

Chemicals and Textiles

FY3/13 results preview: Eyeing weak yen benefits and company-specific growth factors

■ Industry Overview

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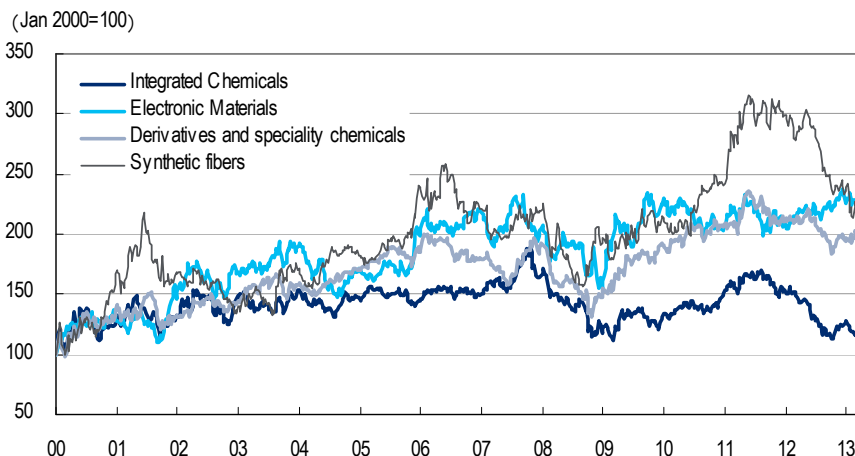
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- **Preference for electronic materials/derivatives/synthetic fibers** — Petrochemical product demand and prices remain weak. We see no sign of any recovery near term either, as with the price of feedstock naphtha also now declining, we doubt users will stock up on products. In electronic materials too, demand is currently somewhat weak owing to adjusted smartphone and tablet production and sluggish PC demand, but we think demand should gradually recover once the effect of seasonal factors and inventory adjustments peter out. Growth in cutting-edge materials, predominantly for smartphone and tablet applications, remains strong. In derivatives & fine chemicals and synthetic fiber segments, we are watching for company-specific growth factors.
- **Stocks to watch** — We plan to closely watch results from **Nitto Denko**, where we expect growth in polarizing and ITO film for smartphone/tablet applications; **Shin-Etsu Chemical**, where we expect brisk US PVC earnings and a 300mm wafer recovery; **SUMCO**, where we expect an earnings recovery on a rebound in the 300mm wafer business and cost cutting; **Asahi Kasei**, where we believe housing and healthcare earnings continue brisk; **Toray**, where we see growth in high-performance fibers and carbon fibers used in aeronautical and shale gas-related applications; and **Daicel**, where we expect growth in cigarette filter tow and automotive airbag inflators.
- **Petrochemical demand weak** — Asian petrochemical market conditions are generally severe. While spring demand should now be emerging, the upswing in demand is weak. Prices and spreads are generally low. The supply/demand balance is collapsing for terephthalic acid, caprolactam and other products that have seen a large number of capacity increases by Chinese makers. Production cut benefits led to an improvement in prices for acrylonitrile, which have weakened again on poor downstream demand. Given generally low operating rates at domestic plants, we think operations will probably need to be slimmed down further. However, near term, we forecast a weak yen-led decline in imports and a recovery in exports, and so we think operating rates will improve slightly.
- **Electronic materials demand set to bottom** — Semiconductor and LCD materials demand weakened from October 2012. However, we expect a recovery off a February bottom as inventory adjustment effect peter out. But, we think any immediate recovery is likely to be modest, because final demand is low as, in addition to weak PC demand, production of smartphones and tablets is being adjusted. We also expect gaps to open up between demand for smartphone/tablet materials and PC and consumer electronics materials. We think the weak yen will not only bring direct benefits, but should also ease competition and allow Japanese makers to improve their share versus makers in Asia.
- **Derivatives/fine chemicals/synthetic fiber** — At Toray, we think overall earnings will be driven by fibers and textiles, where we foresee growth in sewn products, primarily for Uniqlo, and PP spunbond fabric for the world's diaper makers. With the expected reopening of B787 services, we see a steady increase in the number of B787s manufactured and positive implications for carbon fiber, including for the supply/demand balance. We think Daicel will benefit from a strong rise in cigarette filter tow and airbag inflator shipments, as well as weak yen benefits. As Japanese automakers account for a high weighting of earnings, including inflator and engineering plastics earnings, at Daicel, we also see indirect benefits from the weak yen. We consider Mitsubishi Gas Chemical undervalued presently, considering growth in smartphone/tablet and PC materials, restructuring benefits, and the sustained high methanol prices.

See Appendix A-1 for Analyst Certification, Important Disclosures and non-US research analyst disclosures.

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Figure 1. Subsector performance relative to TOPIX



Note: Integrated chemical makers are Asahi Kasei, Showa Denko, Sumitomo Chemical, Tosoh, Mitsui Chemicals, Mitsubishi Chemical Holdings, and Ube Industries. Electronic material makers are SUMCO, Shin-Etsu Chemical, JSR, Tokyo Ohka Kogyo, Sumitomo Bakelite, Zeon, Hitachi Chemical, and Nitto Denko. Derivative and specialty chemical makers are Kuraray, DKK, Nippon Shokubai, Kaneka, Mitsubishi Gas Chemical, Daicel, and DIC. Synthetic fiber makers are Teijin and Toray.

Source: Citi Research.

Figure 2. Forex sensitivity (OP)

Code	Company	OP impact of ¥1/\$ decline (¥bn)	OP sensitivity of ¥10/\$ decline	OP FY13E (¥bn)
Integrated chemicals				
3407	Asahi Kasei	0.7	6%	113.0
4004	Showa Denko	0.8	23%	35.5
4005	Sumitomo Chemical	2.5	32%	79.0
4042	Tosoh	0.3	10%	30.0
4183	Mitsui Chemicals	0.5	17%	30.0
4188	Mitsubishi Chemical HD	1.7	13%	136.0
4208	Ube Industries	0.0	0%	32.5
Electronic materials				
3436	SUMCO	1.0	31%	32.0
4063	Shin-Etsu Chemical	1.3	7%	196.0
4185	JSR	0.6	14%	42.0
4186	Tokyo Ohka Kogyo	0.2	21%	9.6
4203	Sumitomo Bakelite	0.2	19%	10.3
4205	Zeon	0.5	15%	33.0
4217	Hitachi Chemical	0.8	24%	33.0
6988	Nitto Denko	2.5	26%	96.0
Derivatives and specialty chemicals				
3405	Kuraray	0.1	1%	54.0
4061	Denki Kagaku Kogyo	0.2	8%	25.0
4114	Nippon Shokubai	0.0	0%	15.0
4118	Kaneka	0.4	17%	23.0
4182	Mitsubishi Gas Chemical	0.5	26%	19.5
4202	Daicel	0.5	14%	36.5
4631	DIC	0.1	2%	43.0
Fibers				
3401	Teijin	0.0	0%	30.0
3402	Toray	0.5	5%	110.0

Source: Citi Research

Note: SUMCO's FY13E is adjusted for 11month period due to change in FY end (from January to December)

