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EDITOR:

Annelie van Niekerk

Lisette IJssel de Schepper

lisette@sun.ac.za

+27 (21) 808 9777

TECHNICAL ASSISTANCE:

Nicolaas van der Wath

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

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Executive summary

According to the latest Absa Manufacturing Survey, business confidence in the sector improved to 26 in Q4, from an average of 19 points in the first three quarters of the year. Still, roughly seven out of ten businesspeople in the sector are unsatisfied with prevailing business conditions.

The improvement in the underlying activity data would have supported a more significant increase in confidence. On the demand front, a smaller net majority reported a decline in domestic sales volumes, while export sales rose notably in Q4. Less intense load-shedding and a fading impact from prior disruptions (such as the Cape Town taxi strike) supported an improvement in overall production volumes in Q4. This likely reflects a normalisation in activity. With less frequent load-shedding, manufacturers also reported an increase in the average hours worked per factory worker.

For a fourth consecutive quarter, a sizeable net majority reported a decline in fixed investment outlays compared to the same quarter last year. Slack capacity in the sector has increased and the business environment remains challenging. The political climate, short-term interest rate and insufficient demand are rated as the biggest constraints on business conditions.

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Introduction

After showing resilience in the first half of the year, the South African (SA) manufacturing sector was hit by a range of shocks in the third quarter of 2023 (2023Q3) which led to production declining on a quarterly basis. The latest Absa Manufacturing Survey results suggest that the sector performed better in the fourth quarter (2023Q4), but there remains much uncertainty as to whether the improvement is sustainable.

This report provides an overview of the situation in the manufacturing sector as it developed during 2023Q4, expectations for 2024Q1 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 graphs of the survey data are also provided for each sector and province[1].

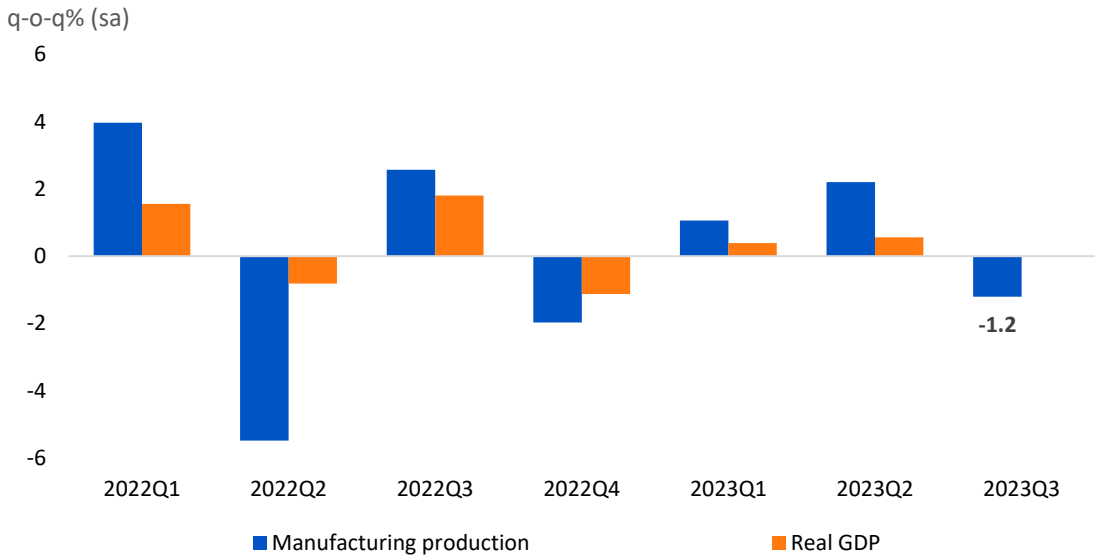
An overview of the latest official data

MANUFACTURING PRODUCTION CONTRACTS IN Q3

According to Statistics South Africa (Stats SA), manufacturing production contracted by 4.3% year-on-year (y-o-y) in September, following a downwardly revised 1.5% increase in August. While the decline in output was broad-based, the biggest drag stemmed from manufacturers of food and beverages (-10.5% y-o-y, shaving off 2.6 percentage points (% pts)) and motor vehicles (-19.7% y-o-y; -2.3% pts). Moreover, following a 0.4% month-on-month (m-o-m) increase in August, seasonally adjusted (sa) manufacturing production fell by 0.5% in September. Together with the notable monthly contraction recorded in July, this resulted in manufacturing production falling by 1.2% quarter-on-quarter (q-o-q) in Q3. As such, the sector is set to subtract from quarterly real GDP growth in Q3 – see Figure 1. Indeed, with the available high-frequency data foreshadowing quarterly contractions in mining, manufacturing and some of the internal trade categories, GDP growth is set to slow significantly in Q3, if not stagnate. This was despite less intense and less frequent load-shedding through most of the quarter.

[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).

Figure 1: The manufacturing sector is set to subtract from Q3 real GDP growth



Source: Stats SA

While no official data for Q4 is available as yet, the latest Absa Purchasing Managers' Index (PMI) suggests that the manufacturing sector also had a poor start to 2023Q4. Indeed, the headline index weakened to 45.4 index points in October, down from an upwardly revised 46.2 during September and an average level of 47.8 in Q3. The biggest drag came from the business activity index, which declined from 43.1 to 40.3. Because the ability to produce presumably improved as the frequency and intensity of load-shedding eased in both October, the weak activity reading most likely reflects continued strained demand conditions in SA. That said, the production indicator in the Absa Manufacturing Survey painted a rosier picture, suggesting that output may have picked up through the remainder of the quarter.

GLOBAL MANUFACTURING OUTPUT STILL UNDER PRESSURE

The J.P. Morgan global manufacturing PMI dipped to a three-month low of 48.8 in October from 49.2 in September. The biggest drag on the headline PMI came from the output index, which declined to 48.9 from 49.8 the month prior – i.e., signalling a faster contraction in business activity. Both the new orders and new export orders subindices remained in contractionary terrain, reflecting weak global demand. Among SA's major trading partners, the UK, Eurozone (EZ) and China had PMI readings below 50 points, while the US eked out a marginal rise in output volumes. Worryingly, there are signs that conditions could worsen over the near term as October saw cutbacks in employment in 21 out of the 30 countries included in the survey, while expectations of future output growth deteriorated to an eleven-month low. Moreover, both the input cost and output price indices had readings above the neutral 50-point mark, signalling that price pressures remain elevated.

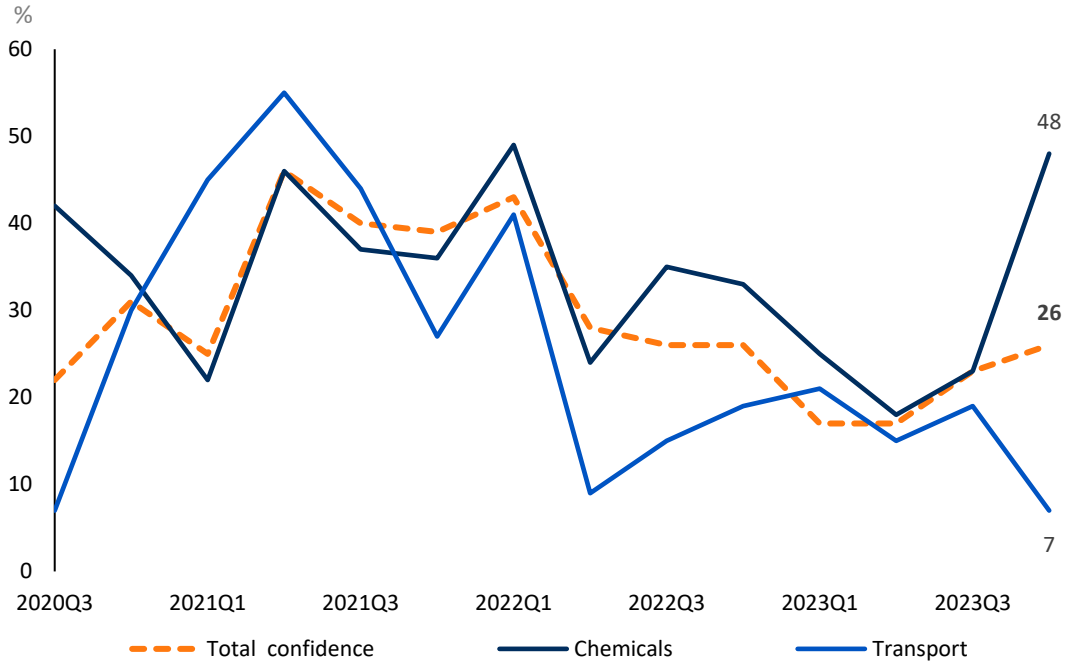
The 2023Q4 Absa Manufacturing Survey results

MANUFACTURING BUSINESS CONFIDENCE IMPROVED SLIGHTLY IN Q4

Manufacturing business confidence improved from 23 index points in Q3 to 26 in 2023Q4 – see Figure 2. Although the fourth quarter saw the highest confidence in 2023, the index has shown little improvement over the past three years and remains far below the long-term average of 37. The current level implies that roughly 7 out of 10 respondents were unsatisfied with prevailing business conditions.

