

Manufacturing

Quarterly analysis of manufacturing activity

1st quarter 2023
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Executive summary

The South African (SA) manufacturing sector experienced a tumultuous 2022, with numerous shocks and load-shedding keeping the sector from generating any real recovery momentum. The latest Absa Manufacturing Survey¹ results suggest that the sector continued to struggle in the first quarter of 2023. Business confidence among manufacturers fell by a significant 9 points to 17 in 2023Q1. This is the most pessimistic respondents have been since the strictest phase of the COVID-19 lockdown in the first half of 2020.

The burden of load-shedding on production, costs and confidence is a key feature of the Q1 survey results. Indeed, the index measuring the seriousness of the constraint that the general political climate poses on business conditions rose to a record high of 91 in Q1. This index is likely impacted by load-shedding, water shortages and other service delivery failings. Continued friction at the local ports is also concerning to many respondents.

Domestic sales declined for a fourth straight quarter, but selling price inflation remained fairly high. On the export front, selling price inflation also remains high, while volumes dipped further.

Amid a slowdown in demand and intensive load-shedding, production took a turn for the worse. A seasonally adjusted net majority of 23% reported a decline in production volumes compared to the same quarter last year.

The average total production cost per unit remained very high, with the indicator at 85 compared to a long-term average of 60. Many of the respondents explicitly report on the cost of load-shedding, either in lost production or in the form of diesel purchases to run generators, in their commentary on the survey.

After two quarters of slight net majorities reporting an increase in fixed investment, a net 15% reported a decline in fixed investment levels relative to 2022Q1. The picture for investment going forward also looks bleak. A net 13% expects a decline in fixed investment in 12 months' time, with respondents being particularly downbeat about investment in additions.

Despite the current environment already being so challenging, a net majority of 45% expects business conditions to worsen further in twelve months' time.

¹ The survey was conducted between 8 and 27 February 2023.

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Introduction

The South African (SA) manufacturing sector experienced a tumultuous 2022, with numerous shocks and load-shedding keeping the sector from generating any real recovery momentum. The latest Absa Manufacturing Survey results suggest that the sector continued to struggle in the first quarter of 2023.

This report provides an overview of the situation in the manufacturing sector as it developed during the first quarter of 2023 (2023Q1), expectations for the second quarter of 2023 (2023Q2) and also 12 months hence. The main section of the report discusses the trends in the overall manufacturing industry with the assistance of graphs, followed by a brief outlook for the sector. After this section, separate tables and graphical displays of the survey data are also provided for each individual sector and province².

A brief overview of the latest official data

SA real GDP contracts in 2022Q4

Quarterly GDP
decline notably
worse than
expected

According to Statistics South Africa (Stats SA), real Gross Domestic Product (GDP) declined by 1.3% quarter-on-quarter³ (q-o-q) in 2022Q4. This followed an upwardly revised 1.8% q-o-q expansion in Q3. The contraction was deeper than expected, and, as a result, the level of real GDP dipped back below the pre-COVID level. Put differently, the level of real GDP at the end of 2022 was lower than three years earlier. Real GDP growth was 2% in 2022, down from the bounce-back growth of 4.9% achieved in 2021.

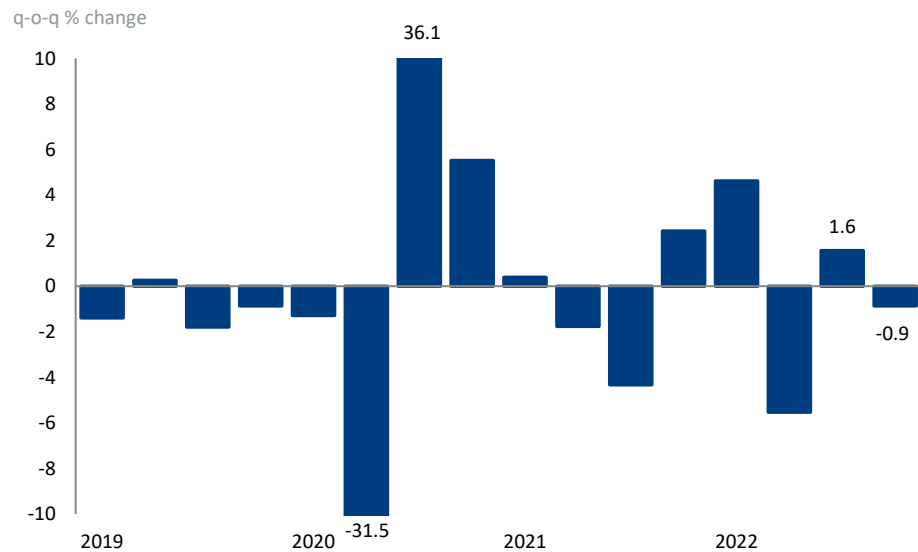
The weakness in Q4 was broad-based with seven of the ten major sectors posting quarterly contractions. At -0.6 percentage points (% pts), the finance sector was by far the biggest drag on the services sector, as well as overall real GDP in Q4. As foreshadowed by the high-frequency production data, the manufacturing sector contracted on a quarterly basis. The sector declined by 0.9% following 1.6% growth recorded in the previous quarter – see Figure 1. On

² The Manufacturing Survey separately covers eight of the main subsectors of the manufacturing industry as well as the three main provinces (Gauteng, KwaZulu-Natal and the Western Cape).

³ All quarterly and monthly growth figures quoted in this section are seasonally adjusted rates.

an annual basis, the sector contracted by 0.5% compared to the fourth quarter of 2021.

Figure 1: Another quarterly decline in manufacturing output



Source: Stats SA

The high-frequency data available for January 2023 shows a third consecutive monthly increase in manufacturing production. Output rose by 1.1%, following a 0.5% increase in December. This was an encouraging outcome given that the intensity of load-shedding worsened in January compared to the previous month but was foreshadowed by a solid improvement in the business activity index of the Absa Purchasing Managers' Index (PMI) in January. Unfortunately, the activity index as well as the headline PMI fell back below the neutral 50-point mark in February.

Global manufacturing output returns to growth

According to the J.P. Morgan global manufacturing PMI for February, output expanded for the first time in seven months amid better-working supply chains and a rebound in China. The improvement in output lifted the headline index to 50 following five months of signalling worsening conditions in the global factory sector. The output price index of the global PMI did remain elevated, which raises the risk of goods inflation becoming more entrenched. The rapid rebound in Chinese activity following the sudden reopening of its economy late last year should provide a vital boost to global growth in 2023. The picture for SA's other key trading partners, particularly in Europe, remains more clouded although it seems like the region will be able to avoid a near-term recession.

China reopening
boosts global
growth

The 2023Q1 Absa Manufacturing Survey results

Manufacturing business confidence declines further

Confidence down to lowest level since 2020

Business confidence among manufacturers fell by a significant 9 points to 17 in 2023Q1. This is the most pessimistic respondents have been since the strictest phase of the COVID-19 lockdown in the first half of 2020 – see Figure 2.

Confidence is also slightly below the lowest level seen during the global financial crisis in 2008/09. Indeed, at the current level, less than two out of ten respondents were satisfied with prevailing business conditions.

Among the different subsectors, only confidence of transport⁴ producers improved relative to Q4. However, with confidence ticking up from 19 to just 21, respondents remain extremely pessimistic. All other subsectors saw confidence decline. Confidence of furniture manufacturers fell by 41 points, while food producers saw confidence drop from 46 to 22 points.

The sizeable decline in manufacturing confidence contributed to the downtick in the overall RMB/BER Business Confidence Index (BCI) in Q1. The BCI declined further from 38 in Q4 to 36 in Q1. While the outcome could have been worse given the severity of power outages and the associated drop-off in business activity, the result is nonetheless disappointing. The general business mood in South Africa certainly remains gloomy.

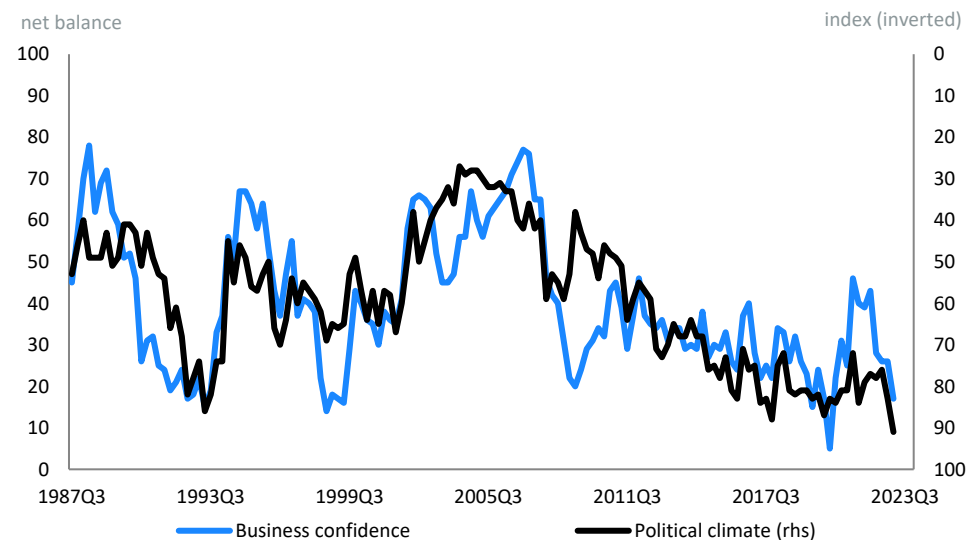
Political climate constraint up to record high in Q1

The remainder of the report will discuss some of the underlying drivers of demand and activity in the factory sector. These go some way in explaining the downbeat mood among manufacturers. However, the survey also tracks constraints on business conditions and one constraint in particular stands out in Q1 and further adds to the explanation for why confidence declined notably. The index measuring the seriousness of the constraint that the general political climate poses on business conditions rose to a record high of 91 in Q1. The series started in the late 1980s – see Figure 2 – and has a good relationship with business confidence over time. During periods when the political climate is seen as a serious constraint, business confidence tends to be low and vice versa. Note that the axis of the political climate constraint (on the right side) has been flipped, so the lower the index, the more constraining it is. While we do not define political climate in the survey, some of the respondents' commentary

⁴ Transport refers to the full motor vehicles, parts & transport equipment subsector. In the main text of the document, subsectors will be referred to by mentioning the main subcategory within the subsector, the footnote on the first page of the **Survey results section** provides all the subcategories included per subsector.

makes it clear that this index is impacted by load-shedding, water shortages and other service delivery failings. Continued friction at the local ports which hampers the ability to export, and import, is also a cause of concern to many respondents. The Q1 survey period corresponded with a particularly intense period of load-shedding in SA, including an unprecedented streak of stage 6 load-shedding. This negatively impacts production, while alternative power sources – especially generators – put an additional cost burden on already struggling manufacturers. It remains to be seen whether producers are able to push these costs on to consumers without suffering from a decline in demand due to higher prices. The frequent power outages and power surges when electricity returns also damage machinery and equipment, which requires additional maintenance (further adding to the cost burden). In turn, this results in further downtime. Furthermore, staff members are unable to work during power outages, but still need to be paid while working hours cannot be made up. The burden of load-shedding on production, costs and confidence is a key feature of the Q1 survey results.

Figure 2: Manufacturing confidence and the political climate constraint move closely together over time



Source: BER

Sales volumes under pressure as selling price inflation remains relatively high

A net majority of 17% reported a decline in domestic sales volumes compared to the same quarter last year. This was the fourth consecutive quarter that respondents noted a decline in sales. Selling price inflation remained high, with the index tracking the rate of increase in domestic selling prices ticking up from 48 to 50 in Q1 – this compares to a long-term average reading of the index at 30 points. This was the ninth consecutive quarter that prices rose at a faster pace

Domestic sales decline for a fourth straight quarter

than the long-term average and it remains to be seen how long this can be sustained.