Figure 3. Share price performance

Company		Price	Share price performance				Relative to TOPIX			
		19-Apr	1 month	3 months	6 months	12 months	1 month	3 months	6 months	12 months
Integrated chemicals										
3407	Asahi Kasei	646	1.3	22.6	48.2	30.5	-6.0	-0.8	-0.8	-5.7
4004	Showa Denko	149	5.7	4.2	23.1	-19.5	-1.9	-15.7	-17.5	-41.8
4005	Sumitomo Chemical	281	-3.4	7.3	26.0	-17.6	-10.4	-13.2	-15.6	-40.5
4188	Mitsubishi Chemical Holdings	442	-6.8	1.6	39.9	4.5	-13.4	-17.8	-6.3	-24.5
4042	Tosoh	257	-10.5	22.4	59.6	18.4	-16.9	-1.0	6.9	-14.4
4183	Mitsui Chemicals	194	-8.5	-8.1	17.6	-19.2	-15.1	-25.6	-21.3	-41.6
4208	Ube Industries	179	-9.1	-6.3	1.1	-17.5	-15.7	-24.2	-32.3	-40.4
Electronic materials										
3436	SUMCO	985	-7.4	5.0	71.6	19.7	-14.1	-15.0	14.9	-13.5
4063	Shin-Etsu Chemical	6,510	2.0	15.6	39.5	41.8	-5.3	-6.5	-6.6	2.5
4185	JSR	1,988	5.8	11.4	48.9	19.3	-1.8	-9.9	-0.3	-13.8
4186	Tokyo Ohka Kogyo	1,959	-3.0	7.8	16.6	10.2	-9.9	-12.8	-21.9	-20.3
4203	Sumitomo Bakelite	372	-4.9	-0.3	28.7	-12.5	-11.7	-19.3	-13.8	-36.8
4205	Zeon	937	-9.0	22.5	62.7	30.5	-15.6	-0.9	8.9	-5.7
4217	Hitachi Chemical	1,458	-2.3	8.3	34.8	-0.8	-9.3	-12.4	-9.8	-28.3
6988	Nitto Denko	6,280	11.0	29.0	72.5	81.5	3.0	4.3	15.5	31.2
Derivatives and specialty chemicals										
3405	Kuraray	1,376	0.1	19.4	48.6	20.3	-7.0	-3.4	-0.5	-13.1
4061	Denki Kagaku Kogyo	325	-8.7	3.2	28.5	2.5	-15.3	-16.5	-14.0	-25.9
4114	Nippon Shokubai	834	-4.0	-7.1	5.4	-10.5	-8.7	-24.9	-29.4	-35.3
4118	Kaneka	534	-4.0	18.4	34.5	11.7	-10.8	-4.2	-9.9	-19.3
4182	Mitsubishi Gas Chemical	655	-4.9	13.1	60.9	24.8	-11.8	-8.5	7.8	-9.8
4202	Daicel	782	2.6	26.3	71.1	47.3	-4.7	2.2	14.6	6.4
4631	DIC	206	-4.2	24.1	44.1	26.4	-11.1	0.4	-3.5	-8.7
Textiles										
3401	Teijin	214	-3.2	2.9	15.1	-20.4	-10.1	-16.8	-23.0	-42.5
3402	Toray Industries	665	8.7	30.6	44.3	8.7	0.9	5.7	-3.4	-21.5

Source: Datastream, Citi Research

Figure 4. Valuation overview

Code	Company	Rating		Price	Mkt	FY1E=	EPS		PER (x)		PBR (x)	OPM		EV/EBITDA (x)		RoE	
					Cap		FY1E	FY2E	FY1E	FY2E	FY1E	FY1E	FY2E	FY1E	FY2E	FY1E	FY2E
Integrated chemicals					(\$ bn)												
3407.T	Asahi Kasei	1	JPY	646.00	9.1	3/13	36.1	48.7	17.9	13.3	1.2	5.4%	6.4%	4.2	3.7	7.0%	8.9%
4004.T	Showa Denko	2	JPY	149.00	2.2	12/13	10.4	13.0	14.4	11.4	0.8	4.4%	5.0%	6.0	5.6	5.6%	6.7%
4005.T	Sumitomo Chem	1	JPY	281.00	4.6	3/13	-30.6	23.9	nm	11.8	1.1	2.5%	3.8%	6.6	5.8	-11.0%	8.8%
4042.T	Tosoh	2	JPY	257.00	1.5	3/13	16.7	23.4	15.4	11.0	0.9	3.0%	4.3%	6.8	6.0	5.7%	7.6%
4183.T	Mitsui Chem	2	JPY	194.00	2.0	3/13	-10.0	13.0	nm	14.9	0.5	0.4%	2.1%	9.2	5.9	-2.7%	3.6%
4188.T	Mitsubishi Chem	2	JPY	442.00	6.5	3/13	14.2	33.2	31.0	13.3	0.8	3.2%	4.3%	6.3	5.3	2.7%	6.2%
4208.T	Ube	2	JPY	179.00	1.8	3/13	6.5	15.9	27.7	11.2	0.9	4.5%	5.0%	6.0	5.6	3.2%	7.6%
Electronic materials																	
3436.T	Sumco	1	JPY	985.00	2.6	12/13	58.2	149.4	16.9	6.6	1.5	14.5%	21.3%	8.6	6.2	8.7%	20.1%
4063.T	Shin-Etsu	1	JPY	6,510.00	27.8	3/13	259.1	315.6	25.1	20.6	1.8	15.4%	17.7%	9.1	7.6	7.4%	8.5%
4185.T	JSR	1	JPY	1,988.00	4.7	3/13	120.1	134.8	16.6	14.7	1.6	9.2%	10.4%	6.2	5.0	9.8%	10.2%
4186.T	Tokyo Ohka Kogyo	2	JPY	1,959.00	0.9	3/13	132.0	149.9	14.8	13.1	0.7	11.2%	12.5%	0.9	0.6	4.9%	5.4%
4203.T	Sumitomo Bakelite	2	JPY	372.00	0.9	3/13	14.5	27.8	25.6	13.4	0.8	3.8%	5.5%	4.2	3.5	3.0%	5.6%
4205.T	Zeon	1	JPY	937.00	2.2	3/13	62.7	82.2	14.9	11.4	1.5	9.5%	11.5%	5.3	4.2	10.5%	12.4%
4217.T	Hitachi Chem	1	JPY	1,458.00	3.1	3/13	84.0	96.0	17.4	15.2	1.0	5.4%	6.7%	4.8	3.9	6.0%	6.6%
6988.T	Nitto Denko	1	JPY	6,280.00	10.4	3/13	294.5	394.7	21.3	15.9	2.2	10.9%	13.1%	7.6	6.1	10.8%	13.3%
Derivatives and specialty chemicals																	
3405.T	Kuraray	2	JPY	1,376.00	4.8	3/13	82.7	91.6	16.6	15.0	1.3	13.1%	13.4%	4.3	3.9	7.8%	8.2%
4061.T	DKK	1	JPY	325.00	1.6	3/13	24.1	32.4	13.5	10.0	0.9	5.8%	6.9%	5.2	4.4	6.6%	8.5%
4114.T	Nippon Shokubai	2	JPY	834.00	1.7	3/13	4.9	46.8	nm	17.8	0.8	3.8%	5.1%	5.4	4.5	0.5%	4.6%
4118.T	Kaneka	2	JPY	534.00	1.8	3/13	29.7	37.7	18.0	14.2	0.7	3.7%	4.6%	3.4	2.8	4.0%	5.0%
4182.T	MGC	1	JPY	655.00	3.0	3/13	-20.8	68.2	nm	9.6	1.1	2.3%	3.7%	8.6	7.4	-3.4%	10.6%
4202.T	Daicel	1	JPY	782.00	2.8	3/13	45.5	63.4	17.2	12.3	1.2	7.5%	9.6%	5.4	4.4	7.0%	9.0%
4631.T	DIC	2	JPY	206.00	1.9	3/13	23.5	23.8	8.8	8.7	1.4	5.5%	5.8%	5.4	4.9	17.8%	14.8%
Synthetic fibers																	
3401.T	Teijin	2	JPY	214.00	2.1	3/13	-30.5	12.1	nm	17.7	0.8	1.6%	3.9%	5.0	4.3	-10.7%	4.3%
3402.T	Toray	1	JPY	665.00	10.9	3/13	30.7	43.2	21.6	15.4	1.6	5.3%	6.4%	7.9	6.6	7.6%	9.7%
Overseas chemical majors																	
DOW.N	Dow Chem	1	USD	30.55	36.9	12/13	2.3	2.8	13.3	11.0	1.2	9.5%	10.5%	6.9	6.1	12.0%	13.7%
DD.N	DuPont	2	USD	49.19	45.2	12/13	3.9	4.4	12.6	11.3	4.1	17.0%	17.3%	6.4	5.7	34.3%	33.4%
BASF.DE	BASF	2	EUR	65.63	78.7	12/13	5.3	5.7	12.3	11.5	2.3	8.6%	10.0%	7.9	7.6	15.9%	16.0%
WCHG.DE	Wacker Chem	2	EUR	50.80	3.5	12/12	1.5	1.6	34.9	31.3	1.0	5.1%	5.0%	6.0	6.3	2.8%	3.3%
051910.KS	LG Chem	1	KRW	251,000.00	14.9	12/13	26,800.4	32,368.5	9.4	7.8	1.4	9.9%	11.0%	5.3	4.4	15.6%	16.4%
011170.KS	Lotte Chemical	1	KRW	164,000.00	5.0	12/13	16,113.6	27,519.5	10.2	6.0	0.8	4.0%	6.6%	4.1	2.6	8.6%	13.3%
1301.TW	Formosa Plastics	2	TWD	68.40	14.1	12/13	4.6	4.2	14.8	16.4	1.7	3.6%	5.7%	nm	12.8	11.9%	10.0%
6505.TW	Formosa Petro	3	TWD	78.00	24.9	12/13	2.3	2.9	34.1	27.3	3.3	2.9%	3.5%	nm	nm	10.1%	11.8%

