Fasern für die Vliesstoffindustrie-
aktuelle Markttrends

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Fig. 1

Global capacity of thermoplastic resins 2007

Polymer	1‘000 tons	No. of Producers
PE	82,300	131
PET	55,900	>400
PP	49,800	136
PVC	43,300	194
PS	16,400	107
PA	9,200	>300
PBT	1,100	24
PPS	60	9
PI	52	7
LCP	43	8
PEEK	4	3

Source: Maack Business Services

Fig. 2

Global production of textile fibers

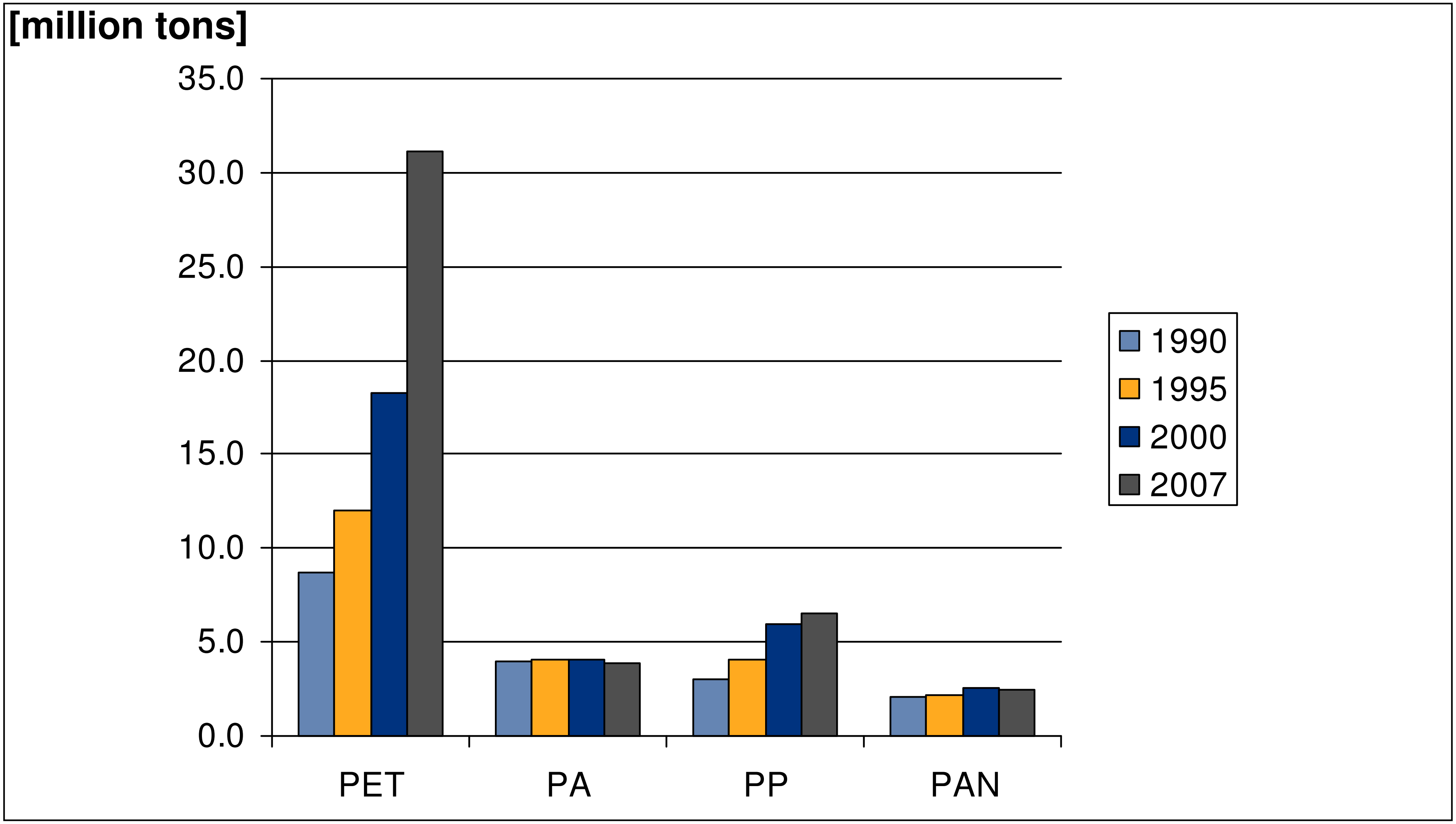
[million tons]	2000	2006	2007
Synthetic Fibers	33.0	41.3	44.5
Polyester	18.9	27.8	31.1
PP fibers [1)]	6.0	6.5	6.4
Polyamide	4.1	3.9	3.9
Acrylics	2.7	2.5	2.4
Others	0.3	0.6	0.6
Cellulosics [2)]	2.8	3.3	3.6
Cotton	19.7	25.7	26.7
Wool	1.3	1.2	1.2
Silk	0.1	0.1	0.1
Total	56.9	71.7	76.2

1) Incl. film fibers 1) excluding lyocell fibers (capacity 130‘000 t/y in 2008)

Source: Fiber Organon / USA

Fig. 3

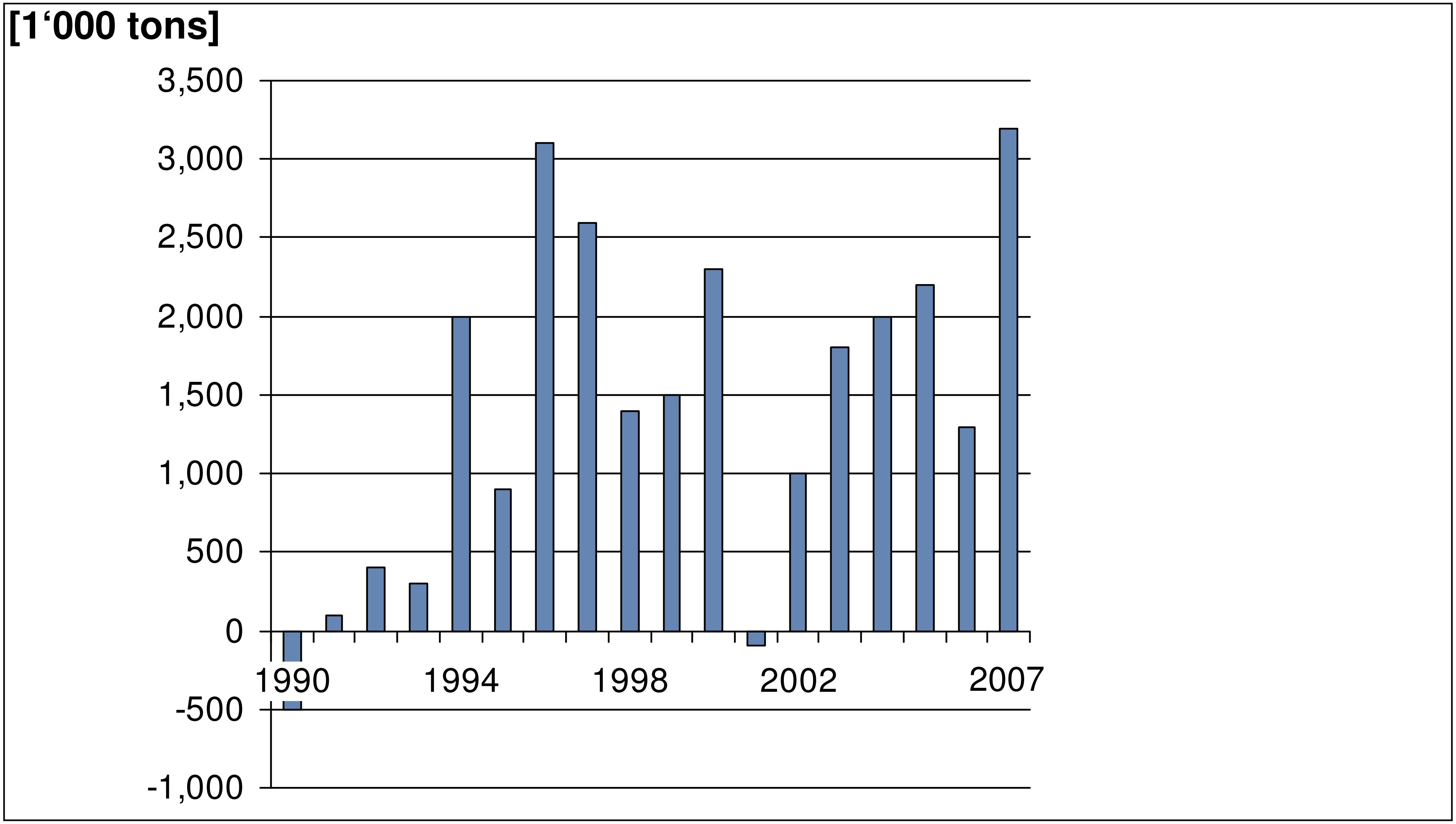
Global production of synthetic fibers (1990 - 2007)



Source: Fiber Organon / USA

Fig. 4

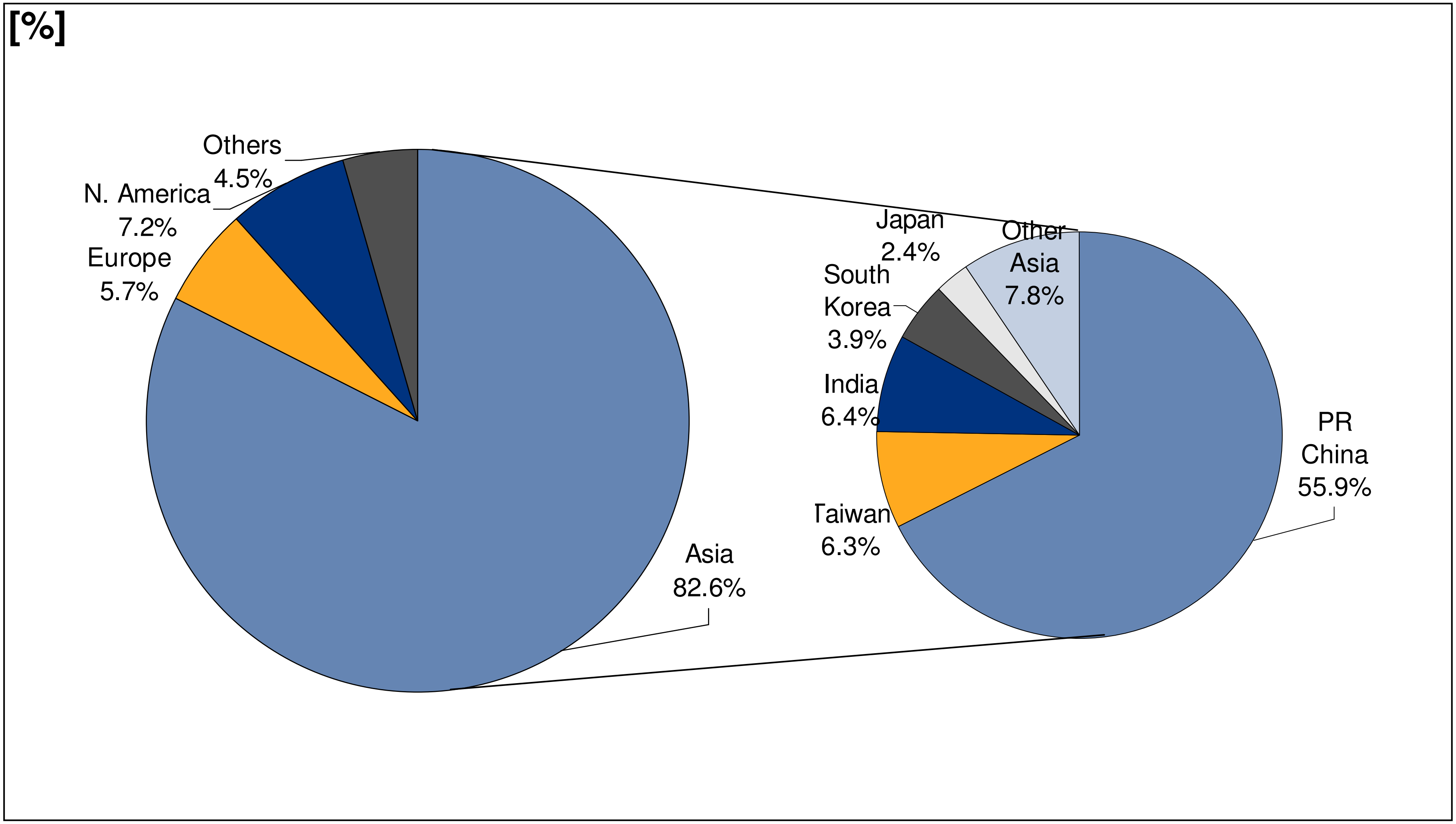
Y/Y increase of global synthetic fiber prod. 1990 – 2007 (incl. PP fibers)