On the export front, selling price inflation also remains high – albeit the indicator declined from 50 to 43 in Q1, which points to a slight deceleration in the rate of increase. Still, this remains significantly higher than the long-term average reading of this indicator at 15. The weaker rand exchange rate could benefit producers targeting the export market as it increases the rand income of an exported product even if the foreign-currency denominated price remains unchanged. That said, a weaker rand also pushes up the cost of imported raw materials and intermediate products.

Beyond price movements, a slightly bigger net majority reported a decline in export volumes compared to the same period last year. At 13%, this is the biggest net majority reporting a fall since 2021Q1 and is more or less in line with the long-term average. All the major exporting subsectors reported a decline in exports, with metals producers being the most downbeat (-25), followed by chemical manufacturers (-19).

Export volumes expected to fall in 12 months' time

Respondents foresee exports to perform better in Q2, albeit remaining slightly in negative terrain. Worryingly, while manufacturers usually expect an improvement in export volumes in 12 months' time, a net majority of 15% expects a decline in exports over this time. While the outlook for the global economy is more downbeat compared to last year, prospects have arguably brightened since the previous survey which would argue against a worsening of export expectations.

Figure 3: Export and domestic sales volumes

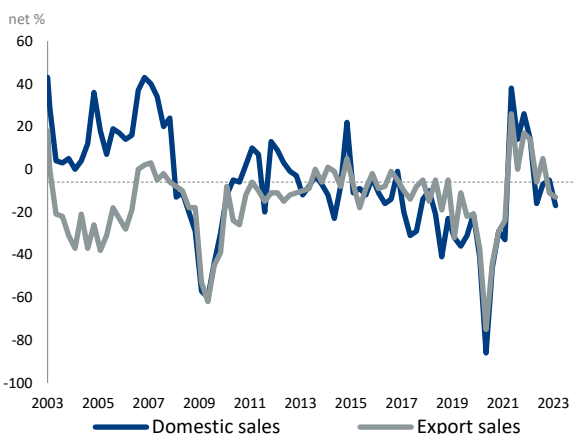
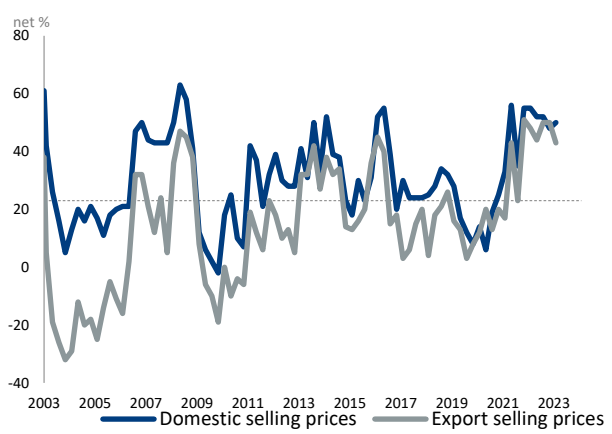


Figure 4: Export and domestic selling prices



Source: BER

Production under pressure

Amid a slowdown in demand – particularly on the domestic front – and intensive load-shedding, production took a turn for the worse. Indeed, production is lower than one would expect given current demand levels, illustrative of the impact of load-shedding. A seasonally adjusted net majority of 23% reported a decline in production volumes compared to the same quarter last year. Food and beverages producers led the decline with a net majority of 22% reporting a fall in output after a net 13% still saw an increase in production in the previous quarter. Food producers that need to ensure a consistent cold chain through the production process are likely struggling with the frequent power outages. Electricity-intensive producers of metals and wood also struggled in Q1. Indeed, barring transport manufacturers – where output trends can be volatile – all big subsectors reported a decline in output. Positively, a net 12% of transport producers reported an increase, which would be a promising start to the year for a sector plagued by the lingering impacts of the flooding in KwaZulu-Natal in April.

Employment indicators worsen in line with weaker output

With a drop in production, it was unsurprising to also see a decline in the employment indicators. A net 17% reported a decline in the number of workers (from 11% before) and a net 20% said the average hours worked per worker declined relative to 2022Q1.

Stock levels of final goods were once again deemed as too low relative to expected demand. This is normally seen as a positive sign for output growth as it means a ramp-up of production is required to normalise stock levels, but it remains to be seen whether producers are able to play catch-up if load-shedding at high stages continues through the second quarter.

Load-shedding keeps production costs elevated

Beyond the direct impact on the ability to produce, load-shedding also adds to the cost burden of manufacturers. The average total production cost per unit remained very high, with the indicator at 85 compared to a long-term average of 60. Many of the respondents explicitly report on the cost of load-shedding, either in lost production or in the form of diesel purchases to run generators, in their commentary on the survey. Encouragingly, the survey does suggest that shortages of raw materials are becoming less of an issue and that cost increases of raw materials are also slowing down. Stock levels of raw materials relative to planned production are also no longer deemed as too low. Shortages of raw materials have been an important constraint on the (global) manufacturing recovery from the pandemic, so the relief is certainly welcome.

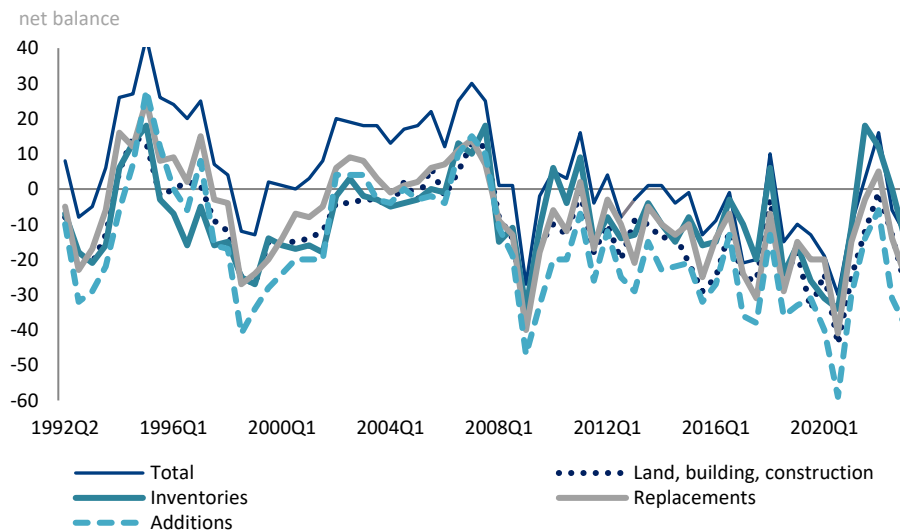
Fixed investment projects take a knock

After two quarters of slight net majorities reporting an increase in fixed investment, a net 15% reported a decline in fixed investment levels relative to 2022Q1. Not only is this a big turnaround, but the current level is also the poorest reading in two years. The increase in slack capacity in the sector, reflected in the capacity underutilisation index increasing to 72 from 68, likely explains part of the reason why investment plans were scaled back.

Current and
planned fixed
investment
outlays scaled
back

The picture for investment going forward also looks bleak. A net 13% expects a decline in fixed investment in 12 months' time, with respondents being particularly downbeat about investment in additions⁵ - see Figure 5. This makes sense with commentary from the survey respondents and comments by listed companies in the media stating that companies are forced to divert spending on capital outlays to alternative energy generation, with spending on additional capacity last in line. That said, investment on all categories surveyed worsened. In terms of the constraint on investment, as was the case with the constraints on business conditions, the political climate is rated as the most serious constraint (of those surveyed). The insufficient demand constraint ticked down slightly to just below its long-term average, while credit costs and tax structure were largely deemed equally constraining as in 2022Q3.

Figure 5: Expected fixed investment in 12 months' time



Source: BER

⁵ These long-term questions are only surveyed in the first and third quarter of each year. The same holds for the long-term investment constraint questions. For more information on the calculation of constraint indices, see the **Technical note** at the end of this report.

Outlook

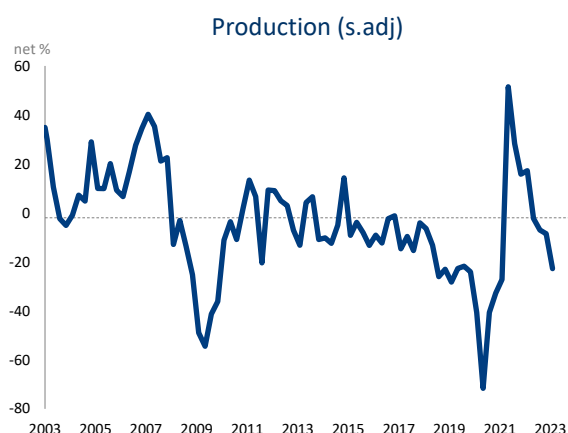
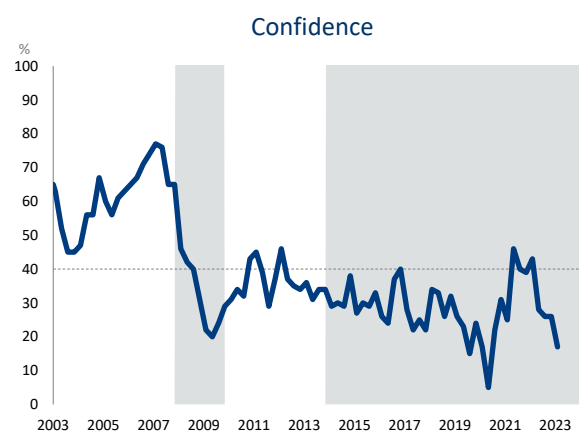
The decline in manufacturing business confidence was not unexpected given the tough business environment. One of the respondents summarises it as follows in a sobering comment: “all aspects of doing business in South Africa are very trying! The extra cost of own electricity production is huge, while the ports are a disaster. It is getting harder to try and run a profitable business in South Africa.” The impact of load-shedding not only weighs on confidence, but also negatively impacts production (likely also demand), adds to the cost burden and filters through to investment decisions.

Despite the current environment already being so challenging, a net majority of 45% expects business conditions to worsen further in twelve months’ time. While the load-shedding situation is likely to remain very tough over the short term and through winter, the hope is that there will be some improvement by this time next year which could help conditions turn out slightly better than feared. Beyond the local economy, the global picture remains uncertain. While concerns of a near-term recession in Europe have diminished somewhat, the risk of an energy shortage in the next winter remains. The US economy is also set to slow down through 2023. On the positive side, the rapid reopening of the Chinese economy and the immediate boost to output will be positive for global demand.

