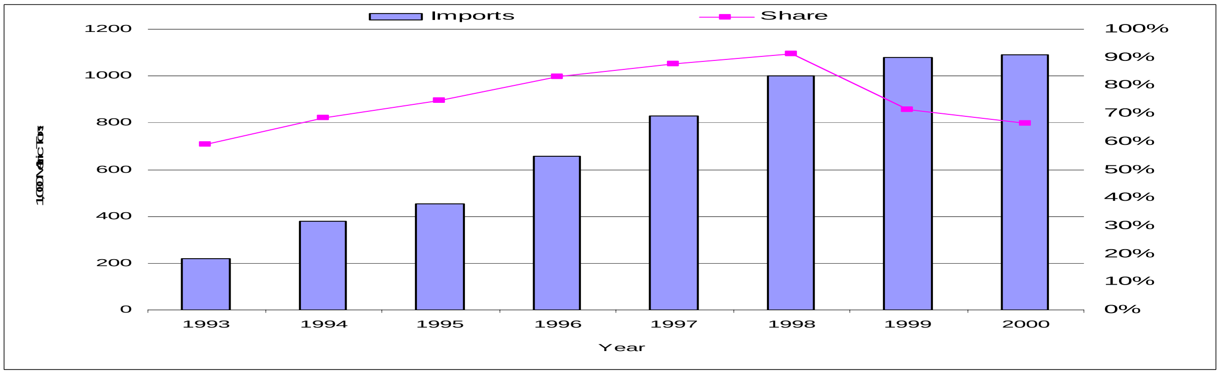
Printing and writing paper imports increase steadily from 0.11 million tons to 1.3 million tons in 2000, with an average growth rate of 28.9%, over the last 10 years. It is worth noticing the coated printing and writing paper. As shown in Figure 7, over the period of 1993-2000, imports consistently account for over 60% of total demand for coated printing and writing paper.

Figure 6. Printing and Writing Papers Imports and Exports from 1980-2000



Source: International paper and paperboard Factbook, different issues.

Figure 7. Coated Printing and Writing Paper Imports and Import share of Demand 1993-2000



Source: International paper and paperboard Factbook, different issues.

3. INDUSTRY OUTLOOK

The resumption of economic growth, increasing literacy level, and the lowering of tariff barriers, will not only boost the domestic paper industry but also open up Chinese market to imports. We expect that China will continue consuming more newsprint and printing & writing paper, and importing more.

First, China's newsprint and printing & writing paper markets are far from saturated. For example, the consumption of newsprint per capita in China is 0.8, by comparison, North America on average consumes 37.6 kilogram per person. In Western Europe, demand per capita averaged 25.6 kilograms in 2001. Even the average consumption in Asia amounted to 2.9 kilograms in 2001.

Second, China's buoyant economy will continue supporting the demand for newsprint and printing & writing paper. Although the outbreak of the Severe Acute Respiratory Syndrome (SARS) dented China's economy in both the second and third quarters 2003, the nation's GDP growth retained 7.5% in 2003. China's economic growth will still be "healthy", providing strong supports to the advertising and newspaper industries.

Third, a growing circulation of published books, magazines, and newspapers will have a significant impact on the demand for newsprint as well as printing and writing paper. As indicated in Table 4, the number of published books, magazines, and newspapers has increased from in 1990 to in 2001. The rising literacy level provides solid foundation for publishing industry. From 1980 to 2001, the illiteracy rate of adult (% of people ages 15 and above) decreased from 32.94% to 14.23%, according to World Bank Development Indicator Data Base. The literacy rate of youth in China is 2.08%, much lower than the 14.23% total adult illiteracy rate. More people will read newspapers, which means increasing circulation and boosting demand for newsprint and printing & writing papers.

Table 4. Number of Published Books, Magazines, and Newspaper from 1980-2000

Year	Number of Kinds of Published books	Number of Kinds of Published Magazines	Number of Kinds of Published Newspapers
1980	21621	2191	188
1990	80224	5751	773
1999	141831	8187	2038
2000	143376	8725	2007
% Growth	9.92%	7.15%	12.57%

Source: CDC, China Data Center, University of Michigan

Strong advertising activities also drive up the demand for newsprint. Statistics released by the China State Administration of Industry & Commerce showed that advertising revenue of China in 1999 amounted to 90.3 trillion RMB, of which 22.7% were generated from newspaper and magazine industries.