Note: Share prices as of the April 19th close.

Source: Citi Research.

Figure 5. Integrated chemical makers: OP forecasts and consensus estimates

(#bn)		Full						Quarter								results release
Code	Company	FY11	FY12			FY13		FY11				FY12				
		A FY	Co FYCE	Citi FYE	Cons Ave	Citi FYE	Cons Ave	A Q1	A Q2	A Q3	A Q4	A Q1	A Q2	A Q3	Citi Q4E	
3407	Asahi Kasei YoY	104.3 -15%	90.0 -14%	90.0 -14%	90.5 -13%	113.0 26%	110.6 22%	30.2 32%	33.5 -18%	23.3 -25%	17.2 -40%	10.8 -64%	27.5 -18%	24.2 4%	27.5 60%	9-May
4004	Showa Denko YoY	38.7 -18%	28.1 -27%	28.1 -27%	NA NM	35.5 26%	37.3 33%	9.4 33%	12.7 19%	16.8 71%	-0.1 -101%	9.5 2%	6.5 -49%	7.8 -53%	4.3 NM	8-May
4005	Sumitomo Chemical YoY	60.7 -31%	50.0 -18%	50.0 -18%	51.5 -15%	79.0 58%	84.7 64%	34.8 2%	19.3 1%	4.3 -84%	2.3 -73%	13.0 -63%	11.5 -40%	12.3 185%	13.2 465%	15-May
4042	Tosoh YoY	23.7 -29%	20.0 -16%	20.0 -16%	21.0 -12%	30.0 50%	31.8 52%	10.4 142%	11.3 96%	-0.8 NM	2.9 -77%	-1.8 NM	6.6 -42%	7.0 NM	8.2 182%	10-May
4183	Mitsui Chemicals YoY	21.6 -47%	5.0 -77%	5.0 -77%	6.4 -70%	30.0 500%	30.5 373%	22.0 87%	6.8 21%	-1.2 NM	-6.0 NM	6.9 -68%	-5.5 NM	1.0 NM	2.5 NM	10-May
4188	Mitsubishi Chemical HD YoY	130.6 -42%	100.0 -23%	98.0 -25%	99.8 -24%	136.0 39%	140.3 41%	59.8 -2%	35.9 -29%	28.9 -58%	6.0 -87%	15.6 -74%	25.5 -29%	32.4 12%	24.5 305%	9-May
4208	Ube Industries YoY	46.0 4%	28.0 -39%	28.5 -38%	29.4 -36%	32.5 14%	34.5 17%	8.7 100%	13.9 13%	12.4 -11%	10.9 -20%	6.1 -30%	10.1 -27%	7.0 -44%	5.3 -51%	10-May

Note: FY12 for Showa Denko represents FY12/12

Source: Company data, IFIS, Citi Research

Earnings trends

Integrated chemical makers

Asahi Kasei

We think earnings at Asahi Kasei basically trended in line with expectations in FY3/13. While there is some uncertainty about acrylonitrile supply and demand, we look for steady profit growth in FY3/14 driven by 1) housing, where Asahi Kasei has a large order backlog, 2) healthcare, on growth in drugs like the osteoporosis drug Teribone and anticoagulant Recomodulin, and 3) Zoll, where sales growth remains brisk. Among the integrated chemical makers in our coverage, we think profit growth visibility is high at Asahi Kasei.

Showa Denko

With seasonal factors also coming into play, we think Showa Denko made slow progress towards its full-year FY12/13 forecasts in Q1. We think HD demand is currently severe, given the impact of the slowdown in the PC market and inventory adjustments. However, Showa Denko's excellent technological capabilities in high-capacity HDs remain unchallenged. Forex sensitivity is significant, with each ¥1/\$ weakening lift OP by some ¥0.8bn. However, we think forex benefits will be limited in H1, as forward contracts are already in place.

Sumitomo Chemical

In FY3/13 Q4, we think basic chemicals and petrochemicals earnings may well have fallen short both of guidance and our own projections. We expect IT, healthcare and agrichemicals to drive growth in FY3/14. We also foresee sizable weak yen benefits, given the company's significant forex exposure. We think basic chemicals, petrochemicals and the Petro Rabigh project will remain as earnings risk factors.

Tosoh

Operating rates recovered in FY3/13 H2 for urethane feedstock MDI, where earnings have remained weak. We think full-year earnings will largely finish in line with guidance. We expect profit growth in FY3/14, as the impact of the fire at the Nanyo complex peters out and the depreciation burden lightens.

Mitsui Chemicals

In FY3/13, we think earnings from basic chemicals like the phenol chain and terephthalic acid likely undershot guidance. While we think the operating environment will remain challenging, we forecast profit growth in FY3/14, on the winding down of the impact of the incident at the Iwakuni-Ohtake plant, the weak yen, and higher urethane feedstock license revenue.

Mitsubishi Chemical Holdings

We think FY3/13 Q4 earnings probably did not reach the level we projected, in part because terephthalic acid spreads were tighter than expected. In FY3/14, we expect a recovery in MMA prices and the normalization of operations at the No. 2 line at the company's terephthalic acid plant in India, along with growth in functional products to drive a recovery in earnings. In comparison to other integrated chemical makers, forex exposure is high at MCH.

