Defining the China Market for pulp, paper and board

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HAWKINS WRIGHT

Statistics…

32.74% of statistics are made up on the spot

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Paper Industry structure

- The **New China** industry
  - ⇨ Capacity >50,000 t/y using imported fibre (woodpulp & wastepaper)
  - ⇨ Some smaller mills producing woodfree papers
  - ⇨ Mills built since 1996
- The **Old China** industry
  - ⇨ Mills using predominantly non-wood fibres and domestic wastepaper
  - ⇨ Mills built before 1996
  - ⇨ We cannot define ‘Old China’ with any confidence, but it doesn’t matter

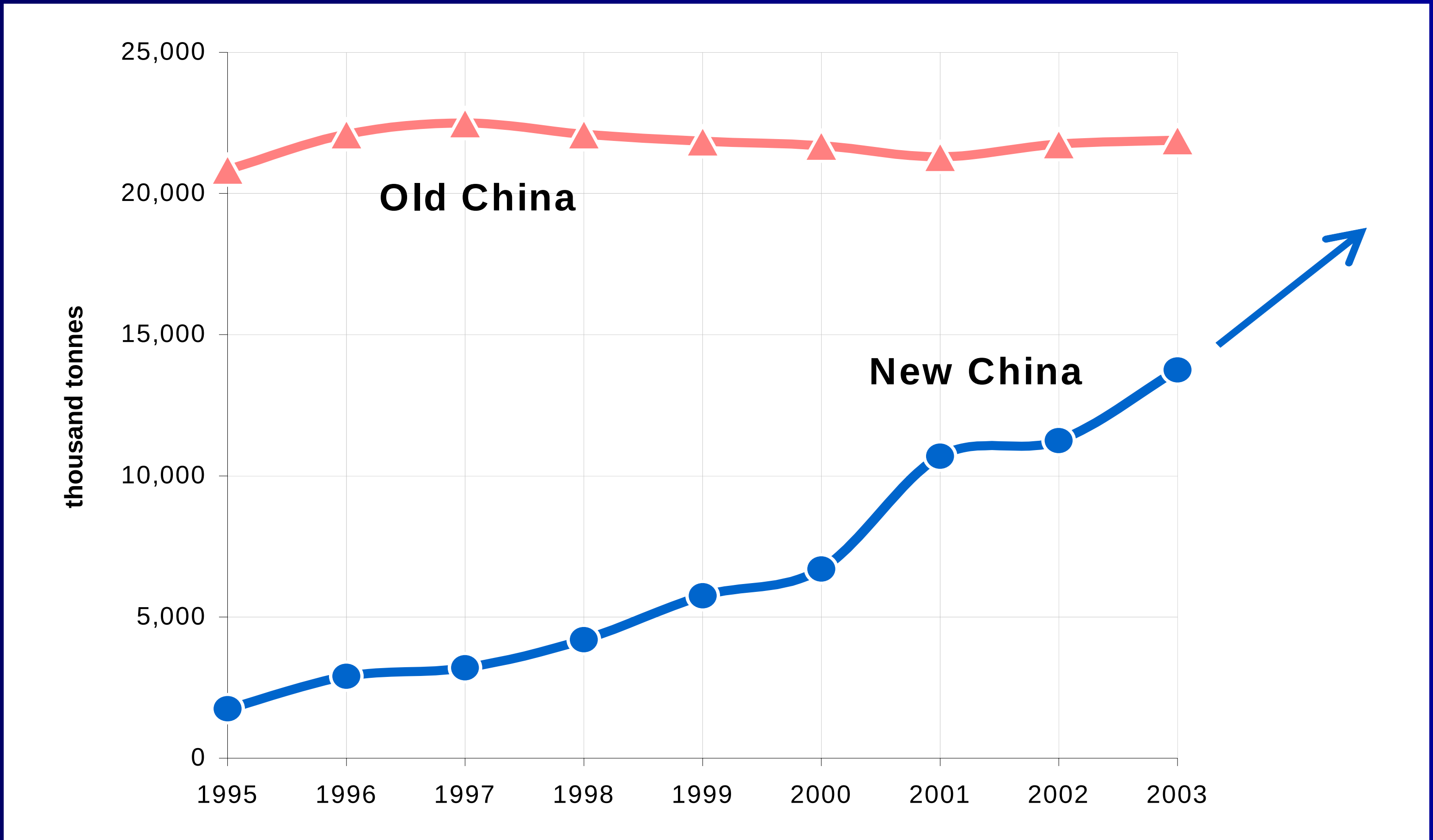
Old v New China production:

mills over 5 million RMB

	Paper & board production			Imported fibre	
	"New" China	"Old" China	Total	Recycled fibre	Wood pulp
1995	1,750	20,850	22,600	906	751
1996	2,900	22,100	25,000	1,372	1,393
1997	3,200	22,500	25,700	1,620	1,427
1998	4,200	22,100	26,300	1,913	2,054
1999	5,750	21,850	27,600	2,515	2,942
2000	6,700	21,700	28,400	3,712	2,823
2001	10,700	21,300	32,000	6,418	4,739
2002	11,250	21,750	33,000	6,873	5,021
2003	13,750	21,890	35,640	9,162	5,720
1995-2003	***12,000***	***1,040***	***13,040***	***8,256***	***4,969***