Source: Fiber Organon / USA

Fig. 5

Synthetic fiber production share by region 2007



Source: Fiber Organon / USA

Fig. 6

% share of global production and capacity of synthetic fibers

[%]	Production			Capacity		
	2005	2006	2007	2005	2006	2007
PR China	45.0%	51.8%	55.9%	51.3%	55.3%	56.6%
USA	8.5%	7.1%	6.1%	6.7%	6.0%	5.7%
Taiwan	8.2%	6.9%	6.3%	7.2%	6.3%	5.4%
India	5.8%	6.2%	6.4%	6.7%	7.1%	7.5%
W. Europe	5.5%	4.8%	4.2%	4.4%	4.1%	4.0%
South Korea	5.4%	4.3%	3.9%	4.1%	3.3%	3.4%
Indonesia	3.5%	3.2%	3.0%	3.2%	2.9%	3.0%
Japan	3.0%	2.7%	2.4%	2.7%	2.5%	2.4%
Thailand	3.0%	2.4%	2.2%	2.5%	2.3%	2.1%
Turkey	2.5%	2.3%	2.0%	2.2%	2.1%	2.0%
Pakistan	1.8%	1.6%	1.4%	1.8%	1.6%	1.6%
Malaysia	1.1%	0.9%	0.9%	1.0%	0.9%	1.0%
C.I.S.	1.0%	0.9%	0.9%	1.0%	1.0%	1.0%
Mexico	0.9%	0.8%	0.7%	0.8%	0.8%	0.7%
Brazil	1.0%	0.8%	0.8%	0.9%	0.8%	0.8%
	96.2%	96.6%	97.1%	96.5%	96.8%	97.0%

Source: Fiber Organon / USA

Note: not included polyolefins, glass fibers or acetate filter tow

Fig. 7

Global synthetic fiber production increase / decrease

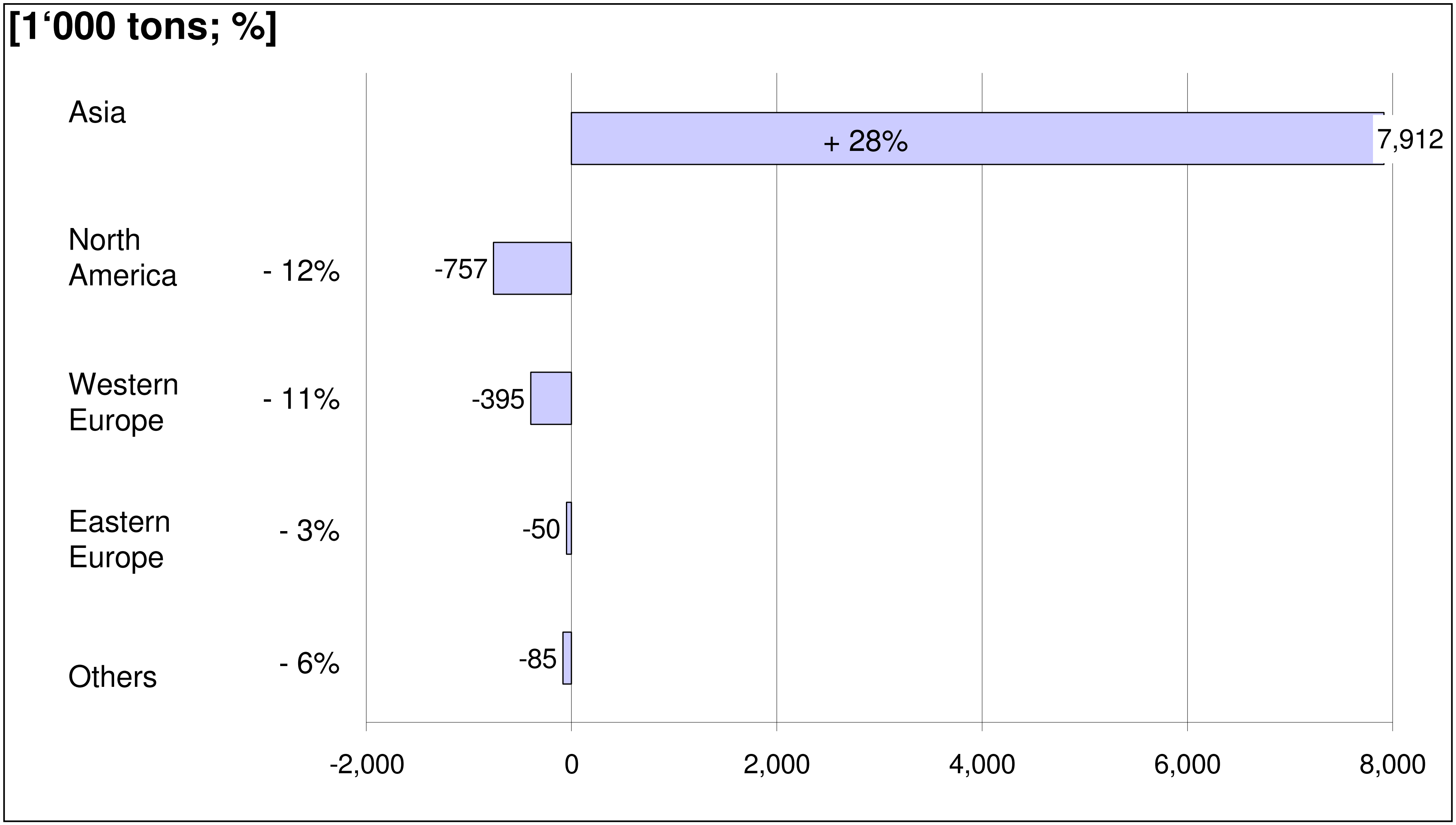
[%]

	2003/04	2004/05	2005/06	2006/07
PET filament yarn	7.8%	10.0%	7.6%	12.4%
PET staple fibers	8.1%	9.1%	1.7%	7.9%
PA filament yarn	1.0%	-2.4%	2.0%	-0.3%
PA staple fibers	-2.2%	-9.3%	-9.5%	-6.5%
Acrylic staple	4.3%	-4.5%	-6.1%	-3.0%

Source: Fiber Organon / USA

Fig. 8

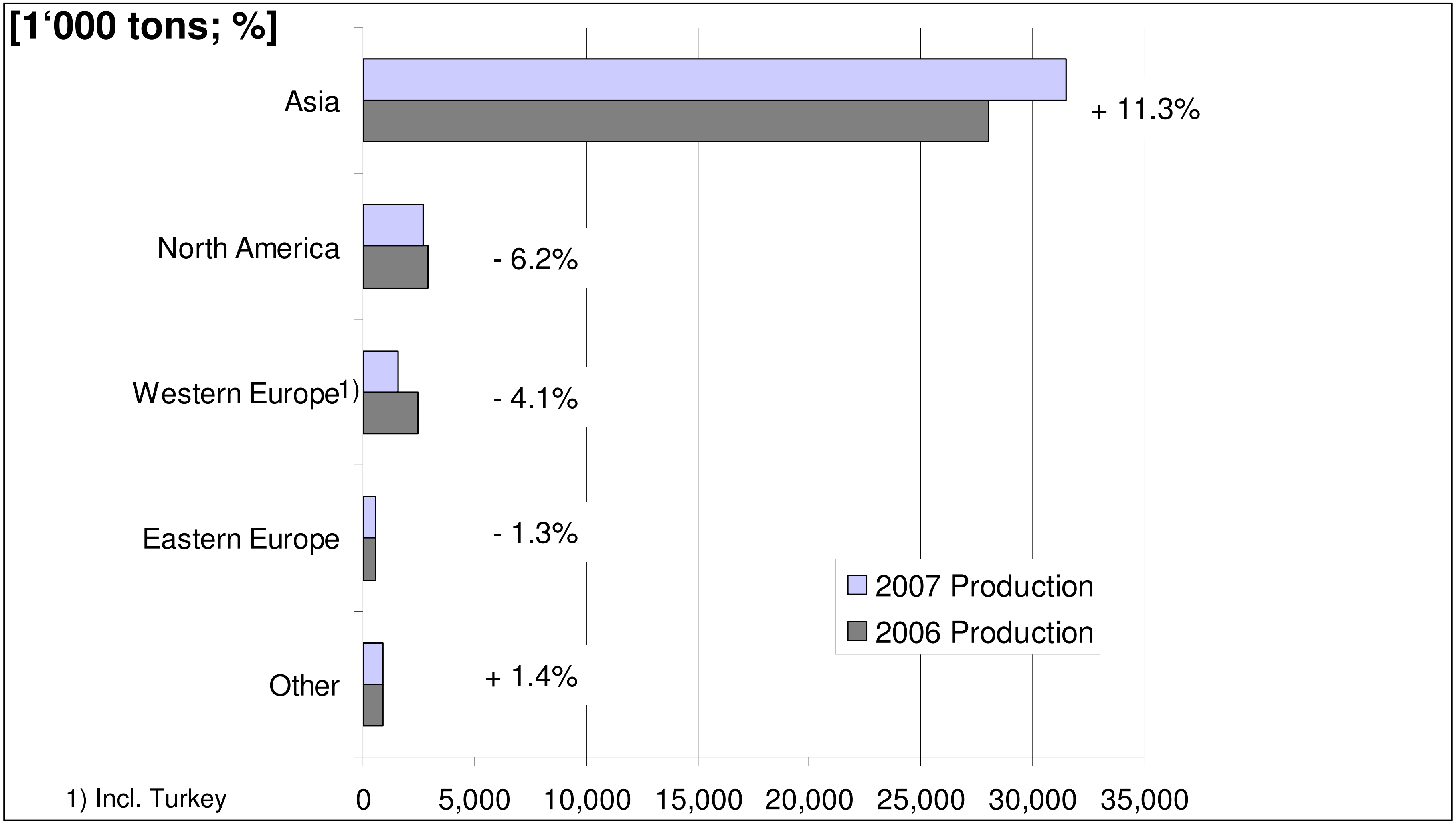
Synthetic fiber production changes by region 2004 to 2007