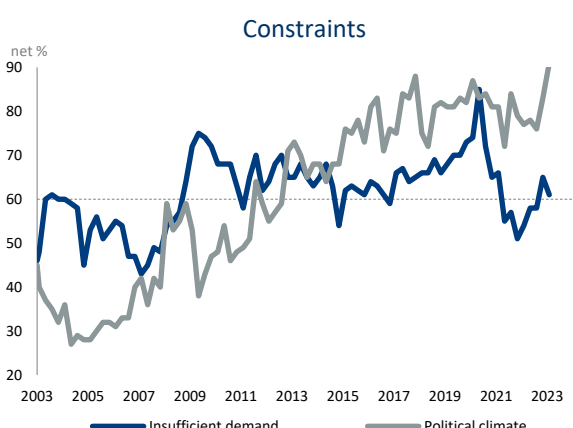
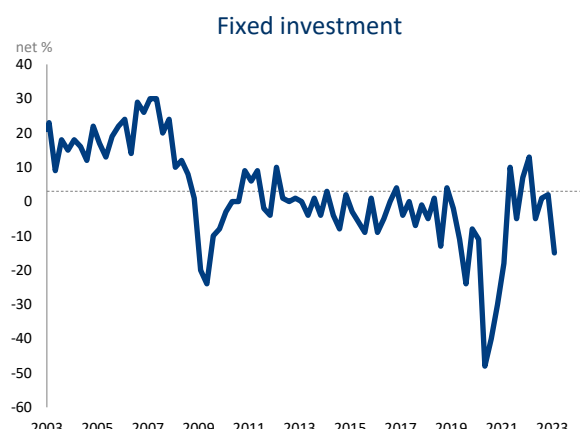
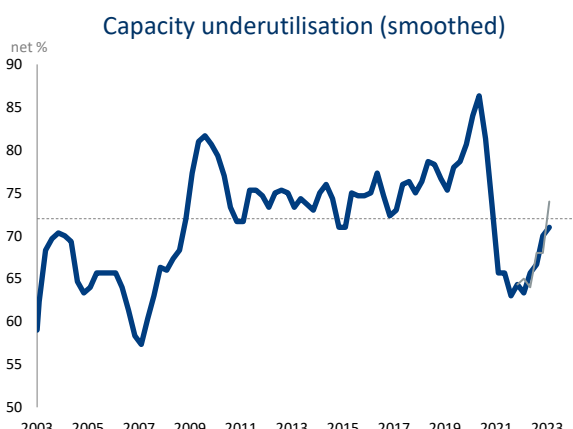
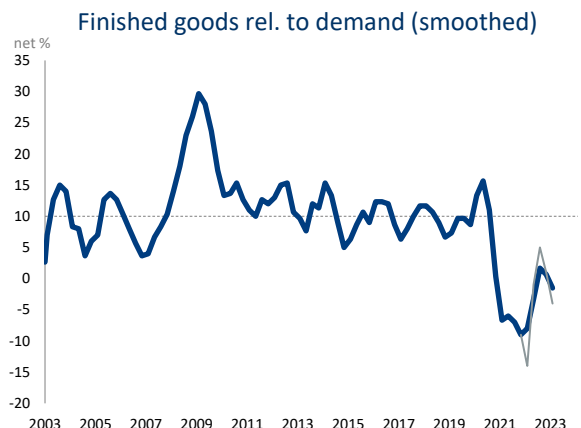
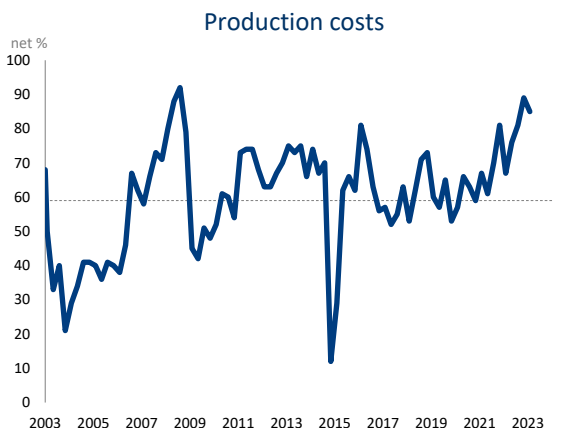
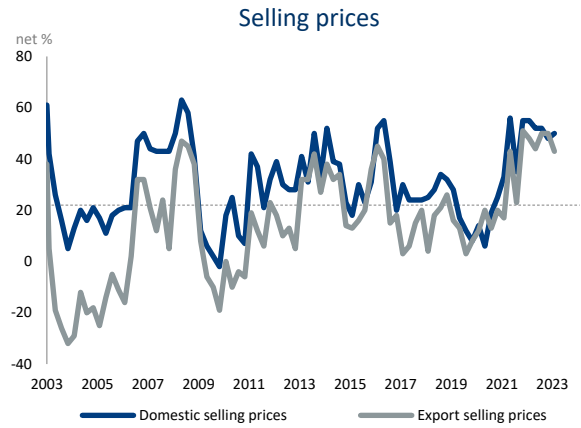
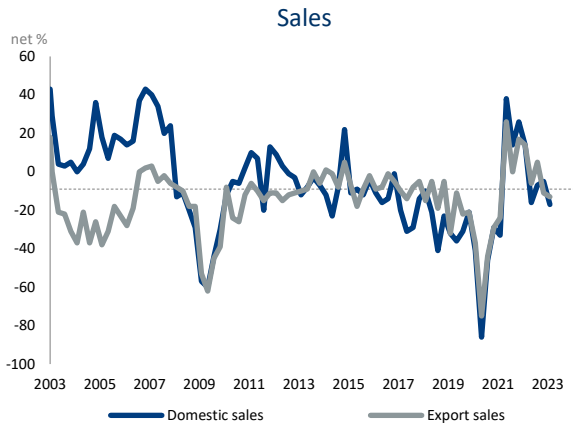
Survey results

Manufacturing: total⁶

Indicator	Unit	$\mu-\sigma$	μ	$\mu+\sigma$	21Q2	21Q3	21Q4	22Q1	22Q2	22Q3	22Q4	23Q1	Δ	σ_{Δ}
Confidence	%	22	38	54	46	40	39	43	28	26	26	17	-9	7
Activity & prices														
Production	Net %	-27	-5	17	44	25	22	22	-10	-10	-3	-18	-15	17
Seasonally adjusted	Net %	-26	-5	17	51	28	16	17	-2	-7	-8	-23	-15	16
Employment	Net %	-28	-15	-2	1	-6	2	-7	-4	-14	-11	-17	-6	9
Average hours worked / worker	Net %	-28	-13	2	25	-1	1	0	-9	-16	-16	-20	-4	12
Domestic sales	Net %	-31	-7	17	38	14	26	14	-16	-7	-5	-17	-12	17
Domestic selling prices	Net %	15	30	45	56	35	55	55	52	52	48	50	2	12
Export sales	Net %	-32	-15	1	26	0	17	14	-6	5	-11	-13	-2	14
Export selling prices	Net %	-7	15	36	43	23	51	48	44	50	50	43	-7	13
Production costs	Net %	44	60	76	61	70	81	67	76	81	89	85	-4	12
Stocks & investment														
Finished goods rel. to demand	Net %	1	10	18	-8	-4	-9	-14	-1	5	1	-4	-5	7
Smoothed	Net %	3	10	17	-6	-7	-9	-8	-3	2	1	-2	-3	5
Capacity underutilisation	%	65	72	79	61	67	61	65	64	68	68	74	6	5
Smoothed	%	66	72	78	66	63	64	63	66	67	70	71	1	4
Fixed investment	Net %	-13	2	16	10	-5	7	13	-5	1	2	-15	-17	10
Constraints														
Insufficient demand	Net %	54	62	70	55	57	51	54	58	58	65	61	-4	5
Political climate	Net %	42	61	80	72	84	79	77	78	76	83	91	8	6
Expected in 12 months														
Business conditions	Net %	-31	-11	9	6	2	-9	-5	-17	-20	-29	-45	-16	15
Smoothed	Net %	-28	-11	6	-5	0	-4	-10	-14	-22	-31	-37	-6	12
Fixed investment	Net %	-14	1	15		3		16		-6		-13	-7	13

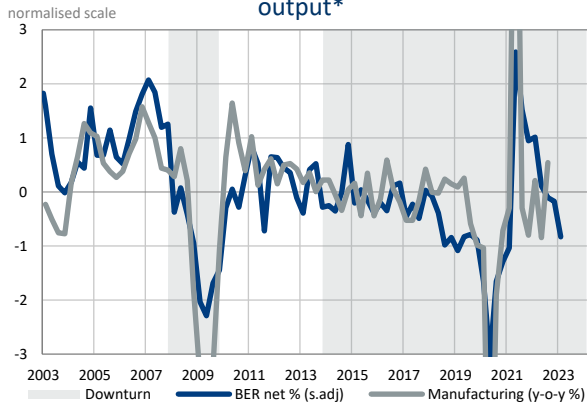


⁶ The total consists of 1) food & beverages, 2) textiles, clothing, leather & footwear, 3) wood, paper, printing & publishing, 4) chemical products, rubber & plastics, 5) glass & non-metallic mineral products, 6) basic metals, metal products & machinery, 7) electrical machinery, radio, TV and professional equipment, 8) motor vehicles, parts & transport equipment and 9) furniture & other. Although the BER covers the electrical machinery etc. sector and includes it in the total, it does not publish the results of this sector separately. The BER does not cover petroleum refining (which is part of the chemical etc. sector) and scrap metal (which is part of "other") and they are therefore not included in the total.

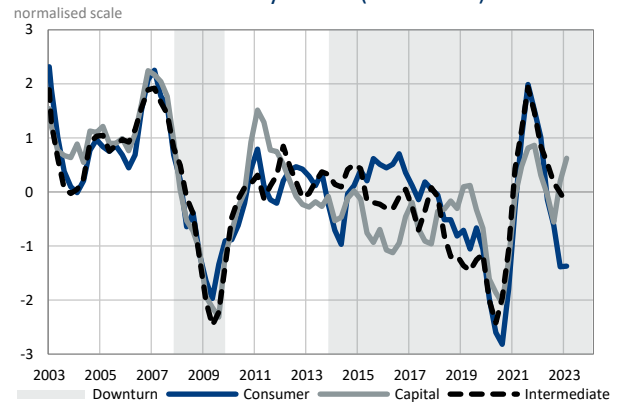


Summary

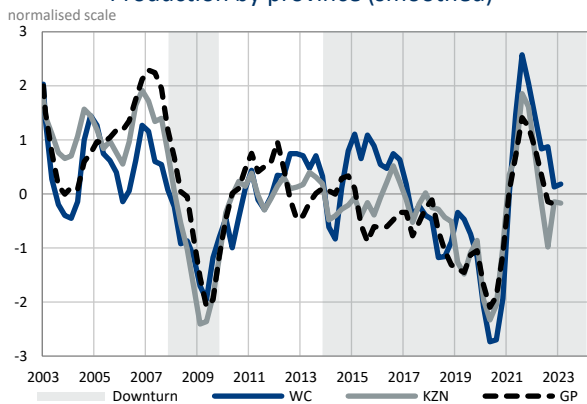
Production & actual manufacturing output*



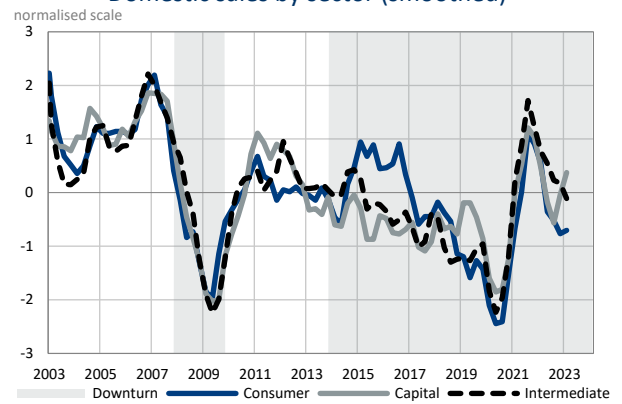
Production by sector (smoothed)



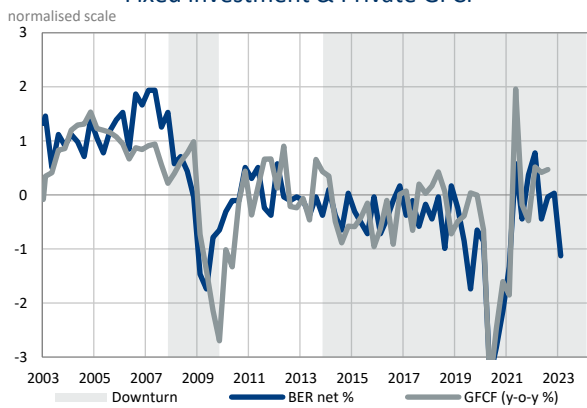
Production by province (smoothed)



Domestic sales by sector (smoothed)