Ube Industries

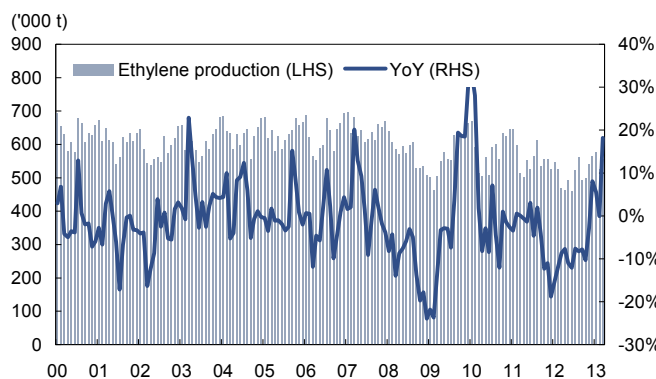
Although earnings from synthetic rubber and other products were somewhat weak, we believe overall FY3/13 Q4 earnings were more or less in line with forecasts. In FY3/14, we expect somewhat sluggish earnings growth, as we expect sustained oversupply of caprolactam, growth drivers are scarce, and forex exposure is low.

Figure 6. Petrochemical product supply/demand balance (ethylene conversion basis)

(mn MT)	01	02	03	04	05	06	07	08	09	10	11	12E	13E	14E	11-14 CAGR
Ethylene derivative demand															
North America	23.1	24.1	23.8	25.2	24.4	24.6	24.2	23.1	23.8	24.3	24.6	25.0	25.3	25.8	1.7%
Western Europe	21.2	21.8	22.0	23.2	23.3	24.1	24.8	22.8	22.2	22.2	22.4	22.4	22.3	22.2	-0.3%
Japan	5.6	5.5	5.6	5.8	5.7	5.8	5.7	5.6	5.4	4.9	5.7	5.7	5.7	5.7	0.0%
Asia	25.1	27.3	29.2	30.6	32.2	32.6	35.8	35.7	37.7	47.2	50.0	52.6	55.5	58.4	5.3%
Middle East	2.0	2.2	2.4	2.6	2.7	3.1	3.3	3.5	4.0	5.2	5.5	5.7	6.0	6.3	5.0%
Others	12.6	13.0	13.4	14.8	15.6	16.5	17.5	15.9	16.7	17.1	18.0	18.3	18.7	19.0	2.0%
World total	89.6	93.8	96.3	102.1	103.9	106.6	111.3	106.6	109.8	120.9	126.1	129.7	133.5	137.5	2.9%
Ethylene production capacity															
North America	34.1	34.9	34.6	34.1	34.8	35.2	35.4	35.1	33.5	33.0	33.4	33.5	34.2	34.7	1.3%
Western Europe	21.9	23.2	23.3	23.6	23.7	24.1	24.2	24.6	24.4	24.4	24.1	23.8	23.7	23.5	-0.9%
Japan	7.4	7.4	7.6	7.6	7.7	7.8	7.8	7.8	7.8	7.8	7.7	7.7	7.7	7.4	-1.4%
Asia	20.4	22.5	23.3	23.9	25.8	27.7	30.5	32.0	32.9	40.0	41.4	42.4	45.2	50.5	6.8%
Middle East	8.9	9.8	10.1	10.6	11.8	12.9	14.4	17.1	20.8	25.3	27.1	28.2	29.4	30.1	3.5%
Others	11.5	11.7	11.6	11.7	12.0	13.0	13.2	13.6	13.2	13.4	13.6	13.8	13.8	14.4	1.7%
World total	104.2	109.5	110.5	111.5	115.9	120.7	125.4	130.2	132.6	143.9	147.5	149.3	154.0	160.6	2.9%
Capacity - demand															
North America	11.0	10.8	10.9	8.9	10.5	10.6	11.2	12.0	9.7	8.7	8.8	8.5	8.9	8.9	
Western Europe	0.7	1.4	1.3	0.4	0.5	-0.0	-0.6	1.8	2.2	2.2	1.7	1.4	1.4	1.3	
Japan	1.8	2.0	2.1	1.9	2.1	2.0	2.1	2.2	2.4	2.9	2.0	2.0	2.0	1.7	
Asia	-4.7	-4.8	-5.9	-6.7	-6.5	-5.0	-5.3	-3.7	-4.7	-7.2	-8.5	-10.3	-10.3	-7.9	
Middle East	6.9	7.6	7.7	8.1	9.1	9.9	11.1	13.6	16.8	20.1	21.7	22.4	23.3	23.8	
Others	-1.1	-1.3	-1.8	-3.1	-3.6	-3.5	-4.3	-2.3	-3.4	-3.7	-4.3	-4.5	-4.8	-4.7	
World total	14.6	15.7	14.2	9.4	12.0	14.0	14.2	23.6	22.8	23.0	21.4	19.6	20.5	23.1	
Utilization rate (%)	86.0	85.7	87.2	91.6	89.6	88.4	88.7	81.9	82.8	84.0	85.5	86.9	86.7	85.6	

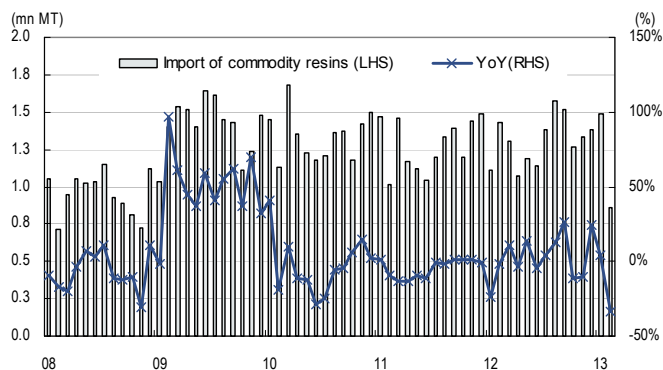
Source: IHS, METI, Citi Research.

Figure 7. Ethylene production in Japan



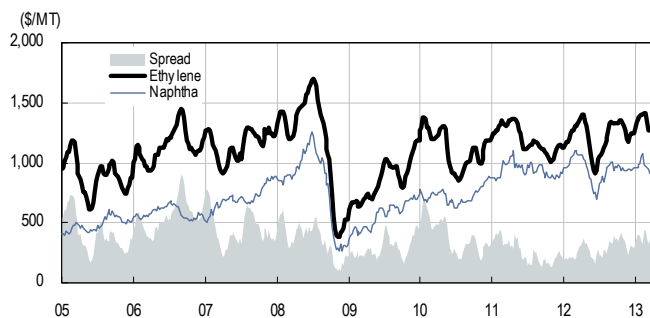
Source: METI, Citi Research.

Figure 8. Import of commodity resins by China



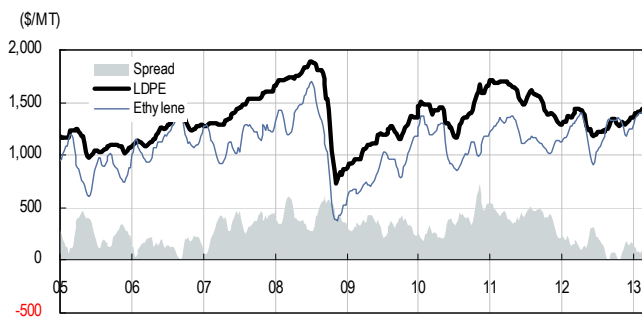
Source: Chinese trade statistics, Citi Research.