New China / Old China

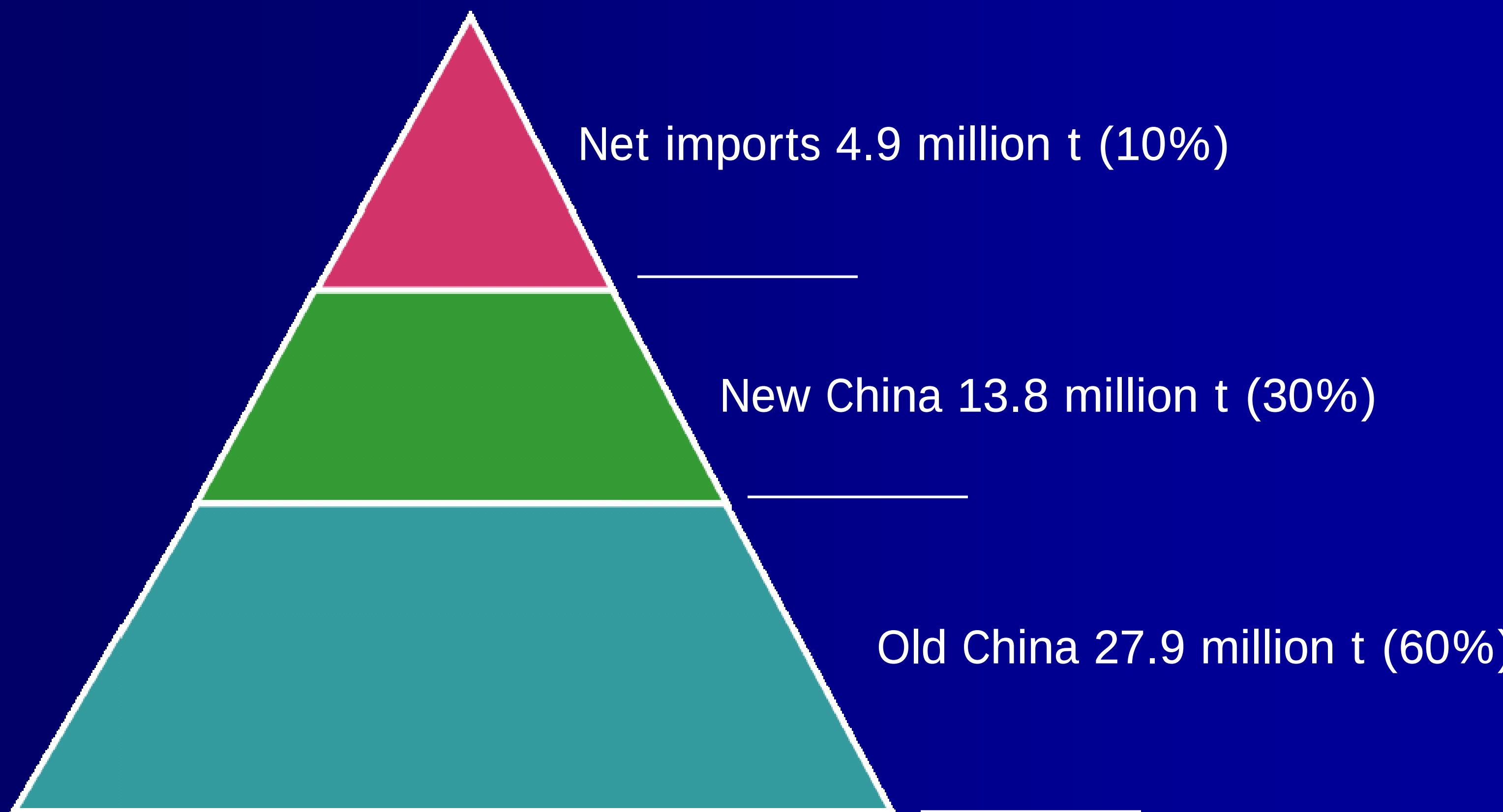
Paper and board production



Paper and board mills, 2003e, by size

Category	Number of Companies	Capacity '000 tonnes	% Capacity	Ave '000 tonnes
Over 200 kty	25	9,000	24%	360
100-200 kty	31	4,500	12%	145
50-100 kty	25	1,900	5%	76
10-50 kty	35	1,100	3%	31
1.5-10 kty	2,114	12,700	33%	6
Under 1.5	1,770	2,000	5%	1
Total	**4,000**	**31,200**	**82%**	**8**

Paper & board demand 2003



Total P&B demand (2003) = 46.6 million t

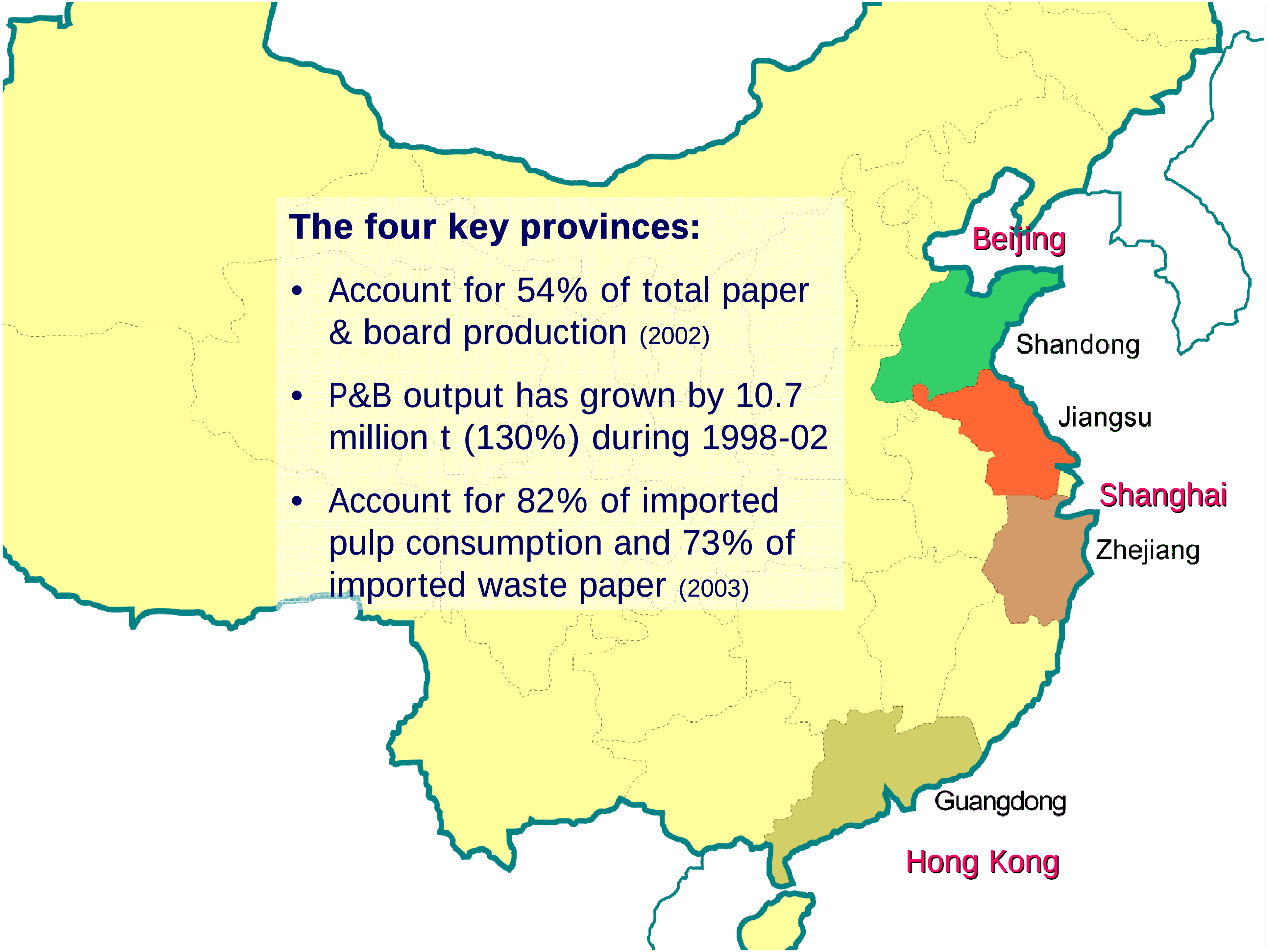
The four key provinces:

- **Shandong, Guangdong, Jiangsu, Zhejiang**

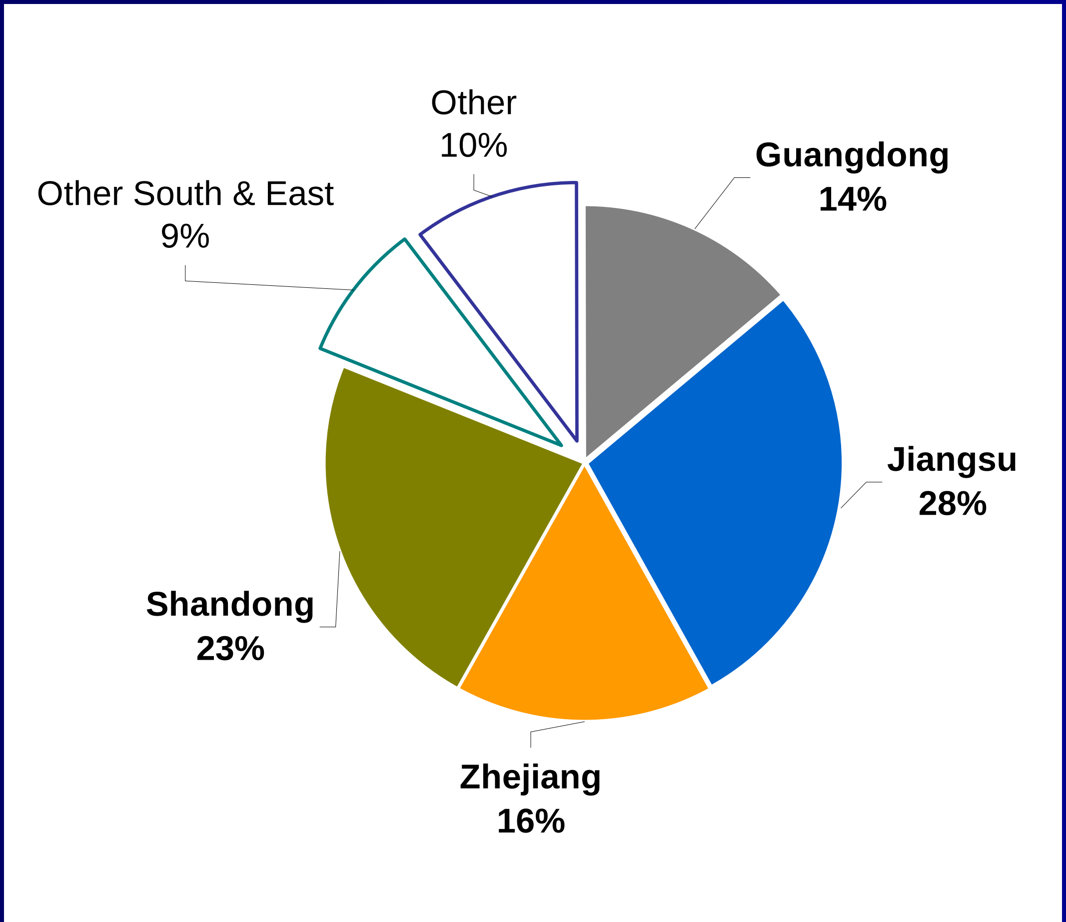
- Account for 54% of total paper & board production (2002)
- P&B output has grown by 10.7 million t (130%) during 1998-02
- Account for 82% of imported pulp consumption and 73% of imported waste paper (2003)