Of the eight major manufacturing sectors surveyed, half saw an increase in confidence, while the remaining four reported a drop in confidence. The chemicals sector recorded both the highest reading in Q4 and the most significant quarterly rise in confidence relative to Q3. The gain was supported by notable improvements in domestic sales (from -37 to 7) and production volumes (from -21 to 26). Chemical producers also recorded higher domestic and export selling prices in Q4, which, coupled with better volume growth may have boosted their overall turnover growth and, in turn, business confidence.

Figure 2: While confidence improved, there were clear divergences among subsectors



Source: BER

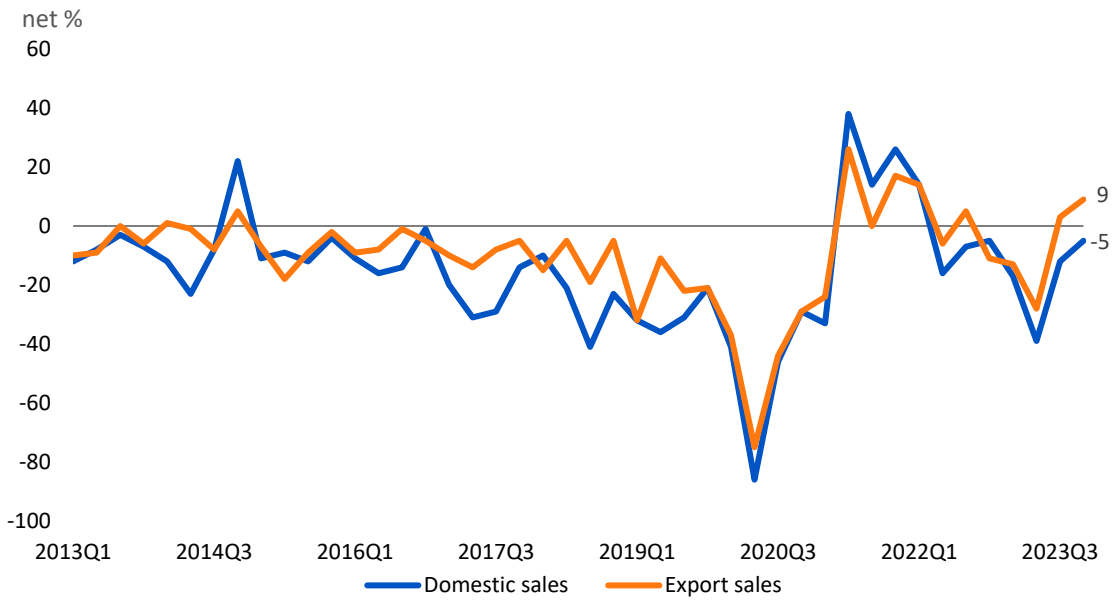
In contrast, the transport sector experienced a major decline in confidence, from an already low level of 19 in Q3 to 7 in Q4. The underlying activity data does not explain the drop in confidence as especially export sales volumes (from -2 to 46) looked significantly better. However, ongoing lack of policy guidance on electric vehicle production in SA could have weighed on confidence. In the lead-up to the Medium Term Budget Policy Statement (MTBPS) on November 1st, there was hope that the Minister of Finance would announce the (already-delayed) policy on 'New Energy Vehicle' (NEV) production. However, the policy announcement was postponed until the Budget Speech in February 2024. Another factor to consider is that the majority of survey responses were received prior to the African Growth and Opportunity Act (AGOA) forum at the end of October. Hence, there was likely some uncertainty regarding the continuation of AGOA (which is a highly

important trade agreement for some exporters in the transport sector), that might have weighed on confidence.

SALES VOLUMES PICKED UP AMID SOFTER SELLING PRICES

A net majority of 5% of respondents reported a decline in domestic sales volumes compared to the same quarter last year – see Figure 3. While still in contractionary terrain, the current reading is notably better than the 12% reporting a decline in 2023Q3 and above the long-term average of the series. This suggests that current sales volumes are performing slightly better than usual. The improvement in volumes likely came on the back of softer selling prices, as the indicator tracking domestic selling price inflation declined by 12 index points to 33. However, it is worth noting that only three (textiles, wood and chemicals) of the eight major subsectors saw their domestic sales volumes expand in Q4. Worryingly, a larger net majority of producers (-11%) expect domestic sales volumes to deteriorate further in the next quarter.

Figure 3: Domestic and export sales volumes moved higher



Source: BER

The performance on the export front was more encouraging, as a net majority of 9% reported an increase in sales volumes relative to 2022Q4 – see Figure 3. At the same time, export selling price inflation stayed at an elevated level. Overall, respondents in five of the eight sectors surveyed registered higher exports in Q4, led by the transport sector (from -2 to 46). Furthermore, transport producers reported notably higher export selling price increases. The official data available for the fourth quarter (so far) supports the improved export volume performance in the transport sector. According to Naamsa, vehicle export sales rose by 11.1% m-o-m and 36.5% y-o-y in October.

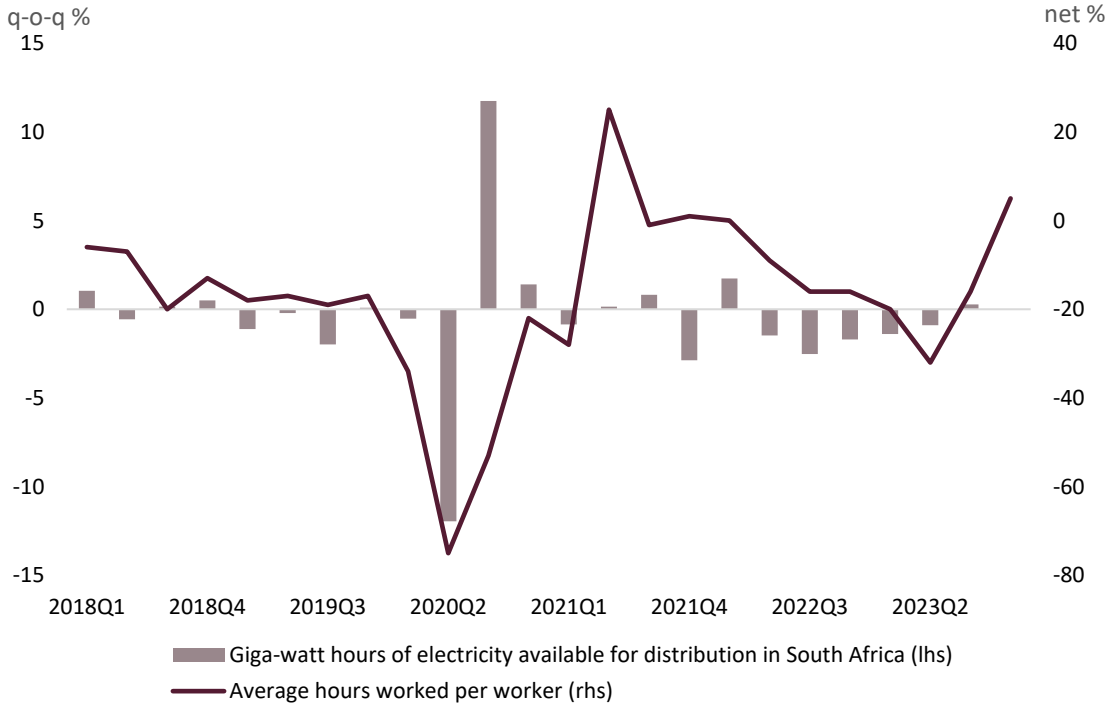
Looking ahead, manufacturers are less optimistic about export growth than before, but a net 2% still sees an increase in volumes in 12 months' time. The expected slowdown in global growth was likely a key reason for the less positive expectation. Indeed, one respondent in the metals industry commented on how foreign economic conditions appear 'recessionary' and that demand from China (a key export market for metal products) has been muted. Respondents also mentioned how logistical constraints, especially congestion at the ports, are hindering exports.