Source: Fiber Organon / USA

Fig. 9

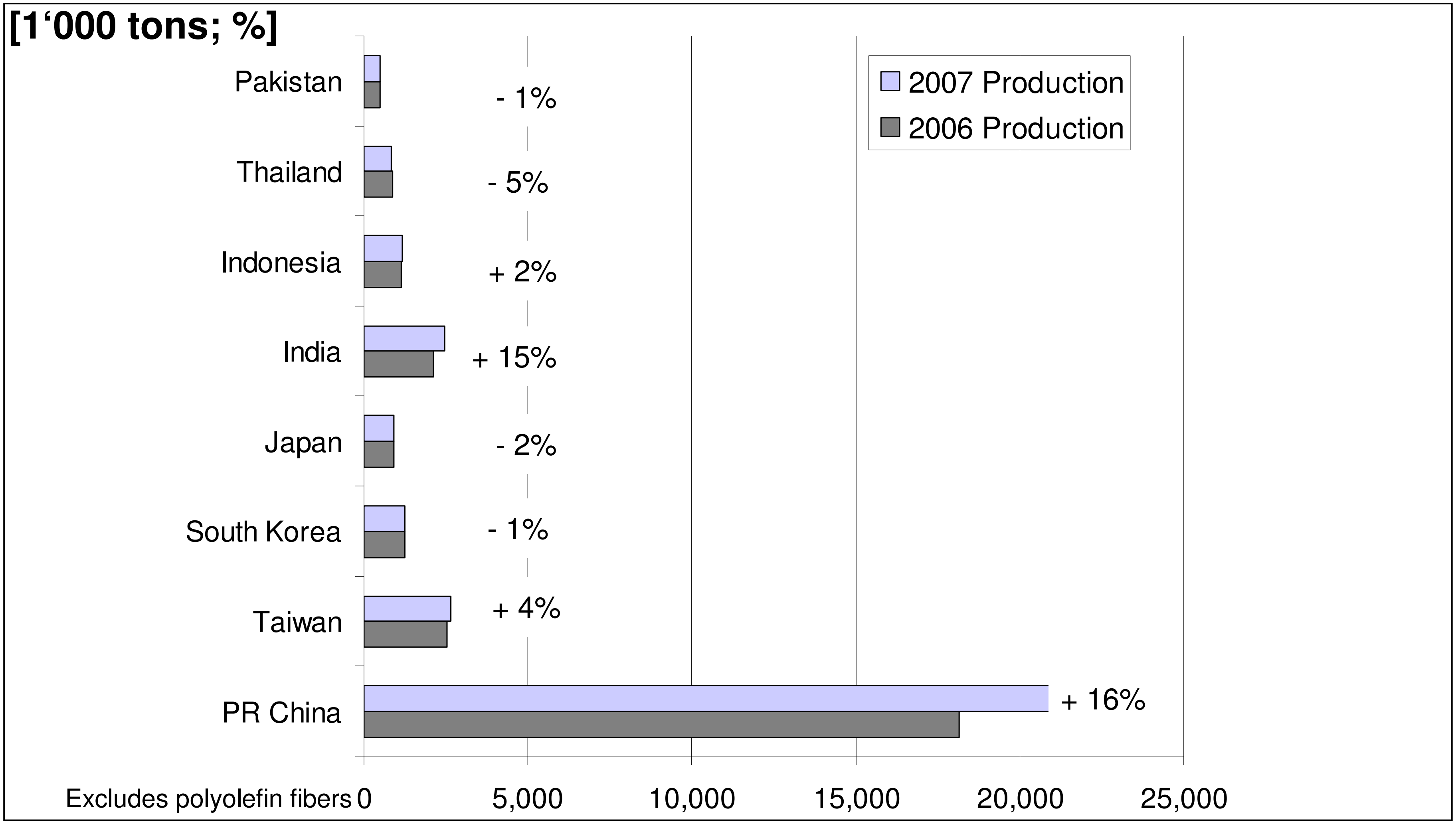
Synthetic fiber production by region 2006 to 2007



Source: Fiber Organon / USA

Fig. 10

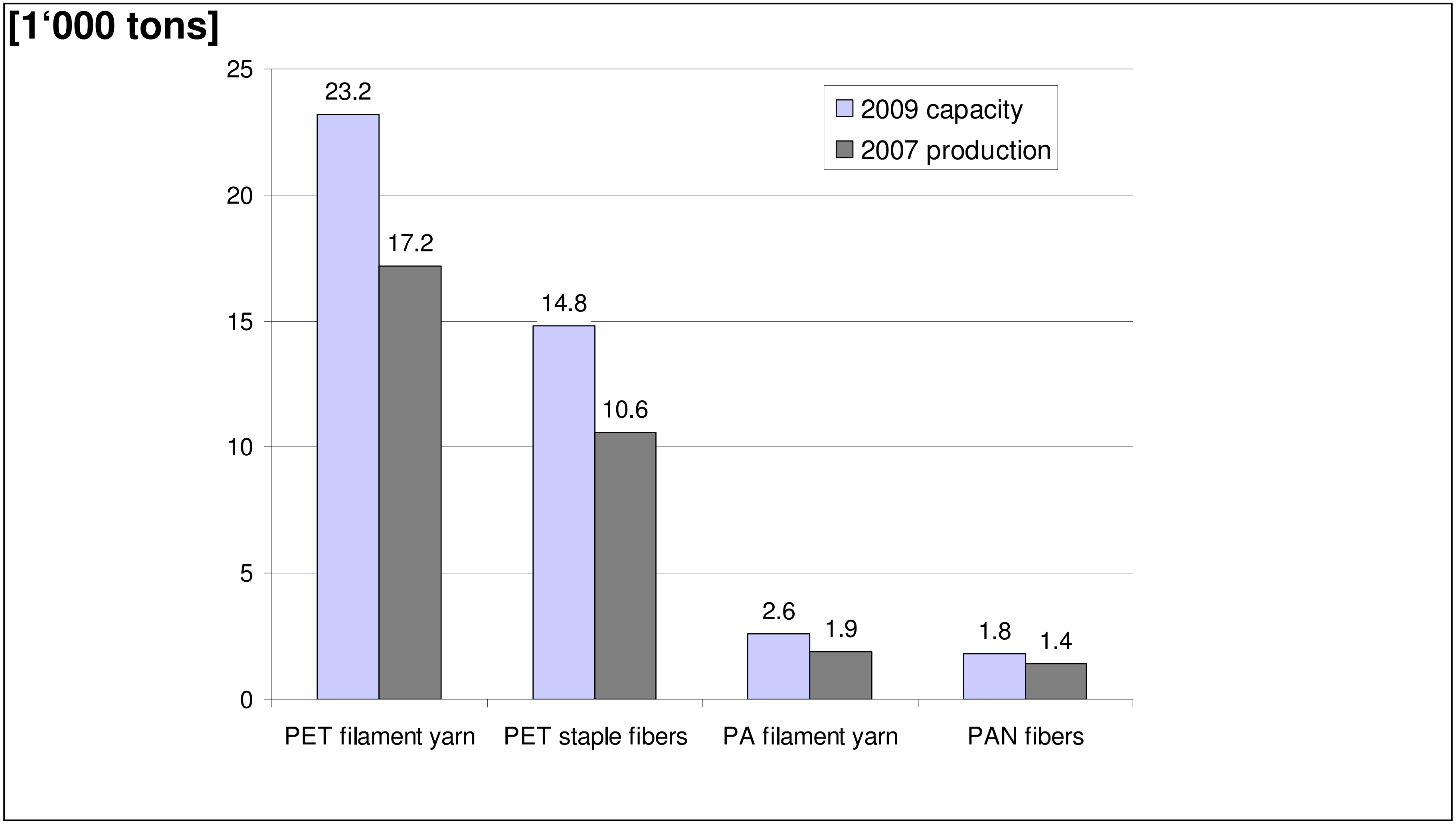
Synthetic fiber production in selected Asian countries 2006 and 2007



Source: Fiber Organon / USA

Fig. 11

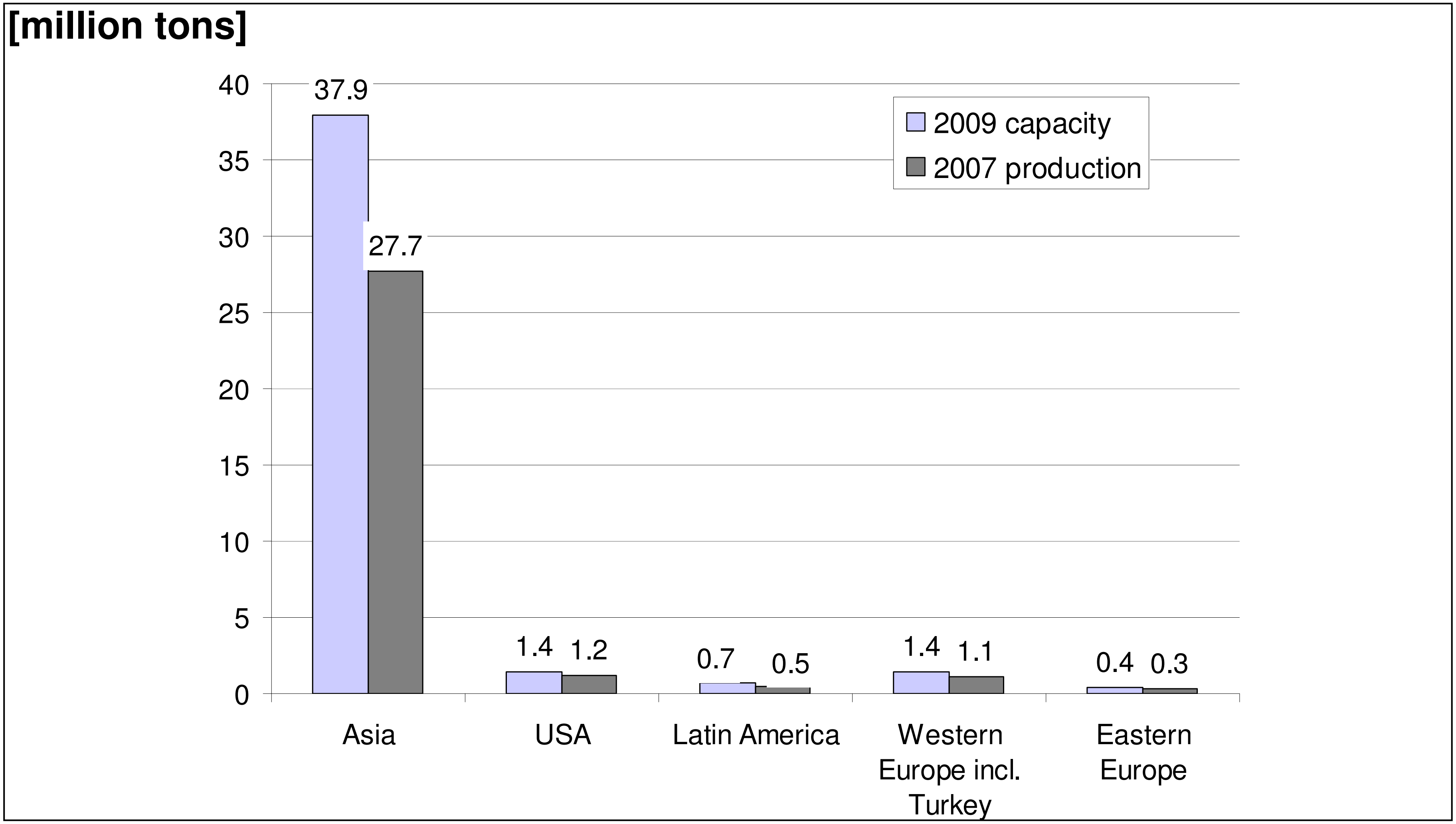
Asia: Synthetic fiber production 2007 and capacities 2009