The four key provinces:

- Account for 54% of total paper & board production (2002)
- P&B output has grown by 10.7 million t (130%) during 1998-02
- Account for 82% of imported pulp consumption and 73% of imported waste paper (2003)

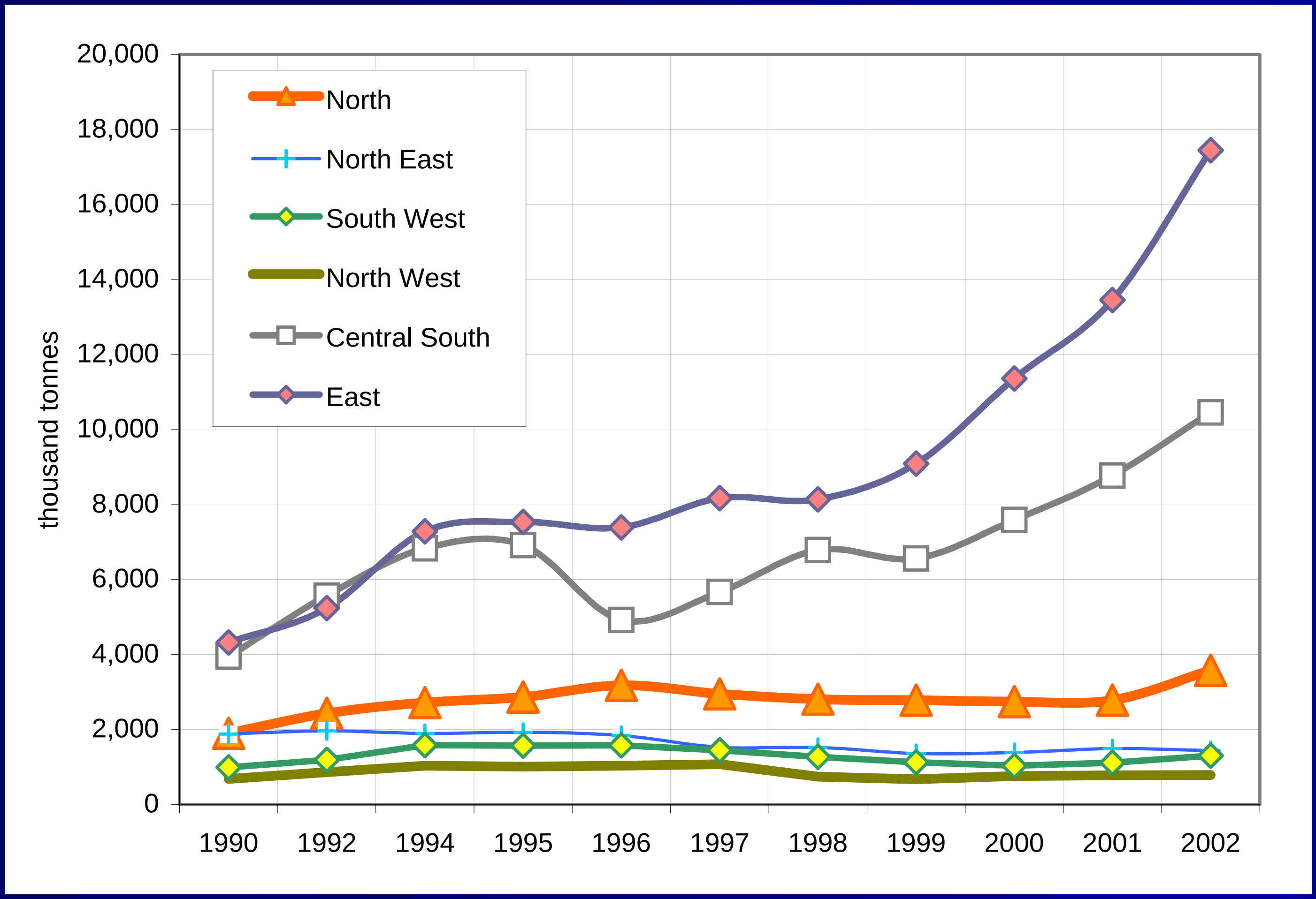


Imported pulp consumption by key province



Four provinces account for 82% of imported pulp consumption

China paper & board production by region



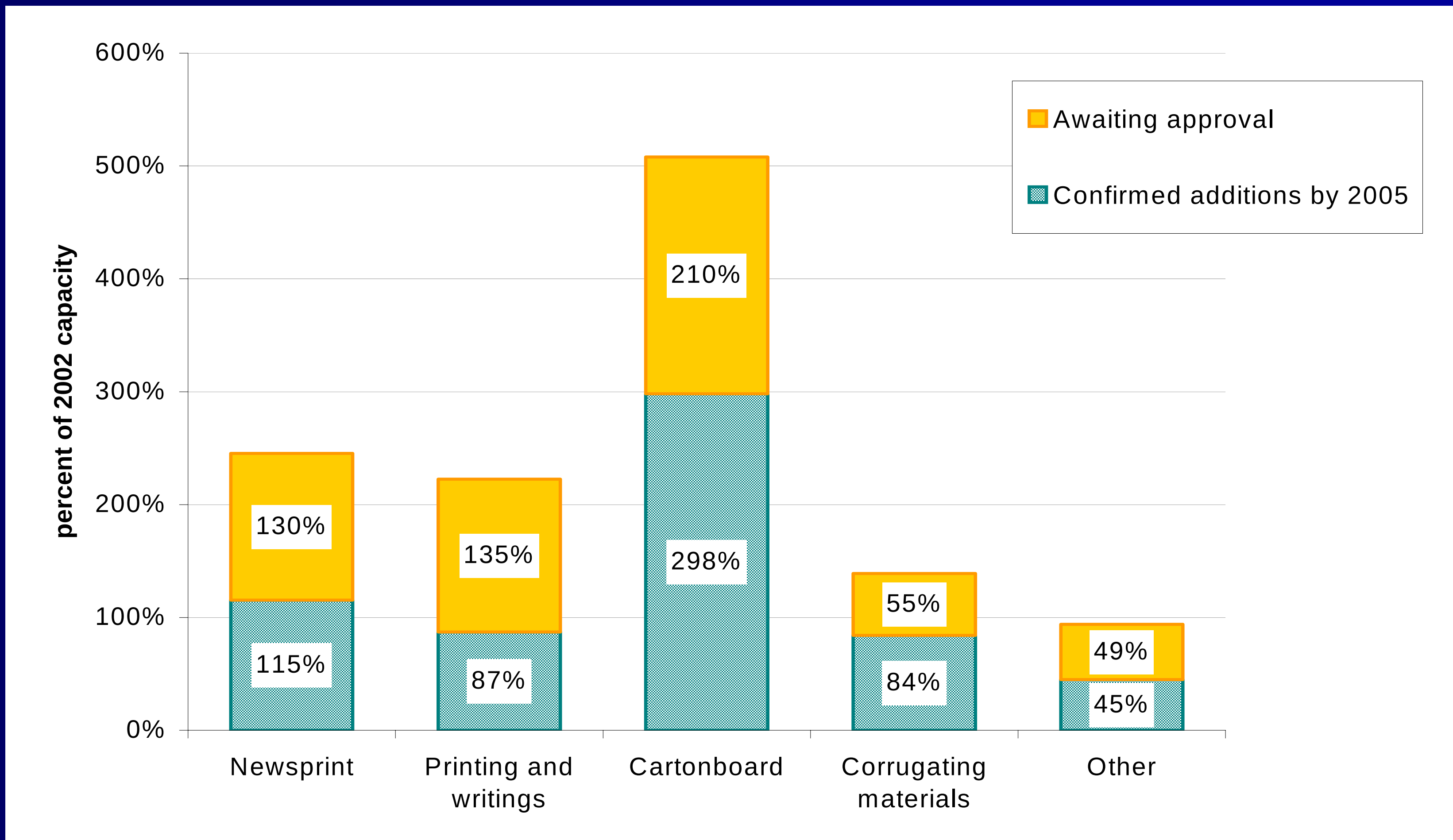
Expansions..