PRODUCTION VOLUMES NORMALISE AMID FEWER DISRUPTIONS IN Q4

A seasonally adjusted (sa) net majority of 4% reported an increase in production volumes in Q4 relative to the same quarter last year. This outcome was in stark contrast to the poor reading of the business activity index of the Absa PMI in October and points to a slight expansion in the official annual manufacturing production data[2]. Most subsectors experienced an uptick in production volumes compared to 2022Q4, led by the transport sector (from 16 in Q3 to 42). Given that there was less intense and less frequent (daytime) load-shedding, while the impact from prior disruptions like the Cape Town taxi-strike has largely faded, the improvement in overall production volumes in Q4 likely reflects a normalisation in activity.

With the rebound in production, it was unsurprising to also see a corresponding improvement in the employment indicators. A net 2% reported a decline in the number of workers (from 18% in Q3) and a net 5% said the average hours worked per worker increased relative to 2022Q4. The latter may be a positive knock-on effect of less intense load-shedding in Q4 (so far) on the ability to produce. Indeed, Figure 4 below illustrates a positive relationship between improved electricity supply and average hours worked for the fourth quarter.

Figure 4: Average hours worked likely improved on the back of less intense load-shedding



Source: BER, Stats SA

The indicator tracking the average rate of increase in per unit production costs declined for a fourth consecutive quarter, from 77 to 68. This could in part be due to less need to run diesel generators and factories that have installed solar energy may now benefit from lower electiricy bills. While total cost still remains somewhat above the long-term average for this indicator, domestic and export selling price inflation

[T] While the business activity index of the PMI and manufacturing survey production indicator both track activity, there are a few reasons why they could seem to give mixed signals. For example, the PMI asks respondents for the change in production relative to the previous month, where the survey question asks to compare to the same quarter in the previous year. Furthermore, the PMI results are not weighed per respondent or sector, while the survey respondents are assigned weights. For more, see this note on our website.

is also still faster than the long-term average. This mitigates the negative impact from higher costs on profitability somewhat, although respondents expressed concern about the ability to pass on higher costs to consumers.

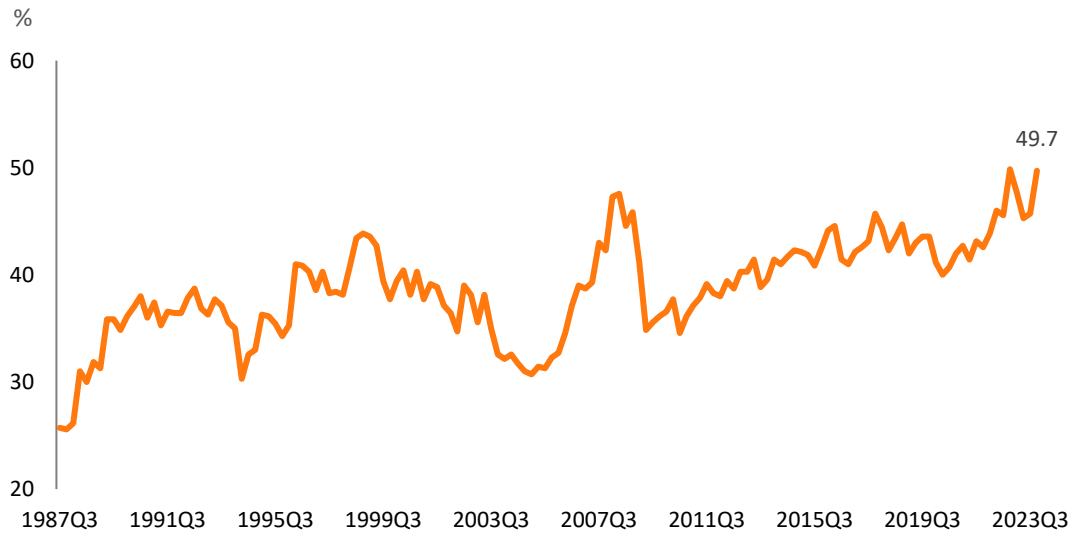
FIXED INVESTMENT REMAINS SUBDUED IN Q4

For a fourth consecutive quarter, a sizeable net majority reported a decline in fixed investment outlays compared to the same quarter last year. At -13%, the fixed investment indicator remains below its long-term average level of 0, and is expected to remain poor in Q1. The increase in slack capacity in the sector, which is reflected in the capacity underutilisation index increasing to 73 from 69, could explain part of the reason why investment plans were scaled back in Q4. Continued load-shedding mitigation costs and recent investment in alternative energy might have depleted budgets reserved for non-energy investment. Looking ahead, the picture remains bleak, with a net 12% expecting a decline in fixed investment in machinery and equipment in 12 months' time**.**

OUTLOOK

The extent of the improvement in many of the underlying indicators relative to Q3 as well as the current levels around long-term averages would have supported a bigger increase in manufacturing business confidence. However, the business environment remains tough - Figure 5 illustrates how the average of the constraints to activity included in the survey is at an all-time high[3]. Furthermore, uncertainty about load-shedding, red tape and inefficiencies at the harbour likely also weighed on confidence in Q4. In addition to these supply constraints, there may also be some concern about underlying weakness in demand and thus doubt that current better levels will be sustained going forward. It remains difficult to see what would propel confidence higher over the short term, and unfortunately higher confidence is needed before we will see a sustained improvement in (non-energy) investment in the sector.

Figure 5: The constraints to business conditions remain high and point to an increasingly tough operating environment



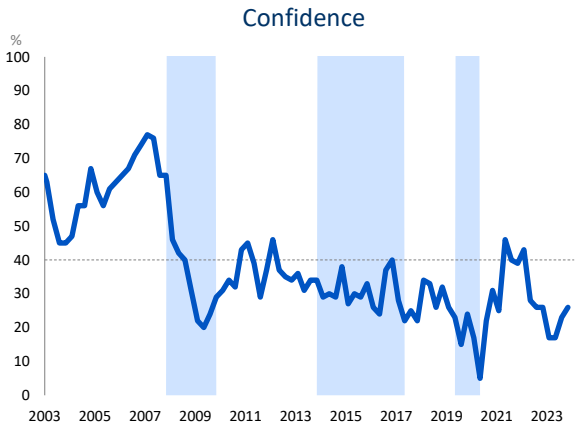
Source: BER

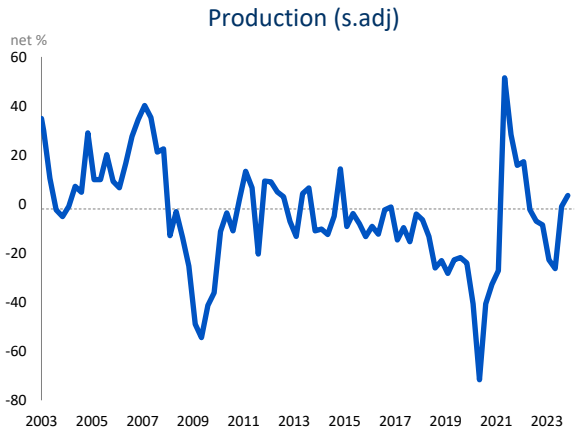
[3] Respondents are asked to rate the seriousness of several constraints on business conditions (including the political climate, short-term interest rate and insufficient demand). Respondents do no need to rank the constraints but judge each on its own merits.

