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Manufacturing

Quarterly analysis of manufacturing activity

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Please refer to the glossary on the BER's website for explanations of technical terms.

Executive summary

According to the latest Absa Manufacturing Survey, business confidence in the South African factory sector declined again in 2024Q1. The underlying activity and demand data suggest that the sector started the year on the back foot.

Business confidence in the manufacturing sector declined by five index points to 21 in 2024Q1. The current level is well below the long-term average, and at 21 points, only about two in ten business people in the manufacturing sector are satisfied with prevailing business conditions. With domestic and export demand ticking down in Q1, insufficient demand was rated as a more serious constraint on business conditions than in Q4. With both domestic and export demand ticking down in Q1, it was unsurprising to see insufficient demand being rated as a more serious constraint on business conditions than in Q4. Furthermore, amid weaker demand, there was a notable decline in production in Q1 following an encouraging uptick in Q4. Stock levels of finished goods in relation to expected demand were deemed too low. Typically, this could boost production in the coming quarters if manufacturers want to get inventories back to normal levels. However, the fact that raw material stocks in relation to planned production are also very low may prevent this from happening. Worryingly, there is little appetite to invest in restocking. In general, manufacturers scaled back their expectations for planned fixed investment in all categories in twelve months time. A net majority of respondents expect conditions to worsen over this period.

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Introduction

The South African (SA) manufacturing sector registered a marginal quarterly expansion in the fourth quarter of 2023 (2023Q4). However, the sector's long-term performance remains uninspiring and total production remains below its pre-pandemic level. According to the latest Absa Manufacturing Survey, business confidence declined once more in 2024Q1, and the underlying data suggests that the sector started the year off on the back foot.

This report provides an overview of the situation in the manufacturing sector as it developed during 2024Q1, as well as the expectations for 2024Q2 and 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 graphs of the survey data are provided for each sector and province[1].

A brief overview of the latest official data

MANUFACTURING PRODUCTION EKES OUT GROWTH IN Q4

Following a 0.2% quarter-on-quarter (q-o-q) contraction in Q3, the economy expanded by a mere 0.1% q-o-q in Q4. This meant that real GDP growth averaged 0.6% in 2023 for the full year, down from 1.9% in 2022. As has been the case for some time, the manufacturing sector experienced a volatile 2023. A relatively solid performance in the first half of the year was followed by a 1.2% q-o-q contraction in Q3 amid a range of shocks and a slight 0.2% expansion in Q1. The sector expanded by 0.5% for the entire year following a 0.4% contraction in 2023. The sector still needs to return to pre-pandemic levels of activity.

There is no high-frequency official data for 2024 available as yet, but the Absa Purchasing Managers' Index (PMI) suggests that the manufacturing sector experienced a tough start to 2024. The headline index declined to 43.6 index points in January 2024, down from 50.9 in December. Worryingly, the decline came on the back of a sharp deterioration in demand and activity. In February, the headline PMI rose from 43.6 to 51.7 points. While this is a welcome increase, it does need to be qualified by saying that business activity remains more subdued. Indeed, of the five subcomponents of the PMI, only suppliers' performance is above 50 – although encouragingly, new sales orders are almost there. It is also useful to highlight that the survey tracks month-on-month movements, so with the January PMI being so weak, a slight uptick in February would have resulted in a considerable increase in the indices. Business

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[1] 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).

conditions can still be more challenging than the long-term average experience. Indeed, combining the PMI results with the quarterly survey results unpacked in the remainder of this report suggests that activity may falter once more in the first quarter of 2024.

GLOBAL PMI IMPROVES FURTHER IN FEBRUARY

After edging up to a neutral 50-point level in January, the J.P.Morgan Global Manufacturing PMI rose further to 50.3 in February. This was the first above-50 reading since August 2022 with orders, stocks and output in positive terrain. From a country perspective, the US, India and Brazil drove the improvement, while Japan, the Eurozone (EZ) and the UK saw declines in manufacturing output. Encouragingly, optimism about the year ahead remained high.

The 2024Q1 Absa Manufacturing Survey results

BUSINESS CONFIDENCE DECLINES AFTER TWO QUARTERS OF RISING CONFIDENCE

Business confidence in the manufacturing sector declined by five index points to 21. As illustrated in Figure 1, this entirely erased Q4's gain, and the current level is well below the long-term average. At 21 points, only about two in ten business people in the manufacturing sector are satisfied with prevailing business conditions. Indeed, a net majority of 42% of respondents say that business conditions have deteriorated compared to this time last year.

Figure 1: Business confidence down to 21 index points in 2024Q1
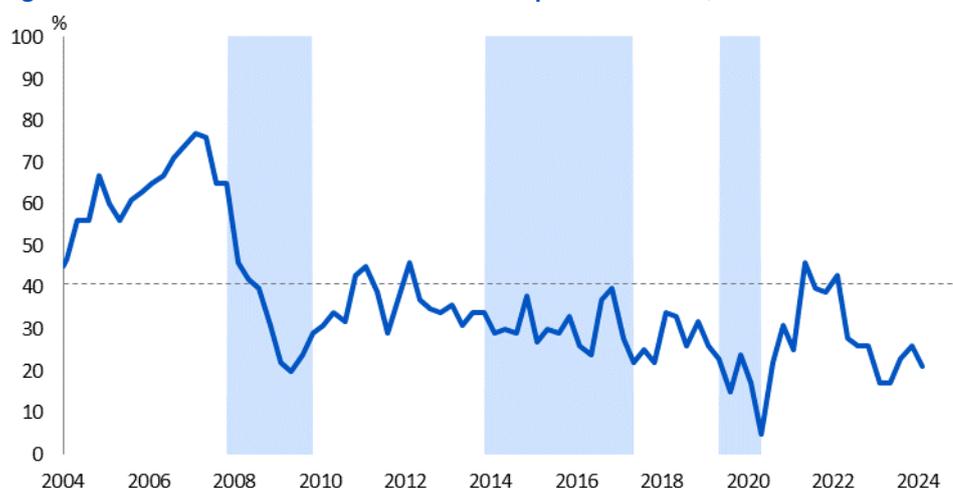
Source: BER, SARB (business cycle downswing phases are shaded)

Among the different manufacturing subsectors, chemical producers[2] were the least pessimistic. In fact, with a confidence reading of 54 in Q1, the majority of producers were satisfied with prevailing business conditions. This was the second consecutive quarter in which confidence in this subsector was significantly better than that of the total manufacturing sector. The underlying data and activity support the higher confidence reading for this subsector, and

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[2] For ease of reading, the report only refers to the main components of each subsector. For example, chemicals refers to the full chemical products, rubber & plastics sector. See the first page of the **results table** for the details per subsector. Note that we do not survey refineries.

the subsector generally seems to be doing much better than the other subsectors. Conversely, food, transport, non-metal minerals and furniture producers were downbeat. Food producers also stand out as being remarkably pessimistic about business conditions going forward.

Barring new vehicle dealers (under severe strain amid the consumer squeeze and high interest rates), manufacturers are the most pessimistic of all sectors surveyed in the RMB/BER Business Confidence Index (BCI). The RMB/BER BCI stood at 30 points in 2024Q1.

DEMAND WEAKENS FURTHER AT THE START OF THE YEAR

A net majority of 14% reported a decline in domestic sales volumes in Q1, a deterioration from 5% in 2023Q4. The last time respondents reported an increase in domestic sales was in 2022Q1. The worsening in volumes in 2024Q1 may have come due to a slight pick-up in selling price inflation, with there often being a trade-off between volumes and prices.

Exports rose through the second half of 2023 but ticked down in the first quarter of 2024. A net majority of 8% reported a decline in export sales, while a net 9% still reported an increase in Q4. Unlike the domestic experience, where prices accelerated, export selling price inflation slowed. Respondents expect little change in volume and price growth in the second quarter from the first, while a slight net 3% expect an improvement in export volumes in 12 months time. In Q1, movements among the big exporting subsectors were volatile, with an improvement in chemicals not enough to offset declines in transport, metals and food.

With both domestic and export demand ticking down in Q1, it was unsurprising to see insufficient demand being rated as a more serious constraint on business conditions than in Q4. The constraint indicator ticked up to 65, the highest level since 2022Q4.

PRODUCTION DROPS SHARPLY IN Q1

Amid weaker demand, there was a notable decline in production in Q1 following an encouraging uptick in Q4. On a seasonally adjusted basis, a net majority of 19% reported a decline in production, while in Q4, a net 4% reported an increase. The official data reflected a slight uptick in manufacturing production in Q4 – see Figure 2. While not as pessimistic as respondents were during the first half of 2023, the extent of the deterioration from Q4 to Q1 is noteworthy. Among the big manufacturing subsectors, the food, transport and wood subsectors turned notably more pessimistic. These subsectors can be volatile. Still, the weakness was broad-based, with only chemical producers seeing a sustained improvement in production. The Absa PMI, which tracks monthly production momentum, also suggests that 2024Q1 could be worse following an uptick in output in Q4.