Source: Fiber Organon / USA

Fig. 12

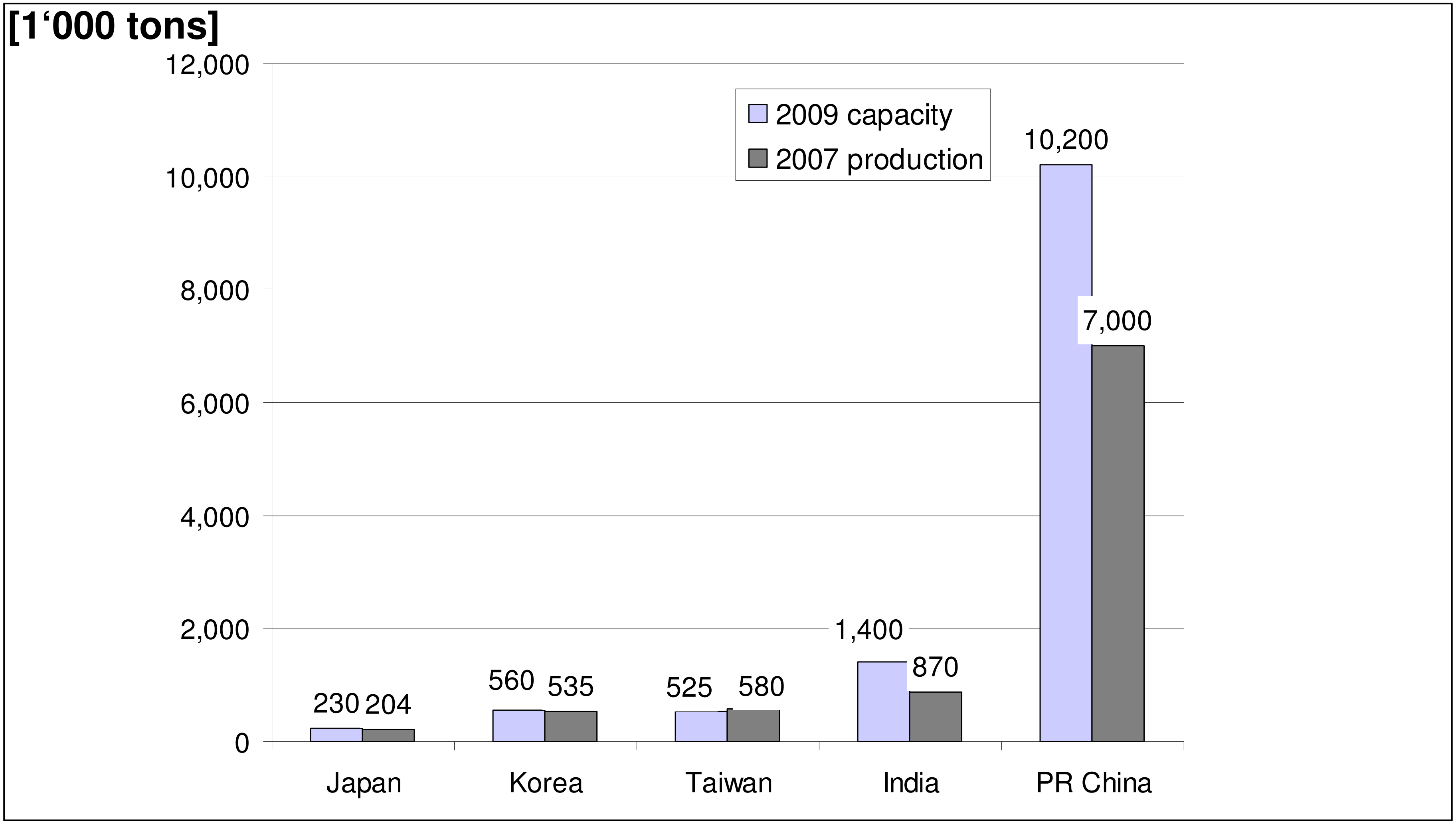
Global polyester fiber production 2007 and capacities 2009



Source: Fiber Organon / USA

Fig. 13

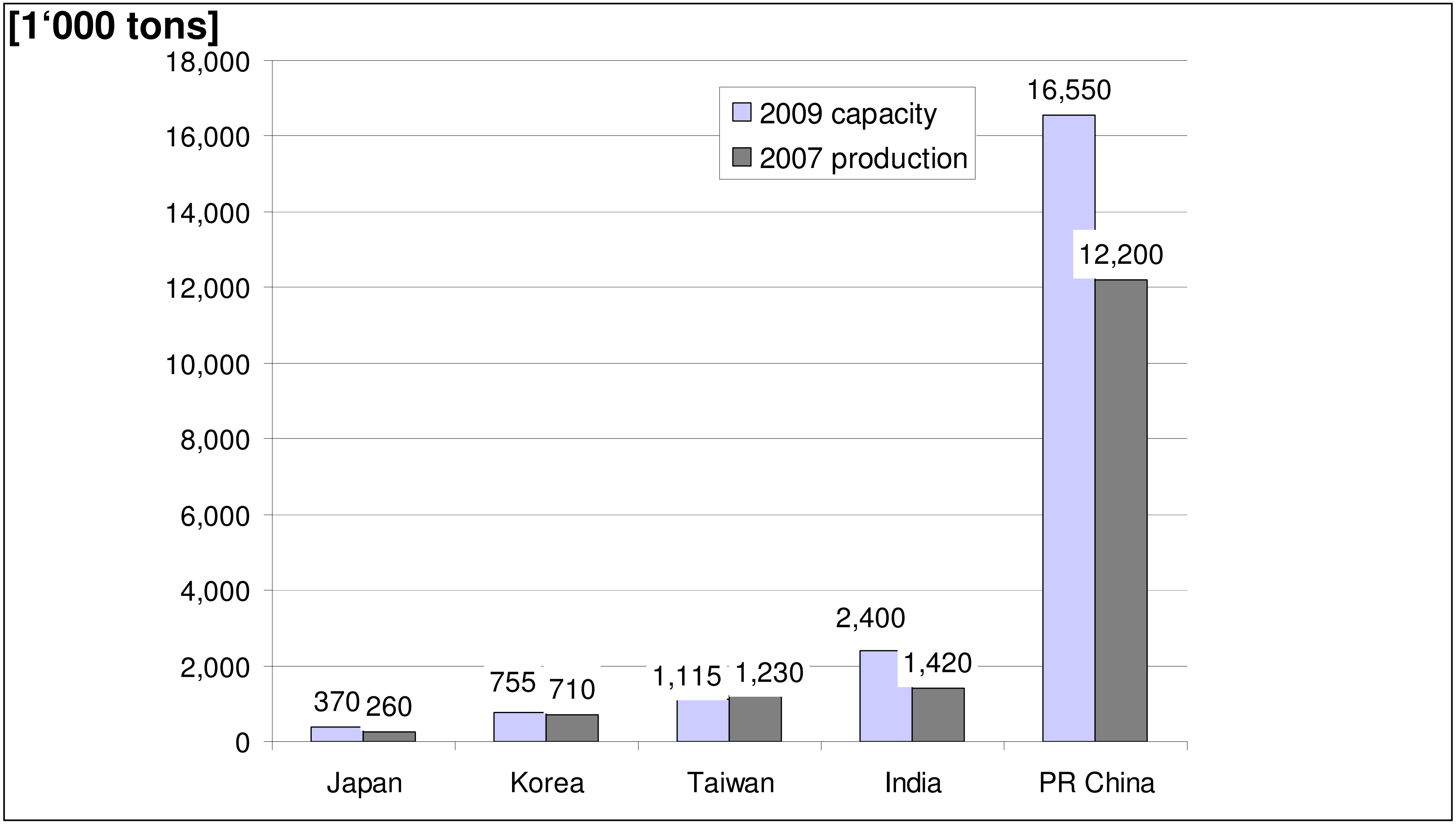
PET staple fiber production 2007 and capacity 2009 in Asian countries