Figure 9. Ethylene: Asia price and spread



Source: Datastream, Citi Research.

Figure 10. Linear low-density polyethylene: Asia price and spread



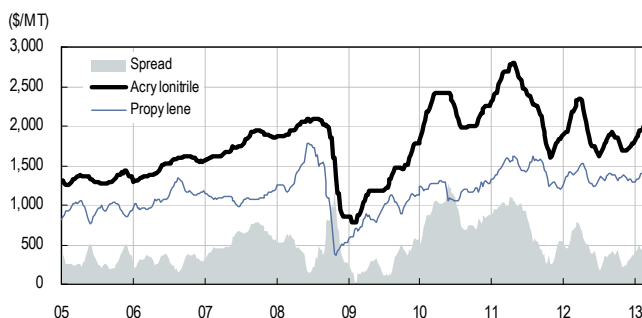
Source: Datastream, Citi Research.

Figure 11. Polypropylene: Asia price and spread



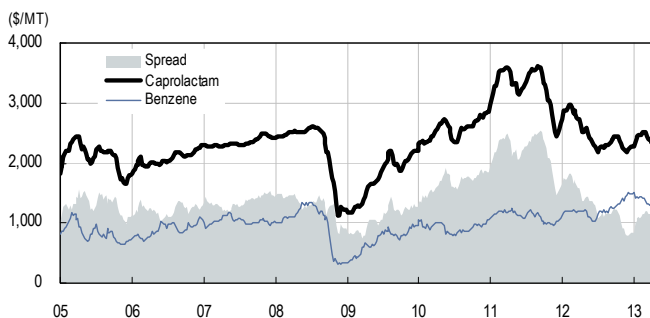
Source: Datastream, Citi Research.

Figure 12. Acrylonitrile: Asia price and spread



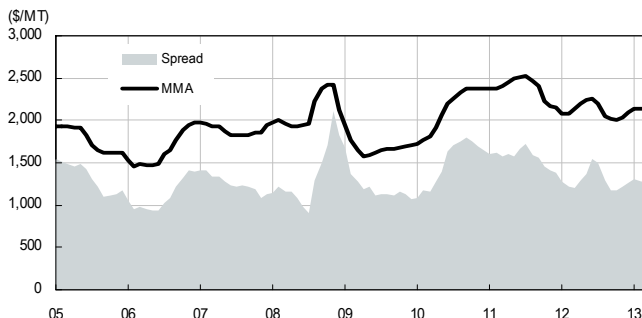
Source: Datastream, Citi Research.

Figure 13. Caprolactam: Asia price and spread



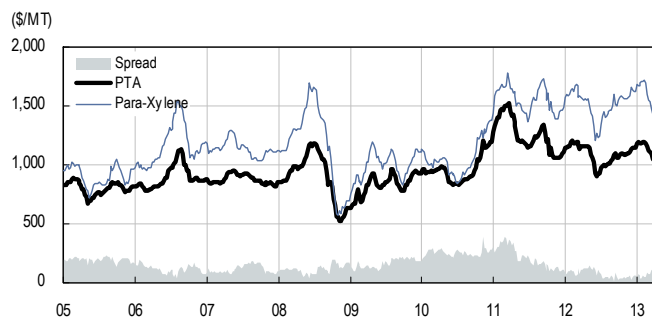
Source: Datastream, Citi Research.

Figure 14. MMA monomer: Asia price and spread



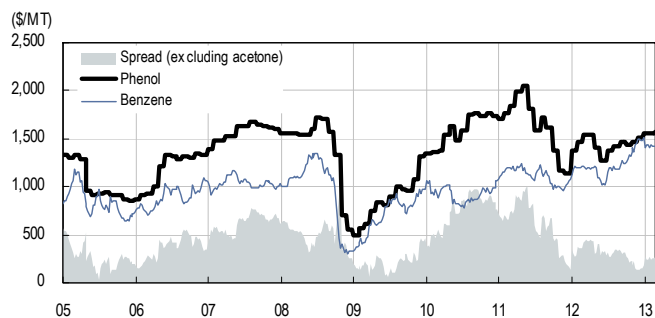
Source: Datastream, Citi Research.

Figure 15. Terephthalic acid: Price and spread



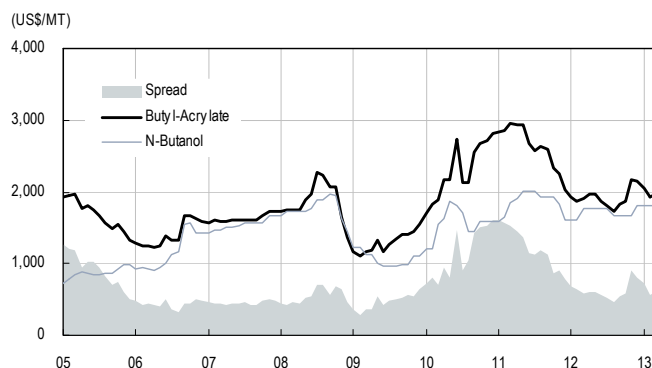
Source: Datastream, Citi Research

Figure 16. Phenol: Asia price and spread



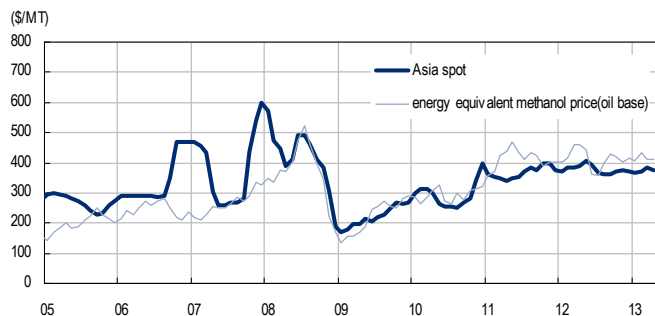
Source: Datastream, Citi Research

Figure 17. Acrylic acid ester: Price and spread



Source: Datastream, Citi Research.

Figure 18. Methanol prices



Source: Datastream, Citi Research.

Electronic materials makers

SUMCO

In February-April 2013, we think the recovery in 300mm wafers demand was in line with our forecasts, while demand for 200mm and smaller wafers seems to have been more solid than expected. Earnings benefit greatly from a weak yen, with each ¥1 depreciation against the dollar lifting annual OP by ¥1bn or so. We expect FY12/13 earnings to surpass guidance. We still expect demand for 300mm wafers to remain tight from the latter half of FY12/13 through FY12/14.

Shin-Etsu Chemical

We expect FY3/13 earnings to finish largely in line with our own and the company's forecasts. We believe brisk earnings at Shintech in the US offset the effect of weak silicon wafer earnings. We anticipate further growth in profit at Shintech in FY3/14 on sustained brisk demand for PVC in the US. We believed Shintech started its year well, with a brisk January-March quarter. We also expect to see improvements in the latter half of FY3/14 in the silicon wafer supply demand balance.

JSR

We think FY3/13 earnings will fall short of guidance, but believe the market has already taken this on board. In FY3/14, we think expansion in the company's share of the 20nm generation ArF resists market, growth in alignment film for small and medium-size LCDs, and increased shipments of S-SB rubber for fuel-efficient tires will drive earnings growth.

Tokyo Ohka

In FY3/13, we think earnings could fall short of our projections because of factors like weaker-than-expected demand for semiconductors in the January-March quarter. We believe growth in ArF resists will continue to drive earnings growth in FY3/14. We also expect weak yen benefits to emerge. Meanwhile, the new plant in South Korea should come on stream in FY3/14, but will need some time before it can contribute to earnings.