Figure 2: Manufacturing output under renewed pressure in Q1
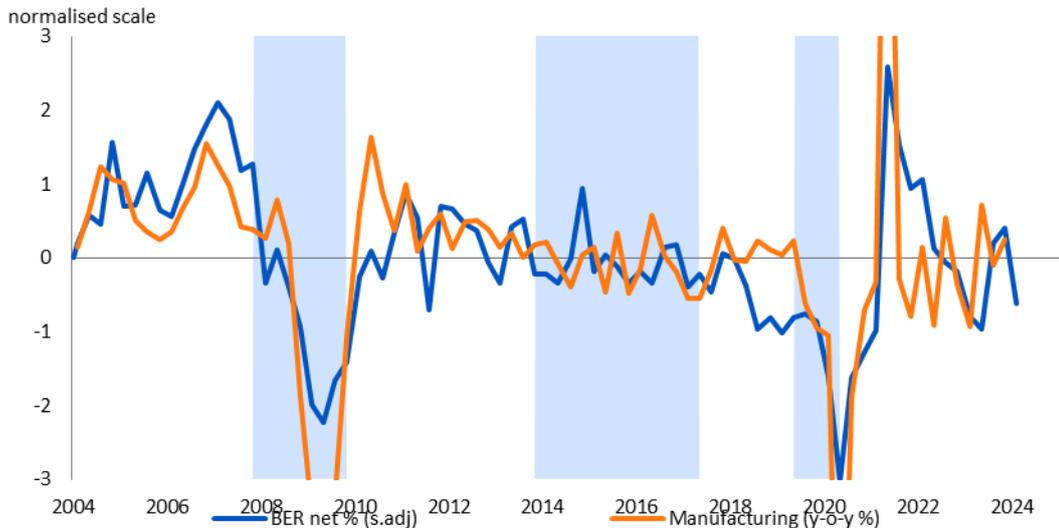
Source: BER, Stat SA, SARB (business cycle downswing phases are shaded)[3]

With production falling, it was not surprising to see that the employment indicator also moved down sharply. A net 21% reported a decline in the number of factory workers, worse than the 2% in Q4. Worryingly, the average hours worked per factory worker also declined again following an encouraging improvement in Q4. This is often seen as a leading indicator of future employment growth. The Q4 improvement was likely driven by less load-shedding during the quarter, with an uptick in the intensity of load-shedding in Q1 having the opposite effect.

The indicator tracking production cost per unit of production stayed unchanged at 68. This was despite production coming down (which would lift the cost per product) as well as labour and raw material costs accelerating in Q1. Some respondents now benefit from lower electricity costs as they depend less on power from the (Eskom) grid.

STOCK LEVELS MOVE LOWER

With production falling back, stock levels of finished goods in relation to expected demand were deemed too low. Usually, this could boost production in coming quarters if manufacturers want to get inventories back to more normal levels. However, the fact that stocks of raw materials in relation to planned production are also very low may prevent this from happening. Anecdotal evidence and several comments from respondents to the survey suggest that the reason for stock levels being so low may be the rail- and port issues that South Africa is facing at the moment. These issues hamper the ability to export (although mainly on the mining side) and delay the imports of raw materials and intermediate goods used in the production process. As such, the indicator tracking the seriousness of the constraint that the shortage of raw materials poses on current business conditions also rose sharply in Q1. The index rose to 58, which compares to a long-term average of 41 points (coincidentally also the level of the reading of this indicator just two quarters ago). This indicator reached an all-time high of 67 in 2021 when global supply chains were gridlocked during the post-pandemic recovery and is thus currently reasonably high compared to the long-term experience.

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[3] Note that the axis is normalised, please see the **technical note** at the end for an explanation.

Figure 3: Raw material stocks are deemed too low relative to planned production
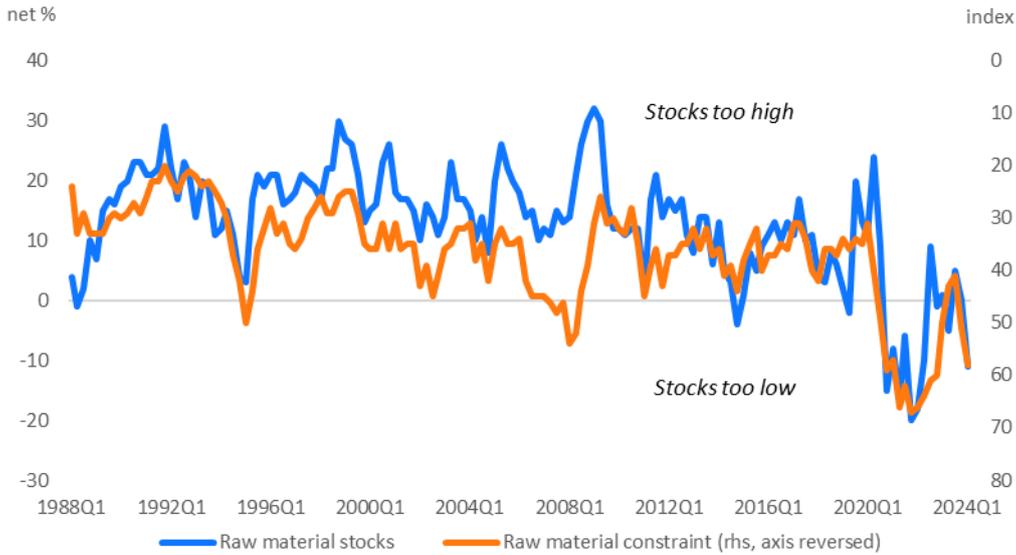
Worryingly, there is little appetite to invest in restocking. A net majority of 23% expects a decline in the investment in inventories in 12 months time. This compares to a long-term average of 8% (see Table 1 below).

INVESTMENT INTENTIONS REMAIN BLEAK

For a fifth consecutive quarter, respondents noted a decline in fixed investment levels compared to the same level last year. A net 17% reported a decline in Q1, this compares to a long-term average level of 0. Worryingly, respondents also turned more downbeat about planned fixed investment in 12 months time. Relative to 2023Q3, the net majority reporting a decline in total fixed investment more than doubled from 8 to 20% (the long-term average is -1, see Table 1). This is the most downbeat respondents have been about planned investment outlays since 2020Q3. As to be expected, given that slack capacity in the sector remains relatively high and in line with the long-term experience, respondents are the most negative about investment in additions. Although, all categories surveyed are below their long-term averages.

The general political climate is seen as the most serious constraint on the ability to invest in 12 months time (with a rating of 83 compared to a long-term average of 65). The upcoming national election should bring more certainty on that front, but whether it will improve or worsen the situation will depend on the outcome. This is followed by the constraint posed by insufficient demand – although, unlike the general political climate, which is well above long-term average levels, this constraint is essentially equal to its long-term reading. This suggests that low demand is not a bigger problem than usual. The credit cost and tax structure constraint are also higher than their respective long-term average levels.

Table 1: Planned investment outlays in 12 months time are scaled back

	Total	Land, building, construction	Inventories	Replacements	Additions
2020Q1	-19	-24	-31	-20	-40
2020Q3	-30	-44	-34	-41	-59
2021Q1	-10	-25	-11	-15	-30
2021Q3	3	-12	18	-3	-14
2022Q1	16	-1	12	5	-6
2022Q3	-6	-13	0	-14	-31
2023Q1	-13	-28	-15	-25	-39
2023Q3	-8	-16	-8	-14	-33
2024Q1	-20	-24	-23	-17	-35
Long-term average	*-1*	*-14*	*-8*	*-11*	-21

Source: BER

OUTLOOK

Respondents expect little improvement in demand and production in Q2. Indeed, worryingly, fixed investment is set to turn even lower in Q2, with long-term investment outlays (discussed above) also being very negative. Looking twelve months ahead, a net 46% of respondents expect business conditions to deteriorate further. While not the most pessimistic manufacturers have been in recent years, this is exceptionally downbeat. We know that in times of uncertainty, respondents tend to err on the side of negativity. The outcome of the upcoming national election is a significant uncertainty in the next 12 months. Of course, South Africa is not the only country with elections coming up over this period, with the US election outcome also being important for global policy developments, including the US's appetite towards trade relations with South Africa. The global economic outlook remains uncertain. While the US economy is set to slow, Europe – arguably a more important trading partner for many of SA's manufacturers could be doing better this time next year. A potential silver lining for the SA economy could be more robust demand for its commodities from China, given their economic stimulus drive. However, for now, there seem to be too few targeted interventions to support the ailing property sector in order for it to have positive spillovers for our exports.