Survey results

MANUFACTURING: TOTAL[4]

Indicator	Unit	μ-σ	μ	μ+σ	22Q1	22Q2	22Q3	22Q4	23Q1	23Q2	23Q3	23Q4	Δ	σ Δ
Confidence	%	21	37	53	43	28	26	26	17	17	23	**26**	3	7
Activity & prices														
Production	Net %	-27	-5	17	22	-10	-10	-3	-18	-34	-4	**9**	13	17
Seasonally adjusted	Net %	-27	-5	17	17	-2	-7	-8	-23	-26	-1	**4**	5	16
Employment	Net %	-29	-15	-2	-7	-4	-14	-11	-17	-19	-18	**-2**	16	9
Average hours worked / worker	Net %	-28	-13	3	0	-9	-16	-16	-20	-32	-16	**5**	21	13
Domestic sales	Net %	-32	-8	17	14	-16	-7	-5	-17	-39	-12	**-5**	7	18
Domestic selling prices	Net %	16	31	46	55	52	52	48	50	31	45	**33**	-12	12
Export sales	Net %	-31	-14	2	14	-6	5	-11	-13	-28	3	**9**	6	14
Export selling prices	Net %	-3	17	36	48	44	50	50	43	29	30	**30**	0	13
Production costs	Net %	47	62	77	67	76	81	89	85	84	77	**68**	-9	11
Stocks & investment														
Finished goods rel. to demand	Net %	1	9	18	-14	-1	5	1	-4	-4	3	**2**	-1	7
Smoothed	Net %	2	9	17	-8	-3	2	1	-2	-2	0	**3**	3	5
Capacity underutilisation	%	65	72	79	65	64	68	68	74	78	69	**73**	4	5
Smoothed	%	66	72	78	63	66	67	70	73	74	73	**71**	-2	4
Fixed investment	Net %	-14	0	15	13	-5	1	2	-15	-20	-12	**-13**	-1	10
Constraints														
Insufficient demand	Net %	54	62	70	54	58	58	65	61	58	60	**61**	1	5
Political climate	Net %	44	63	82	77	78	76	83	91	86	84	**82**	-2	6
Expected in 12 months														
Business conditions	Net %	-33	-13	7	-5	-17	-20	-29	-45	-59	-29	**-33**	-4	16
Smoothed	Net %	-31	-13	4	-10	-14	-22	-31	-44	-44	-40	**-31**	9	12
Fixed investment	Net %	-15	0	14	16		-6		-13		-8		5	13

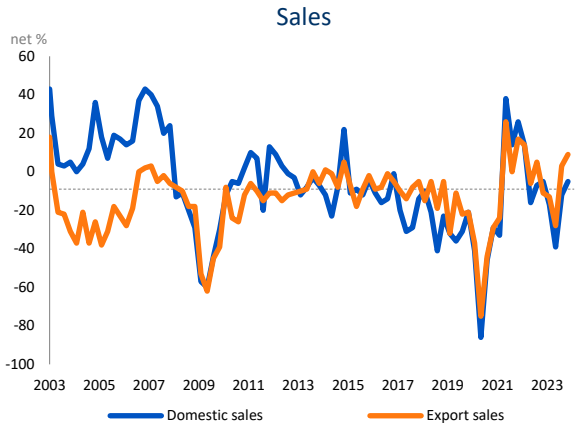


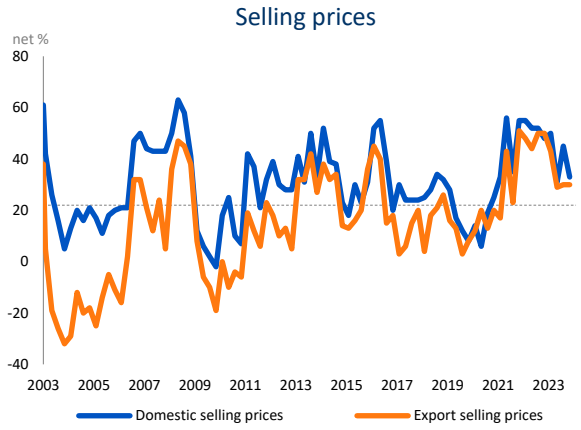


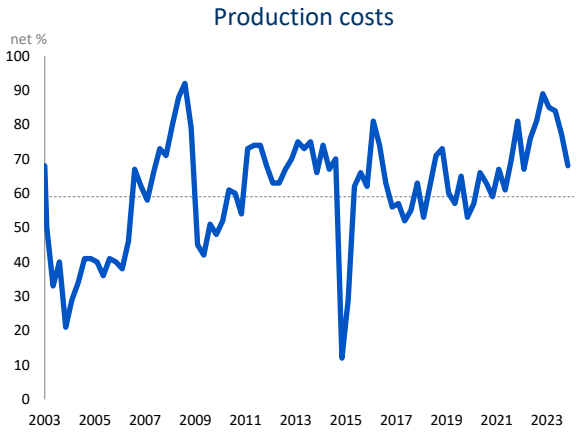
[4] The total consists of 1) food & beverages, 2) textiles, clothing, leather & footwear, 3) wood, paper, printing & publishing, 4) chemical products, rubber & plastics, 5) glass & non-metallic mineral products, 6) basic metals, metal products & machinery, 7) electrical machinery, radio, TV and professional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

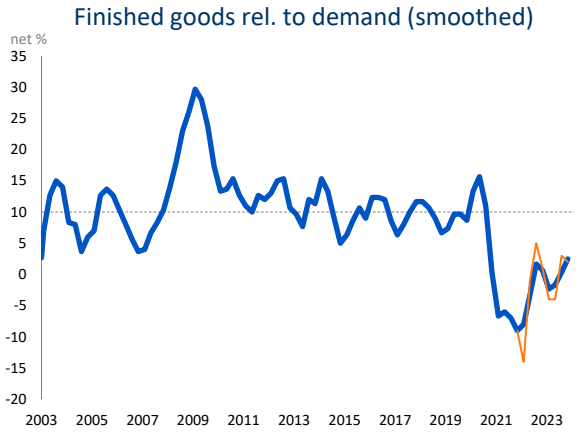
μ – average
σ – standard deviation
Δ – change from previous period
σΔ – volatility (standard deviation of the changes)
All of the above calculated over the last 20 years
See technical note for further details