- End 2002, new China capacity about 13.5 Mty
- In 2003-2005, confirmed additions total 11.6 Mty (includes second hand machines bought this year by Nine Dragons and APP starting up this year)
- A further 10.5 Mty is awaiting government or board approval or finance. (This includes projects of international companies such as Oji, RGM, StoraEnso)
- Since report completed in early March, more announcements from
  - ⇨ Long Chen (+400,000t/y; 2007)
  - ⇨ YFY (+500,000t/y; 2006 pending decision this year)
  - ⇨ Lee & Man (+400,000t/y; 2005)
  - ⇨ Foshan Huafeng (+300,000t/y; 2005/6)
  - ⇨ Tissue investments from DF China Tech and Hengan Hldgs

Supply v Demand 2003-2008 ; 000t

	Demand increase	Capacity increase	Awaiting approval	Total potential
Newsprint	1,000	1,665	1,560	3,225
P&W Ctd	1,700	1,950	2,100	4,050
P&W Uctd	820	780	1,500	2,280
Corrugated	3,450	3,390	2,000	5,390
Boxboard	1,900	2,950	2,000	4,950
Total	8,870	10,735	9,160	19,895

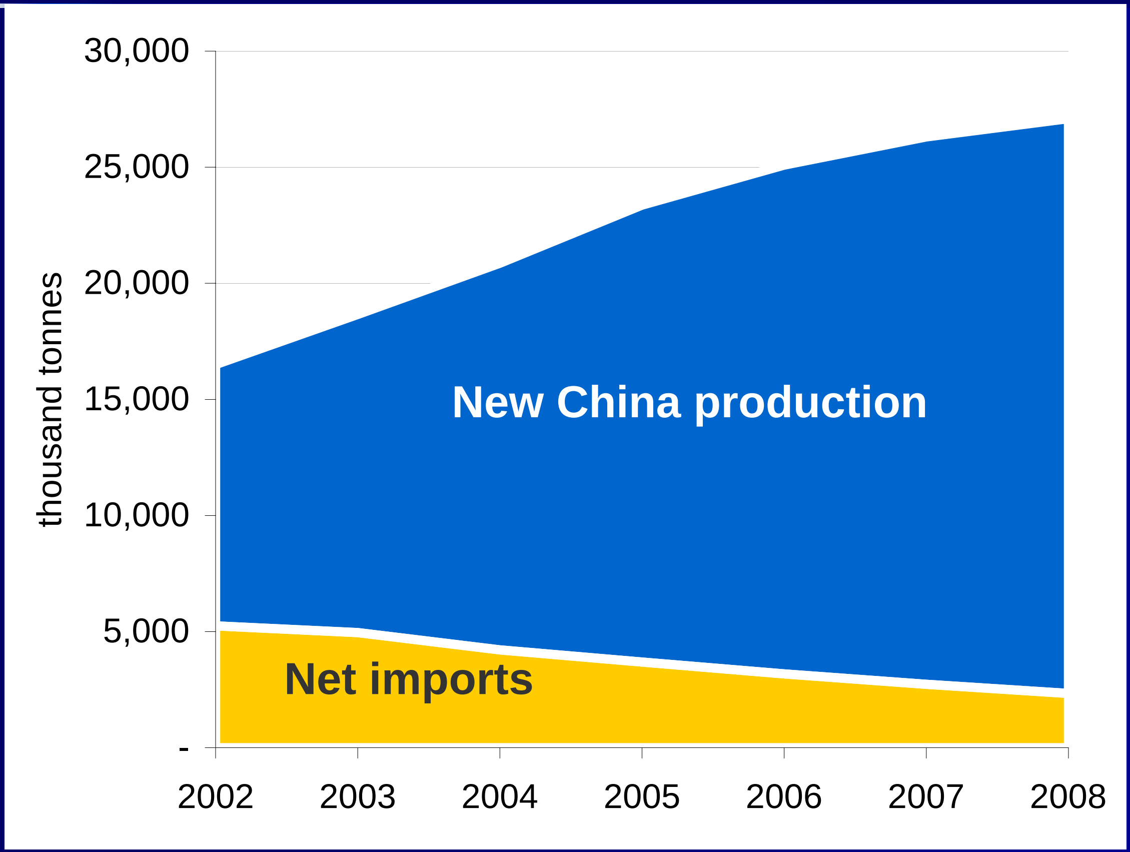
Capacity additions: Paper and Board
As a percent of 2002 production



Over-investment = Over-capacity

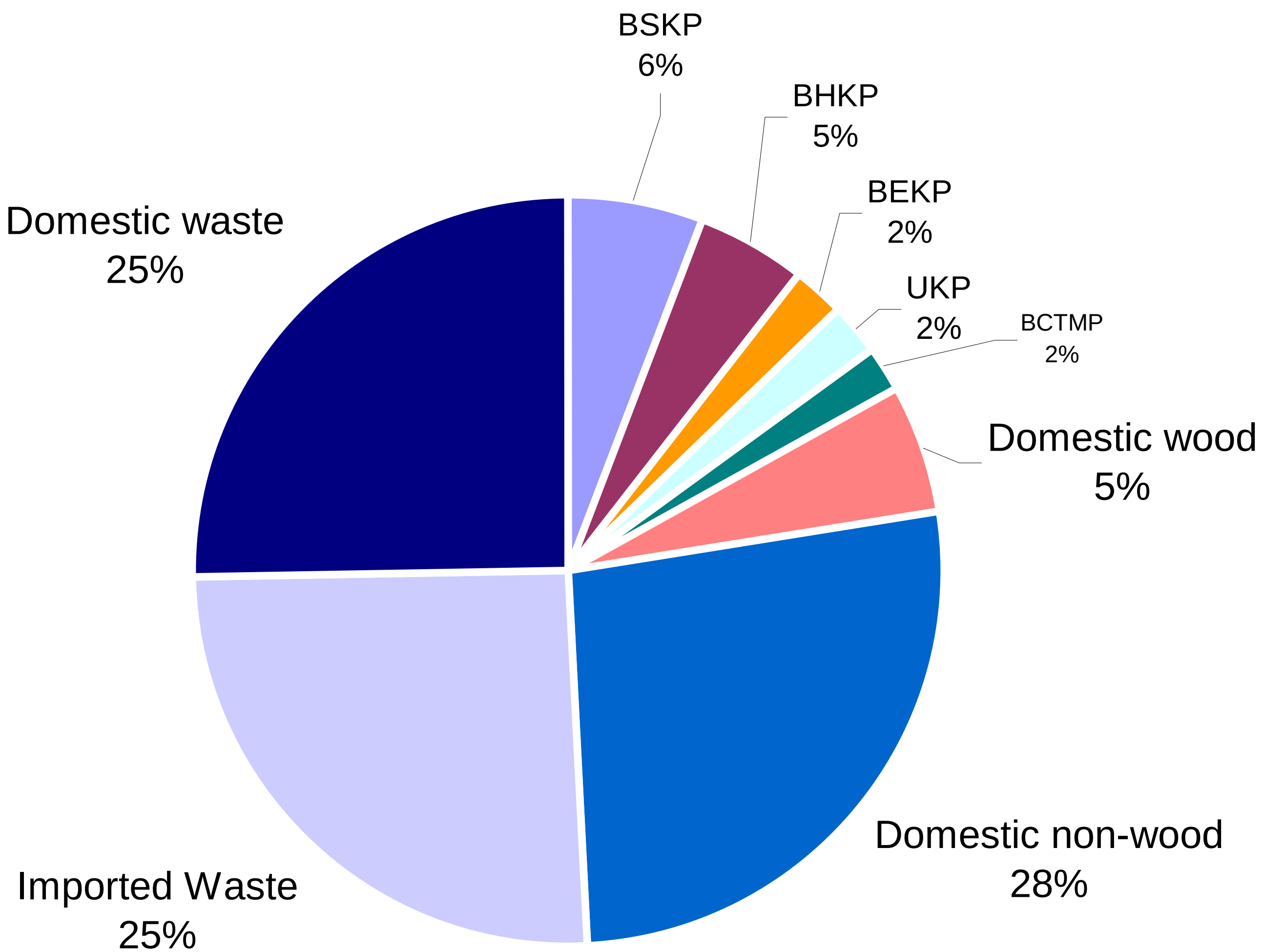
- Capacity expansions far exceed even the most optimistic forecasts of demand growth in the next three years
- A significant portion of imports is specified by foreign companies
- Imports processed in the SEZs for export sector are not subject to import duty
- If capacity is to be utilised, paper and board exports will have to increase
- Overcapacity = lower prices