Sumitomo Bakelite

We think FY3/13 earnings could well miss both our own and the company's projections because of weak sealant material demand. We expect earnings to recover in FY3/14 on the back of an upturn in sealant materials and growth in LaZ and a rebound in high-performance plastics.

Zeon

We understand optical film used in smartphone and tablet applications remained brisk in the January-March quarter. We believe FY3/13 earnings were largely as we expected. In FY3/14, we expect growth in optical film to make a full-year contribution. While some impact is likely from falling synthetic rubber prices in the Asian market, we expect earnings to remain firm, as formula pricing is used in most sales.

Hitachi Chemical

We think FY3/13 earnings likely missed guidance and our own projections owing to weakening demand in Q4. We expect profit growth in FY3/14 on the back of returns on investments made to date in developing countries and a recovery in storage batteries. We think weak yen benefits will also emerge.

Nitto Denko

Sales of polarizing film, ITO film and other information fine materials recovered in March after a period of adjustment in January and February. We think FY3/13 earnings matched our projections. We look for further growth in polarizing film and ITO film used in smartphone and tablet applications in FY3/14. Forex exposure is also high. We think the weak yen will further enhance the company's superiority versus rivals in South Korea and Taiwan.

Earnings trends at makers of derivatives, fine chemicals, and fibers

Kuraray

We expect FY3/13 earnings slightly below guidance due to high materials costs but in line with forecasts. We look for modest QoQ growth in PVA film shipments in January-March. In FY3/14, we expect contributions from a new PVA film line, the full consolidation of MonoSol, and the elimination of the previous year's Eval problems, but we anticipate a significant increase in the burden of depreciation costs, particularly in PVA film business. A relatively high proportion of transactions are euro denominated. By product type, we expect forex effects in Poval resin, PVB film, Eval, and others. Transactions in PVA film for LCD applications are denominated in yen, and the company's rivals are other Japanese makers, so we anticipated little impact from yen weakness.

Denki Kagaku Kogyo

Despite a solid performance in pharmaceuticals, DKK may fall somewhat short of FY3/13 OP guidance on weakness in chloroprene rubber and electronic materials. In FY3/14, higher power costs may prove a burden, but we expect gains as exports account for about 80% of chloroprene rubber sales. In addition, we expect competitive conditions for petrochemicals and heat dissipation materials to improve.

Nihon Shokubai

FY3/13 OP is likely to be generally in line with guidance and our forecasts. In FY3/14, operations at the Himeji production facilities are set to resume from around May, but given some relaxation of acrylic acid demand and the time it may take to regain SAP market share, we expect earnings will remain low. In terms of forex

effects, conversion differences at Indonesian operations will be positive. However, given low SAP exports from Japan to Europe partly due to the effects of the accident at Himeji, as well as the company's materials purchasing position, we think weak-yen effects will be limited.

Kaneka

While we expect Kaneka's FY3/13 earnings to fall short of guidance, we think they will be in line with our forecast. We expect FY3/14 earnings to be driven by electronic materials like polyimide films and heat dissipation materials as well as growth in synthetic fibers. We will also be monitoring efforts to boost earnings from solar batteries.

Mitsubishi Gas Chemical

FY3/13 OP is likely to take a hit from weak demand for synthetic resins and other factors, but with positives including weak-yen benefits we expect earnings to come in slightly ahead of guidance. In addition to weak-yen benefits, we look for FY3/14 OP drivers to include growth in ELM Clean products and structural reforms in high-purity isophthalic acid business. Against a back drop of tight supply/demand in the methanol market, we think current earnings levels are sustainable on the whole. Regarding forex effects, yen weakness is good for a number of dollar-denominated businesses, including specialty aromatics, BT materials, and ELM Clean products. Competitive conditions for natural gas-related petrochemical products are set to improve. We also expect a positive contribution from conversion gains on equity earnings, particularly in methanol-related businesses.

Daicel

Daicel's synthetic resin earnings may fall somewhat short of plan in FY3/13, but with weak-yen benefits and solid results from TAC and tobacco filter business, we think guidance is within reach. Added filter tow facilities will start to make contributions in FY3/14, and we expect airbag inflator shipments to increase while the impact from the temporary cost burden that squeezed FY3/13 earnings in N. America should wind down. We estimate OP sensitivity at around ¥0.5bn for each ¥1 change in the ¥/\$ rate. This is mainly due to tobacco filter business, where 85% of earnings come from overseas. In addition, a high proportion of the company's sales are to Japanese automakers, leading us to expect a knock-on effect from yen weakening. Forex effects are likely to be most substantial in inflator and engineering plastics businesses. We expect competitive conditions for petrochemicals exports to take a turn for the better.

DIC

We think FY3/13 results at DIC will finish largely in line with expectations. We anticipate improved ink earnings and a recovery in LCD-related earnings in FY3/14. We think PPS resin, which is used primarily for automotive applications, should also expand steadily. However, with growth in TFT LCDs slowing, we see a slight shortage of growth drivers.

Teijin

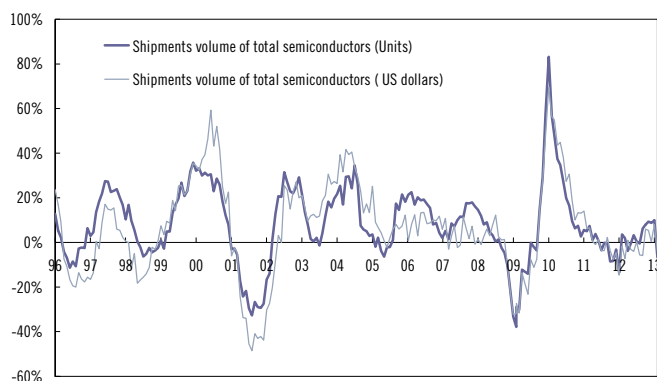
In FY3/14, we expect lower amortization of goodwill etc., primarily in the carbon fiber and home health care segments, and cost savings from overall cost cuts to underpin earnings. However, we think time will be needed for improvements to emerge in the aramid fibers and polycarbonate resins supply/demand balance. We expect competition to further intensify in the health care segment, particularly in the area of osteoporosis drugs, and the operating environment for Teijin's core operations to remain challenging. While we think some of Teijin's products will benefit from the weak yen, we think the overall forex impact will be neutral, given the low level of earnings at the European aramid fiber plants and the likelihood of losses at overseas carbon fiber and polycarbonate resin plants.

Toray

We see the fibers & textiles segment as the key earnings driver in FY3/14. We forecast substantial earnings growth on the back of expansion in sewn products, primarily for Uniqlo, and benefits from an increase in capacity for polypropylene

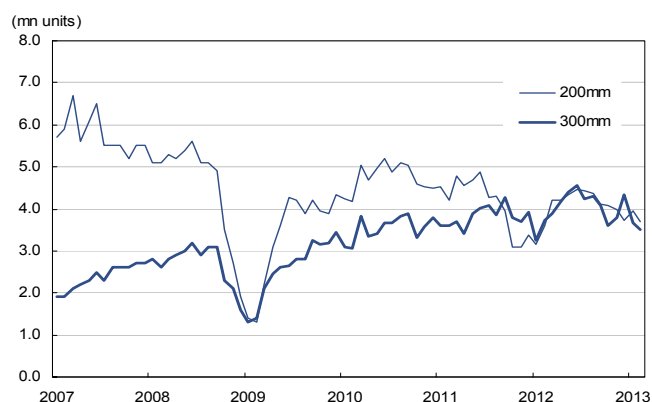
spunbond fabric used in disposable diapers. We think increased production of the B787 and other aircraft and growth in CNG tank-related demand will drive carbon fiber earnings growth. In terms of forex, many of the company's carbon fiber transactions are dollar denominated, particularly in the growth aircraft and CNG tank areas. Toray also exports most of its water-treatment membranes. We think competition with imported products will ease off in films. We expect Toray to benefit from increased output by Japan's automakers.