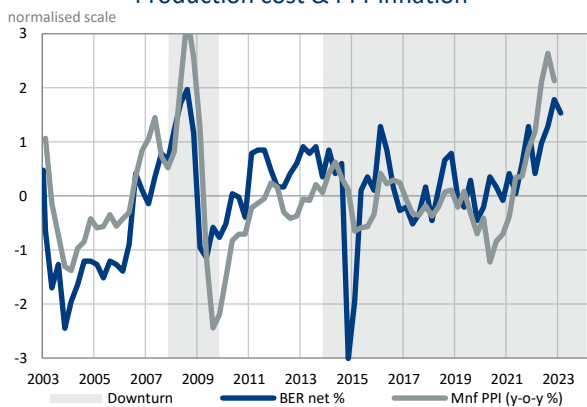
Fixed investment & Private GFCF



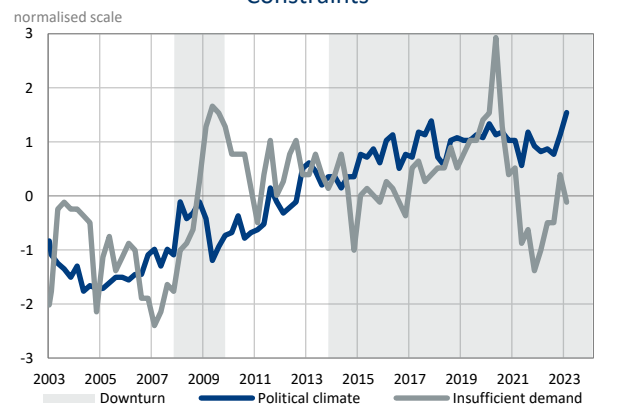
Export sales & actual exports



Production cost & PPI-inflation



Constraints



Capital⁷, intermediary⁸ and consumer⁹ goods

Indicator	Unit	$\mu-\sigma$	μ	$\mu+\sigma$	21Q2	21Q3	21Q4	22Q1	22Q2	22Q3	22Q4	23Q1	Δ	$\Delta\sigma$
Capital goods														
Confidence	%	16	37	57	34	33	23	38	11	15	24	13	-11	11
Smoothed	%	17	37	56	30	30	31	24	21	17	17	19	2	8
Production	Net %	-41	-10	22	33	1	2	37	-43	-27	-3	17	20	28
Smoothed	Net %	-36	-9	17	3	12	13	-1	-11	-24	-4	7	11	20
Domestic sales	Net %	-43	-12	20	38	9	17	24	-38	-36	-8	5	13	25
Smoothed	Net %	-39	-12	16	3	21	17	1	-17	-27	-13	-2	11	19
Export sales	Net %	-41	-18	5	33	21	16	32	-6	13	3	-12	-15	24
Smoothed	Net %	-36	-18	0	13	23	23	14	13	3	1	-5	-6	18
Intermediate goods														
Confidence	%	20	36	53	50	40	41	46	32	31	20	15	-5	8
Smoothed	%	21	36	52	38	44	42	40	36	28	22	18	-4	7
Production	Net %	-31	-6	19	52	32	23	22	-9	2	-1	-21	-20	20
Smoothed	Net %	-28	-6	15	18	36	26	12	5	-3	-7	-11	-4	17
Domestic sales	Net %	-36	-9	17	52	17	24	17	-15	8	-5	-19	-14	21
Smoothed	Net %	-33	-9	14	11	31	19	9	3	-4	-5	-12	-7	18
Export sales	Net %	-33	-16	1	35	-5	19	-1	0	6	-22	-7	15	16
Smoothed	Net %	-31	-16	-1	1	16	4	6	2	-5	-8	-15	-7	12
Consumer goods														
Confidence	%	27	41	56	43	46	43	40	29	22	37	21	-16	10
Smoothed	%	28	41	55	39	44	43	37	30	29	27	29	2	7
Production	Net %	-18	1	19	36	25	32	14	2	-21	-8	-33	-25	17
Smoothed	Net %	-15	1	16	16	31	24	16	-2	-9	-21	-21	0	14
Domestic sales	Net %	-22	0	21	16	11	34	5	-9	-17	-4	-23	-19	18
Smoothed	Net %	-19	0	19	0	20	17	10	-7	-10	-15	-14	1	13
Export sales	Net %	-31	-12	7	9	-5	16	27	-14	-1	-5	-21	-16	17
Smoothed	Net %	-28	-12	4	-7	7	13	10	4	-7	-9	-13	-4	13

⁷ Capital goods: Structural metal products (SIC code 353-4), general purpose machinery (356), special purpose machinery & machine tools (357), electrical motors & generators (361), medical appliances, photo equipment (374-6), motor vehicles & bodies (381-2), parts & accessories (383), other transport equipment (384-7)

⁸ Intermediary goods: Grain mill products, starches & animal feeds (303), spinning, weaving & finishing of textiles, yarns (311), knitted & crocheted fabrics (313), sawmilling, preserving of timber, bark grinding & compressing (321), wood & wood products (322), paper and products (323), basic chemicals (334), rubber (337), plastic products (338), glass & glass products, fibreglass (341), other non-metal mineral products (bricks, tiles, cement, prefab concrete, asphalt, mica products) (342), basic iron & steel (351), basic precious (gold, platinum, silver) & non-ferrous metal (aluminium, copper, lead, nickel, tin, zinc) products (352), other fabricated metal products (355), electrical distribution & control apparatus (362), wire & cable (363), batteries, electrical bulbs & other (364-6)

⁹ Consumer goods: Meat, fish, fruit, vegetables, oils & fats (301), dairy products (302), other (304), beverages (305), tobacco (306), other textiles (312), wearing apparel & articles of fur (314-5), leather (316), footwear (317), other chemical products (335-6), computers & office machines, household appliances (358-9), TV, radio & communication equipment (371-3), furniture (391), other (e.g. jewellery, musical instruments, games & toys, recycling NOT COVERED) (392)

μ – average

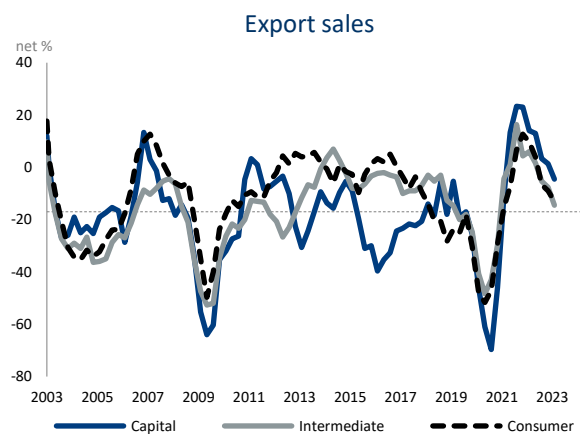
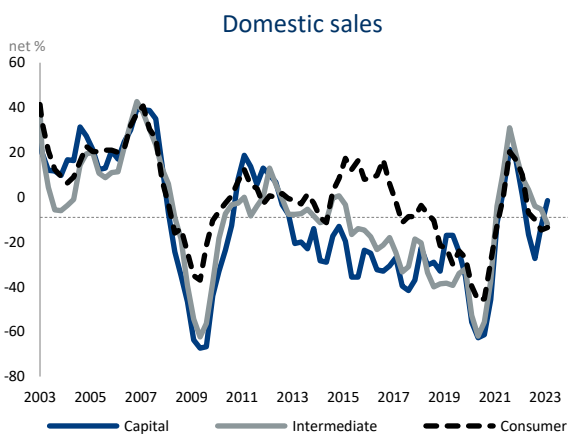
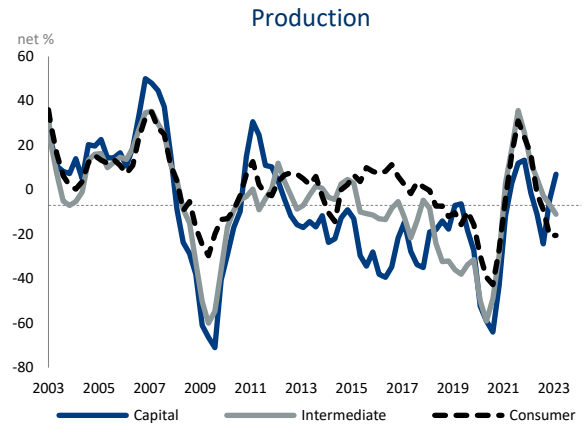
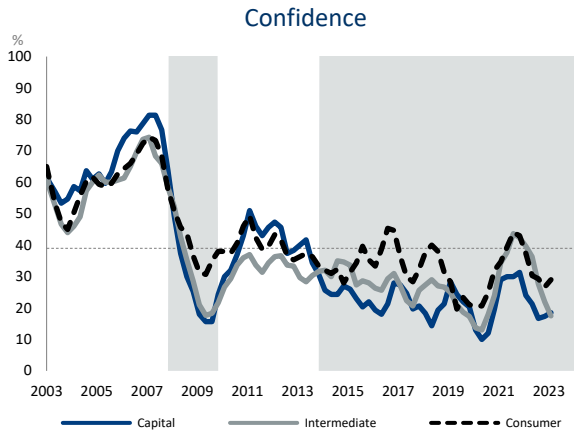
σ – standard deviation

Δ – change from previous period

σ_{Δ} – volatility (standard deviation of the changes)

All of the above calculated over the last 20 years

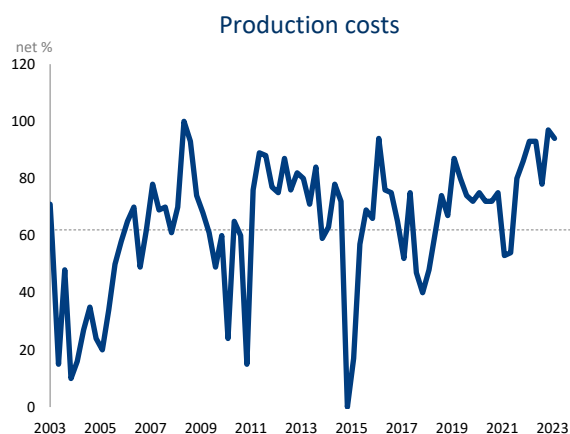
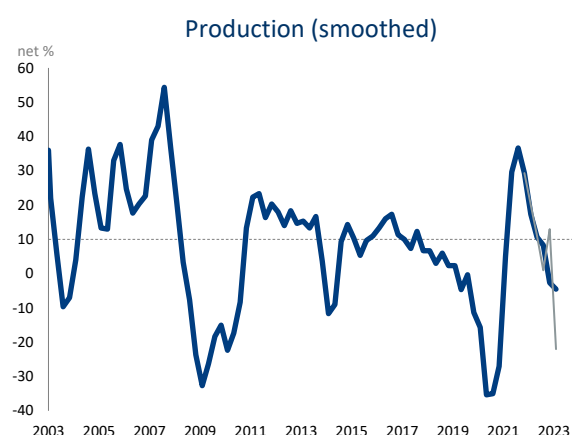
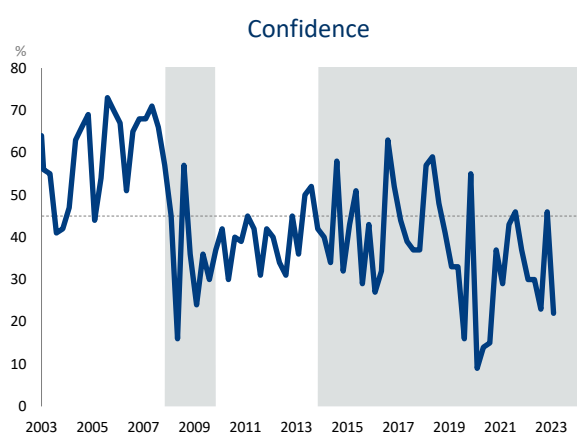
See technical note for further details



μ – average
 σ – standard deviation
 Δ – change from previous period
 σ_{Δ} – volatility (standard deviation of the changes)
 All of the above calculated over the last 20 years
 See technical note for further details

Food and beverages¹⁰

Indicator	Unit	$\mu-\sigma$	μ	$\mu+\sigma$	21Q2	21Q3	21Q4	22Q1	22Q2	22Q3	22Q4	23Q1	Δ	$\Delta\sigma$
Confidence	%	28	43	58	43	46	37	30	30	23	46	22	-24	15
Production	Net %	-15	8	31	42	47	21	20	11	1	13	-22	-35	22
Smoothed	Net %	-10	8	27	30	37	29	17	11	8	-3	-5	-2	18
Export sales	Net %	-27	-3	21	-2	10	17	42	16	19	12	-4	-16	21
Smoothed	Net %	-23	-3	17	3	8	23	25	26	16	9	4	-5	16
Production costs	Net %	41	63	86	54	80	86	93	93	78	97	94	-3	20
Business conditions in 12m	Net %	-27	-7	12	17	29	4	22	-15	-23	-11	-18	-7	22



¹⁰ Food & Beverages: Meat, fish, vegetables, oils & fats (SIC code 301), dairy products (302), grain mill products, starches & animal feeds (303), other food (304) and beverages (305). In 2017, this sector contributed 28.4% to production and 11.1% to manufactured exports, petroleum and other excluded in both cases. We recommend that users attach more weight to the trend (smoothed series) than a single data point, as the correlation between the survey production data and reference series is low.