Closer to home, the expectation is that load-shedding should be less intense over the next twelve months compared to last year. Still, it is understandable that manufacturers would rather wait and see this happen before turning more positive. Indeed, widespread and prolonged water disruptions in Gauteng in recent weeks are a stark reminder of other infrastructure problems outside of electricity supply. There have been some tentative reports that the situation at the ports is slowly turning around, and this may help improve business conditions down the line. Again, it is understandable that manufacturers would like to wait and see first. In any case, it will take time to rebuild the inventory levels required to ramp up production.

Survey results

MANUFACTURING: TOTAL[4]

Indicator	Unit	μ-σ	μ	μ+σ	22Q2	22Q3	22Q4	23Q1	23Q2	23Q3	23Q4	24Q1	Δ	σ Δ
Confidence	%	21	37	53	28	26	26	17	17	23	26	**21**	-5	7
Activity & prices														
Production	Net %	-28	-5	17	-10	-10	-3	-18	-34	-4	9	**-14**	-23	18
Seasonally adjusted	Net %	-27	-5	17	-3	-7	-9	-23	-26	-1	4	**-19**	-23	16
Employment	Net %	-29	-15	-2	-4	-14	-11	-17	-19	-18	-2	**-21**	-19	10
Average hours worked / worker	Net %	-28	-13	3	-9	-16	-16	-20	-32	-16	5	**-5**	-10	13
Domestic sales	Net %	-32	-8	17	-16	-7	-5	-17	-39	-12	-5	**-14**	-9	18
Domestic selling prices	Net %	16	31	46	52	52	48	50	31	45	33	**38**	5	12
Export sales	Net %	-31	-14	3	-6	5	-11	-13	-28	3	9	**-8**	-17	14
Export selling prices	Net %	-2	17	36	44	50	50	43	29	30	30	**21**	-9	13
Production costs	Net %	48	63	77	76	81	89	85	84	77	68	**68**	0	11
Stocks & investment														
Finished goods rel. to demand	Net %	0	9	18	-1	5	1	-4	-4	3	2	**-5**	-7	7
Smoothed	Net %	2	9	17	-3	2	1	-2	-2	0	0	**-2**	-2	5
Capacity underutilisation	%	65	72	79	64	68	68	74	78	69	73	**74**	1	5
Smoothed	%	66	72	78	66	67	70	73	74	73	72	**74**	2	4
Fixed investment	Net %	-15	0	15	-5	1	2	-15	-20	-12	-13	**-17**	-4	10
Constraints														
Insufficient demand	Net %	54	62	70	58	58	65	61	58	60	61	**65**	4	5
Political climate	Net %	45	64	83	78	76	83	91	86	84	82	**85**	3	6
Expected in 12 months														
Business conditions	Net %	-34	-14	7	-17	-20	-29	-45	-59	-29	-33	**-46**	-13	16
Smoothed	Net %	-31	-14	4	-14	-22	-31	-44	-44	-40	-36	**-40**	-4	12
Fixed investment	Net %	-15	-1	14		-6		-13		-8		**-20**	-12	13

Confidence

Production (s.adj)
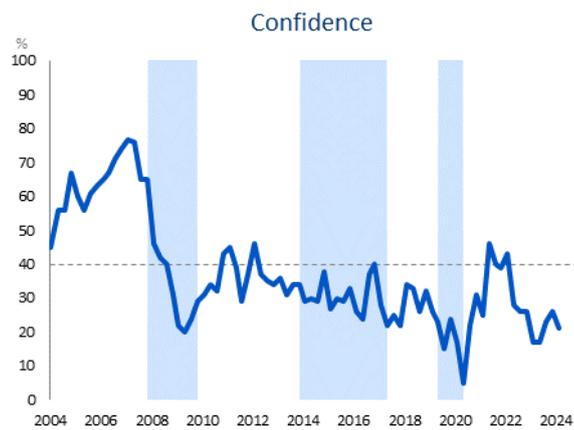
[4] The total consists of 1) food & beverages, 2) textiles, clothing, leather & footwear, 3) wood, paper, printing & publishing, 4) chemical products, rubber & plastics, 5) glass & non-metallic mineral products, 6) basic metals, metal products & machinery, 7) electrical machinery, radio, TV and professional 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.

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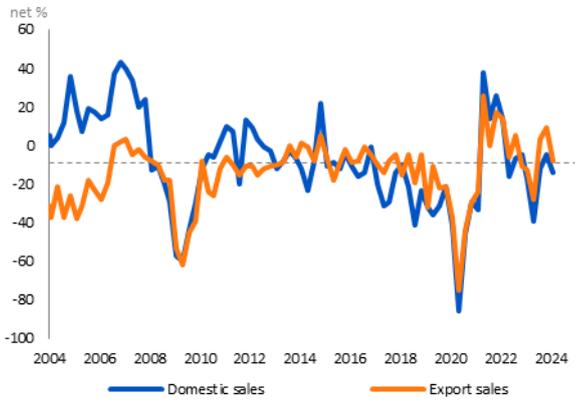*Δ – change from previous period*
σ_Δ – volatility (standard deviation of the changes)
All of the above calculated over the last 20 years
See technical note for further details

MANUFACTURING: TOTAL

Sales

net %

— Domestic sales — Export sales

Selling prices

net %

— Domestic selling prices — Export selling prices

Production costs

net %
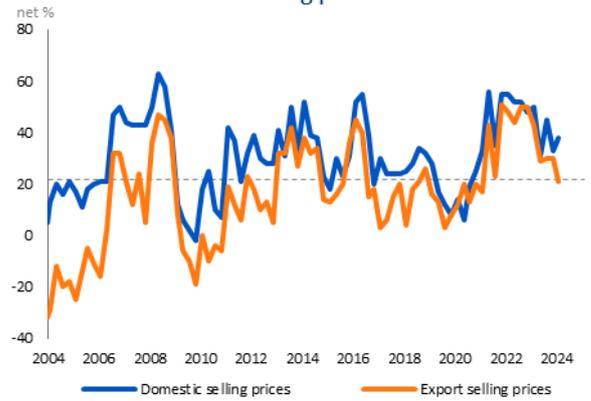
Finished goods rel. to demand (smoothed)

net %

Capacity underutilisation (smoothed)

net %

Fixed investment

net %

Constraints

net %

— Insufficient demand — Political climate

Expected in 12 months' time

net %

— Business conditions (smoothed) — Fixed investment
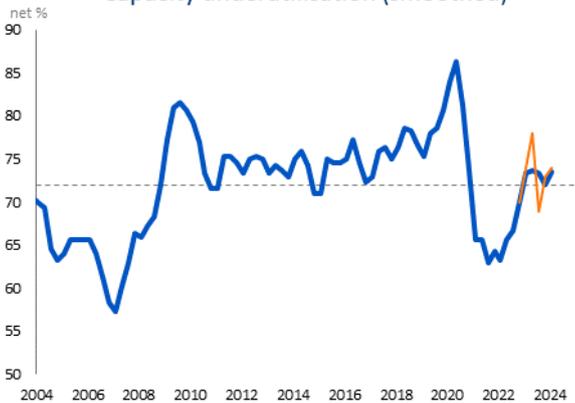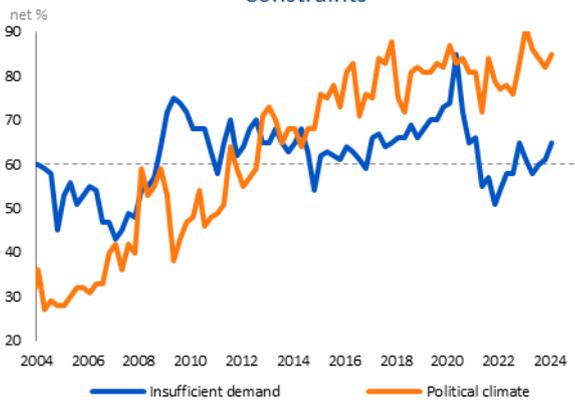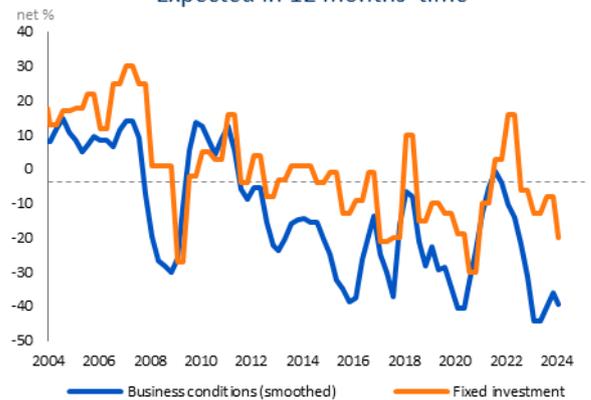
SUMMARY