Figure 19. Global semiconductor device shipments (YoY)



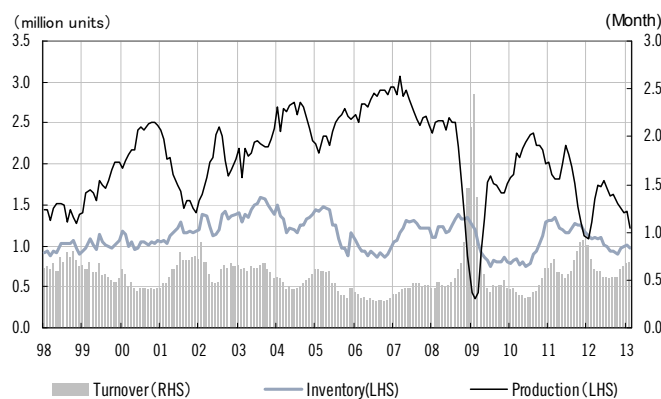
Source: WSTS, Citi Research.

Figure 20. Global silicon wafer shipments



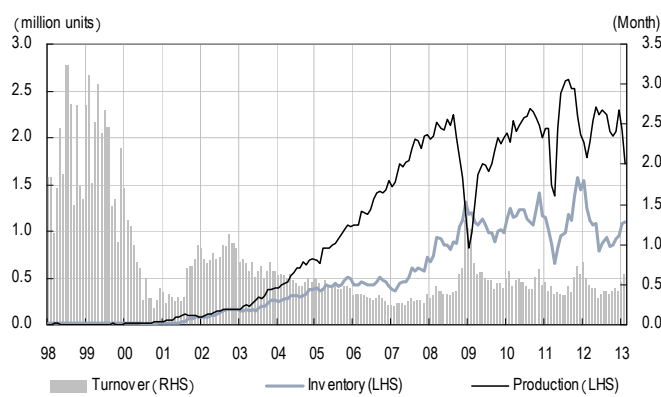
Source: Citi Research.

Figure 21. 200mm wafer production and inventory



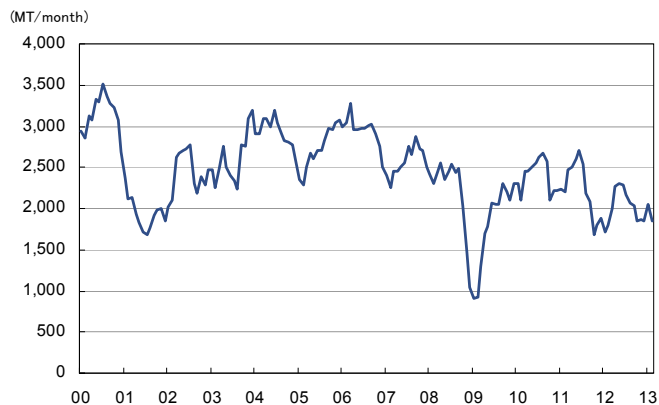
Source: METI, Citi Research.

Figure 22. 300mm wafer production and inventory



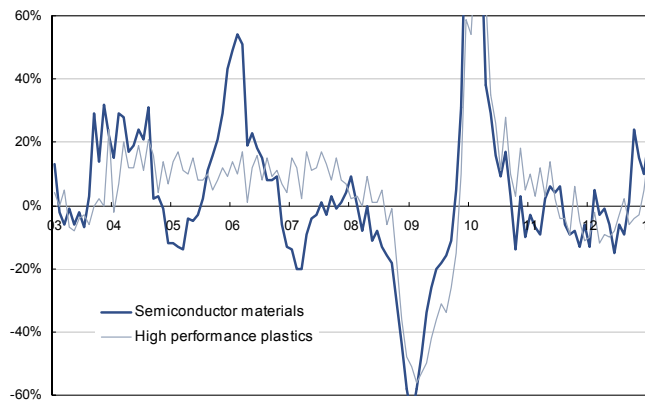
Source: METI, Citi Research.

Figure 23. Sales volume of Sumitomo Bakelite sealant



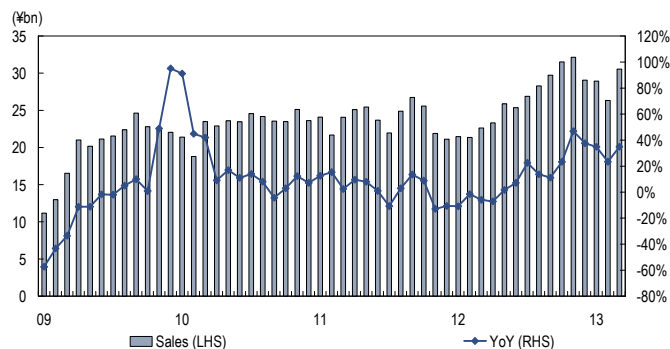
Source: Company data, Citi Research

Figure 24. Sumitomo Bakelite: Monthly sales (YoY)



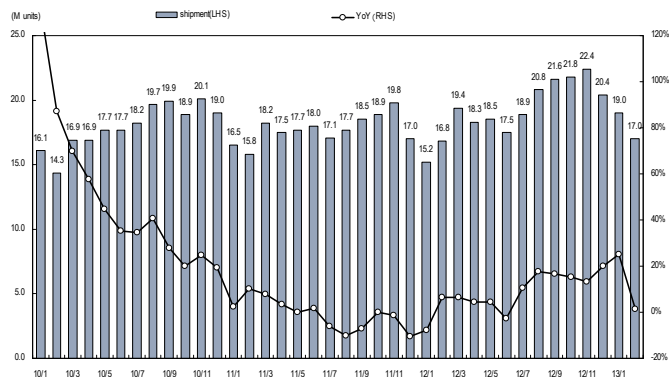
Source: Company data, Citi Research

Figure 25. Nitto Denko: Monthly sales



Note: Based on criteria used before segment changes.
Source: Company data, Citi Research.

Figure 26. LCD TV panels: Monthly shipments



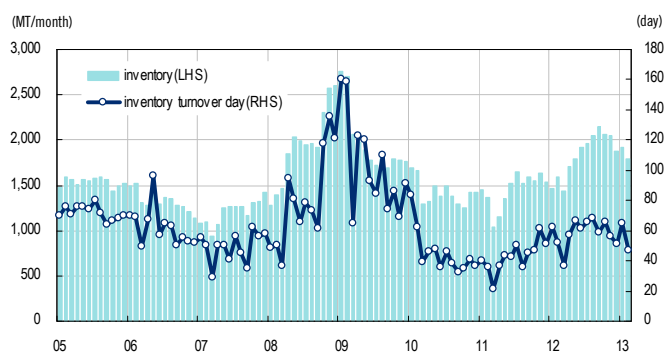
Source: DisplaySearch, Citi Research.

Figure 27. Carbon fiber: Export price



Source: METI's Ceramic Industry Statistics, MoF's Trade Statistics, Citi Research.