New China production and trade



- Difficult to forecast how competitive domestic production will be compared to imported papers made in integrated mills
- Also difficult to forecast the impact of the trade balance on producers in other countries e.g. Indonesia, Korea, Japan

Chinese fibre use, 2003



World market pulp demand, 1997-2003

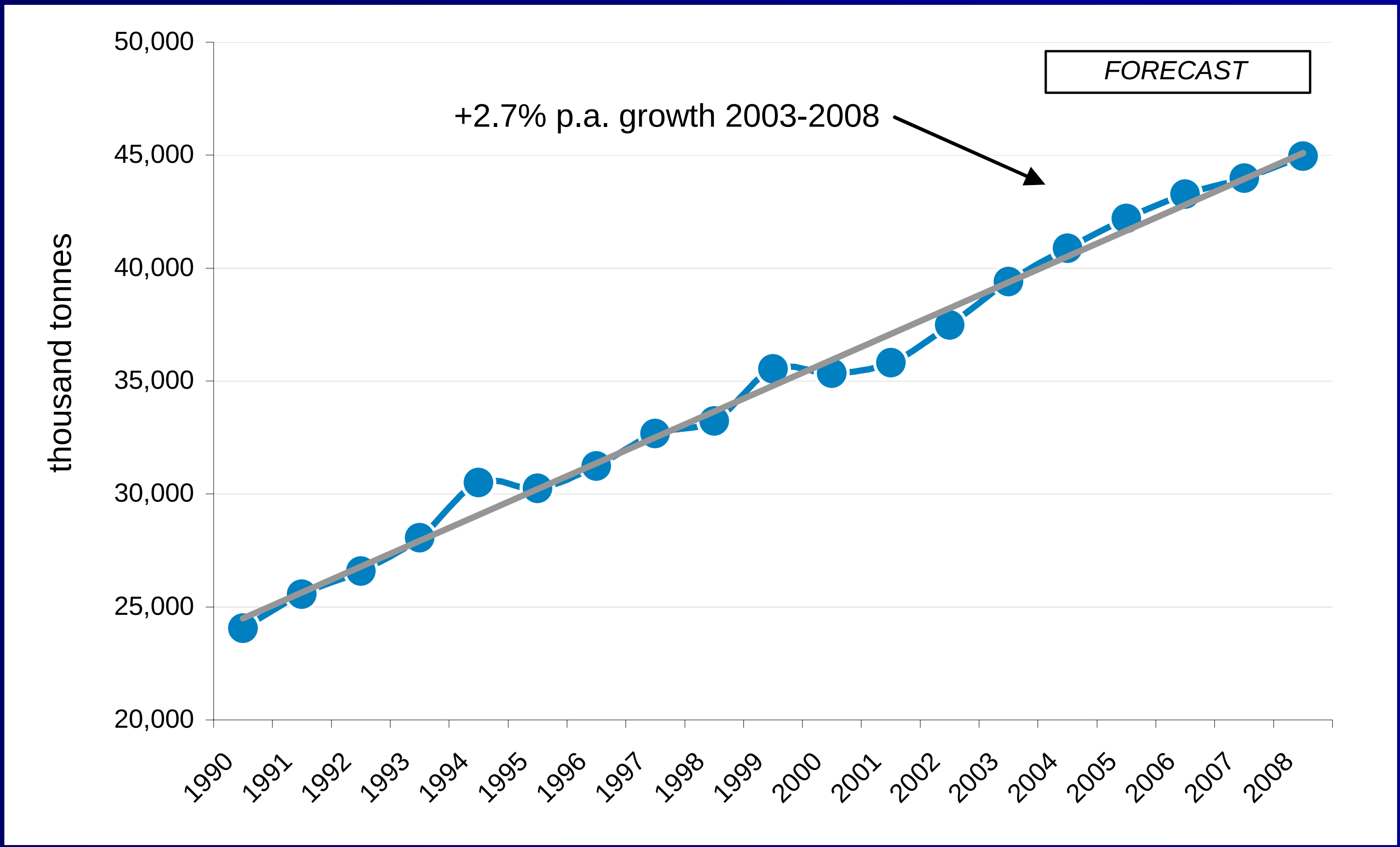
thousand tonnes	China	Rest of World	**Total**
1997	1,427	35,315	**36,742**
1998	2,054	35,334	**37,388**
1999	2,942	36,991	**39,933**
2000	2,823	37,360	**40,183**
2001	4,739	35,645	**40,384**
2002	5,021	36,430	**41,451**
2003	5,720	38,760	**44,480**
Growth 1997-2003	*4,293*	*3,445*	***7,738***
% p.a. growth	*26.0%*	*1.6%*	*3.2%*
% of world growth	***55%***	***45%***	

Big Questions for China

- Will supplies of imported market pulp be sufficient to satisfy China's demand ?

Market pulp

Forecast growth in world BCP demand



World Market Pulp Supply and Demand forecast

	China	Rest of World	Total Demand	Global Capacity	% Supply /Demand
2003	5,876	39,008	44,884	47,990	93.5
2008	8,825	42,248	51,073	56,470	90.4
Growth	2,949	3,240	6,189	8,480	
% p.a.	8.5%	1.6%	2.6%	3.3%	

thousand tonnes per year		*capacity change*						***Total change***
		2003	**2004**	**2005**	**2006**	**2007**	**2008**	***2003-08***
Bleached softwood kraft pulp								
Mercer	*Stendal*	-	+30	+260	+260	-	-	*+550*
Ilim Pulp	*Bratsk & Ust-Ilimsk*	-	-	+50	+230	-	-	*+280*
Heinzel	*Pols*	+15	+15	-	-	-	-	*+30*
Arauco	*Valdivia & Itata*	-	+185	+130	-	+200	+100	*+615*
CMPC	*Pacifico*	+60	+40	-	-	-	-	*+100*
Sweden/Finland	*Botnia & UPM mills*	+120	+75	+45	-	-	-	*+240*
Others		-	+166	-40	-35	-	-	*+91*
Total BSKP		**+195**	**+511**	**+445**	**+455**	**+200**	**+100**	***+1,906***
Bleached hardwood kraft pulp								-
Eucalyptus		**+870**	**+805**	**+510**	**+945**	**+1,250**	**+580**	***+4,960***
Veracel	*Brazil*	-	-	+200	+700	-	-	*+900*
Aracruz	*Guaiba & Barra do Riacho*	+390	+90	+20	+165	-	-	*+665*
VCP	*Brazil*	+400	+90	-	-	-	-	*+490*
Bahia Sul	*Mucuri*	-	+120	-	-	+700	+250	*+1,070*
Other Brazil	*Lwarcel, Cenibra*	+115	+150	+40	+80	-	-	+385
CMPC	*Santa Fe*	-	-	-	+100	+450	+230	*+780*
Arauco	*Valdivia & Itata*	-	+310	+125	+50	+250	+100	*+835*
ENCE	*Huelva, Pontevedra & Nacia*	+60	-	-	-	-	-	*+60*
Portugall	*Celbi (StoraE) & Portucel*	-60	+5	-	-150	-150	-	*-355*
Advance Agro	*Tha Toom*	-	+30	+10	-	-	-	*+40*
Mondi	*Richards Bay*	-35	+10	+115	-	-	-	*+90*
Other hardwood & BCTMP		**+665**	**+449**	**+920**	**+625**	**+230**	**+460**	***+3,349***
Indonesia	*Kiani, APRIL, PT Tel*	+420	+440	+210	-100	-150	-	*+820*
United Fiber System	*Kalimantan*	-	-	-	-	+80	+300	*+380*
APP China	*Hainan, China*	-	-	+600	+400	+200	-	*+1,200*
Other BHKP		+245	-71	+35	-	-	-	*+209*
Larvik Cell BCTMP	*Estonia*	-	-	30	135	-	-	*+165*
Brancocel BCTMP	*Brazil*	-	-	-	-	100	160	*+260*
Other BCTMP	*Canada & Nordic*	-	+80	+45	+190	-	-	*+315*
Total BHKP/BCTMP		**+1,535**	**+1,254**	**+1,430**	**+1,570**	**+1,480**	**+1,040**	***+8,309***
Total hardwood and softwood		**+1,730**	**+1,765**	**+1,875**	**+2,025**	**+1,680**	**+1,140**	***+10,215***