Production & actual manufacturing output*

normalised scale

Business cycle downturn — BER net % (s.adj) — Manufacturing (y-o-y %)
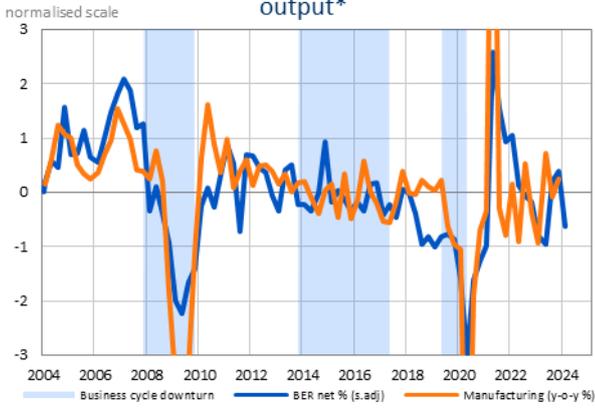
Production by sector (smoothed)

normalised scale

Business cycle downturn — Consumer — Capital — Intermediate
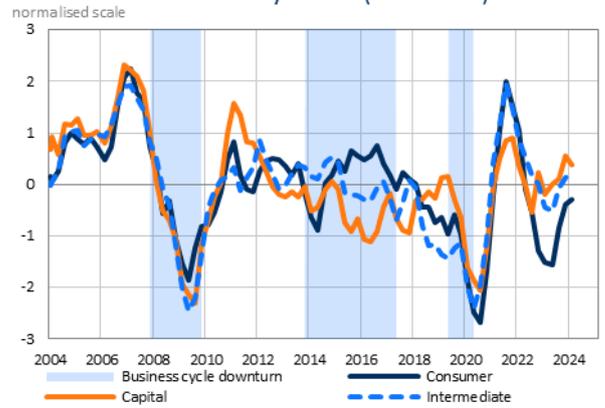
Production by province (smoothed)

normalised scale

Business cycle downturn — WC — KZN — GP
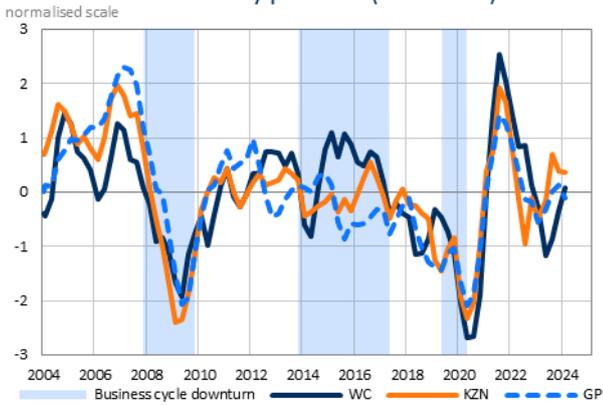
Domestic sales by sector (smoothed)

normalised scale

Business cycle downturn — Consumer — Capital — Intermediate
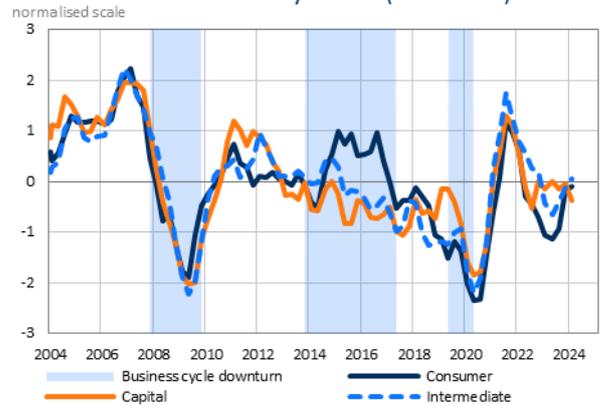
Fixed investment & Private GFCF

normalised scale

Business cycle downturn — BER net % — GFCF (y-o-y %)
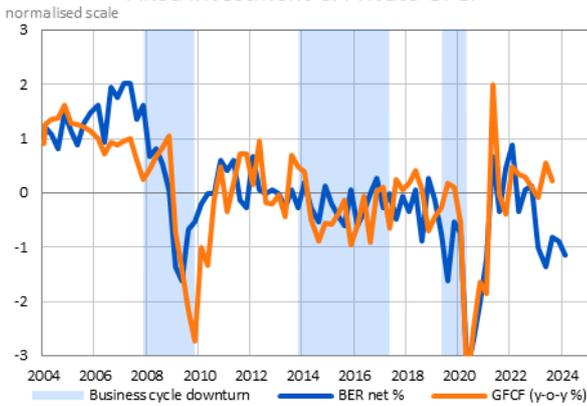
Export sales & actual exports

normalised scale

Business cycle downturn — BER net % — Exports (SARS, rand, y-o-y %, smoothed)
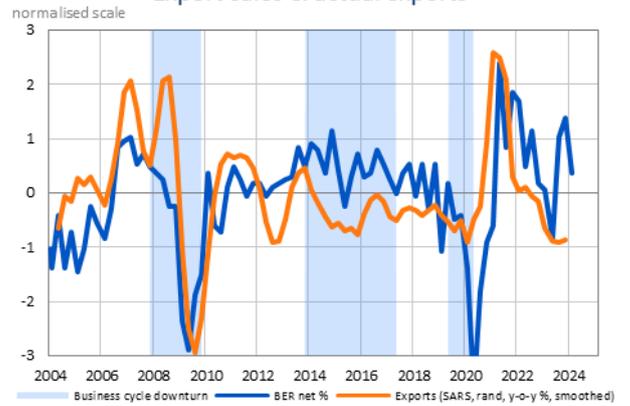
Production cost & PPI-inflation

normalised scale

Business cycle downturn — BER net % — Mnf PPI (y-o-y %)

Constraints

normalised scale

Business cycle downturn — Political climate — Insufficient demand

14
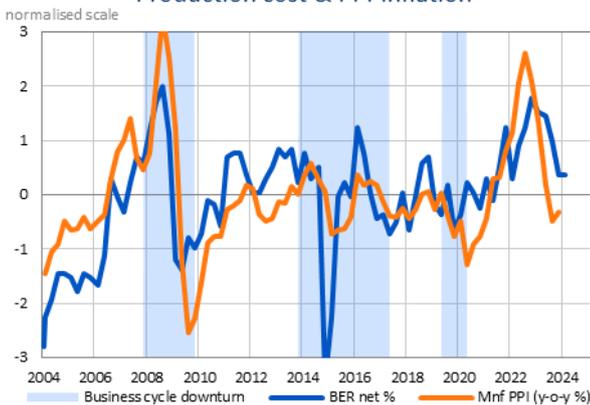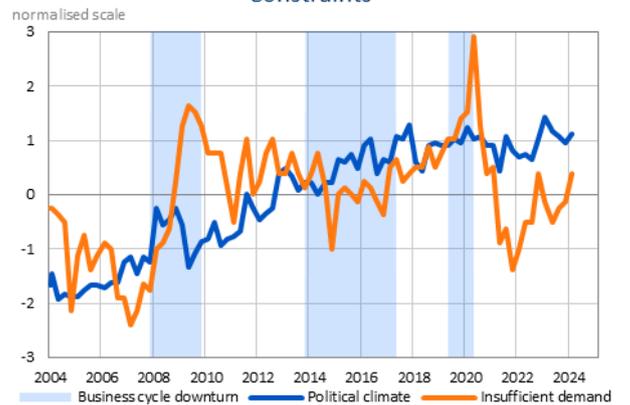
CAPITAL[5], INTERMEDIARY[6] AND CONSUMER[7] GOODS