μ – average

σ – standard deviation

Δ – change from previous period

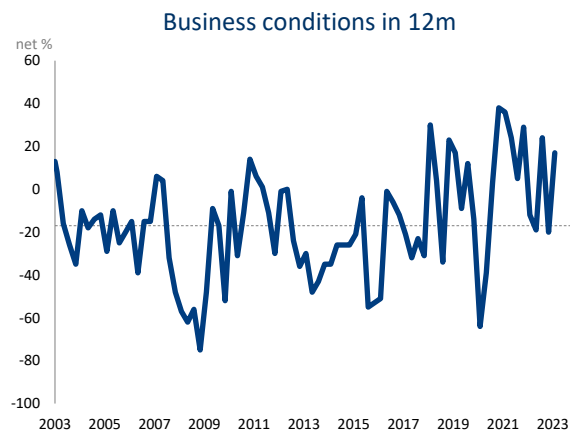
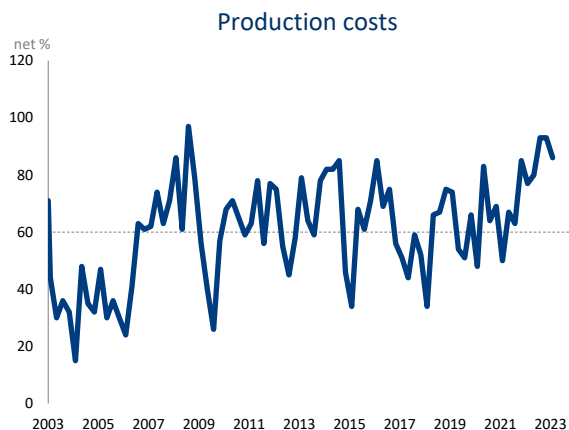
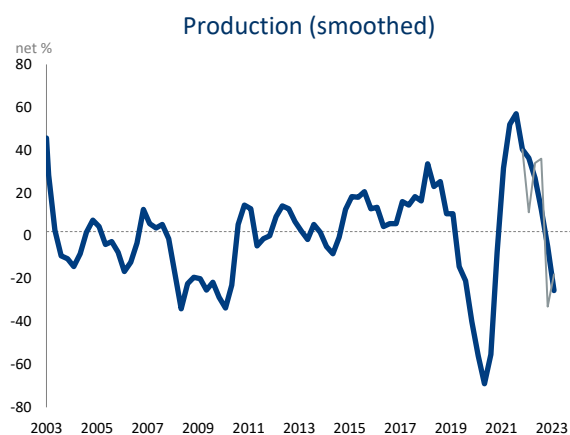
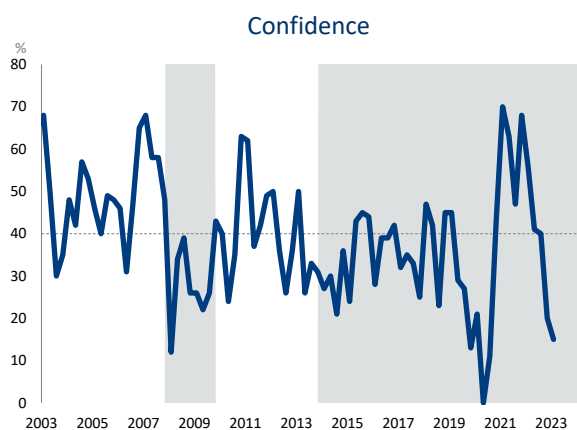
σ_{Δ} – volatility (standard deviation of the changes)

All of the above calculated over the last 20 years

See technical note for further details

Textiles, clothing leather and footwear¹¹

Indicator	Unit	$\mu-\sigma$	μ	$\mu+\sigma$	21Q2	21Q3	21Q4	22Q1	22Q2	22Q3	22Q4	23Q1	Δ	$\Delta\sigma$
Confidence	%	24	39	53	63	47	68	56	41	40	20	15	-5	14
Production	Net %	-27	0	28	61	46	64	11	34	36	-33	-18	15	26
Smoothed	Net %	-22	0	22	52	57	40	36	27	12	-5	-26	-21	22
Production costs	Net %	42	61	79	67	63	85	77	80	93	93	86	-7	16
Business conditions in 12m	Net %	-42	-17	7	24	5	29	-12	-19	24	-20	17	37	25

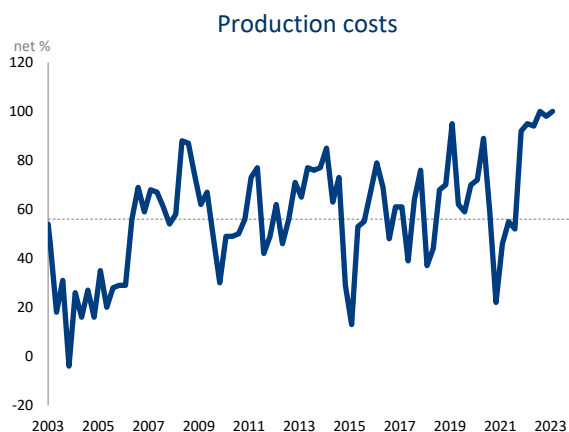
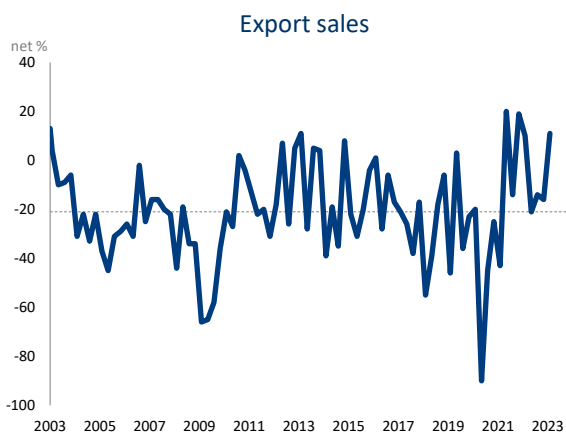
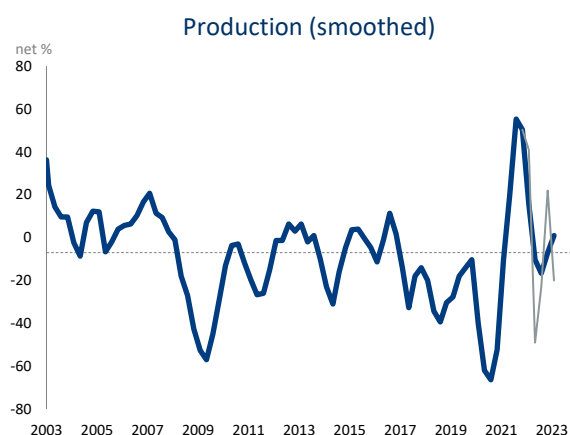
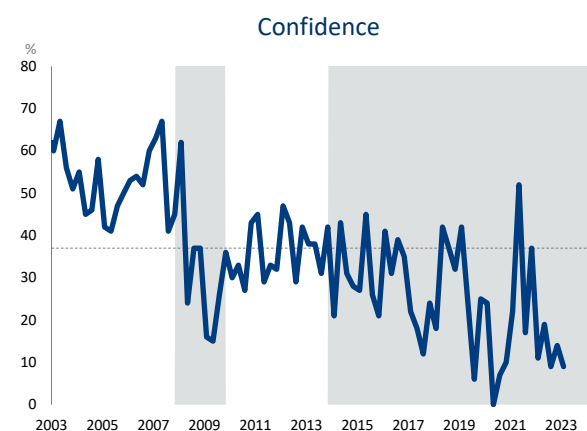


¹¹ Textiles, Clothing, Footwear & Leather: spinning, weaving & finishing of textiles, yarns (SIC code 311), other textiles (312), knitted & crocheted fabrics (313), wearing apparel & articles of fur (314-5), leather (316) and footwear (317). In 2017, this sector contributed 3.7% to production excluding petroleum and other.

μ – average
 σ – standard deviation
 Δ – change from previous period
 σ_{Δ} – volatility (standard deviation of the changes)
 All of the above calculated over the last 20 years
 See technical note for further details

Wood, paper, printing and publishing¹²

Indicator	Unit	$\mu-\sigma$	μ	$\mu+\sigma$	21Q2	21Q3	21Q4	22Q1	22Q2	22Q3	22Q4	23Q1	Δ	$\Delta\sigma$
Confidence	%	19	34	50	52	17	37	11	19	9	14	9	-5	13
Production	Net %	-38	-9	19	56	55	55	41	-49	-23	22	-20	-42	29
Smoothed	Net %	-31	-9	13	20	55	50	16	-10	-17	-7	1	8	23
Export sales	Net %	-41	-22	-2	20	-14	19	10	-21	-14	-16	11	27	24
Production costs	Net %	35	58	81	55	52	92	95	94	100	98	100	2	18
Business conditions in 12m	Net %	-33	-10	13	14	11	15	-15	-22	-27	-42	-47	-5	26



¹² Wood, Paper, Printing & Publishing: sawmilling, preserving of timber, bark grinding & compressing (SIC code 321), wood & wood products (322), paper and products (323) and printing, publishing & recorded media (324-6). In 2017, this sector contributed 13.1% to production and 4.7% to manufactured exports, petroleum and other excluded in both cases. We recommend that users attach more weight to the trend (smoothed series) than a single data point, as the correlation between the survey production data and reference series is low.