Source: Fiber Organon / USA

Fig. 14

PET filament yarn production 2007 and capacity 2009 in Asian countries



Source: Fiber Organon / USA

Fig. 15

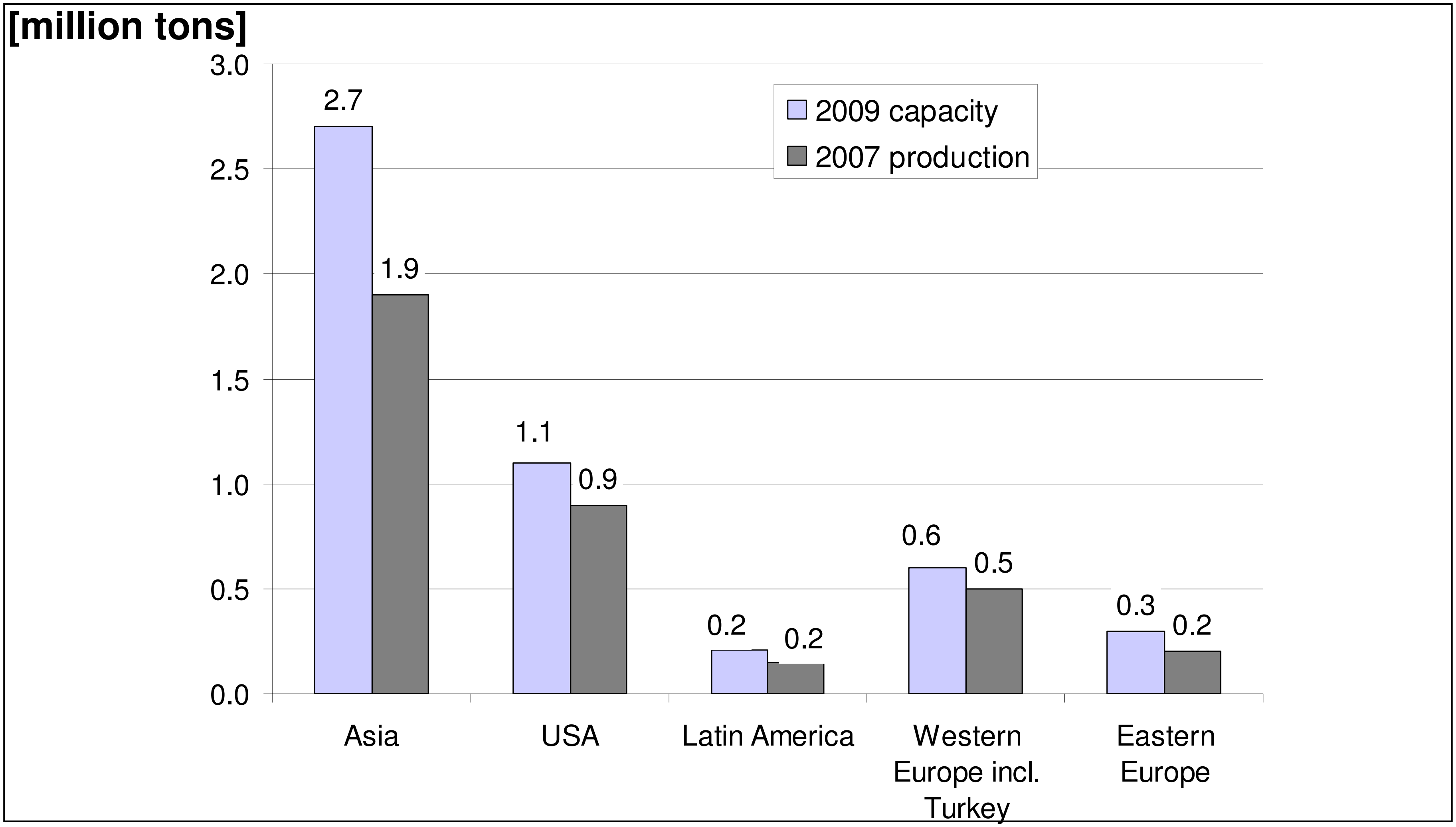
Polyester fiber capacity ranking by company

[1‘000 tons p.y.]

1980		1990		2000		2006	
Du Pont	841	Hoechst	943	Nan Ya	1.087	Sinopec	1.745
Celanese	605	DuPont	759	Tuntex	852	Reliance	1.559
Hoechst	395	Nan Ya	398	DuPont	850	Nan Ya	1.080
Akzo	316	Wellman	391	KoSa	744	Sanfangxiang	1.050
Eastman	302	Teijin	370	Teijin	740	Yuandong	900
Rhône-Poulenc	248	Far Eastern	339	Far Eastern	693	Tuntex	885
Teijin	219	Toray	274	Hualon	654	Far Eastern	781
Toray	172	Yizheng	260	Reliance	638	Huvis	750
ICI	155	Rhône-Poulenc	251	Yizheng	510	Rongsheng	650
Monsanto	146	Samyang	232	Wellman	496	Togkun	640

Fig. 16

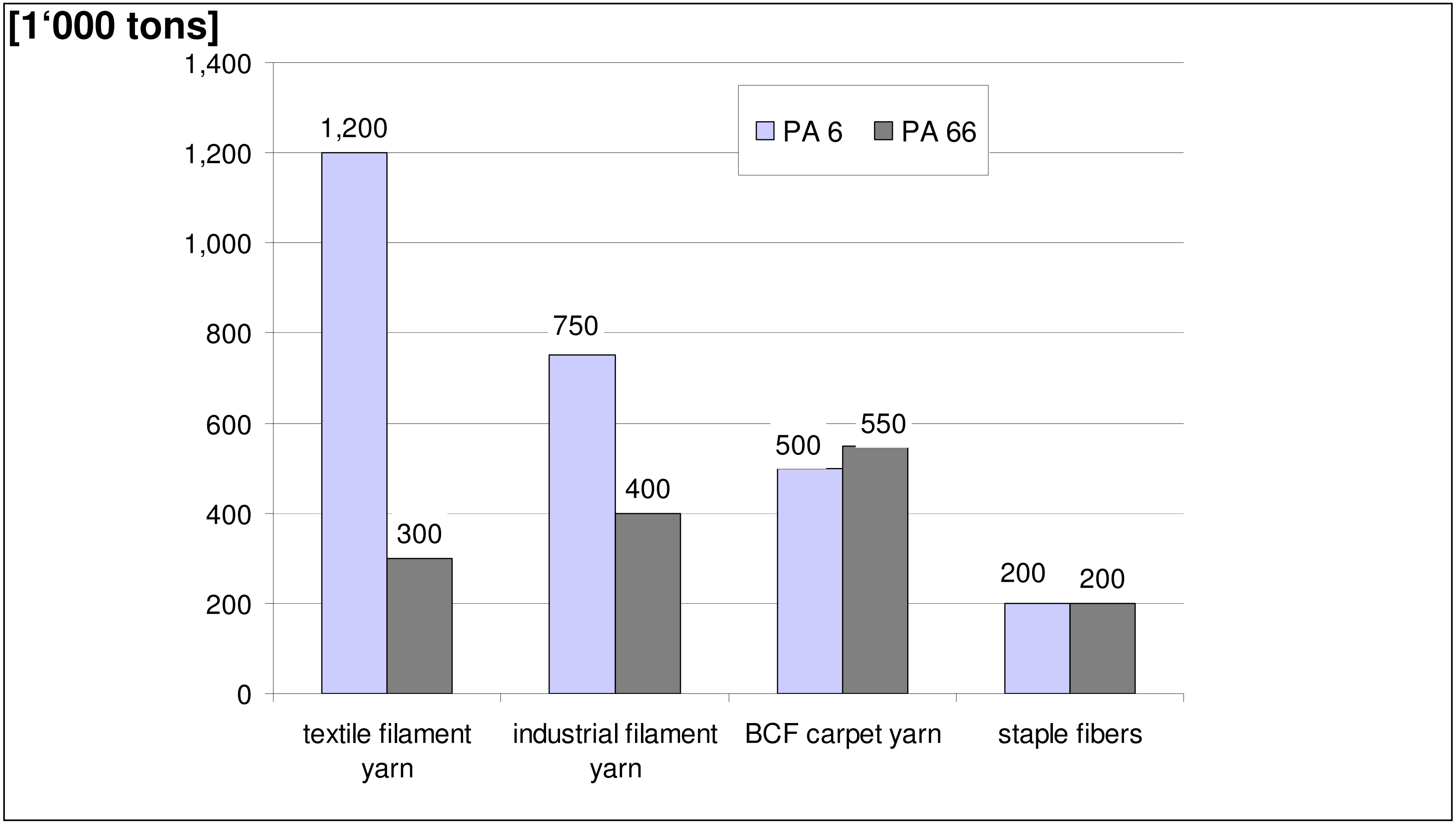
Global PA fiber production 2007 and capacity 2009



Source: Fiber Organon / USA

Fig. 17

Global PA 6 and 66 fiber market structure: 2007



Source: CMAI

Fig. 18

Global consumption of PA Polymers [1)]

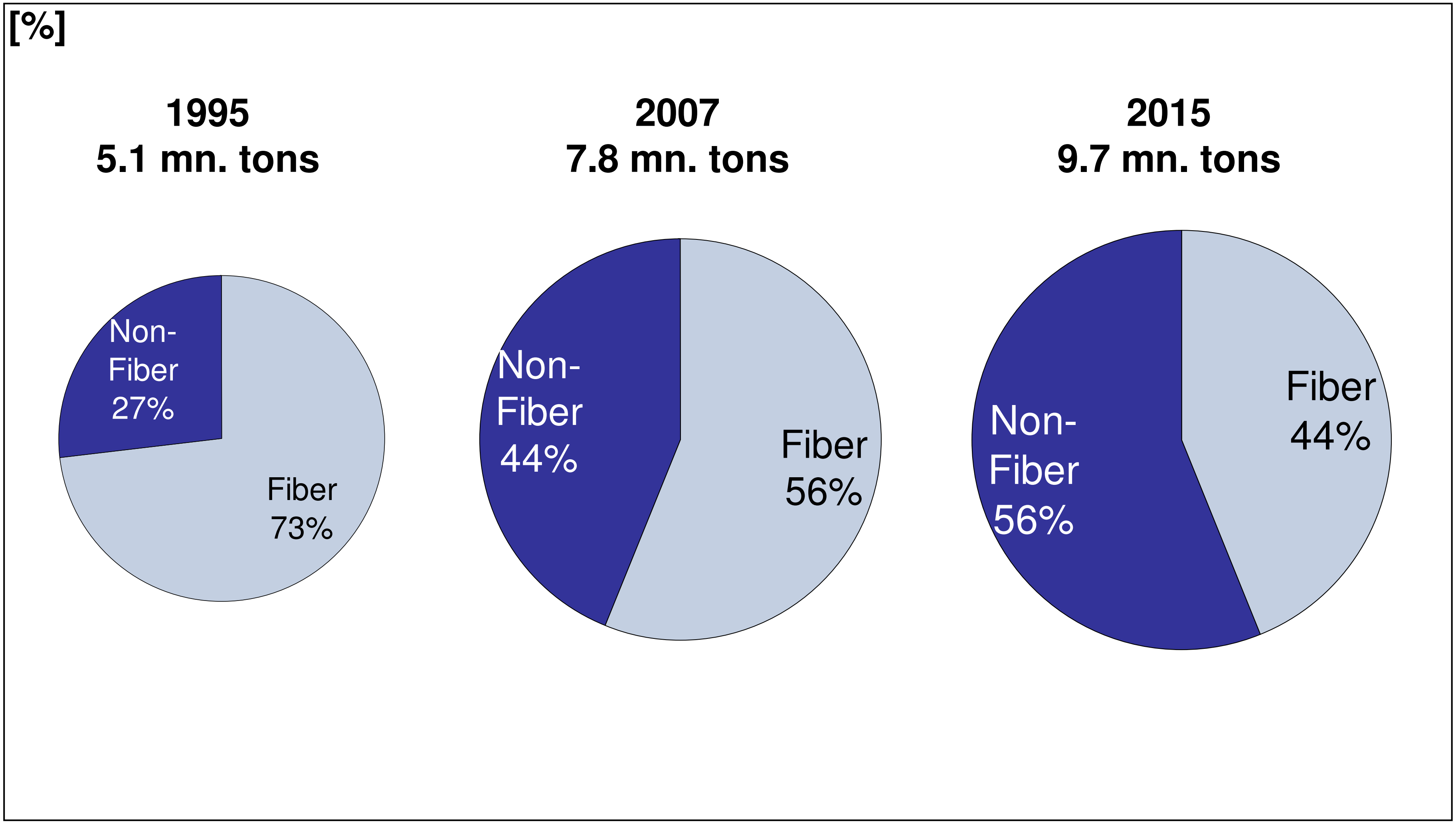
[1'000 tons]	2007		2015	
	PA 6	PA 66	PA 6	PA 66
Western Europe	969	727	1,076	851
Eastern Europe	437	110	455	168
North America	987	1,343	1,100	1,393
South America	170	137	201	165
PR China	524	185	928	305
Japan	281	254	345	316
Asia Pacific	1,098	350	1,508	611
Middle East/Africa	111	79	123	86
Total	**4.577**	**3.185**	**5.808**	**3.895**