Indicator	Unit	μ-σ	μ	μ+σ	22Q2	22Q3	22Q4	23Q1	23Q2	23Q3	23Q4	24Q1	Δ	Δσ
Capital goods														
Confidence	%	14	35	56	11	15	24	13	10	21	19	**16**	-3	11
Smoothed	%	15	35	54	21	17	17	16	15	17	19	**18**	-1	8
Production	Net %	-43	-10	22	-43	-27	-3	17	-60	13	24	**-25**	-49	31
Smoothed	Net %	-37	-10	16	-11	-24	-4	-15	-10	-8	4	**-1**	-5	20
Domestic sales	Net %	-45	-13	18	-38	-36	-8	5	-48	3	-6	**-41**	-35	26
Smoothed	Net %	-40	-13	13	-17	-27	-13	-17	-13	-17	-15	**-24**	-9	19
Export sales	Net %	-41	-17	6	-6	13	3	-12	-25	-21	15	**-6**	-21	24
Smoothed	Net %	-36	-17	1	13	3	1	-11	-19	-10	-4	**5**	9	17
Intermediate goods														
Confidence	%	19	35	52	32	31	20	15	20	29	28	**20**	-8	8
Smoothed	%	20	35	51	36	28	22	18	21	26	26	**24**	-2	7
Production	Net %	-32	-7	19	-9	2	-1	-21	-26	-7	8	**-12**	-20	20
Smoothed	Net %	-28	-7	15	5	-3	-7	-16	-18	-8	-4	**-2**	2	17
Domestic sales	Net %	-37	-10	17	-15	8	-5	-19	-36	-22	-1	**-16**	-15	21
Smoothed	Net %	-34	-10	14	3	-4	-5	-20	-26	-20	-13	**-9**	4	17
Export sales	Net %	-32	-15	3	0	6	-22	-7	-23	11	21	**-11**	-32	17
Smoothed	Net %	-30	-15	0	2	-5	-8	-17	-6	3	7	**5**	-2	12
Consumer goods														
Confidence	%	25	40	55	29	22	37	21	15	16	27	**25**	-2	9
Smoothed	%	26	40	54	30	29	27	24	17	19	23	**26**	3	7
Production	Net %	-19	0	19	2	-21	-8	-33	-32	-10	1	**-11**	-12	17
Smoothed	Net %	-16	0	15	-2	-9	-21	-24	-25	-14	-7	**-5**	2	13
Domestic sales	Net %	-24	-2	20	-9	-17	-4	-23	-38	-7	-12	**5**	17	19
Smoothed	Net %	-20	-2	17	-7	-10	-15	-22	-23	-19	-5	**-4**	1	13
Export sales	Net %	-30	-11	7	-14	-1	-5	-21	-35	7	-12	**-6**	6	17
Smoothed	Net %	-27	-11	4	4	-7	-9	-20	-16	-13	-4	**-9**	-5	12

[5] 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)

[6] 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)

[7] 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
σΔ – volatility (standard deviation of the changes)
All of the above calculated over the last 20 years
See technical note for further details

CAPITAL, INTERMEDIARY AND CONSUMER GOODS

Confidence

Production

Domestic sales

Export sales

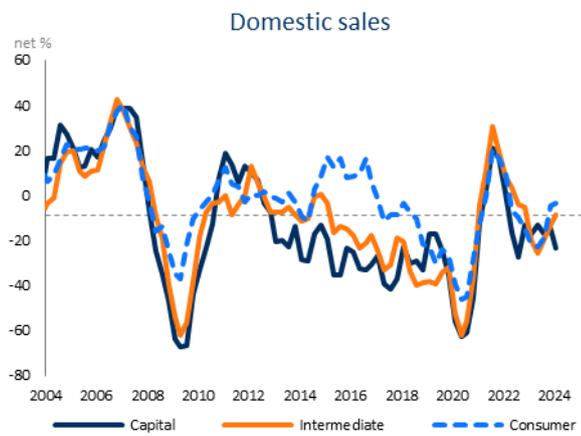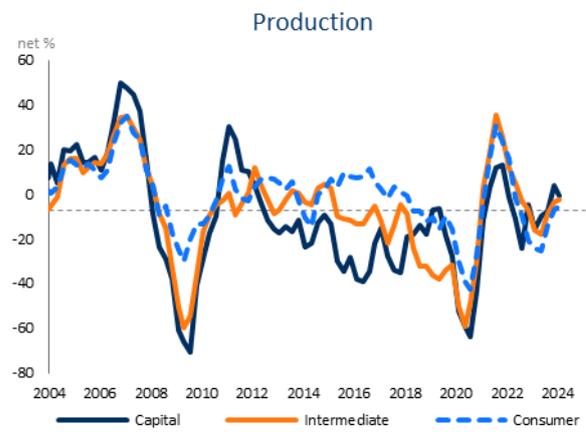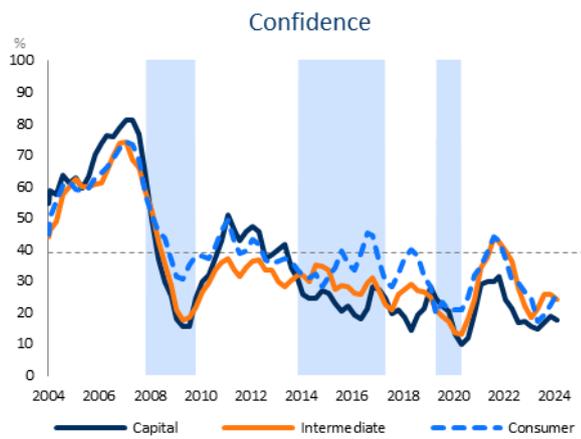*μ – average*
σ – standard deviation
Δ – change from previous period
σ_Δ – volatility (standard deviation of the changes)
All of the above calculated over the last 20 years
See technical note for further details

FOOD AND BEVERAGES[8]

Indicator	Unit	μ-σ	μ	μ+σ	22Q2	22Q3	22Q4	23Q1	23Q2	23Q3	23Q4	24Q1	Δ	Δσ
Confidence	%	25	41	57	30	23	46	22	16	10	19	**11**	-8	15
Production	Net %	-16	8	31	11	1	13	-22	-1	-4	5	**-24**	-29	22
Smoothed	Net %	-11	8	26	11	8	-3	-3	-9	0	-8	**-10**	-2	17
Export sales	Net %	-24	-1	21	16	19	12	-4	-5	2	3	**-11**	-14	21
Smoothed	Net %	-19	-1	17	26	16	9	1	-2	0	-2	**-4**	-2	15
Production costs	Net %	46	66	87	93	78	97	94	83	88	85	**74**	-11	19
Business conditions in 12m	Net %	-31	-9	12	-15	-23	-11	-18	-53	-27	-36	**-70**	-34	22

Confidence

Production (smoothed)

Export sales (smoothed)

Production costs
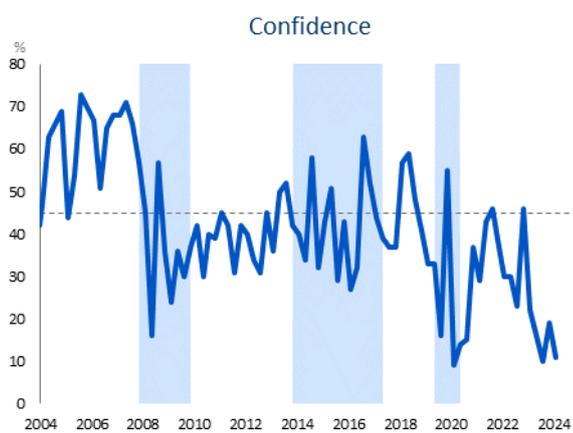
[8] Food & Beverages: Meat, fish, vegetables, oils & fats (SIC code 301), dairy products (302), grain mill products, starches & animal feeds (303), other food (304) and beverages (305). In 2017, this sector contributed 28.4% to production and 11.1% to manufactured exports, petroleum and other excluded 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*

17

TEXTILES, CLOTHING LEATHER AND FOOTWEAR[9]

Indicator	Unit	μ-σ	μ	μ+σ	22Q2	22Q3	22Q4	23Q1	23Q2	23Q3	23Q4	24Q1	Δ	Δσ
Confidence	%	22	37	53	41	40	20	15	16	15	12	**23**	11	13
Production	Net %	-29	-1	28	34	36	-33	-18	-19	-44	15	**-48**	-63	28
Smoothed	Net %	-23	-1	22	27	12	-5	-23	-27	-16	-26	**-17**	9	21
Production costs	Net %	46	63	81	80	93	93	86	92	86	71	**96**	25	16
Business conditions in 12m	Net %	-42	-17	8	-19	24	-20	17	-20	-5	10	**-15**	-25	25

Confidence

Production (smoothed)