μ – average

σ – standard deviation

Δ – change from previous period

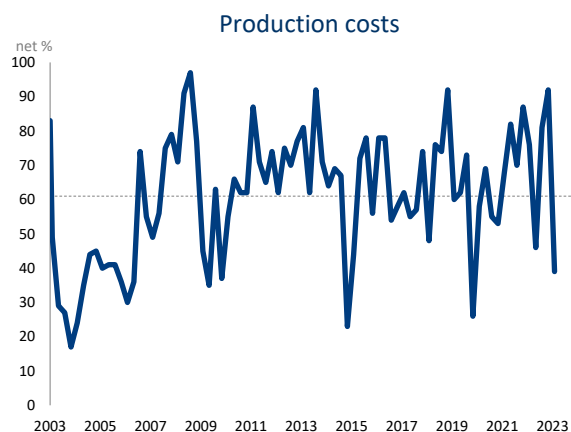
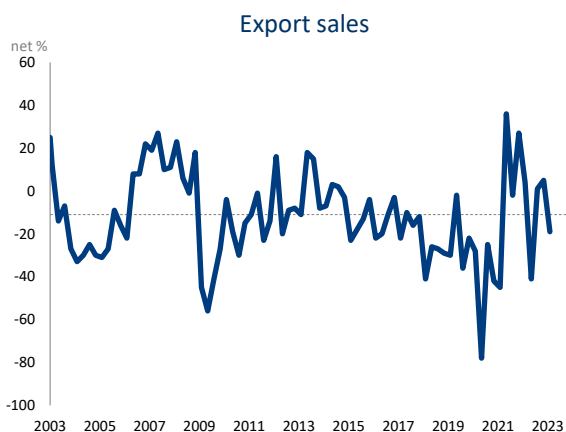
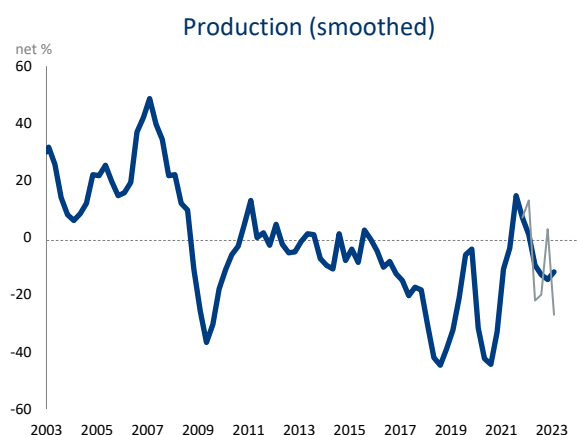
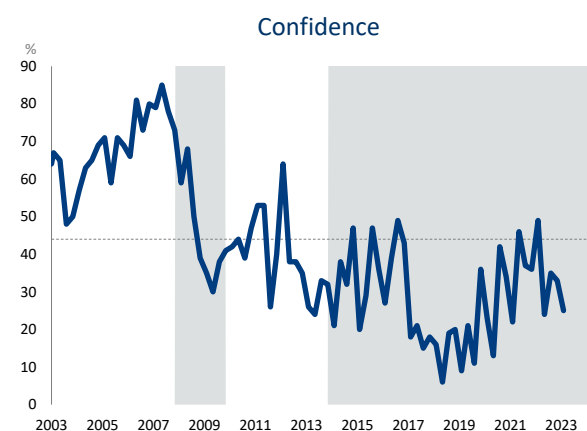
σ_{Δ} – volatility (standard deviation of the changes)

All of the above calculated over the last 20 years

See technical note for further details

Chemical, rubber and plastic products¹³

Indicator	Unit	$\mu - \sigma$	μ	$\mu + \sigma$	21Q2	21Q3	21Q4	22Q1	22Q2	22Q3	22Q4	23Q1	Δ	$\Delta\sigma$
Confidence	%	22	42	61	46	37	36	49	24	35	33	25	-8	12
Production	Net %	-27	-3	22	36	-4	12	13	-22	-20	3	-27	-30	23
Smoothed	Net %	-23	-3	18	-4	15	7	1	-10	-13	-15	-12	3	14
Export sales	Net %	-33	-13	8	36	-2	27	4	-41	1	5	-19	-24	22
Production costs	Net %	42	61	79	82	70	87	76	46	81	92	39	-53	19
Business conditions in 12m	Net %	-34	-8	18	12	6	-17	-19	-22	-27	-21	-41	-20	22



¹³ Chemicals, Rubber & Plastics: Refined petroleum & coke (SIC code 331-3) (NOT COVERED), basic chemicals (334), other chemical products (335-6), rubber (337) and plastics (338). In 2017, this sector contributed 16.6% to production and 15.4% to manufactured exports, petroleum and other excluded in both cases. We recommend that users attach more weight to the trend (smoothed series) than a single data point, as the correlation between the survey production data and reference series is low.

μ – average

σ – standard deviation

Δ – change from previous period

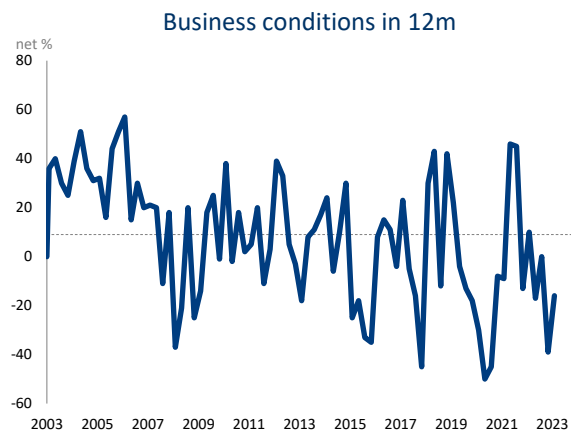
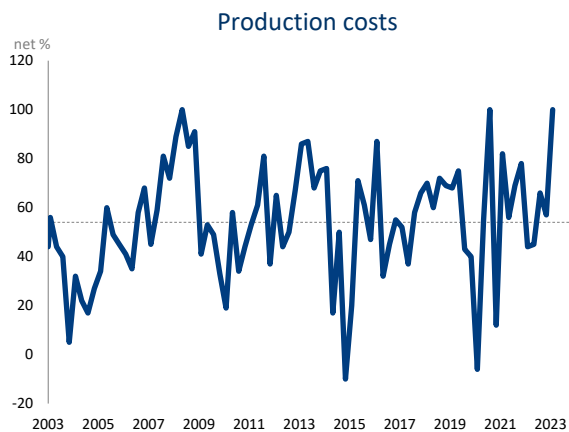
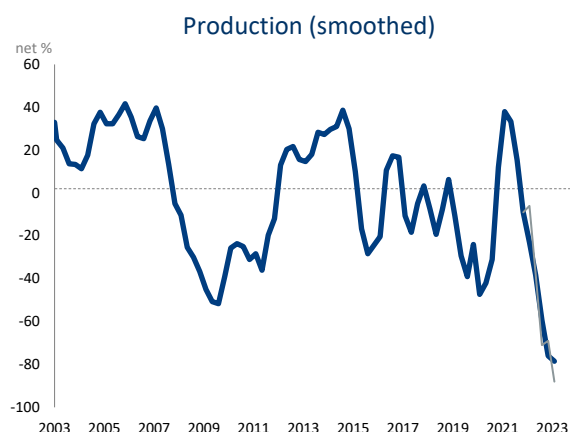
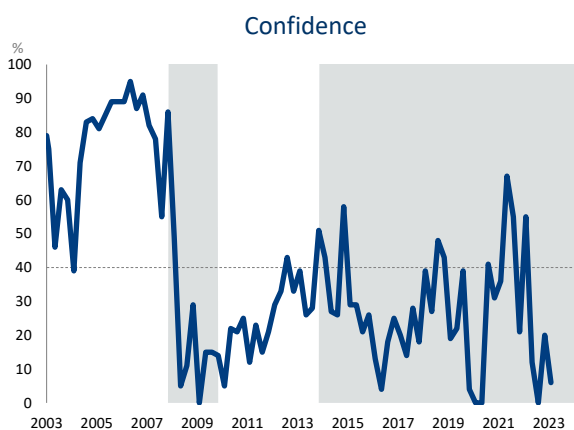
σ_{Δ} – volatility (standard deviation of the changes)

All of the above calculated over the last 20 years

See technical note for further details

Glass and non-metallic mineral products¹⁴

Indicator	Unit	$\mu-\sigma$	μ	$\mu+\sigma$	21Q2	21Q3	21Q4	22Q1	22Q2	22Q3	22Q4	23Q1	Δ	$\Delta\sigma$
Confidence	%	11	38	64	67	55	21	55	12	0	20	6	-14	18
Production	Net %	-39	-3	33	67	4	-25	-6	-38	-71	-69	-88	-19	30
Smoothed	Net %	-33	-3	27	33	15	-9	-23	-38	-59	-76	-79	-3	22
Production costs	Net %	30	54	78	56	69	78	44	45	66	57	100	43	28
Business conditions in 12m	Net %	-18	7	33	46	45	-13	10	-17	0	-39	-16	23	27

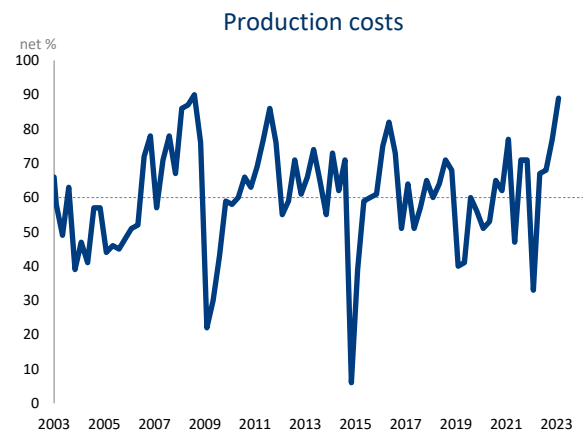
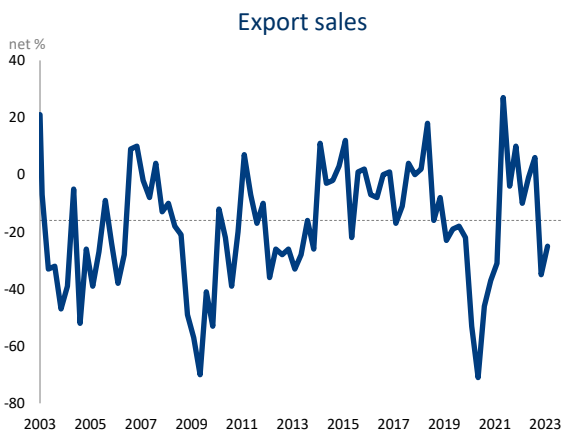
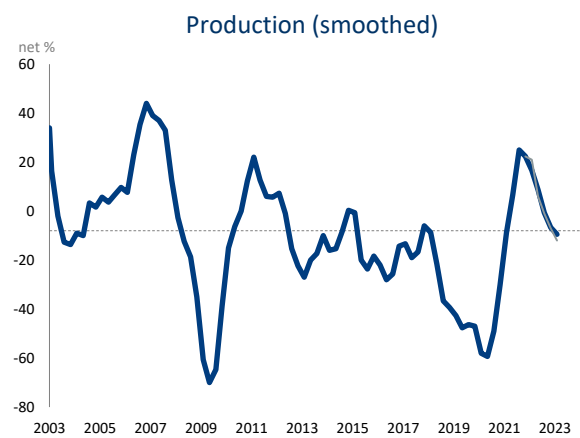
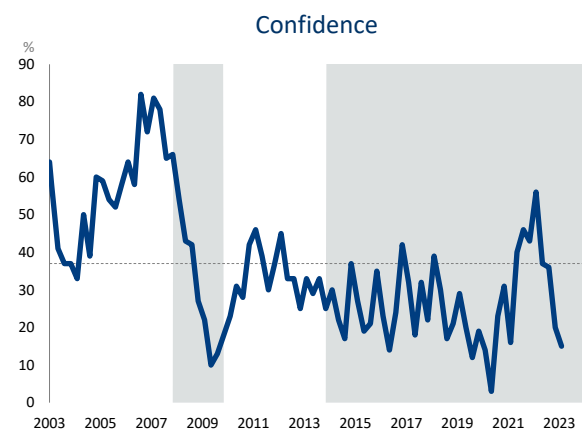


¹⁴ Glass & Non-metallic minerals: Glass & glass products, fibreglass (SIC code 341), other non-metallic mineral products (bricks, tiles, cement, prefab concrete, asphalt, mica products) (342). In 2017, this sector contributed 4.4% to production, excluding petroleum and other.