Table 5. Advertising Revenue of China from 1998-2002

Year	TV	Newspaper	Magazine	Radio	Internet
1998	-	-	-	-	0.3
1999	156.0	112.0	9.0	12.5	0.9
2000	168.9	146.5	11.3	15.2	3.5
2001	206.7	167.0	13.5	19.1	3.9
2002	231.0	188.0	15.0	22.0	4.9

The measurement unit is 100 million RMB.
Source: China State Administration of Industry & Commerce and iResearch.

Yet, China's newsprint and printing & writing paper industries are not free of problems. Even though the quality of Chinese newsprint has been improved and acceptable to local newsprint publishers, Chinese newsprint producers are running at relatively high costs due to the higher-than-world-market costs in timber and energy, and suffering a less efficient management and scale economy. In addition, most of the Chinese newsprints mills are producing only limited grades, except few integrated paper conglomerates, such as Chenmin Paper Corp. and Huatai Paper Corp. (See Appendix II). Therefore, their overall risk prevention ability is not strong and may be hit hard in tough situation when the market becomes weak, sales blocks down and price collapses. In addition, 60% of the raw material for pulp making in China is crop straws, while wood pulp (including imported wood pulp) making up only 14% and waste paper 25%. A large number of high quality paper and various special paper products cannot be produced. Large quantities of pulp and paper products have to be imported every year to meet the demand of the domestic market for high quality paper products.

4. FORECASTING CONSUMPTION AND PRODUCTION

In this section, we apply Box-Jenkins approach (Box, G. and Jenkins, G. 1976) to forecast domestic demand and production for newsprint and printing & writing papers for China. More specifically, we identify the ARIMA processes based on autocorrelation and partial autocorrelation, and then select proper models using Akaike's information criterion (AIC) and Schwarz criteria (SBC). ARIMA (2, 0, 0) is chosen for newsprint consumption in China and ARIMA (0, 0, 2) for newsprint production. ARIMA (2, 0, 1) is chosen for the consumption of printing and writing paper in China and ARIMA (1, 0, 2) for its production. Based upon Ljung-Box statistics (Q statistics), the residuals for both models are white noise, indicating that the models are adequate. Therefore, we use these models to forecast the consumption and production to 2020.

The forecasts of demand and production in China are reported in Table 6. In the year of 2005, we expect the total consumption of newsprint will reach 1.74 million tons. The forecast for production in 2005 is 1.56 million tons. In 2010, we forecast the demand for newsprint products to reach 1.96 million tons, and the demand for printing and writing paper to be 13.44 million tons. Our forecast is very close to the targeted figure set by Chinese government. It is projected that China's printing and writing paper consumption will amount to 13.4 million tons. Forestry Policy and Planning Division of United Nations (1996) provides consumption and production forecasts of Newsprint and Printing & Writing Papers up to 2010. Our projection of newsprint consumption is relatively modest compared with FAO's projection of 2.573 million tons. Printing and writing forecast is higher than FAO's 12.3 million tons.

Table 6. ARIMA Forecasts of Newsprint and Printing and Writing Paper up to 2010

Year	Newsprint (Million Tons)		Printing and Writing Paper (Million Tons)	
	Production	Consumption	Production	Consumption
2004	1.507	1.697	7.668	10.678
2005	1.559	1.741	7.929	11.139
2006	1.606	1.784	8.206	11.599
2007	1.644	1.828	8.480	12.060
2008	1.691	1.872	8.758	12.520
2009	1.734	1.916	9.036	12.981
2010	1.777	1.960	9.315	13.441
2011	1.821	2.004	9.594	13.902
2012	1.864	2.048	9.873	14.362
2013	1.908	2.091	10.152	14.823
2014	1.951	2.135	10.431	15.283
2015	1.995	2.179	10.710	15.744
2016	2.039	2.223	10.989	16.204
2017	2.082	2.267	11.268	16.666
2018	2.126	2.311	11.547	17.125
2019	2.169	2.354	11.826	17.585
2020	2.213	2.398	12.105	18.046

APPENDIX I. Paper industry projects scheduled in China for 2002-2004:

Paper Company	Location	Planned Year	Capacity (1000 ton/year)	Category
Taishan Paper Plant	Shandong	2002	100	LWC
Minfeng Paper Plant	Zhejiang	2002	23	Record Paper
Guitang Liuhua	Guangxi	2002	28	Tissue Paper
Heng An Ltd.	Hunan	2002	32	Tissue Paper
Weida Paper Plant	Guangdong	2002	25	Tissue Paper
Ma An Shan Paper Plant	Anhui	2002	200	Paperboard
Pinghu Paper Plant	Zhejiang	2002	200	Paperboard
Chenming Qihe Paper Plant	Shandong	2002	150	Paperboard
Shanyin Paper Plant	Anhui	2002	150	Paperboard
Zhumadian Baiyu Paper Plant	Henan	2002	40	Uncoated Paper (Wood Free)
Jingda Town Paper Plant No. 1	Guangxi	2002	60	Newsprint
Jingda Town Paper Plant No. 2	Guangxi	2002	60	Newsprint
Meili Paper Plant	Ninxia	2002	40	Coated Paper (Wood Free)
Linqing Paper Plant	Shandong	2002	200	Corrugating Medium
Dongwan Jiulong	Guangdong	2002	400	Paperboard
Jilin Paper Plant	Jilin	2002	180	SC Newsprint
Shixian Bailu Paper Company	Jilin	2002	120	Uncoated Paper (Wood Free)
Chenming Paper Plant	Hubei	2002	120	Uncoated Paper (Wood Free)
Shenzhen Wangda Paper Company	Guangdong	2002	150	Paperboard
Mingfeng Special Paper Company	Zhejiang	2002	100	Coated Paper (Wood Free)
Shandong Rizhao Huanghai Pulp Plant	Shandong	2002	150	Liquor Package Board
Dongying Huatai Paper Plant-Binzhou Factory	Shandong	2002	150	Newsprint
Liwen Paper Plant	Guangdong	2002	320	Paperboard
Zhaozhou Paper Plant	Hebei	2002	100	Paperboard
Baite Paper Company	Shanxi	2002	85	Coated Board

Luohe Yingge	Henan	2002	100	Coated LWC (Wood Free)
Wan Li Da	N/A	2002	150	Paperboard
Leshan Paper Plant	Sichuan	2003	100	Uncoated Paper (Wood Free)
Guitang Liuhua	Guangxi	2003	28	Tissue Paper
Yueyang Paper Company	Hunan	2003	120	Coated Paper (Wood Free)
Qiqihar Paper Company	Neilongjiang	2003-2004	180	Newsprint
Jiangxi Paper Company	Nanchang	2003	180	Newsprint
Bohui Paper Company	Shandong	2003	100	Coated Board
Zhejiang Rongtai Paper Company	Zhejiang	2003	150	Boxboard
Shandong Taiyang	Shandong	2003	150	Coated Board
Gaotang Paper Company	Shandong	2003-2004	200	Coated Paper (Wood Free)
Mingfeng Special Paper	Zhejiang	2003-2004	65	Photographic Paper
Fanya Qianli	Hebei	2003-2004	200	Newsprint
Fanya Qlanli	Shandong	2003-2004	200	Newsprint
Yibin Paper Plant	Sichuan	2003	160	Newsprint
Yalvijang Paper Plant	Liaoning	2003	120	Newsprint
Guangzhou Paper Plant	Guangdong	2004-2005	280	Newsprint
Nanping Paper Plant	Fujian	2004	200	Newsprint

Source: http://www.ejkrause.com/chinapaper/scheduled_projects.html

APPENDIX II. Newsprint Producers In China

Company Name	Capacity (mtpy)	Products
State Owned/JV Companies		
Fujian Nanping Paper Corporation	300,000	Newsprint
Guangzhou Paper Corporation	260,000	Newsprints & Medium
Heilong Paper Corporation	250,000	Newsprint
Yanbian Shiyan Bailu Paper Co.	230,000	Newsprint
Shandong Huatai Paper Corp.	160,000	Multi
Wuhan Chenming Paper Corp.	150,000	Multi
Shanghai Pan-Asia Potential Paper	135,000	Newsprint
Guangxi Jiandaxin Paper Co.	120,000	Newsprint
Jiangxi Paper Co. Ltd.	102,000	Newsprint
Jilin Paper Corporation	100,000	Newsprint & Kraft Paper
Yueyang Paper Corp.	80,000	Multi
Fujian Longyan Paper Co.	80,000	Newsprint
Yibin Paper Co. Ltd.	70,000	Multi
Dandong Yalujian Paper Corp.	60,000	Multi
Hangzhou Jinjiang Paper Corp.	51,000	Newsprint
Private and Small Companies		
Liuzhou Zhongzhu Paper Co.	50,000	Newsprint & Bamboo Pulp
Shandong Shanxian Tianyuan Paper Co.	50,000	Newsprint
Shandong Tengzhou Chun lei Paper Co.	30,000	Newsprint
Shandong Zhucheng Xinxing Paper Co.	30,000	Newsprint
Shandong Guihe Paper Co.	20,000	Newsprint
Xi-An Huamei Paper Co.	20,000	Multi
Zhejiang Lanxi Hualun Paper Co.	15,000	Newsprint

Source: CIF Consulting Ltd.