Production costs

Business conditions in 12m
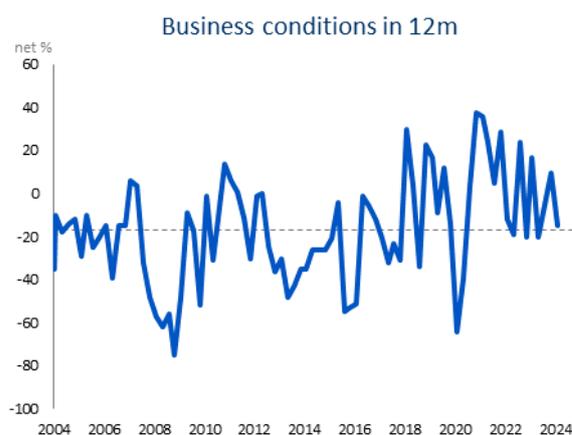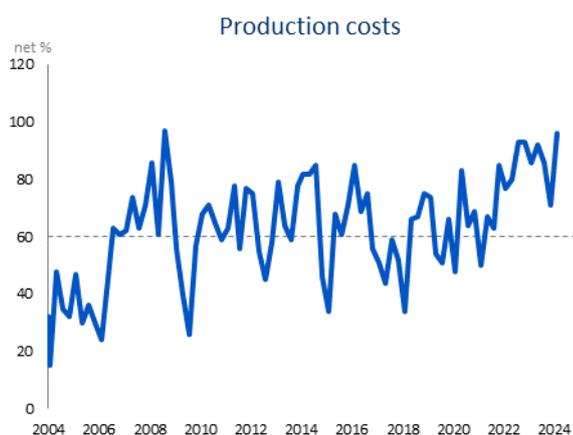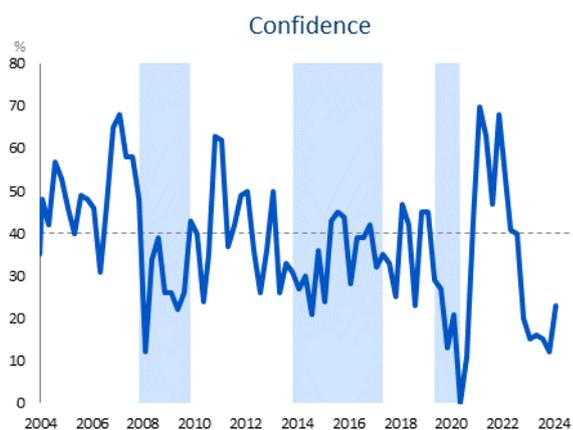
[9] Textiles, Clothing, Footwear & Leather: spinning, weaving & finishing of textiles, yarns (SIC code 311), other textiles (312), knitted & crocheted fabrics (313), wearing apparel & articles of fur (314-5), leather (316) and footwear (317). In 2017, this sector contributed 3.7% to production excluding 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 PUBLISHING[10]

Indicator	Unit	μ-σ	μ	μ+σ	22Q2	22Q3	22Q4	23Q1	23Q2	23Q3	23Q4	24Q1	Δ	Δσ
Confidence	%	18	33	47	19	9	14	9	17	23	37	**13**	-24	14
Production	Net %	-38	-9	20	-49	-23	22	-20	-23	34	32	**-15**	-47	30
Smoothed	Net %	-31	-9	13	-10	-17	-7	-7	-3	14	17	**9**	-8	23
Export sales	Net %	-42	-21	0	-21	-14	-16	11	-46	19	22	**-31**	-53	26
Production costs	Net %	39	61	82	94	100	98	100	100	62	80	**82**	2	18
Business conditions in 12m	Net %	-37	-13	11	-22	-27	-42	-47	-57	-29	-33	**-64**	-31	26

Confidence

Production (smoothed)

Export sales

Production costs
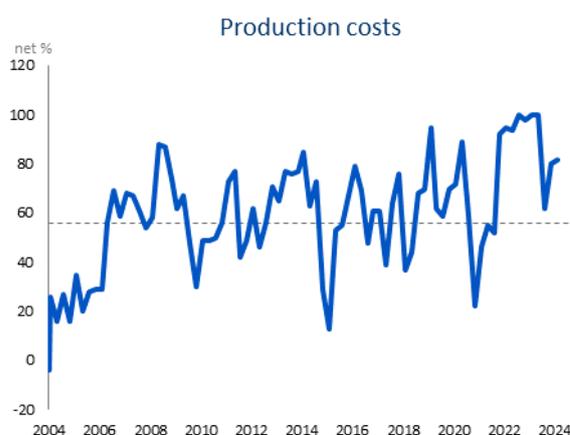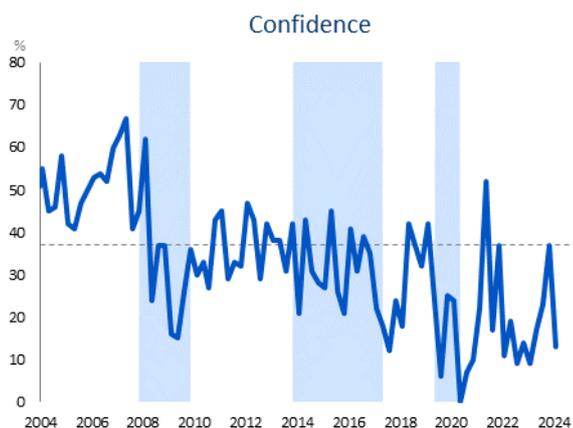
[10] Wood, Paper, Printing & Publishing: sawmilling, preserving of timber, bark grinding & compressing (SIC code 321), wood & wood products (322), paper and products (323) and printing, publishing & recorded media (324-6). In 2017, this sector contributed 13.1% to production and 4.7% to manufactured 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
σΔ – 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 PRODUCTS[11]

Indicator	Unit	μ-σ	μ	μ+σ	22Q2	22Q3	22Q4	23Q1	23Q2	23Q3	23Q4	24Q1	Δ	Δσ
Confidence	%	21	41	61	24	35	33	25	18	23	48	**54**	6	12
Production	Net %	-29	-4	22	-22	-20	3	-27	-59	-21	26	**27**	1	24
Smoothed	Net %	-25	-4	17	-10	-13	-15	-28	-36	-18	11	**27**	16	16
Export sales	Net %	-34	-13	9	-41	1	5	-19	-73	-13	-6	**22**	28	24
Production costs	Net %	44	62	80	46	81	92	39	89	44	34	**38**	4	20
Business conditions in 12m	Net %	-37	-10	16	-22	-27	-21	-41	-68	-53	-3	**3**	6	23

Confidence

Production (smoothed)

Export sales

Production costs
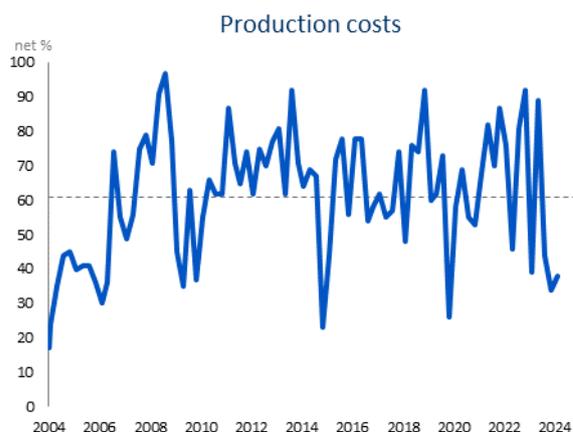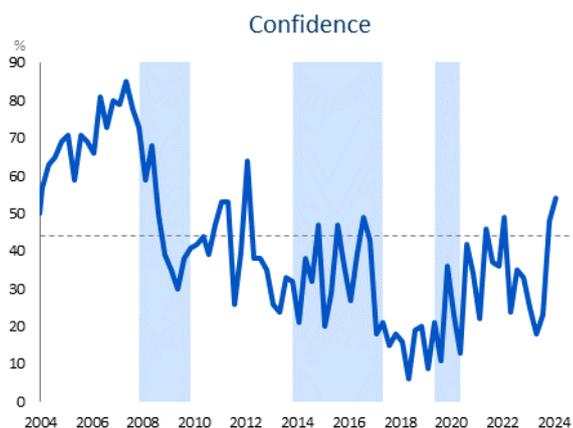
[11] Chemicals, Rubber & Plastics: Refined petroleum & coke (SIC code 331-3) (NOT COVERED), basic chemicals (334), other chemical products (335-6), rubber (337) and plastics (338). In 2017, this sector contributed 16.6% to production and 15.4% to manufactured exports, petroleum and other excluded in 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*
σΔ – 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 PRODUCTS[12]

Indicator	Unit	μ-σ	μ	μ+σ	22Q2	22Q3	22Q4	23Q1	23Q2	23Q3	23Q4	24Q1	Δ	Δσ
Confidence	%	9	36	63	12	0	20	6	13	26	29	**0**	-29	18
Production	Net %	-43	-5	32	-38	-71	-69	-88	-83	-48	-40	**22**	62	31
Smoothed	Net %	-37	-5	26	-38	-59	-76	-80	-73	-57	-22	**-9**	13	24
Production costs	Net %	31	55	78	45	66	57	100	78	46	12	**40**	28	28
Business conditions in 12m	Net %	-20	6	32	-17	0	-39	-16	-29	21	-15	**51**	66	29

Confidence

Production (smoothed)