μ – average
 σ – standard deviation
 Δ – change from previous period
 σ_{Δ} – volatility (standard deviation of the changes)
 All of the above calculated over the last 20 years
 See technical note for further details

Basic metals, metal products and machinery¹⁵

Indicator	Unit	$\mu - \sigma$	μ	$\mu + \sigma$	21Q2	21Q3	21Q4	22Q1	22Q2	22Q3	22Q4	23Q1	Δ	$\Delta\sigma$
Confidence	%	18	35	53	40	46	43	56	37	36	20	15	-5	11
Production	Net %	-39	-11	18	29	23	23	21	6	-1	-7	-12	-5	23
Smoothed	Net %	-35	-10	14	7	25	22	17	9	-1	-7	-10	-3	19
Export sales	Net %	-38	-18	2	27	-4	10	-10	-1	6	-35	-25	10	19
Production costs	Net %	45	61	76	47	71	71	33	67	68	77	89	12	16
Business conditions in 12m	Net %	-38	-16	6	-12	-18	-21	-9	-12	-17	-40	-72	-32	17

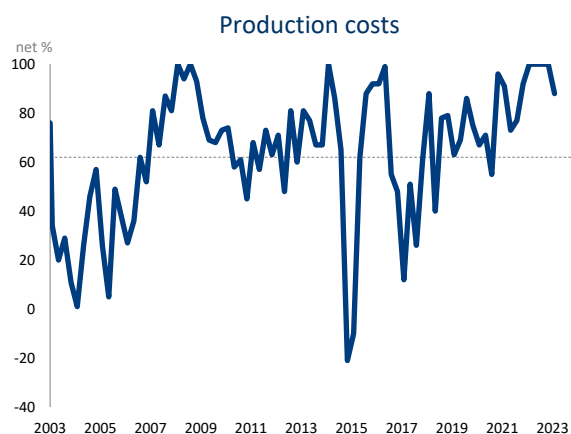
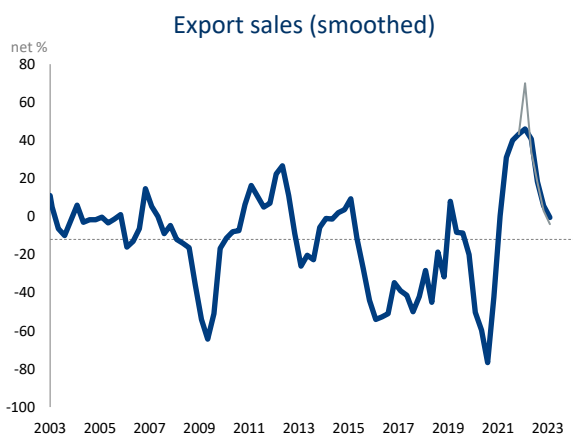
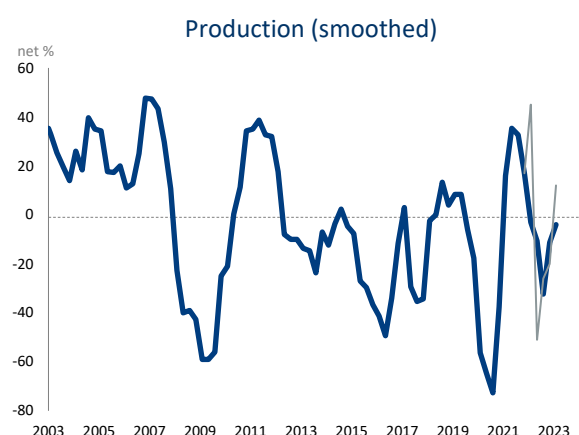
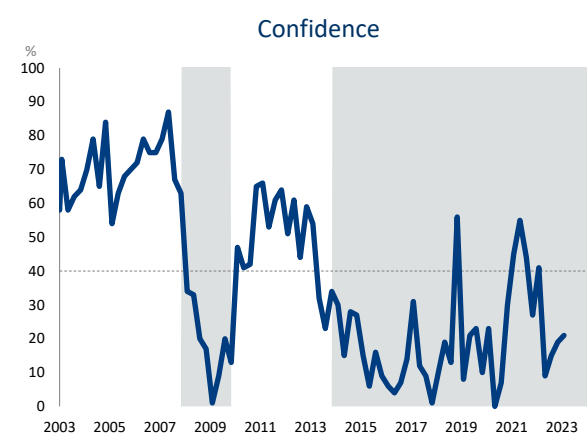


¹⁵ Basic metals, Metal Products & Machinery: Basic iron & steel (SIC code 351), basic precious (gold, platinum, silver) & non-ferrous metal (aluminium, copper, lead, nickel, tin, zinc) products (352), structural metal products (353-4), other fabricated metal products (355), general purpose machinery (356), special purpose machinery & machine tools (357), computers & office machines (358) and household appliances (359). In 2017, this sector contributed 21.1% to production and 42.5% to manufactured exports, petroleum and other excluded in both cases.

μ – average
 σ – standard deviation
 Δ – change from previous period
 σ_{Δ} – volatility (standard deviation of the changes)
 All of the above calculated over the last 20 years
 See technical note for further details

Motor vehicles, parts and transport equipment¹⁶

Indicator	Unit	$\mu-\sigma$	μ	$\mu+\sigma$	21Q2	21Q3	21Q4	22Q1	22Q2	22Q3	22Q4	23Q1	Δ	$\Delta\sigma$
Confidence	%	12	38	63	55	44	27	41	9	15	19	21	2	15
Production	Net %	-42	-4	34	92	9	-3	45	-51	-26	-20	12	32	40
Smoothed	Net %	-33	-4	26	35	33	17	-3	-11	-32	-11	-4	7	26
Export sales	Net %	-46	-12	23	60	26	34	70	34	18	3	-4	-7	38
Smoothed	Net %	-37	-11	15	31	40	43	46	41	18	6	-1	-7	23
Production costs	Net %	36	64	92	73	77	92	100	100	100	100	88	-12	23
Business conditions in 12m	Net %	-50	-17	16	13	-14	-9	-15	-27	-27	-16	-45	-29	28

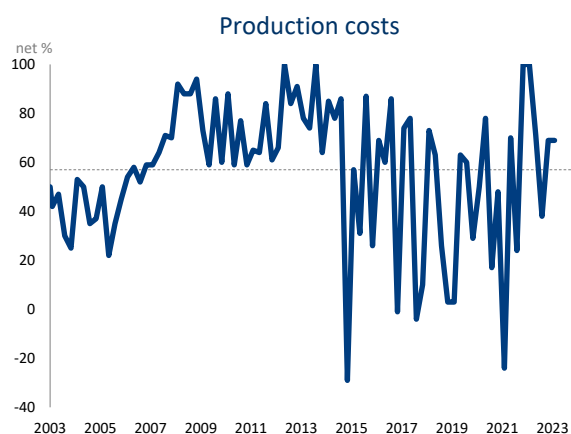
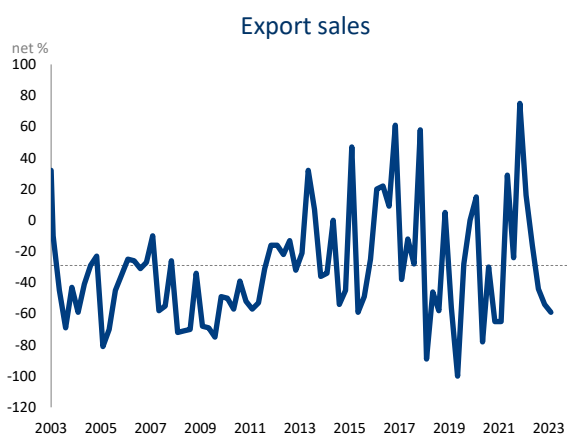
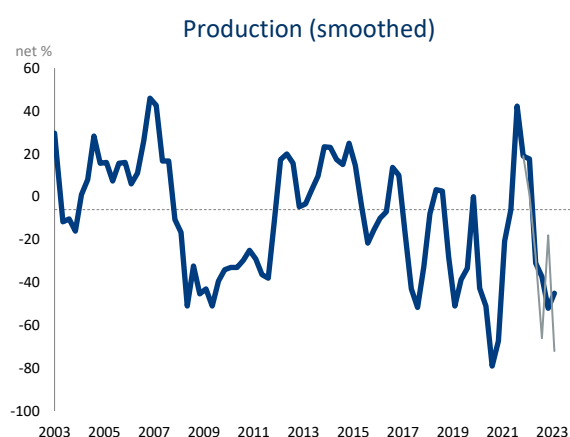
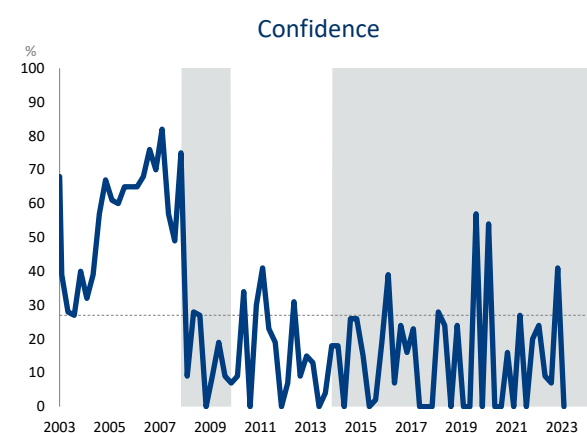


¹⁶ Transport equipment: Motor vehicles & bodies (SIC code 381-2), parts & accessories (383), other transport equipment (384-7). In 2017, this sector contributed 7.7% to production and 16.1% to manufactured exports, petroleum and other excluded in both cases.

μ – average
 σ – standard deviation
 Δ – change from previous period
 σ_{Δ} – volatility (standard deviation of the changes)
 All of the above calculated over the last 20 years
 See technical note for further details

Furniture and other¹⁷

Indicator	Unit	$\mu-\sigma$	μ	$\mu+\sigma$	21Q2	21Q3	21Q4	22Q1	22Q2	22Q3	22Q4	23Q1	Δ	$\Delta\sigma$
Confidence	%	2	25	48	27	0	20	24	9	7	41	0	-41	22
Production	Net %	-50	-10	29	71	-24	80	1	-28	-66	-18	-72	-54	48
Smoothed	Net %	-38	-10	18	-6	42	19	18	-31	-37	-52	-45	7	27
Export sales	Net %	-67	-32	3	29	-24	75	16	-16	-44	-54	-59	-5	43
Production costs	Net %	29	57	86	70	24	100	100	71	38	69	69	0	36
Business conditions in 12m	Net %	-53	-19	15	25	100	-19	7	-9	-73	-49	-80	-31	37



¹⁷ Furniture & Other: Furniture (SIC code 391), other (e.g. jewellery, musical instruments, games & toys, recycling NOT COVERED) (392), tobacco (306). In 2017, this sector contributed 1.2% to production and 1.0% to manufactured exports, petroleum and other excluded in both cases. We recommend that users attach more weight to the trend (smoothed series) than a single data point, as the correlation between the survey production and export data vis-à-vis the reference series is low.

μ – average

σ – standard deviation

Δ – change from previous period

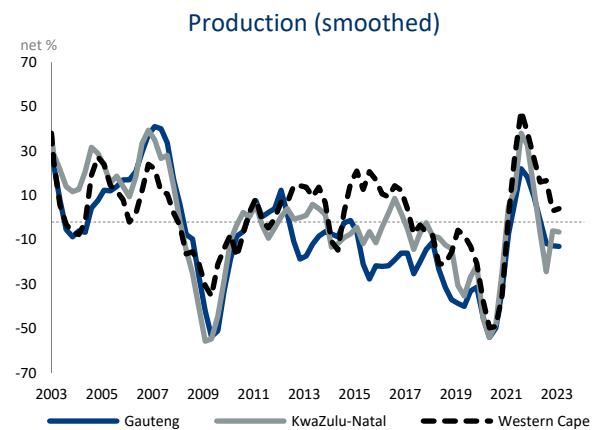
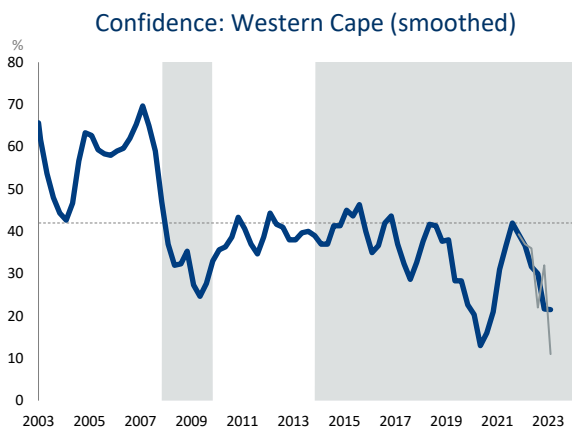
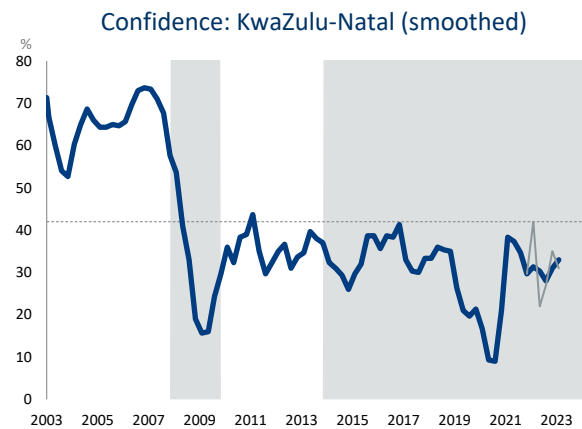
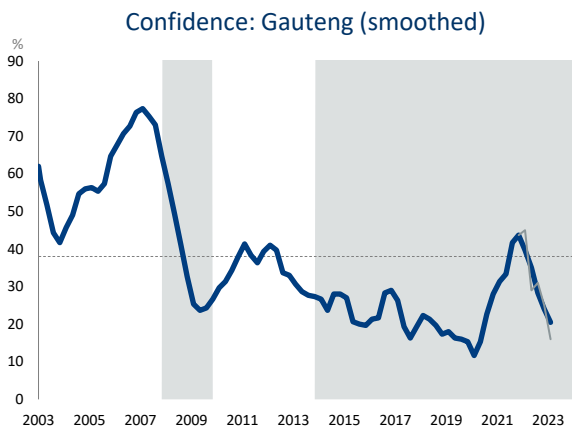
σ_{Δ} – volatility (standard deviation of the changes)