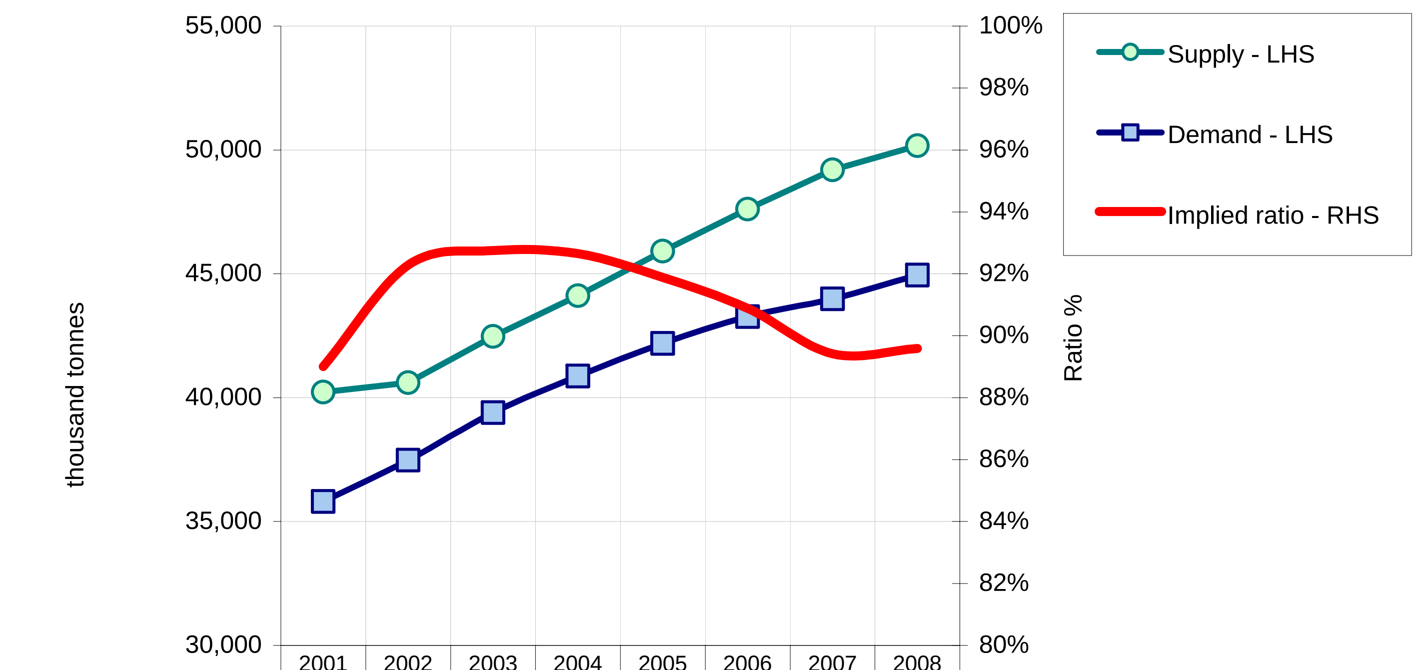
More BHKP in the pipeline – Latin America

- Brazil
  - ⇨ **Aracruz** may de-bottleneck at Espiritu Santo (+200,000t/y) and Guaiba (+50,000t/y)
- Uruguay
  - ⇨ **Botnia S.A.** was set up to assess a large scale (~1 million t/y) pulp project. Socio-economic study underway, decision by end 2004. UPM and Botnia are shareholders in Forestal Oriental (Shell), a major forest owner with eucalyptus plantations
  - ⇨ **Ence** received environmental approval from Uruguayan government in 2003 for a 450,000t/y pulp mill. Eufores, has 40% stake in a new private port “Terminal Logistica M’Bopicua” inaugurated on 10 November 2003. Terminal includes a chipping plant which raises total chipping capacity to over 1.1 million m3/yr

More BHKP in the pipeline

- China
  - ⇨ APRIL plan 1.2 million t/y (based on imported chips) in Rizhao Shandong.
  - ⇨ Oji Paper, UPM-Kymmene and StoraEnso developing plantations
  - ⇨ APP plan another pulp mill in Guangxi
  - ⇨ Plus several integrated CTMP mills in Shandong
- Australia
  - ⇨ Three projects seeking finance and/or state approval

Supply v Demand - BCP



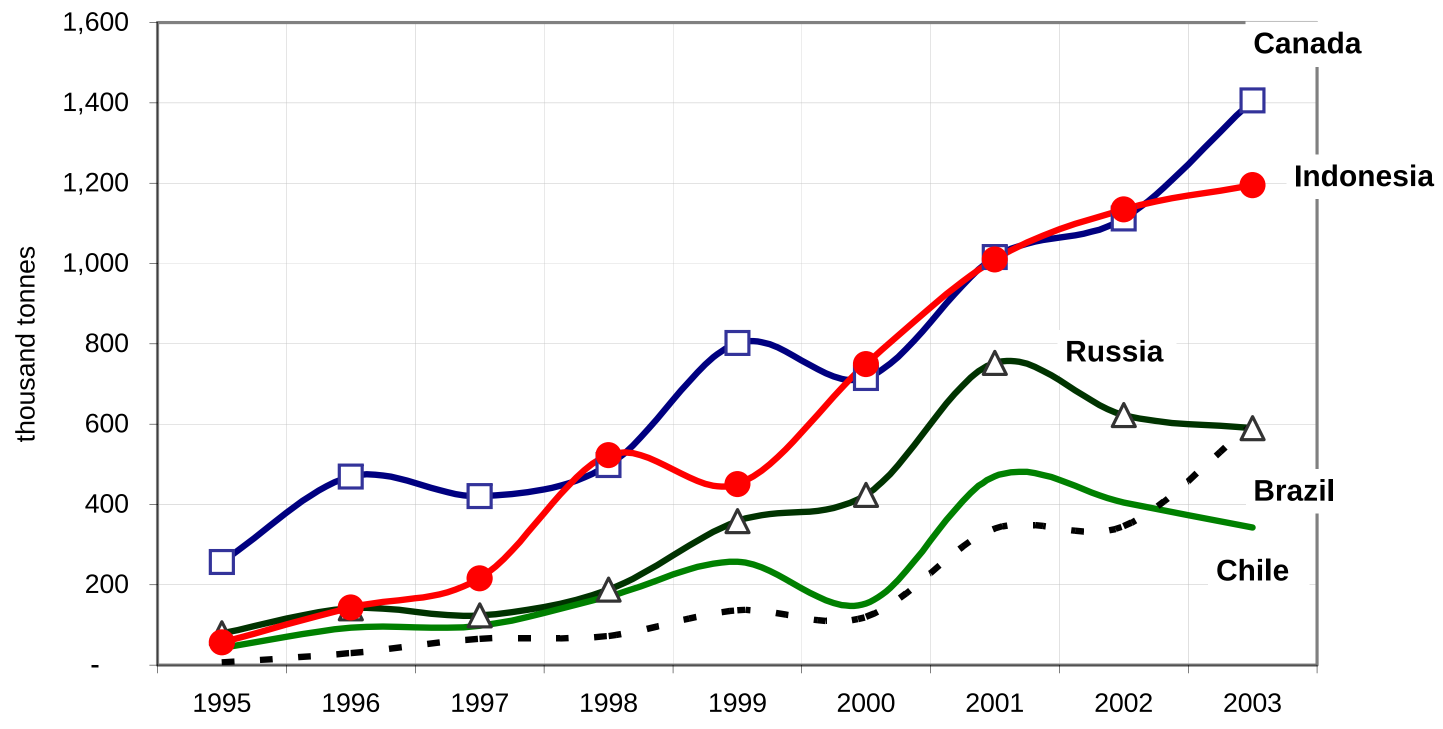
	2001	2002	2003	2004	2005	2006	2007	2008
Supply - LHS	40,230	40,610	42,476	44,115	45,915	47,615	49,195	50,175
Demand - LHS	35,807	37,475	39,396	40,873	42,190	43,274	43,988	44,951
Implied ratio - RHS	89%	92%	93%	93%	92%	91%	89%	90%