Production costs

Business conditions in 12m
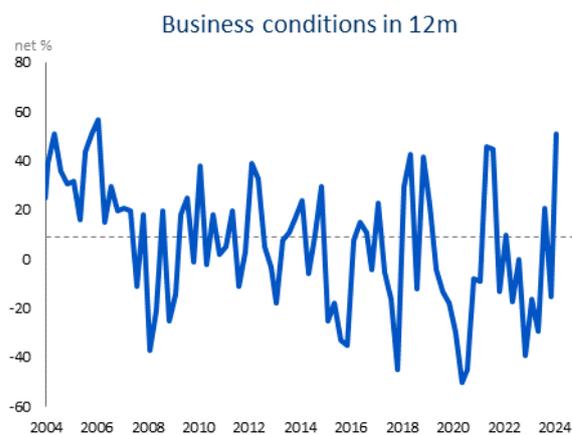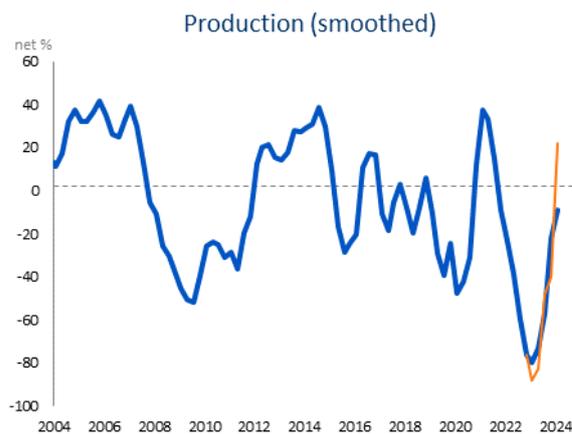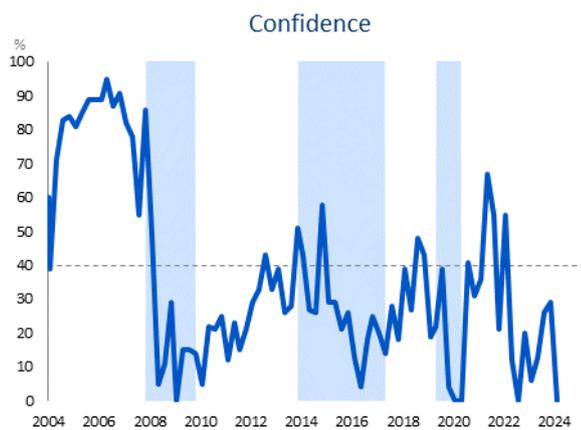
[12] Glass & Non-metallic minerals: Glass & glass products, fibreglass (SIC code 341), other non-metallic mineral products (bricks, tiles, cement, prefab concrete, asphalt, mica products) (342). In 2017, this sector contributed 4.4% to production, excluding petroleum and other.

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 MACHINERY[13]

Indicator	Unit	μ-σ	μ	μ+σ	22Q2	22Q3	22Q4	23Q1	23Q2	23Q3	23Q4	24Q1	Δ	Δσ
Confidence	%	17	35	52	37	36	20	15	17	35	24	**20**	-4	11
Production	Net %	-40	-11	18	6	-1	-7	-12	-27	-14	-15	**-28**	-13	22
Smoothed	Net %	-36	-11	14	9	-1	-7	-15	-18	-19	-19	**-22**	-3	18
Export sales	Net %	-36	-17	3	-1	6	-35	-25	-10	-2	5	**-15**	-20	19
Production costs	Net %	46	62	77	67	68	77	89	70	92	63	**64**	1	17
Business conditions in 12m	Net %	-41	-19	3	-12	-17	-40	-72	-58	-19	-42	**-52**	-10	17

Confidence

Production (smoothed)

Export sales

Production costs
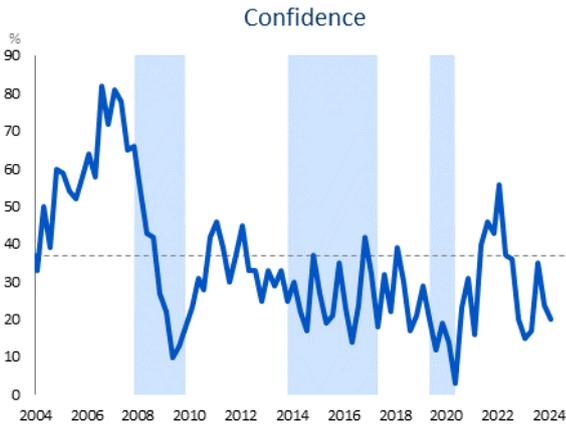
[13] Basic metals, Metal Products & Machinery: Basic iron & steel (SIC code 351), basic precious (gold, platinum, silver) & non-ferrous metal (aluminium, copper, lead, nickel, tin, zinc) products (352), structural metal products (353-4), other fabricated metal products (355), general purpose machinery (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
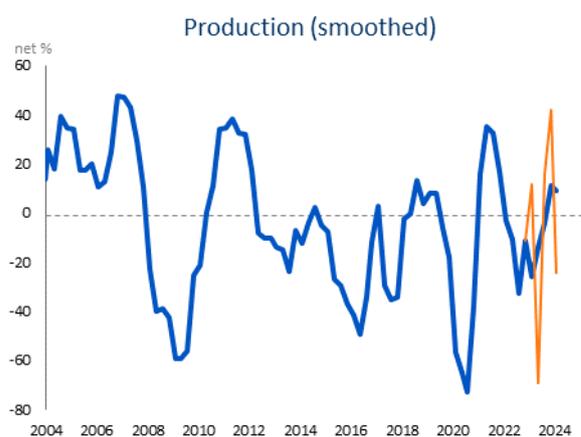*σ – standard deviation*
Δ – change from previous period
σ_Δ – volatility (standard deviation of the changes)
All of the above calculated over the last 20 years
See technical note for further details

MOTOR VEHICLES, PARTS AND TRANSPORT EQUIPMENT[14]

Indicator	Unit	μ-σ	μ	μ+σ	22Q2	22Q3	22Q4	23Q1	23Q2	23Q3	23Q4	24Q1	Δ	Δσ
Confidence	%	10	35	60	9	15	19	21	15	19	7	**9**	2	15
Production	Net %	-44	-5	34	-51	-26	-20	12	-69	16	42	**-24**	-66	42
Smoothed	Net %	-34	-5	24	-11	-32	-11	-26	-14	-4	11	**9**	-2	26
Export sales	Net %	-45	-11	24	34	18	3	-4	-13	-2	46	**14**	-32	38
Smoothed	Net %	-37	-11	16	41	18	6	-5	-6	10	19	**30**	11	23
Production costs	Net %	42	68	94	100	100	100	88	100	93	90	**91**	1	23
Business conditions in 12m	Net %	-56	-22	11	-27	-27	-16	-45	-90	-62	-69	**-83**	-14	29

Confidence

Production (smoothed)

Export sales (smoothed)

Production costs

[14] 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
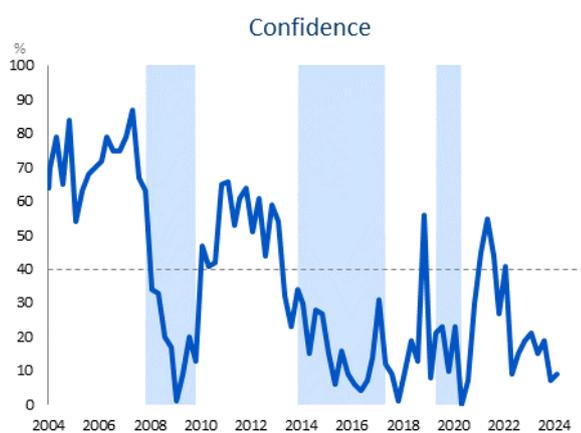*σ – standard deviation*
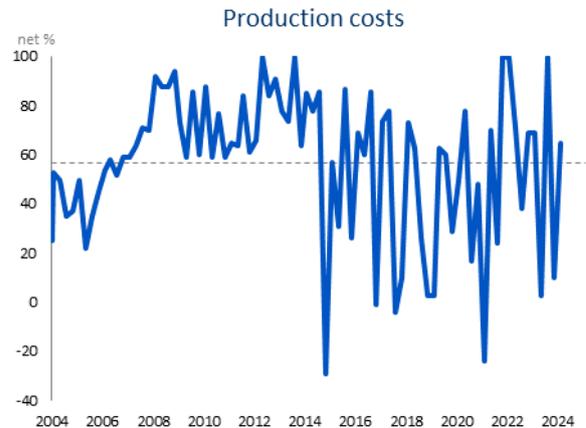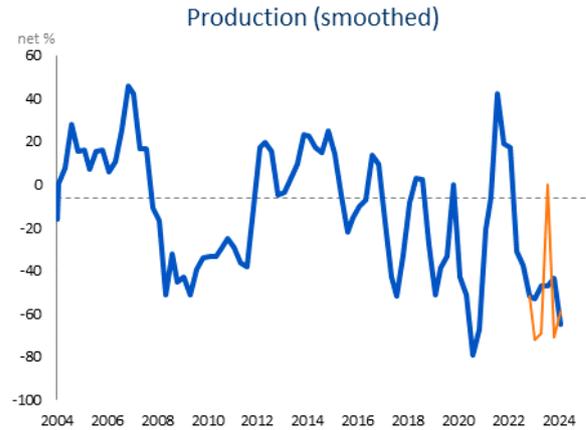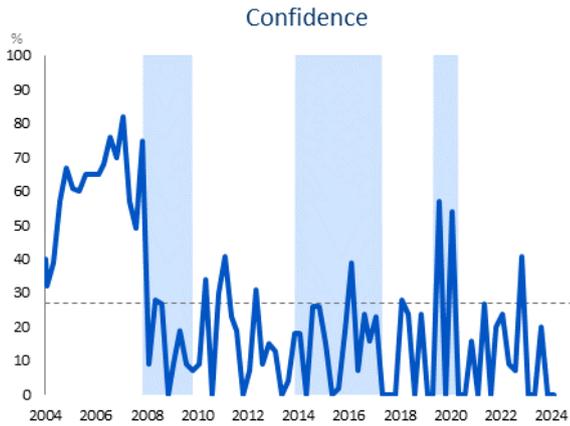*Δ – change from previous period*
σ_Δ – volatility (standard deviation of the changes)
All of the above calculated over the last 20 years
See technical note for further details