1) fiber and non-fiber

Source: Maack Business Services

Fig. 19

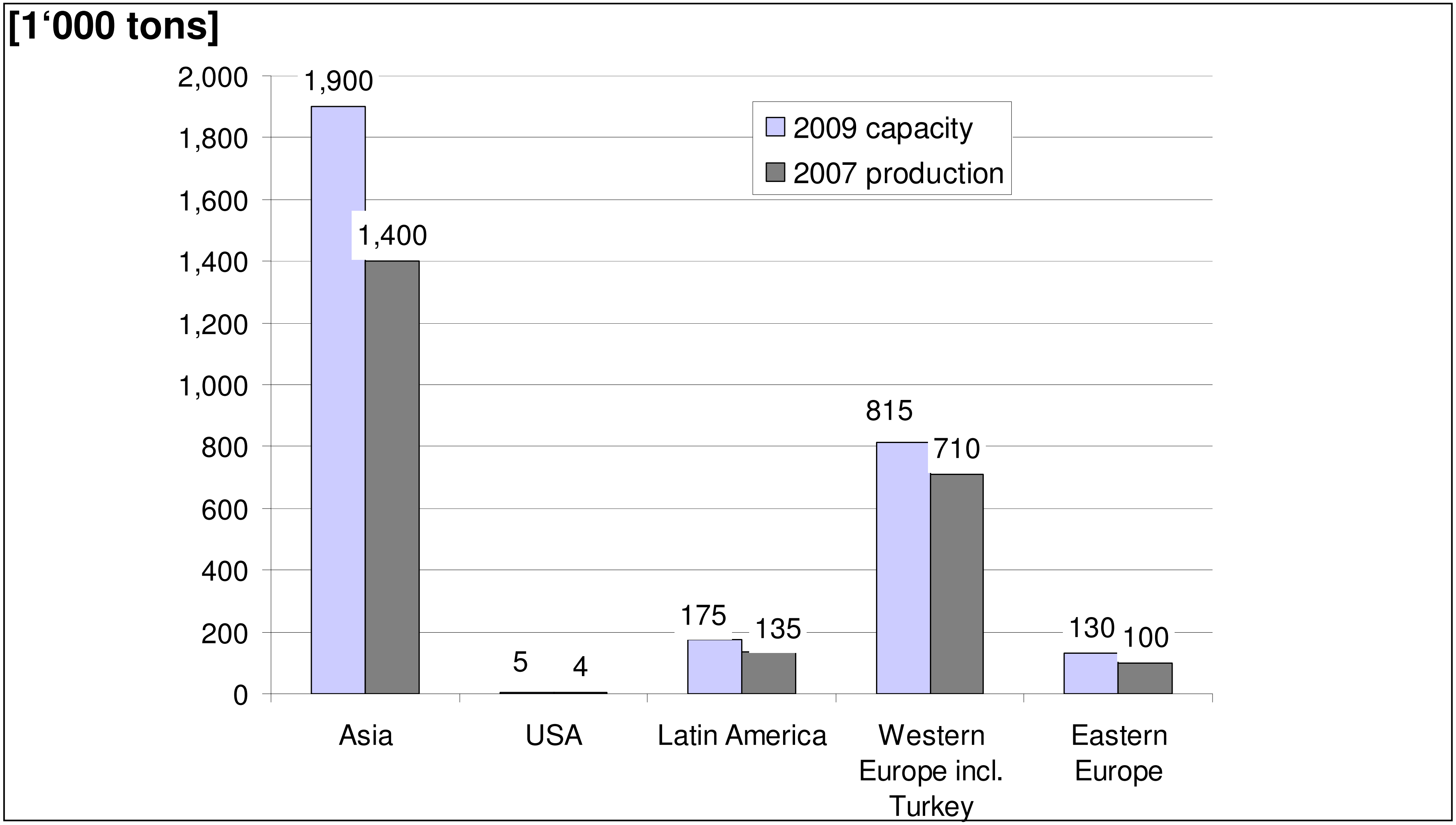
Global PA consumption (fiber and non-fiber)



Source: Fiber Organon / USA

Fig. 20

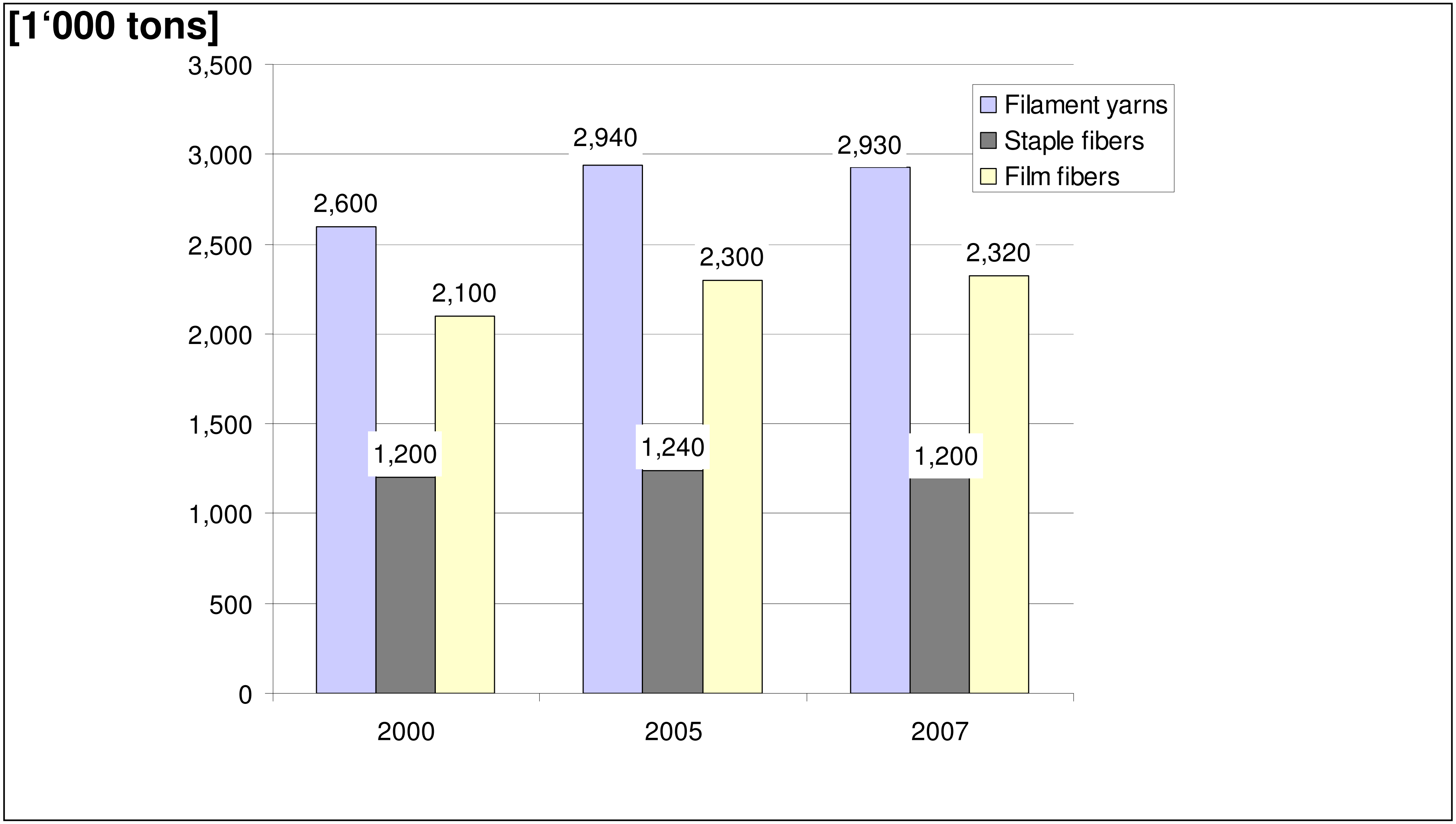
Global acrylic fiber production 2007 and capacity 2009



Source: Fiber Organon / USA

Fig. 21

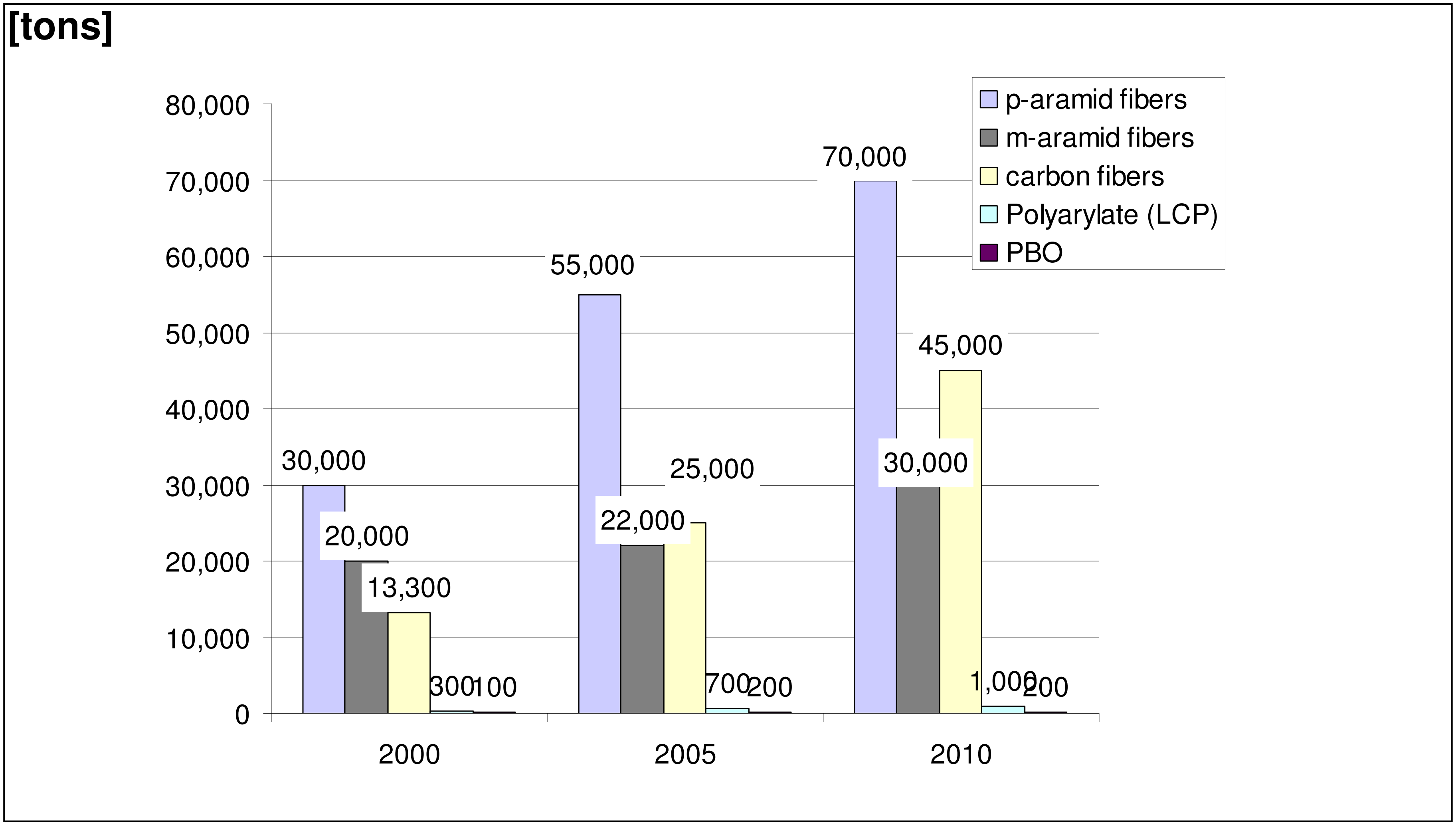
Global production of PP fibers



Source: Fiber Organon / USA

Fig. 22

Global production of high performance fibers



Source: PCI Fibres

Fig. 23

Europe[1)] PP Fiber Consumption

[1'000 tons]