- Capacity increases faster than demand
- Ratio below 90%
- Below 92% producers lack pricing power

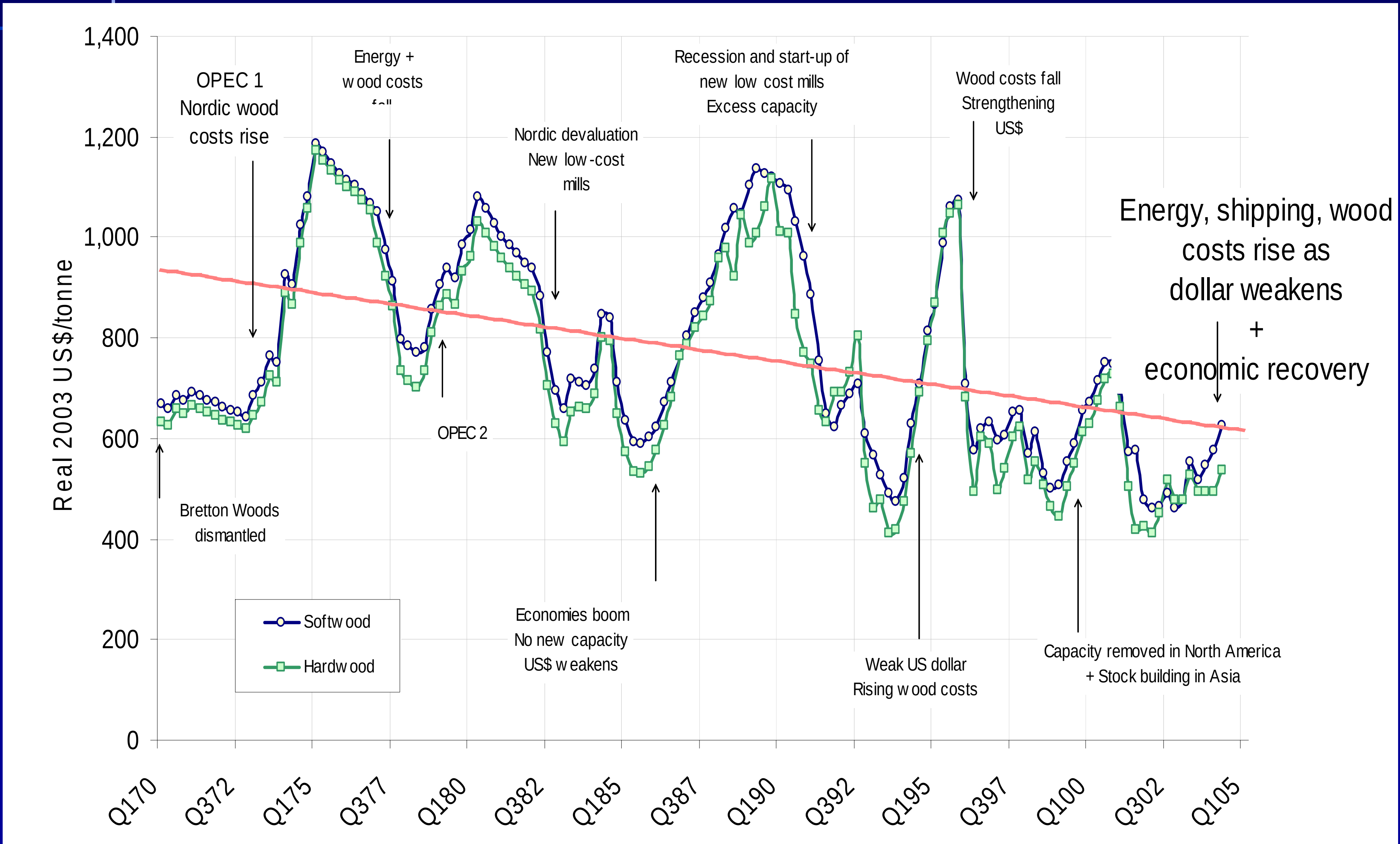
Big Questions for China

- Will supplies of imported market pulp be sufficient to satisfy China's demand ?
- Will domestic wood pulp production be competitive with imports?