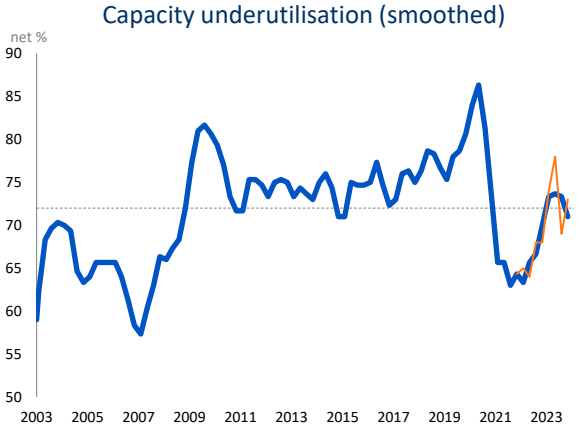
MANUFACTURING: TOTAL

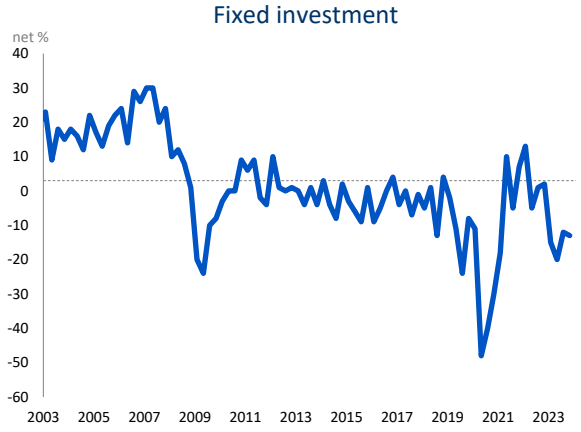


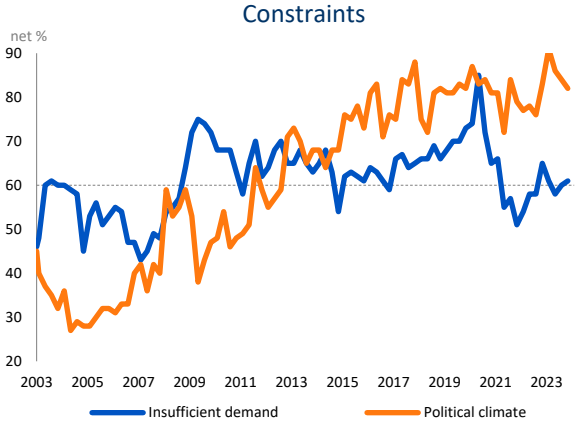


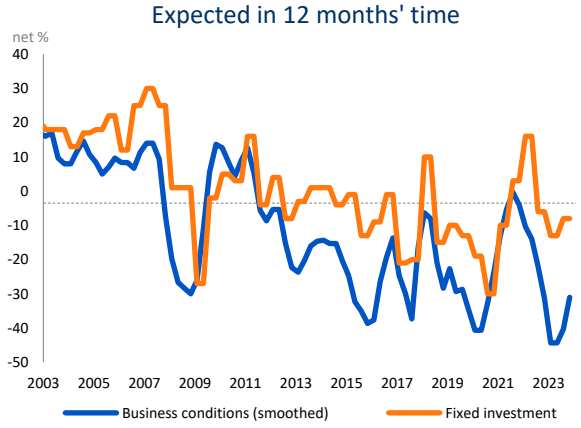






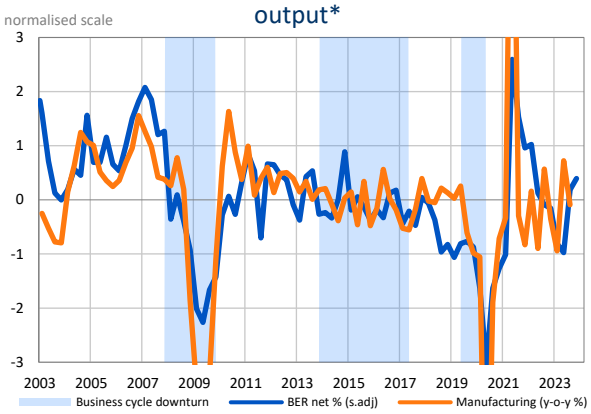




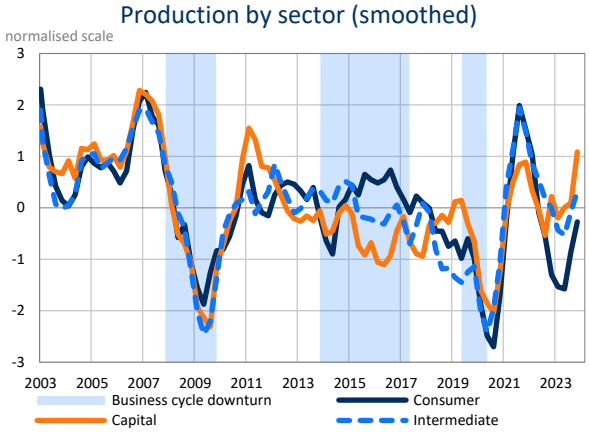


SUMMARY

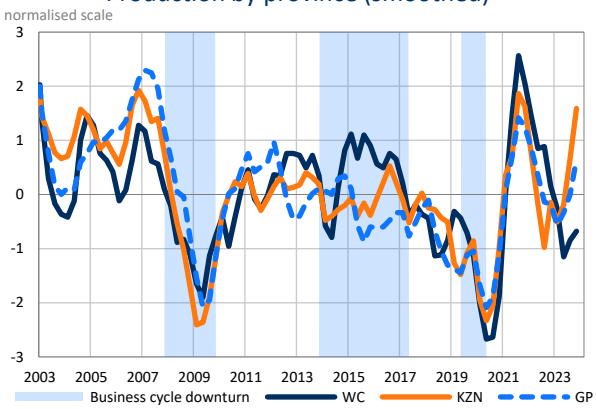
Production & actual manufacturing output*



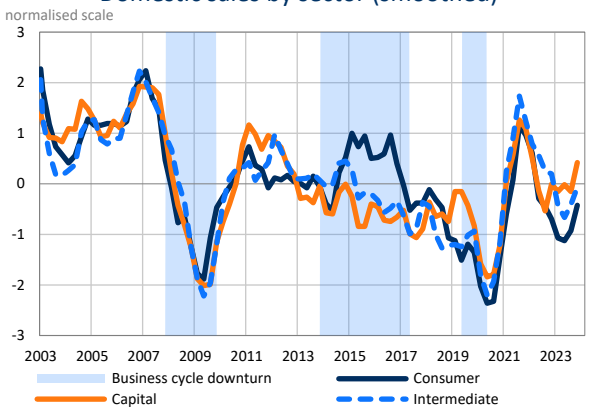
Production by sector (smoothed)



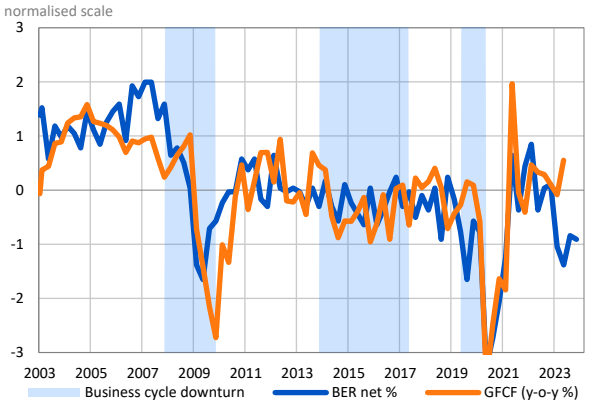
Production by province (smoothed)



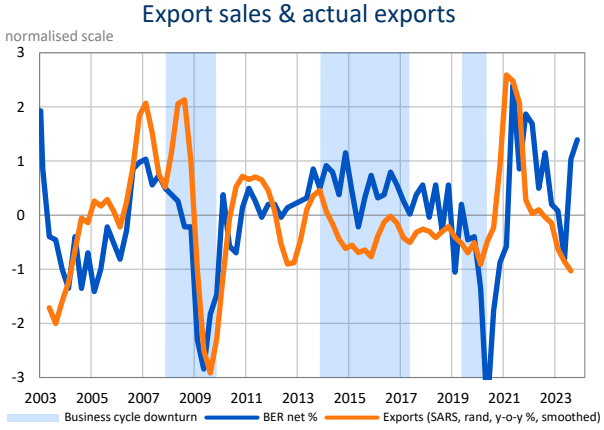
Domestic sales by sector (smoothed)



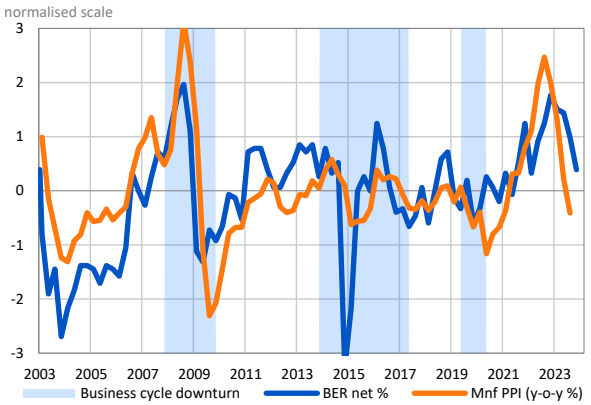
Fixed investment & Private GFCF



Export sales & actual exports



Production cost & PPI-inflation



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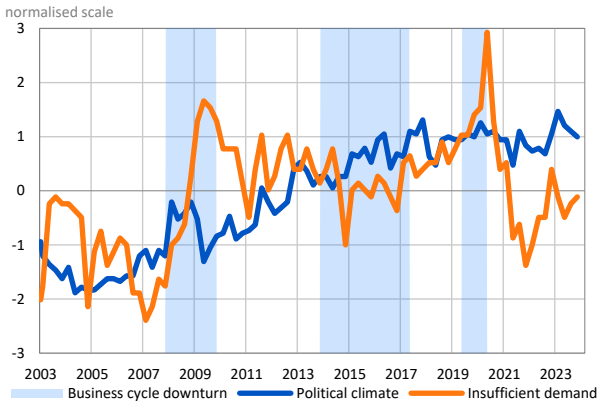