FURNITURE AND OTHER[15]

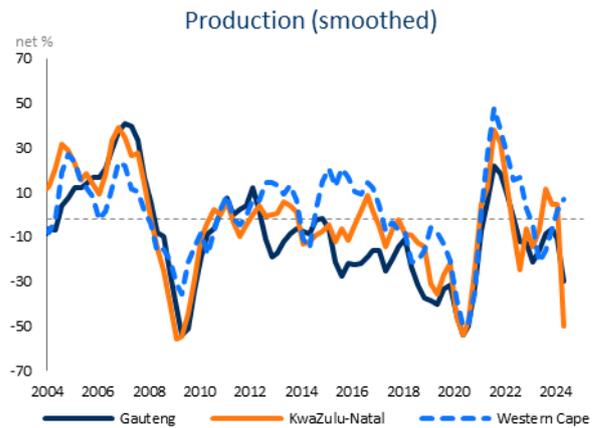| Indicator	Unit	μ-σ	μ	μ+σ	22Q2	22Q3	22Q4	23Q1	23Q2	23Q3	23Q4	24Q1	Δ	Δσ
Confidence	%	0	24	47	9	7	41	0	0	20	0	**0**	0	22
Production	Net %	-53	-12	28	-28	-66	-18	-72	-69	0	-71	**-59**	12	49
Smoothed	Net %	-42	-13	17	-31	-37	-52	-53	-47	-47	-43	**-65**	-22	27
Export sales	Net %	-67	-32	3	-16	-44	-54	-59	-54	-24	-74	**-49**	25	44
Production costs	Net %	28	58	87	71	38	69	69	3	100	10	**65**	55	40
Business conditions in 12m	Net %	-57	-21	14	-9	-73	-49	-80	-100	20	-16	**-69**	-53	40

Confidence

Production (smoothed)

Export sales

Production costs

[15] 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
σΔ – 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	μ-σ	μ	μ+σ	22Q2	22Q3	22Q4	23Q1	23Q2	23Q3	23Q4	24Q1	Δ	Δσ
Gauteng														
Confidence	%	17	35	53	29	31	25	16	20	29	34	**22**	-12	8
Smoothed	%	18	35	52	35	28	24	20	22	28	28	**28**	0	7
Production	Net %	-34	-9	16	-11	-12	-12	-14	-37	3	8	**-30**	-38	19
Smoothed	Net %	-31	-9	13	-1	-12	-13	-21	-16	-9	-6	**-11**	-5	15
KwaZulu-Natal														
Confidence	%	19	38	56	22	27	35	31	22	27	17	**0**	-17	12
Smoothed	%	21	37	54	30	28	31	29	27	22	15	**9**	-6	9
Production	Net %	-32	-4	25	-52	-5	-16	3	-29	5	59	**-50**	-109	30
Smoothed	Net %	-25	-3	18	-7	-24	-6	-14	-7	12	5	**5**	0	18
Western Cape														
Confidence	%	24	39	53	36	22	32	11	14	12	21	**31**	10	11
Smoothed	%	26	39	52	32	30	22	19	12	16	21	**26**	5	8
Production	Net %	-23	0	24	21	1	28	-20	-22	-22	-3	**7**	10	23
Smoothed	Net %	-18	0	19	16	17	3	-5	-21	-16	-6	**2**	8	17
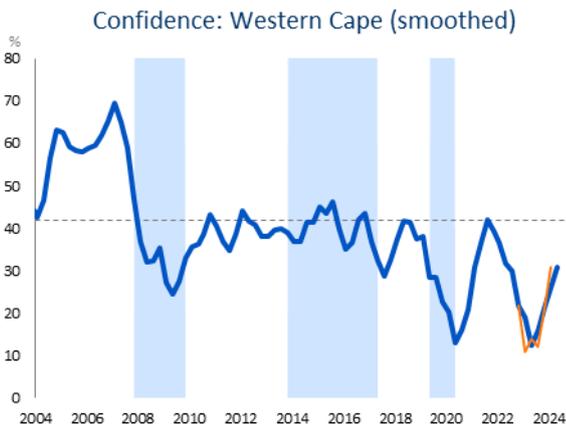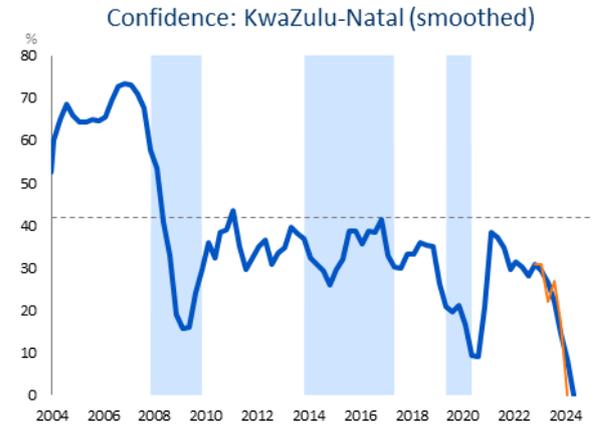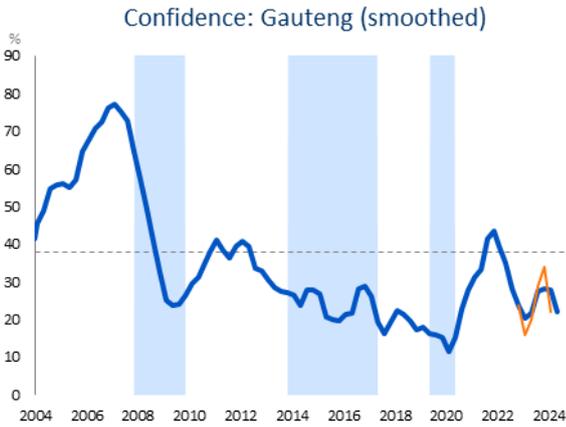
Confidence: Gauteng (smoothed)

Confidence: KwaZulu-Natal (smoothed)

Confidence: Western Cape (smoothed)

Production (smoothed)

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

25

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).

Survey vs Quantitative Data

Net % (lhs) — y-o-y % change (rhs)
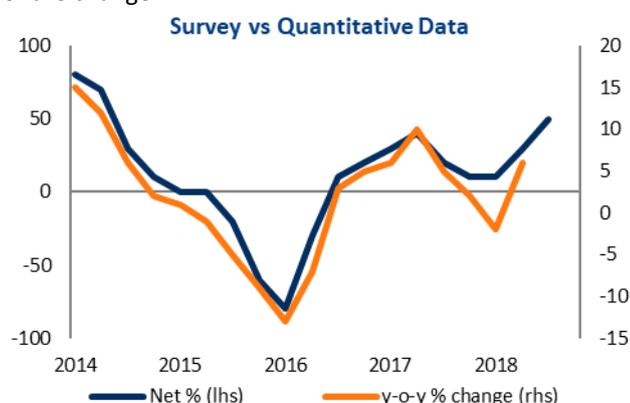
Percentage (%)

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 (3qcma) 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 (μ-σ) and above (μ+σ) 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: Δσ)

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.