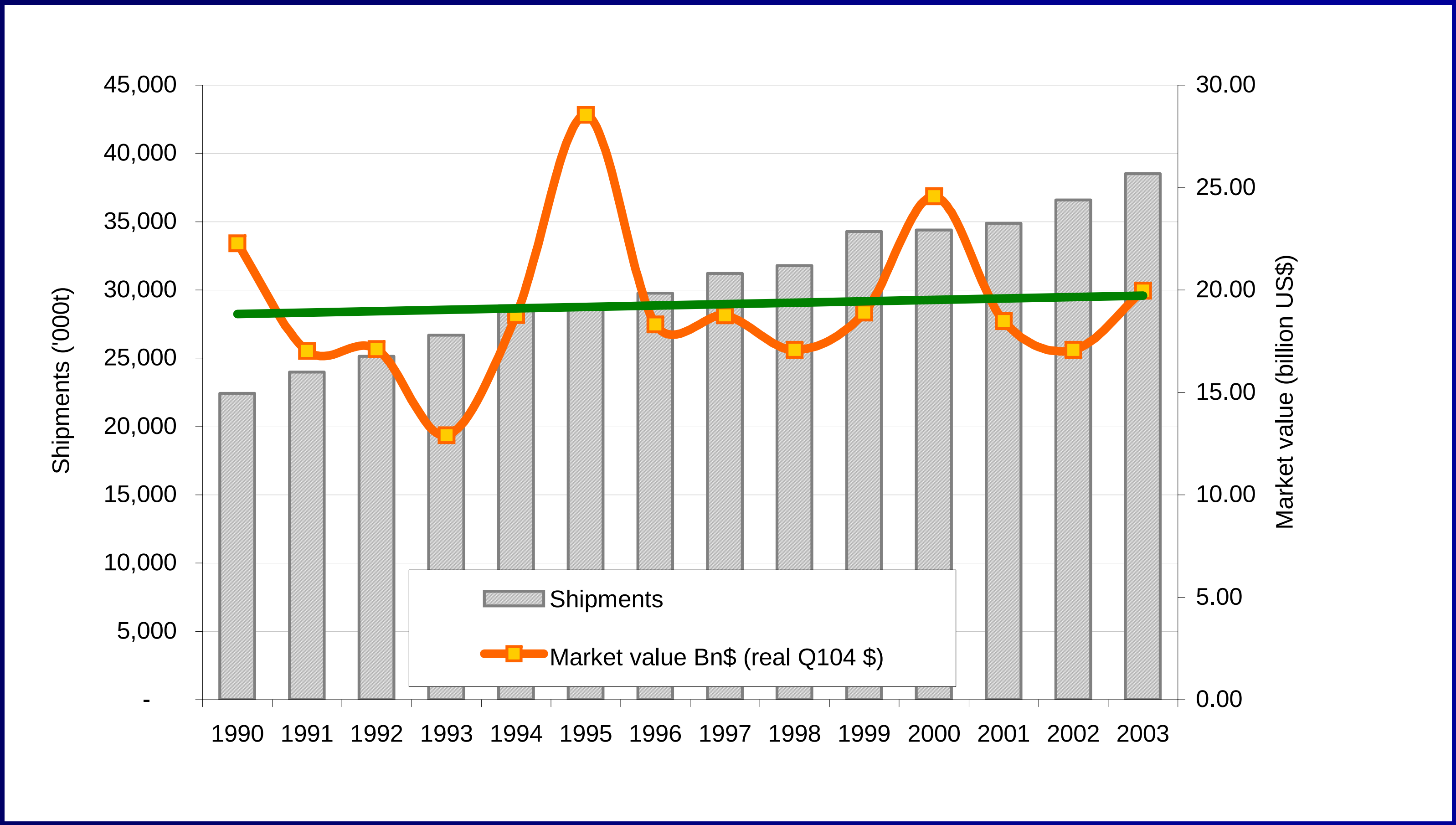
Main market pulp suppliers to China



Pulp prices and cost influences



Market value v demand, BKP



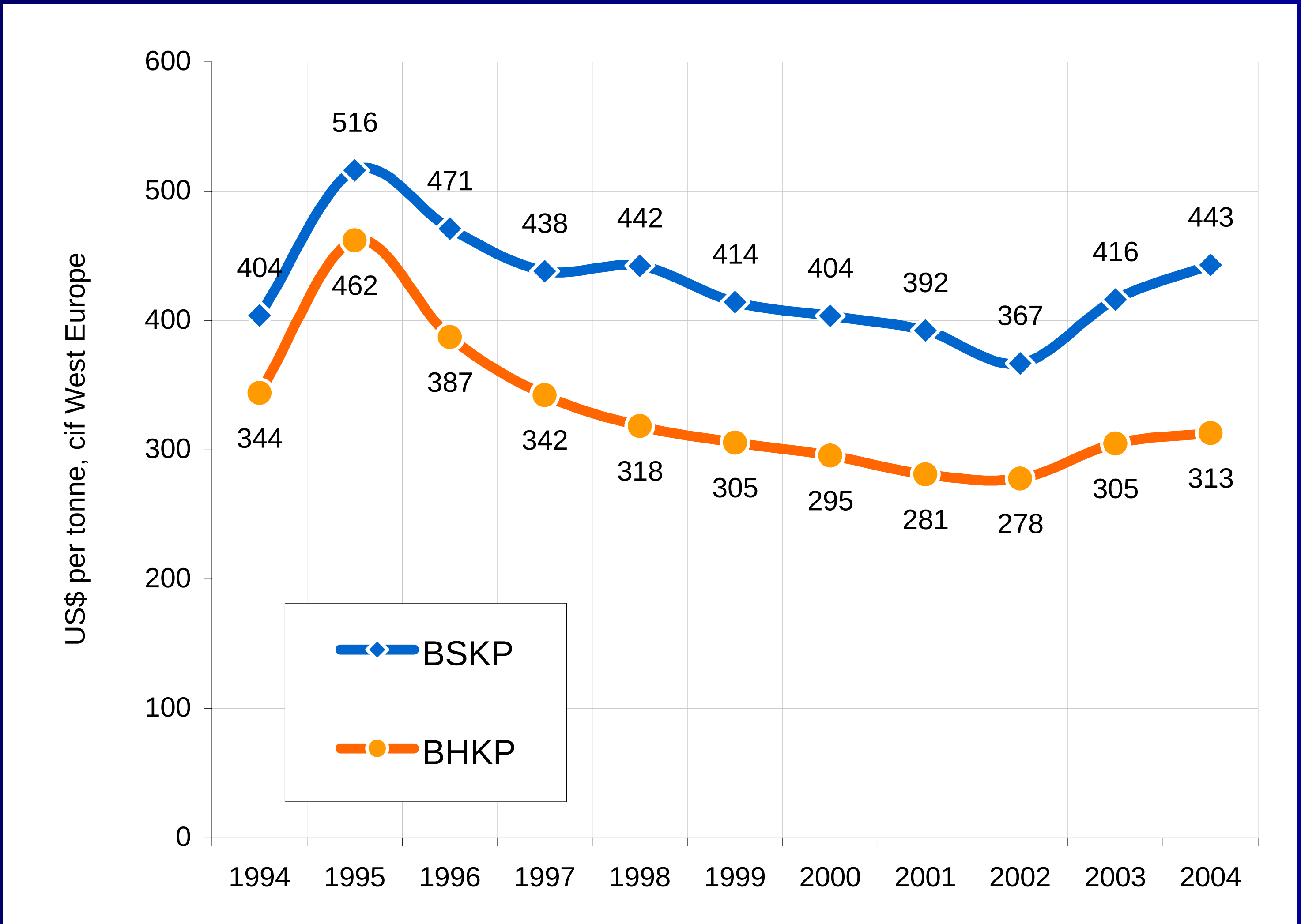
BSKP variable costs

	Chile	Sweden	Finland	US South	France/ Germany	Canada East	BC Interior	BC Coast	WORLD WEIGHT AV
Wood	99	246	276	142	270	204	134	134	173
Chemicals	35	36	40	37	44	45	47	50	41
Energy	9	16	8	21	14	21	42	45	24
Variable costs	**143**	**299**	**324**	**200**	**328**	**270**	**222**	**228**	**239**
Labour	18	50	43	58	56	74	66	104	59
Maintenance	8	19	16	19	20	35	23	35	22
Other mill costs	28	26	17	92	32	31	86	52	58
Fixed Costs	**55**	**95**	**77**	**168**	**108**	**140**	**175**	**192**	**139**
OPERATING COSTS fob mill	**198**	**394**	**401**	**368**	**436**	**410**	**397**	**420**	**378**
Ocean freight	45	16	35	59	25	60	79	63	52
Marketing & sales	9	18	8	21	11	5	8	8	13
TOTAL DELIVERED CASH COSTS cif	**253**	**427**	**444**	**448**	**472**	**475**	**484**	**491**	**443**

BHKP variable costs

US$/tonne	Brazil	Indonesia	US South	Portugal	Sweden	France/ Belgium	Canada East	Finland	Spain	WORLD WEIGHT AV
Wood	71	102	128	188	212	178	158	243	219	132
Chemicals	28	17	37	59	40	60	30	38	41	33
Energy	10	14	23	6	19	13	24	2	11	14
Variable costs	**109**	**134**	**188**	**253**	**270**	**252**	**211**	**283**	**270**	**179**
Labour	8	13	40	49	51	65	50	41	49	30
Maintenance	12	13	31	22	15	14	23	16	19	18
Other mill costs	24	25	50	37	18	35	35	19	36	31
Fixed Costs	**44**	**52**	**122**	**107**	**84**	**113**	**108**	**77**	**104**	**79**
OPERATING COSTS fob mill	**153**	**185**	**310**	**360**	**354**	**365**	**319**	**360**	**374**	**258**
Ocean freight	44	37	53	18	17	17	73	38	26	43
Marketing & sales	17	12	10	5	19	11	7	8	15	12
TOTAL DELIVERED CASH COSTS cif	**214**	**234**	**373**	**383**	**390**	**393**	**399**	**406**	**415**	**313**

Weighted Production costs



Big Questions for China

- Will supplies of imported market pulp be sufficient to satisfy China's demand ?
- Will domestic wood pulp production be competitive with imports ?
- Will Chinese paper and board manufacturers be able to compete with foreign integrated producers?

Comparison with Brazil

- Eucalyptus plantation activity started in 1964 when tax incentives were introduced
- Ideal soil and climatic conditions
- Three rotations by early 1980’s had allowed opportunity for seed selection/cloning and propagation
- Market pulp production started 1978
- By 1988 had risen to 1.3 million tonnes
- In 2003 to 4.8 million tonnes, 40 years after plantations started
- Average MAI 40 cm/ha/yr

Long term decline in real pulp prices

- As a result of larger scale mills , greater efficiencies and technical advances costs decline
- Most investment is in lowest cost regions eg Brazil, Indonesia based on FGHY plantations
- Initially China pulp production would be largely reliant on high cost imported wood
- New suppliers have to displace existing producers because capacity exceeds demand
- China unlikely to be competitive in pulp production until plantations are established....20 years?