CAPITAL[5], INTERMEDIARY[6] AND CONSUMER[7] GOODS

Indicator	Unit	μ-σ	μ	μ+σ	22Q1	22Q2	22Q3	22Q4	23Q1	23Q2	23Q3	23Q4	Δ	Δσ
Capital goods														
Confidence	%	15	35	56	38	11	15	24	13	10	21	**19**	-2	11
Smoothed	%	16	35	55	24	21	17	17	16	15	17	**20**	3	8
Production	Net %	-42	-10	22	37	-43	-27	-3	17	-60	13	**24**	11	30
Smoothed	Net %	-36	-10	16	-1	-11	-24	-4	-15	-10	-8	**19**	27	20
Domestic sales	Net %	-44	-13	19	24	-38	-36	-8	5	-48	3	**-6**	-9	26
Smoothed	Net %	-40	-13	14	1	-17	-27	-13	-17	-13	-17	**-2**	15	19
Export sales	Net %	-41	-18	6	32	-6	13	3	-12	-25	-21	**15**	36	23
Smoothed	Net %	-36	-18	1	14	13	3	1	-11	-19	-10	**-3**	7	17
Intermediate goods														
Confidence	%	19	36	52	46	32	31	20	15	20	29	**28**	-1	8
Smoothed	%	20	36	51	40	36	28	22	18	21	26	**29**	3	7
Production	Net %	-32	-7	19	22	-9	2	-1	-21	-26	-7	**8**	15	20
Smoothed	Net %	-28	-7	15	12	5	-3	-7	-16	-18	-8	**1**	9	17
Domestic sales	Net %	-37	-10	17	17	-15	8	-5	-19	-36	-22	**-1**	21	21
Smoothed	Net %	-34	-10	14	9	3	-4	-5	-20	-26	-20	**-12**	8	17
Export sales	Net %	-33	-15	3	-1	0	6	-22	-7	-23	11	**21**	10	16
Smoothed	Net %	-30	-15	0	6	2	-5	-8	-17	-6	3	**16**	13	12
Consumer goods														
Confidence	%	25	40	55	40	29	22	37	21	15	16	**27**	11	9
Smoothed	%	26	40	54	37	30	29	27	24	17	19	**22**	3	7
Production	Net %	-19	0	19	14	2	-21	-8	-33	-32	-10	**1**	11	17
Smoothed	Net %	-16	0	15	16	-2	-9	-21	-24	-25	-14	**-5**	9	13
Domestic sales	Net %	-23	-2	20	5	-9	-17	-4	-23	-38	-7	**-12**	-5	19
Smoothed	Net %	-20	-1	17	10	-7	-10	-15	-22	-23	-19	**-10**	9	13
Export sales	Net %	-31	-12	7	27	-14	-1	-5	-21	-35	7	**-12**	-19	17
Smoothed	Net %	-27	-12	4	10	4	-7	-9	-20	-16	-13	**-3**	10	12

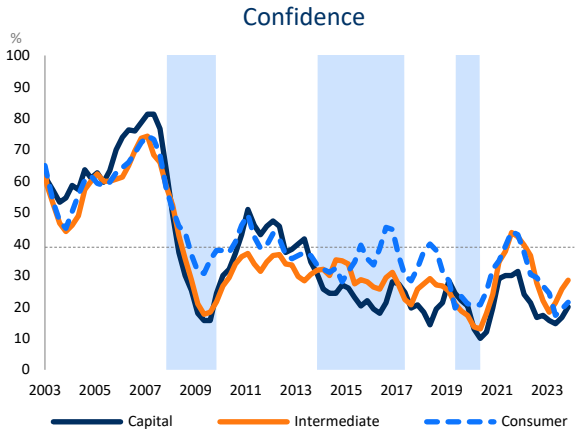
[5] Capital goods: Structural metal products (SIC code 353-4), general purpose machinery (356), special purpose machinery & machine tools (357), electrical motors & generators (361), medical appliances, photo equipment (374-6), motor vehicles & bodies (381-2), parts & accessories (383), other transport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

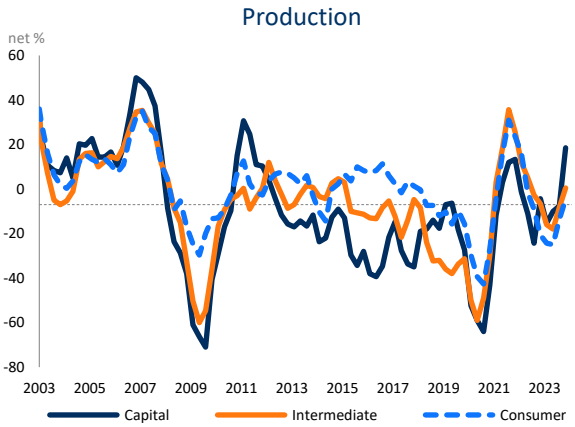
[6] Intermediary goods: Grain mill products, starches & animal feeds (303), spinning, weaving & finishing of textiles, yarns (311), knitted & crocheted fabrics (313), sawmilling, preserving of timber, bark grinding & compressing (321), wood & wood products (322), paper and products (323), basic chemicals (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)

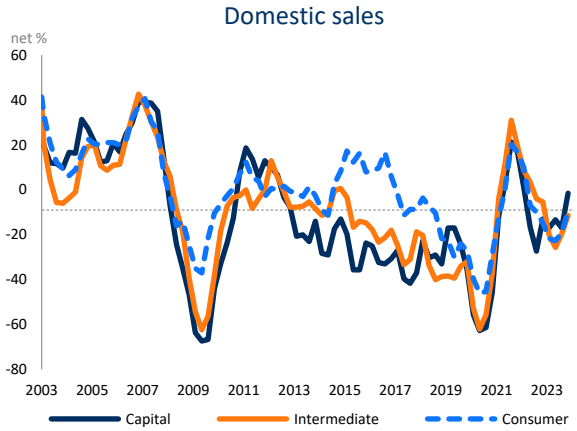
[7] Consumer goods: Meat, fish, fruit, vegetables, oils & fats (301), dairy products (302), other (304), beverages (305), tobacco (306), other textiles (312), wearing apparel & articles of fur (314-5), leather (316), footwear (317), other chemical products (335-6), computers & office machines, household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

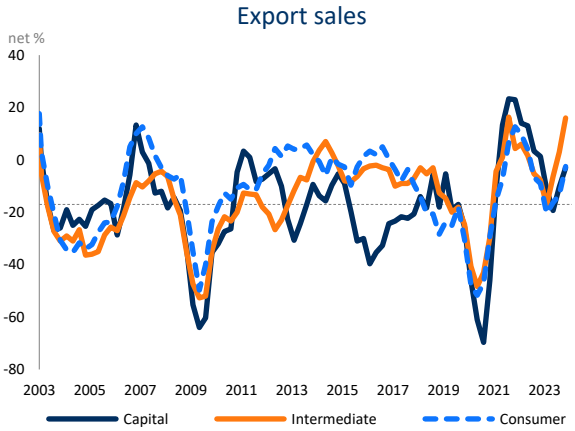
μ – average
σ – standard deviation
Δ – change from previous period
σ_Δ – volatility (standard deviation of the changes)
All of the above calculated over the last 20 years
See technical note for further details

CAPITAL, INTERMEDIARY AND CONSUMER GOODS





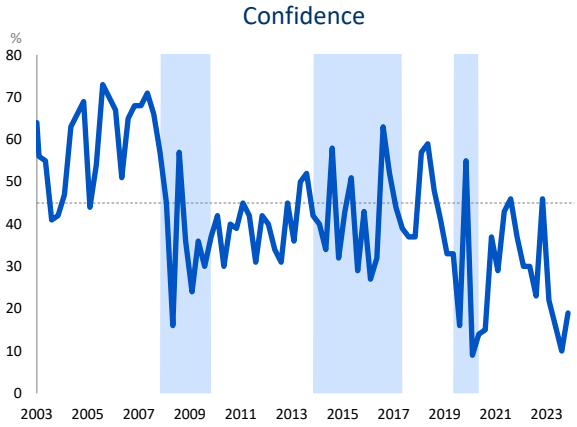


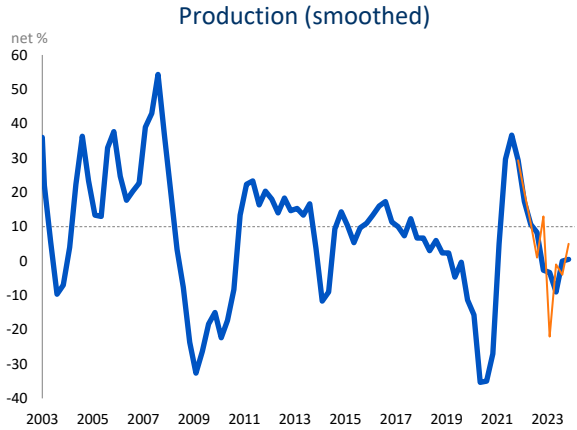


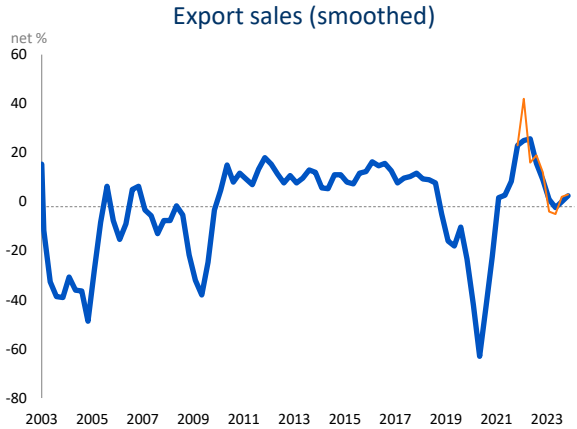
μ – average
σ – standard deviation
Δ – change from previous period
σ_{Δ} – volatility (standard deviation of the changes)
All of the above calculated over the last 20 years
See technical note for further details