All of the above calculated over the last 20 years

See technical note for further details

By province

Indicator	Unit	$\mu-\sigma$	μ	$\mu+\sigma$	21Q2	21Q3	21Q4	22Q1	22Q2	22Q3	22Q4	23Q1	Δ	$\Delta\sigma$
Gauteng														
Confidence	%	18	36	54	39	41	45	45	29	31	25	16	-9	8
Smoothed	%	19	36	53	33	42	44	40	35	28	24	21	-3	7
Production	Net %	-33	-9	16	31	15	20	20	-11	-12	-12	-14	-2	18
Smoothed	Net %	-30	-8	13	7	22	18	10	-1	-12	-13	-13	0	16
KwaZulu-Natal														
Confidence	%	22	39	57	57	17	30	42	22	27	35	31	-4	12
Smoothed	%	23	39	56	37	35	30	31	30	28	31	33	2	9
Production	Net %	-30	-3	24	53	6	55	37	-52	-5	-16	3	19	26
Smoothed	Net %	-25	-3	19	13	38	33	13	-7	-24	-6	-7	-1	18
Western Cape														
Confidence	%	26	40	54	45	44	37	37	36	22	32	11	-21	11
Smoothed	%	28	40	52	37	42	39	37	32	30	22	22	0	8
Production	Net %	-23	1	24	55	55	34	26	21	1	28	-20	-48	23
Smoothed	Net %	-18	1	19	28	48	38	27	16	17	3	4	1	18



μ – average
 σ – standard deviation
 Δ – change from previous period
 σ_{Δ} – volatility (standard deviation of the changes)
 All of the above calculated over the last 20 years
 See technical note for further details

Technical note

Short-term planning is hampered as official (quantitative or numeric) data is released with a time lag. Business tendency survey (BTS) results reveal what happened between the release of the last official figures and the current state of affairs. The survey results not only reveal earlier developments in sales, production, employment, selling prices, capacity utilisation, investment etc. (for which official figures are published), but also provide unique information, such as business confidence, business conditions, constraints and respondents' expectations (or forecast) for the next quarter for which no official figures exist. It is now widely recognised that such subjective individual expectations play a key role in economic developments. Furthermore, the survey results of successive quarters provide a means of tracking cyclical movements, pinpointing trend changes and establishing forecasts.

The survey method

The survey results are obtained from questionnaires completed by senior executives in the trade, manufacturing and building sector during the middle month of every calendar quarter.

The business survey questionnaire contains a small number of questions. These questions are qualitative in nature, e.g. "Compared to the same quarter a year ago, is the volume of production up, the same or down?". No figures are requested.

The sample of executives remains the same from one survey to the next. A panel is in effect established. The sample provides for the main sectors. The list of participants is reviewed every few years to replace those firms that went out of business or stopped responding during the previous two years with new ones.

To provide for widely differing sizes, each firm in the manufacturing and trade sectors is allocated a weight based on its turnover. Firms in the building sector are not weighted. Participants have to complete a "participant details form" at the time of recruitment and every few years to ensure that their sector classification and turnover (optional) are correct.

The BER conducted its first survey of the manufacturing and trade (i.e. retail, wholesale and motor trade) sectors in 1954. The sector coverage was expanded to the building sector (i.e. main contractors and sub-contractors) in 1969. Architects, quantity surveyors and civil engineering contractors were added later to the building survey.

Consult the BER web page (www.ber.ac.za) for more information about the business tendency method.

The unique units of measurement of qualitative surveys

Net percentage (net %)

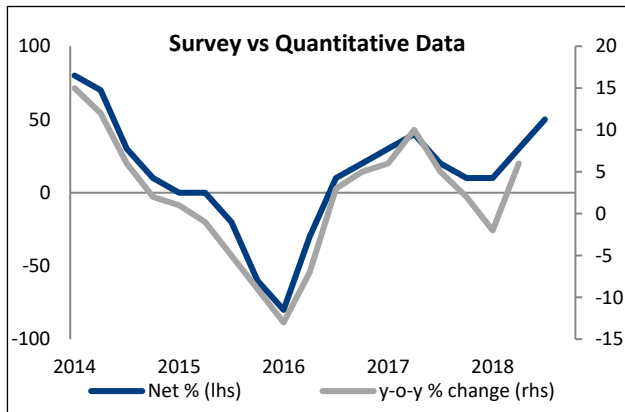
The responses related to the change in production, prices, employment, business conditions etc. are presented as a "net percentage" (also called a "net balance" or a "net majority"). If, for example, the percentages of respondents rating production as "higher", the "same" or "lower" compared to a year ago are 70%, 10% and 20% respectively, then one can conclude that the majority of participants experienced higher production. The net percentage is calculated as the percentage of respondents rating "production" as higher less the percentage rating it as "lower". The percentage rating it as the "same" is ignored. The net percentage in this example is therefore 50%, being the difference between the 70% "higher" and the 20% "lower". A net percentage of -10%, for instance, would indicate a decline in production compared to a year ago. Take note that this does not mean a year-on-year contraction of 10%. It only means that the production of a majority of 10% of the respondents was lower compared to a year ago.

The net percentage, or net balance statistic, can theoretically vary between a minimum of -100 (when all participants replied "lower") and a maximum of +100 (when all respondents replied "higher"). Theoretically a value of zero, therefore, indicates no change, between 0 and 100 reflects a rise (or improvement) and between 0 and -100 a decline (or deterioration) compared to the same quarter a year ago. The net balance statistic is a diffusion index, i.e. it indicates the degree to which the indicated change is "diffused" (spread) throughout the sample population. It indicates both the direction and size of the change.

Given that it reflects respondents' estimation of the change in the phenomenon/variable in the current quarter relative to the same quarter a year ago, the net percentage corresponds to a year-on-year percentage change/growth rate in the corresponding/equivalent official data series (see the figure on the right).

Percentage (%)

The responses relating to business confidence and constraints are presented as percentages.



In the case of business confidence, respondents have to rate prevailing business conditions as either "satisfactory" or "unsatisfactory". The percentage of respondents rating prevailing business conditions as satisfactory is taken as an indicator (proxy) for business confidence. A reading of 10 for business confidence, for instance, means that only 10% of the respondents indicated that they were satisfied. In this example, 90% were, therefore, unsatisfied.

In the case of the constraints, respondents have to rate if a particular issue – for instance, a shortage of skilled labour – "seriously", "slightly" or "not at all" hampers their activity. Composite constraint indices are calculated by weighting the responses as follows: The answers of respondents rating a particular constraint as "serious" are weighted by 0.67%; "slightly" by 0.33% and "not a constraint at all" are discarded. The results are then multiplied by $100/67 = 1.49$ to convert it to an index that can vary between zero and 100.

Care must be taken when making inferences from the constraints indices given that the list of constraints (issues) remains unchanged over time. Each constraint ought to be analysed relative to its own historical performance rather than comparing the ratings of the different constraints at a specific point in time. The latter inference would be more appropriate if respondents had to list all issues hampering their activity at a particular point in time and rank them in order of their impact.

Theoretically, the confidence and constraints series can vary between a minimum of zero and a maximum of 100. A value of zero would reflect an extreme lack of confidence/no limitation at all and 100 extreme confidence/complete limitation. These results reflect respondents' evaluation of the phenomenon/the survey variable in respect to that specific survey quarter, i.e. not relative to some period in the past or future.

Descriptive statistics in the tables

Smoothed

Some series show erratic/volatile movements, i.e. data jumps around quite a bit between consecutive quarters. In such cases, it is necessary to smooth these movements over a longer period to obtain a general trend. Another case where we added moving averages is when the correlation between the survey results and the corresponding reference series is low or non-existent.

Three-quarter centred moving averages (3qdma) were selected in order to not disturb turning points too much, e.g. the moving average of 17Q4 is calculated as the average of 17Q3, 17Q4 and 18Q1, that of 18Q1 is calculated as the average of 17Q4, 18Q1 and 18Q2 etc. In order for the smoothed series to run up to the last unsmoothed data point, the last smoothed data point is only the average of two quarters, namely the previous and current quarter.

When a smoothed series is added, it is prudent not to attach too much value to the unsmoothed results of a particular quarter, but rather to evaluate it in its historical context.

Seasonal adjustment (SA)

In theory, the time series ought to display no seasonal patterns because respondents are instructed to compare the current quarter with the same one of a year ago (e.g. they have to compare the current Festive Season or wet/dry winter period with the same time a year ago). However, in practice, some series nevertheless reveal seasonal patterns, probably because some respondents incorrectly compare the survey quarter with the one directly preceding it. In such cases, a seasonally adjusted series (i.e. where such seasonal variation is eliminated with X12 ARIMA) is added.

Average (μ)

The neutral level of the time series for the two measurement types, net percentage and percentage, is 50 or zero respectively. The long-term average (mean) is often not equivalent to this neutral level. In such cases, it is more useful to evaluate the current results relative to such a long-term average than the neutral level.

One standard deviation below ($\mu-\sigma$) and above ($\mu+\sigma$) the average

The standard deviation indicates the common variation in or dispersion of the values. Data points falling between one standard deviation below and above the average could be regarded as common. Any data point falling outside these ranges, therefore, displays statistically significant variation.

Change (Delta: Δ)

This statistic indicates the change in the results of the latest quarter relative to the preceding quarter.

Volatility (standard deviation of the deltas: $\Delta\sigma$)

This statistic indicates the volatility of the quarter-on-quarter change. If the size (regardless if it is an increase or decline) of the change is greater than the standard deviation of the deltas, then it displays a statistically significant variation.

Conventions and aids provided in the charts

Shaded areas

Indicates cyclical downturns as demarcated by the South African Reserve Bank. Users need to take note that the business cycle could have already reversed course towards the end of the period covered in the chart, but usually we wait until the bank determines a turning point before changing the shaded areas.

Solid vs. dotted horizontal (X) axes:

A solid line indicates the theoretical mid-points of 50 or zero respectively, while a dotted line indicates the long-term average (mean). Also see the section on the “average” above.

Normalised scale

Time series data is normalised (standardised) when one wishes to observe the co-movement among indicators with different units of measurement, say for instance, between a diffusion index (confidence) and the growth rate in a volume index (GDP growth). Normalisation converts both series to the same scale (unit) by subtracting the long-term average from each series and dividing it by its standard deviation. This ensures that one compares “apples” with “apples” when making a visual inspection and not mistakenly identify co-movements or deviations that different scales could produce.