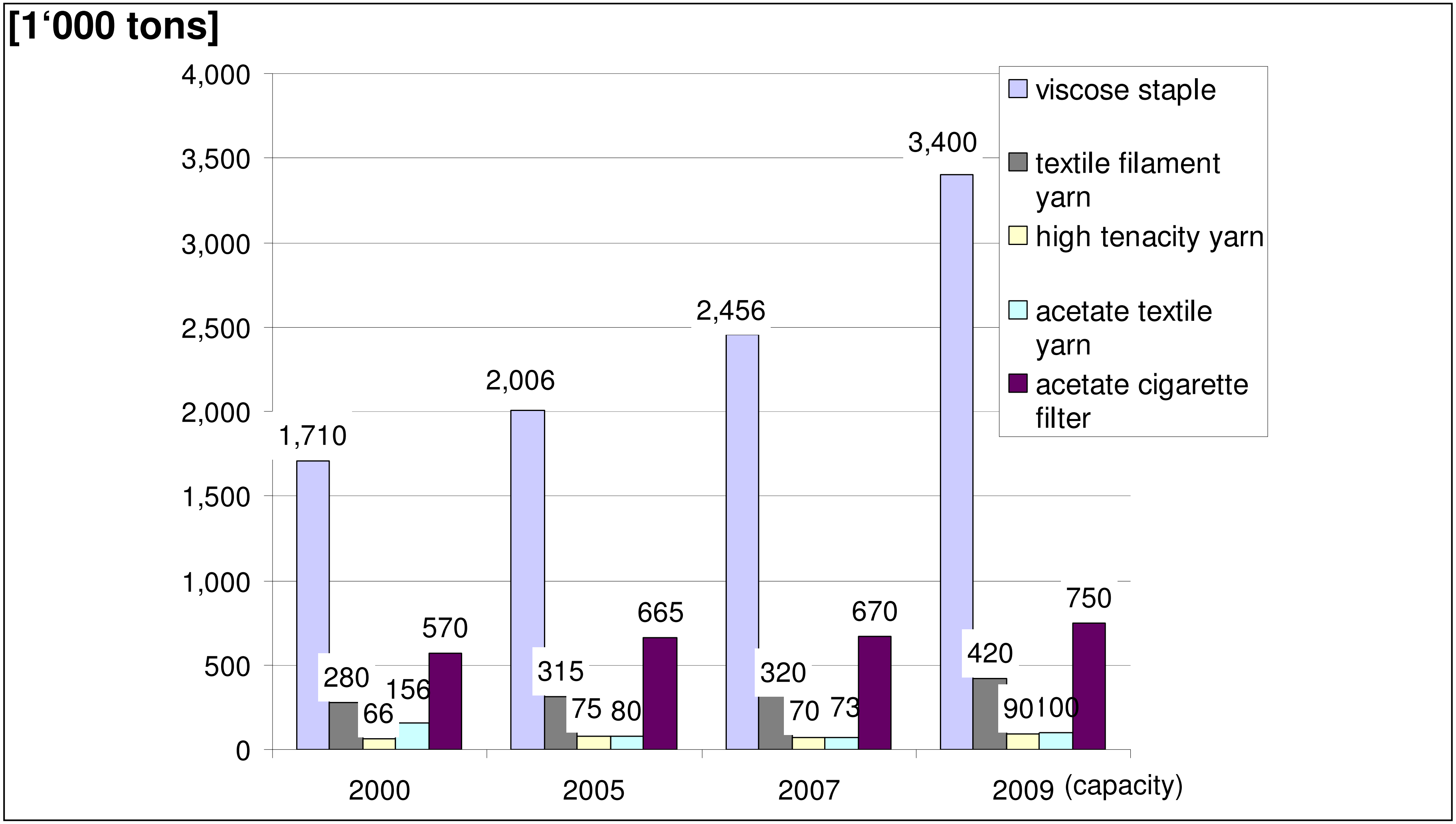
	2006	2007	Change %	Share 2007
Staple fibers	590	567	-4%	22.3%
Multifilament yarns	525	550	5%	21.7%
Spunbonds/meltblown[2)]	555	595	7%	23.4%
Film fibers, tapes	592	605	2%	23.8%
Strapping	123	123	0%	4.8%
Monofilaments	65	65	0%	2.6%
Others	35	35	0%	1.4%
Total	**2,485**	**2,540**	**2%**	**100.0%**

1) Western Europe, Turkey, Eastern Europe 2) 8% meltblown

Source: EATP, Brussels/Belgium

Fig. 24

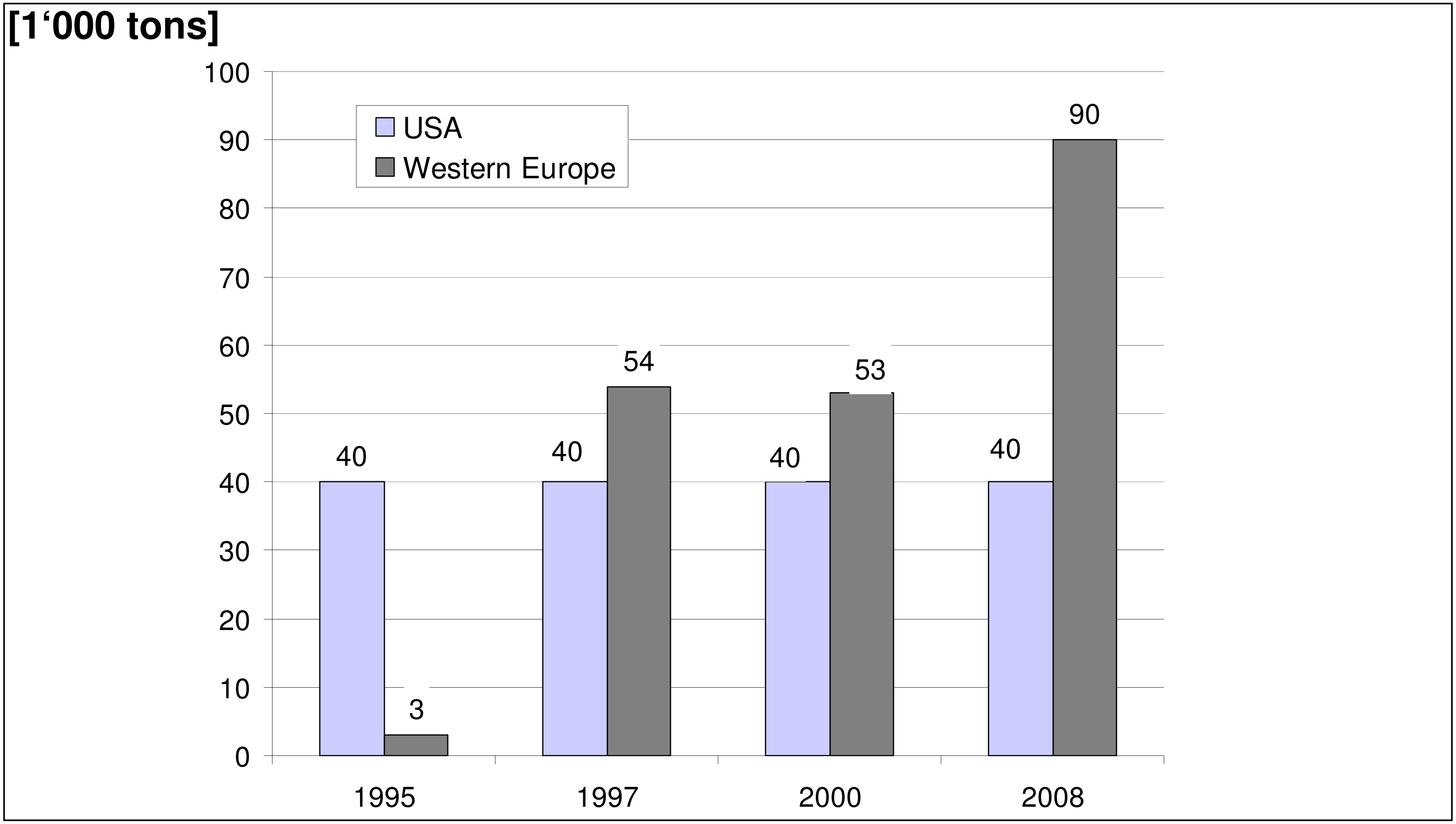
Global production of cellulosic fibers (excluding lyocell fibers)



Source: Fiber Organon / USA

Fig. 25

Global capacity of lyocell fibers



Source: CFI

Fig. 26

Global synthetic fiber capacities 2009 [1)]

[million tons]

	World	Asia	Asian Share
PET filament yarn	25.1	23.6	94%
PET staple fibers	17.1	15.0	88%
PA filament yarn	4.7	2.6	55%
Acrylic staple	3.0	2.0	67%
Polyolefin fibers [1)]	8.8	3.5	40%
Total	58.7	46.7	80%

1) Incl. film fibers and spunbonds

Source: Fiber Organon / USA

Fig. 27

PR China: production of chemical fibers 2007

[1‘000 tons; %]

	1‘000 tons	±%
Synthetics		
PET filament yarns	12,177	+18
PET staple fibers	7,000	+14
PA filament yarns	947	+10
PA staple fibers	58	+32
Acrylic fibers	822	+1
PP filament yarns	529	-4
PP staple fibers	90	+1
PP film fibers	434	+4
Other synthetics	281	+13
Cellulosics		
Staple fibers	1,140	+18
Filament yarns	227	+8
Acetate filter tow	117	+15
Total	**23,822**	**+17**