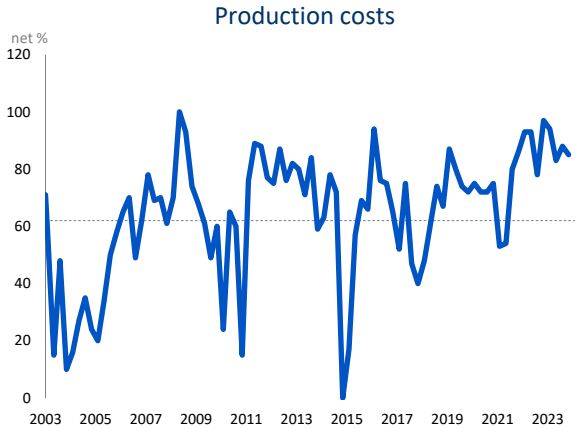
FOOD AND BEVERAGES[8]

Indicator	Unit	μ-σ	μ	μ+σ	22Q1	22Q2	22Q3	22Q4	23Q1	23Q2	23Q3	23Q4	Δ	Δσ
Confidence	%	26	42	58	30	30	23	46	22	16	10	**19**	9	15
Production	Net %	-15	8	31	20	11	1	13	-22	-1	-4	**5**	9	22
Smoothed	Net %	-10	8	27	17	11	8	-3	-3	-9	0	**1**	1	17
Export sales	Net %	-24	-2	21	42	16	19	12	-4	-5	2	**3**	1	21
Smoothed	Net %	-20	-2	17	25	26	16	9	1	-2	0	**3**	3	15
Production costs	Net %	44	66	87	93	93	78	97	94	83	88	**85**	-3	19
Business conditions in 12m	Net %	-29	-8	12	22	-15	-23	-11	-18	-53	-27	**-36**	-9	22







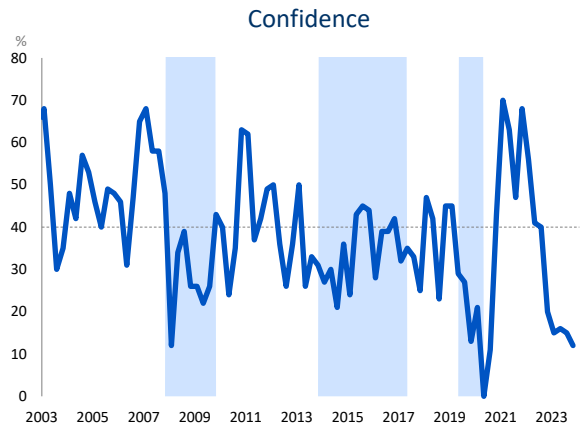


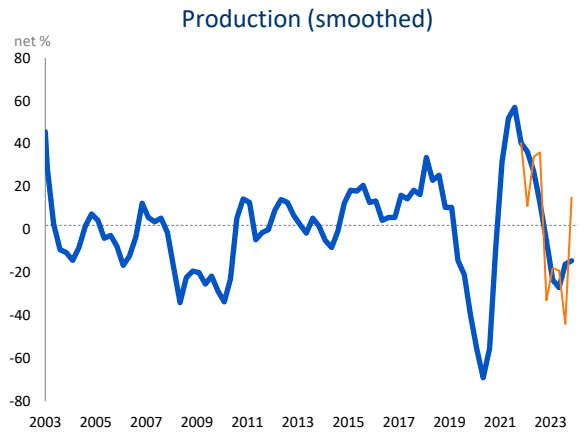
[8] Food & Beverages: Meat, fish, vegetables, oils & fats (SIC code 301), dairy products (302), grain mill products, starches & animal feeds (303), other food (304) and beverages (305). In 2017, this sector contributed 28.4% to production and 11.1% to manufactured exports, petroleum and other excluded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

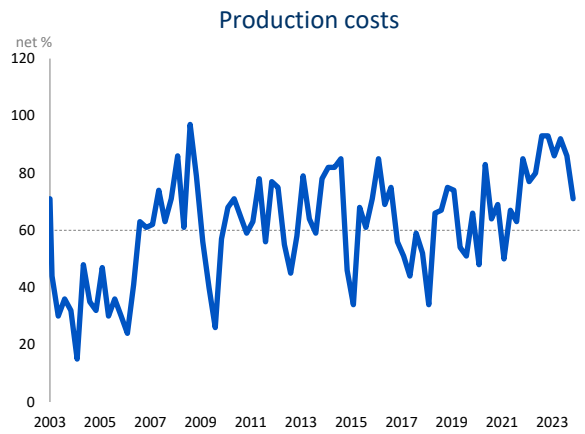
μ – average
σ – standard deviation
Δ – change from previous period
σ_Δ – volatility (standard deviation of the changes)
All of the above calculated over the last 20 years
See technical note for further details

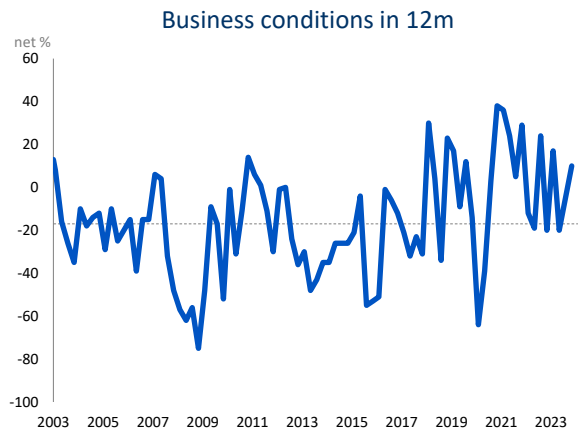
TEXTILES, CLOTHING LEATHER AND FOOTWEAR[9]

Indicator	Unit	μ-σ	μ	μ+σ	22Q1	22Q2	22Q3	22Q4	23Q1	23Q2	23Q3	23Q4	Δ	Δσ
Confidence	%	23	38	53	56	41	40	20	15	16	15	**12**	-3	13
Production	Net %	-28	0	28	11	34	36	-33	-18	-19	-44	**15**	59	27
Smoothed	Net %	-23	0	22	36	27	12	-5	-23	-27	-16	**-15**	1	21
Production costs	Net %	44	62	81	77	80	93	93	86	92	86	**71**	-15	16
Business conditions in 12m	Net %	-41	-17	8	-12	-19	24	-20	17	-20	-5	**10**	15	25







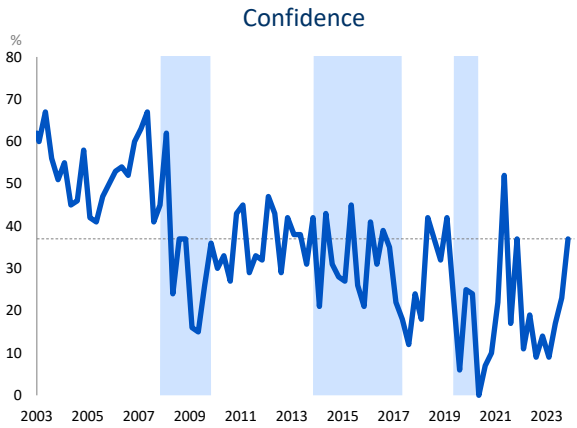


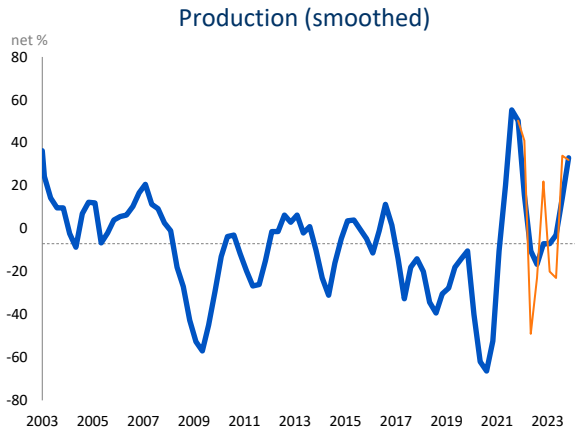
[9] Textiles, Clothing, Footwear & Leather: spinning, weaving & finishing of textiles, yarns (SIC code 311), other textiles (312), knitted & crocheted fabrics (313), wearing apparel & articles of fur (314-5), leather (316) and footwear (317). In 2017, this sector contributed 3.7% to production excluding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