Figure 28. Carbon fiber inventory



Source: METI's Ceramic Industry Statistics, MoF's Trade Statistics, Citi Research.

Figure 29. Electronic materials: OP forecasts and consensus estimates

Code	Company	Full						Quarter								results release
		FY11	FY12			FY13		FY11				FY12				
		A FY	Co FYCE	Citi FYE	Cons Ave	Citi FYE	Cons Ave	A Q1	A Q2	A Q3	A Q4	A Q1	A Q2	A Q3	Citi Q4E	
3436	SUMCO	1.0	13.2	13.2	NA	29.0	29.8	1.9	3.5	1.0	-5.4	2.9	4.0	2.7	3.6	June
	YoY	NM	NM	NM	NM	NM	NM	NM	153%	NM	NM	52%	13%	178%	NM	
4063	Shin-Etsu Chemical	149.6	160.0	160.0	161.2	196.0	188.6	40.0	40.4	37.2	32.0	40.3	43.3	37.5	38.9	25-Apr
	YoY	0%	7%	7%	8%	23%	17%	11%	1%	-2%	-9%	1%	7%	1%	21%	
4185	JSR	36.0	36.0	34.0	34.4	42.0	43.5	9.2	10.2	9.6	6.9	8.7	8.3	7.9	9.1	24-Apr
	YoY	-8%	0%	-5%	-4%	24%	26%	-8%	2%	-3%	-25%	-6%	-18%	-18%	31%	
4186	Tokyo Ohka Kogyo	6.1	8.0	8.4	8.2	9.6	9.3	2.1	2.0	2.3	-0.3	2.1	2.2	2.1	2.1	8-May
	YoY	1%	32%	38%	35%	14%	13%	88%	13%	43%	NM	-2%	12%	-8%	NM	
4203	Sumitomo Bakelite	4.7	6.8	6.8	6.8	10.3	9.6	2.5	1.7	1.1	-0.6	2.0	2.5	2.1	0.1	10-May
	YoY	-58%	44%	44%	44%	51%	40%	-22%	-42%	-62%	NM	-21%	48%	95%	NM	
4205	Zeon	32.1	22.0	24.0	23.6	33.0	31.6	11.8	9.5	7.2	3.7	6.6	4.8	5.7	6.9	9-May
	YoY	-9%	-32%	-25%	-27%	38%	34%	13%	13%	-10%	-57%	-44%	-49%	-21%	87%	
4217	Hitachi Chemical	24.5	25.0	25.0	24.6	33.0	32.6	9.3	6.5	3.6	5.1	6.8	6.6	5.4	6.2	25-Apr
	YoY	-44%	2%	2%	0%	32%	33%	-28%	-46%	-67%	-33%	-27%	2%	49%	22%	
6988	Nitto Denko	56.5	72.0	74.0	71.8	96.0	88.1	20.9	15.4	12.2	8.0	16.4	15.9	22.8	18.9	30-Apr
	YoY	-34%	27%	31%	27%	30%	23%	-16%	-29%	-42%	-53%	-22%	4%	86%	136%	

Source: Company data, IFIS, Citi Research

Figure 30. Derivative and fine chemical makers: OP forecasts and consensus estimates

Code	Company	Full						Quarter								results release
		FY11	FY12			FY13		FY11				FY12				
		A FY	Co FYCE	Citi FYE	Cons Ave	Citi FYE	Cons Ave	A Q1	A Q2	A Q3	A Q4	A Q1	A Q2	A Q3	Citi Q4E	
3405	Kuraray	54.7	50.0	49.0	49.2	54.0	56.8	15.8	13.5	13.7	11.7	11.7	12.2	12.5	12.6	25-Apr
	YoY	3%	-9%	-10%	-10%	10%	15%	26%	5%	-3%	-14%	-26%	-10%	-9%	8%	
4061	Denki Kagaku Kogyo	20.7	20.0	20.0	19.7	25.0	23.9	5.9	5.9	5.0	4.0	4.6	5.2	5.8	4.4	26-Apr
	YoY	-16%	-3%	-3%	-5%	25%	22%	-4%	-9%	-15%	-36%	-21%	-12%	17%	10%	
4114	Nippon Shokubai	31.1	10.0	10.0	10.3	15.0	15.2	9.6	8.5	8.5	4.6	7.1	2.7	0.8	-0.7	8-May
	YoY	4%	-68%	-68%	-67%	50%	47%	28%	43%	0%	-42%	-26%	-68%	NM	NM	
4118	Kaneka	13.2	20.0	17.5	17.0	23.0	22.5	3.6	2.8	3.0	3.7	3.9	3.5	4.4	5.7	10-May
	YoY	-38%	52%	33%	29%	31%	33%	-42%	-32%	-54%	-13%	6%	26%	44%	55%	
4182	Mitsubishi Gas Chemical	9.1	10.0	11.0	10.4	19.5	18.1	5.6	1.9	1.7	-0.1	1.1	2.8	5.5	1.6	9-May
	YoY	-61%	10%	21%	14%	77%	74%	-11%	-69%	-77%	-103%	-80%	45%	226%	NM	
4202	Daicel	20.4	26.0	26.7	26.4	36.5	33.7	6.1	5.4	5.7	3.2	6.5	7.1	6.3	6.8	9-May
	YoY	-38%	27%	31%	29%	37%	28%	-45%	-45%	-23%	-28%	8%	31%	9%	111%	
4631	DIC	35.0	38.0	39.5	39.6	43.0	44.8	10.3	7.6	9.1	8.0	9.7	9.0	11.2	9.7	9-May
	YoY	-6%	9%	13%	13%	9%	13%	1%	-28%	-20%	54%	-6%	18%	23%	22%	

Source: Company data, IFIS, Citi Research

Figure 31. Synthetic fiber: OP forecasts and consensus estimates

Code	Company	Full						Quarter								results release
		FY11	FY12			FY13		FY11				FY12				
		A FY	Co FYCE	Citi FYE	Cons Ave	Citi FYE	Cons Ave	A Q1	A Q2	A Q3	A Q4	A Q1	A Q2	A Q3	Citi Q4E	
3401	Teijin	34.0	12.0	12.0	12.1	30.0	24.9	11.0	9.6	9.7	3.7	3.0	4.4	2.8	1.9	9-May
	YoY	-30%	-65%	-65%	-65%	150%	107%	37%	-23%	-39%	-70%	-73%	-54%	-71%	-50%	
3402	Toray	107.7	87.0	85.0	85.9	110.0	105.3	27.3	36.2	25.8	18.5	17.3	19.4	24.7	23.7	10-May
	YoY	8%	-19%	-21%	-20%	29%	23%	68%	37%	-6%	-39%	-37%	-46%	-4%	28%	

Source: Company data, IFIS, Citi Research

Appendix A-1

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The research analyst(s) primarily responsible for the preparation and content of this research report are named in bold text in the author block at the front of the product except for those sections where an analyst's name appears in bold alongside content which is attributable to that analyst. Each of these analyst(s) certify, with respect to the section(s) of the report for which they are responsible, that the views expressed therein accurately reflect their personal views about each issuer and security referenced and were prepared in an independent manner, including with respect to Citigroup Global Markets Inc and its affiliates. No part of the research analyst's compensation was, is, or will be, directly or indirectly, related to the specific recommendation(s) or view(s) expressed by that research analyst in this report.

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Data current as of 31 Mar 2013

	12 Month Rating			Relative Rating		
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