Source: Fiber Organon / USA

Fig. 28

Germany: Chemical fiber producers

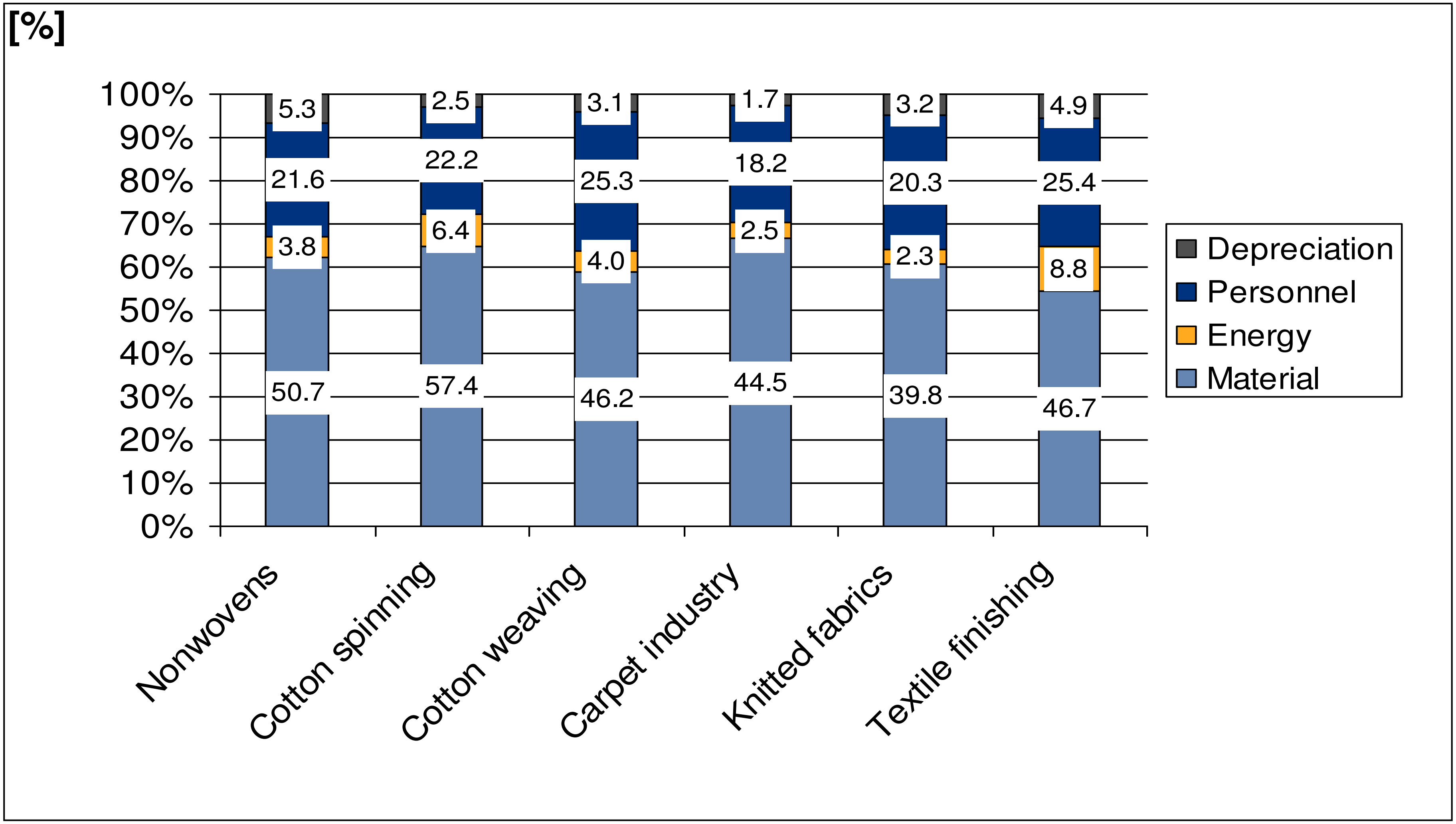
[million €; tons]

Producer	Turnover(million €)		Production(t)	Employees		Product range
	2006 1)	2007 2)	2006	2006	2007	
Rhodia Acetow GmbH, Freiburg	321	441	80,000	900	1300	CA
Trevira GmbH, Bobingen	329	353	90,000	1,628	1900	PET, Bico
Dralon GmbH, Dormagen	281	325	200,000	536		PAN
Invista Deutschland GmbH, Östringen	195	n.a	60,000	610		PA 6.6
Polyamide High Performance GmbH, Wuppertal	170	191	40,000	500	576	PA 6, 6.6, 4.6
Kelheim Fibers GmbH, Kelheim	167	150	82,000	652	600	CV
Performance Fibers GmbH, Bad Hersfeld	145	130	50,000	855		PET
Advansa GmbH, Hamm	130	144	42,000	180		PET
Cordenka GmbH, Obernburg	130	150	32,000	700		CV
Diolen Industrial Fibers GmbH, Obernburg	116	110	42,000	420		PET, PPS
Nilit Germany GmbH, Östringen	100	n.a	25,000	314		PA 6.6
Teijin Monofilament GmbH, Bobingen	100	n.a.	n.a.	250		PA, PET, PBT, PEN, PPS
TWD Fibres GmbH, Deggendorf	100	n.a.	30,000	800		PA 6.6, PET
Enka International GmbH, Wuppertal	95	84	18,000	1000	900	CV
Kuag Elana GmbH, Oberbruch	60	insolvent	10,000	180		PET
Asahi Kasei Sandex Europe GmbH, Dormagen	47	55	6,000	205		EL
Nexis Faserwerke GmbH, Neumünster	46	n.a.	15,000	113		PA, PPS
Märkische Faser GmbH, Premnitz	45	n.a	35,000	200		PET
Thüringer Filamente GmbH, Rudolstadt	20	n.a.	5,000	190		PA 6
Hahl Filamente GmbH, Munderkingen	12	33	15,000	44		PA, PP, PE, PET, PVC
Dolan GmbH, Kelheim	n.a.	25	n.a.	100		PAN
Smartfiber AG, Rudolstadt	2	n.a	500	30		CLY
Tenax Fibers Europe GmbH, Wuppertal	n.a	n.a	3,000	300		CF
Laufaron GmbH,Guben	n.a.	n.a.	6,000	n.a.		PABCF
Stehn & Co.GmbH, Schwarzenbek	n.a.	n.a.	n.a.	n.a.		PP
Perlon-Monofil GmbH, Dormagen	n.a.	n.a.	5,000	n.a.		PA, PES
Dr. Wetekam & Co.GmbH, Melsungen	n.a.	20	4,000	n.a.	108	PA, PE, PP, PET, PBT
Reinhold GmbH, Selbitz	38	n.a.	n.a.	89		PP, PA 6

Sources : 1) Office Löbbe, Mülheim/ Ruhr; 2) IVC, Frankfurt/M. n.a.: not available

Fig. 29

Germany: Cost structure of the textile industry 2006



Source: Gesamtverband textil+mode, Eschborn/Germany

Fig. 30

Germany: Investment of the textile industry

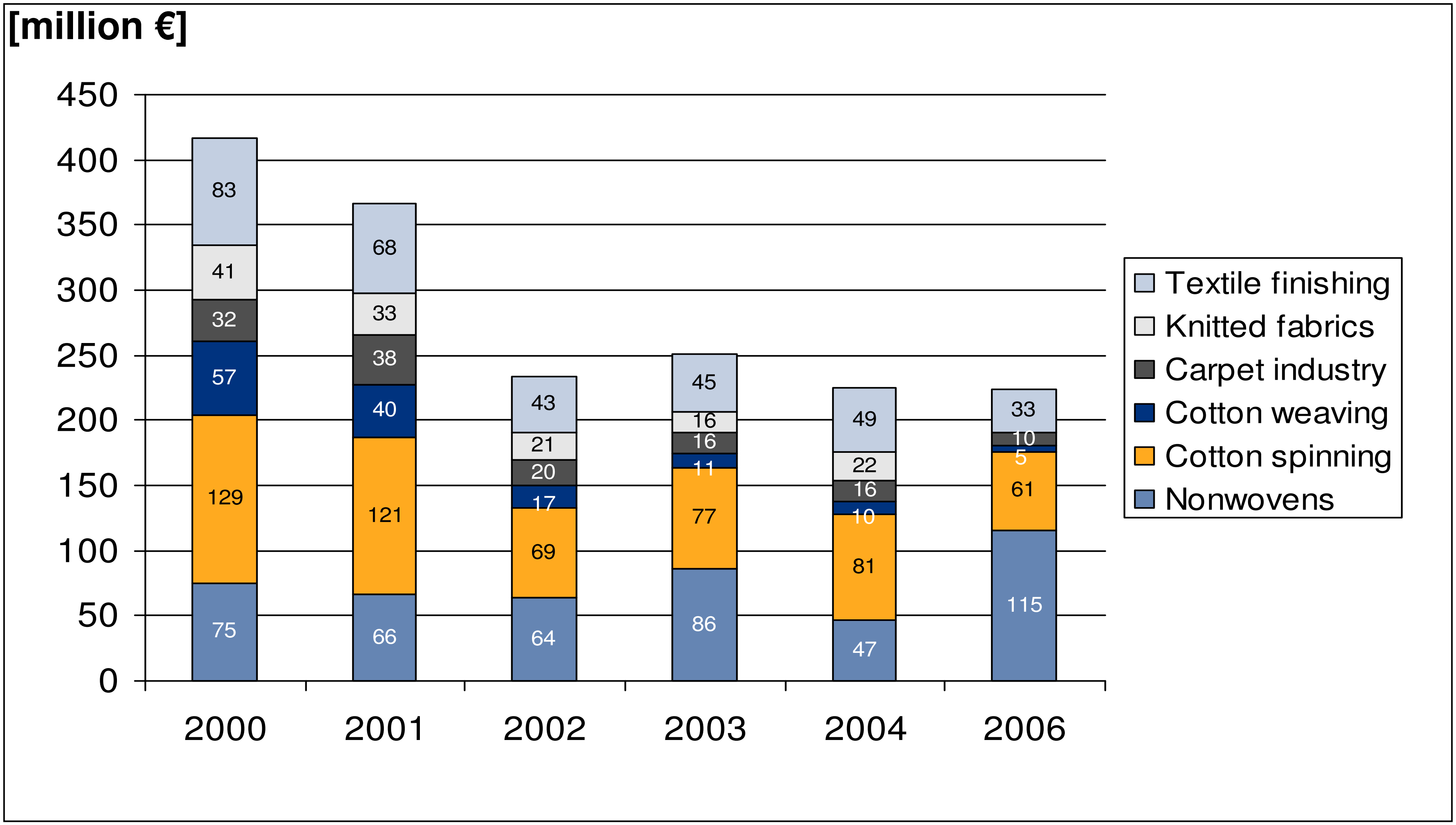
[million €]

	2000	2001	2002	2003	2004	2006
Nonwovens	75	66	64	86	47	115
Weaving	129	121	69	77	81	61
Spinning	57	40	17	11	10	5
Carpet industry	32	38	20	16	16	10
Knitted Fabrics	41	33	21	16	22	-
Textile finishing	83	68	43	45	49	33
Total	**417**	**366**	**234**	**251**	**225**	**224**

Source: Gesamtverband textil+mode, Eschborn/Germany

Fig. 30a

Germany: Investment of the textile industry



Source: Gesamtverband textil+mode, Eschborn/Germany