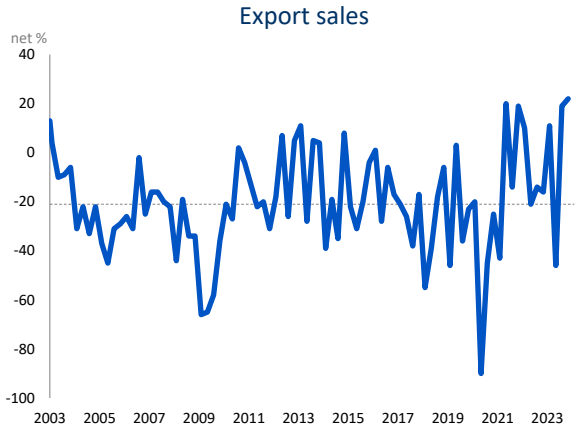
μ – average
σ – standard deviation
Δ – change from previous period
σ_Δ – volatility (standard deviation of the changes)
All of the above calculated over the last 20 years
See technical note for further details

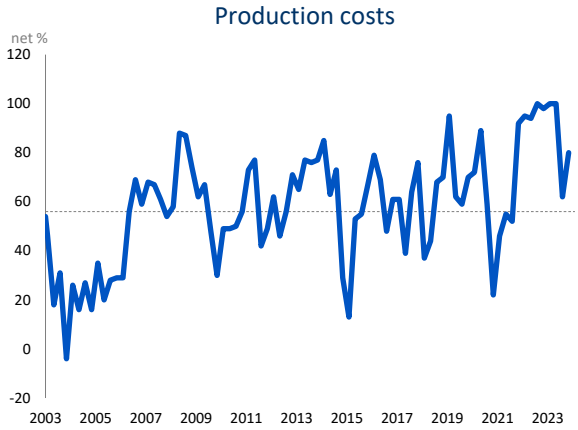
WOOD, PAPER, PRINTING AND PUBLISHING[10]

Indicator	Unit	μ-σ	μ	μ+σ	22Q1	22Q2	22Q3	22Q4	23Q1	23Q2	23Q3	23Q4	Δ	Δσ
Confidence	%	18	33	48	11	19	9	14	9	17	23	**37**	14	13
Production	Net %	-38	-9	20	41	-49	-23	22	-20	-23	34	**32**	-2	30
Smoothed	Net %	-31	-9	13	16	-10	-17	-7	-7	-3	14	**33**	19	23
Export sales	Net %	-42	-21	0	10	-21	-14	-16	11	-46	19	**22**	3	26
Production costs	Net %	38	60	82	95	94	100	98	100	100	62	**80**	18	18
Business conditions in 12m	Net %	-35	-12	11	-15	-22	-27	-42	-47	-57	-29	**-33**	-4	26







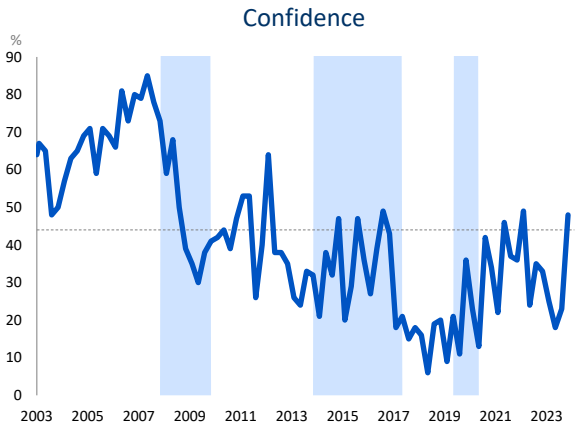


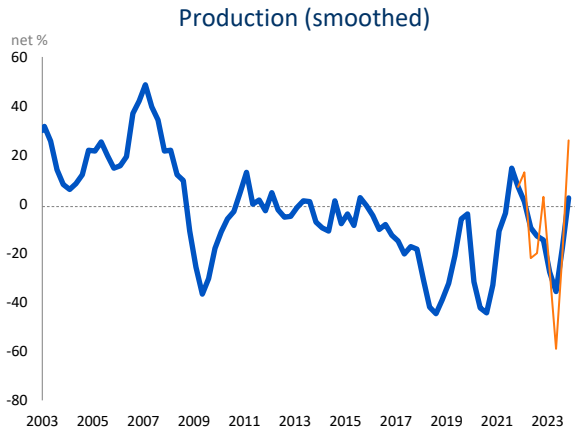
[10] Wood, Paper, Printing & Publishing: sawmilling, preserving of timber, bark grinding & compressing (SIC code 321), wood & wood products (322), paper and products (323) and printing, publishing & recorded media (324-6). In 2017, this sector contributed 13.1% to production and 4.7% to manufactured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

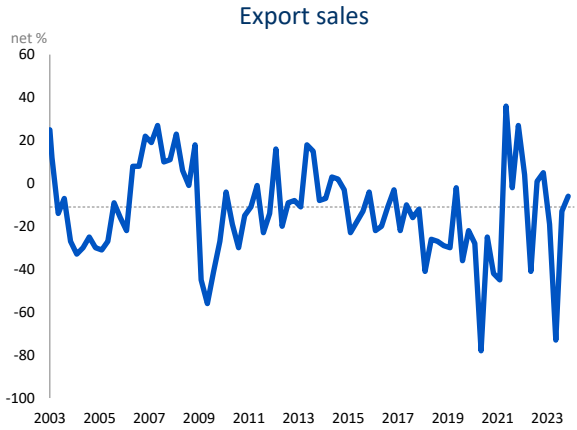
μ – average
σ – standard deviation
Δ – change from previous period
σ_Δ – volatility (standard deviation of the changes)
All of the above calculated over the last 20 years
See technical note for further details

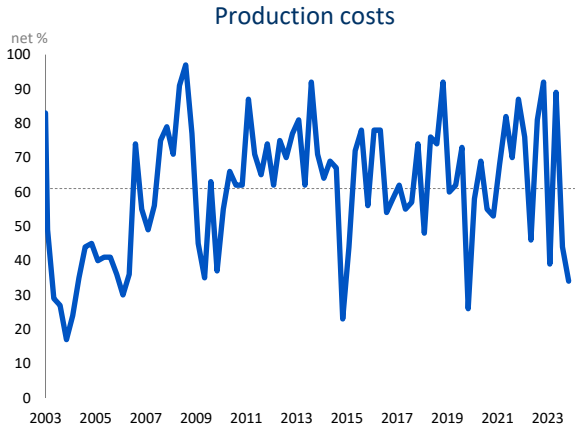
CHEMICAL, RUBBER AND PLASTIC PRODUCTS[11]

Indicator	Unit	μ-σ	μ	μ+σ	22Q1	22Q2	22Q3	22Q4	23Q1	23Q2	23Q3	23Q4	Δ	Δσ
Confidence	%	21	41	61	49	24	35	33	25	18	23	**48**	25	12
Production	Net %	-29	-4	21	13	-22	-20	3	-27	-59	-21	**26**	47	24
Smoothed	Net %	-25	-4	17	1	-10	-13	-15	-28	-36	-18	**3**	21	15
Export sales	Net %	-35	-13	8	4	-41	1	5	-19	-73	-13	**-6**	7	24
Production costs	Net %	44	62	80	76	46	81	92	39	89	44	**34**	-10	20
Business conditions in 12m	Net %	-37	-10	16	-19	-22	-27	-21	-41	-68	-53	**-3**	50	23







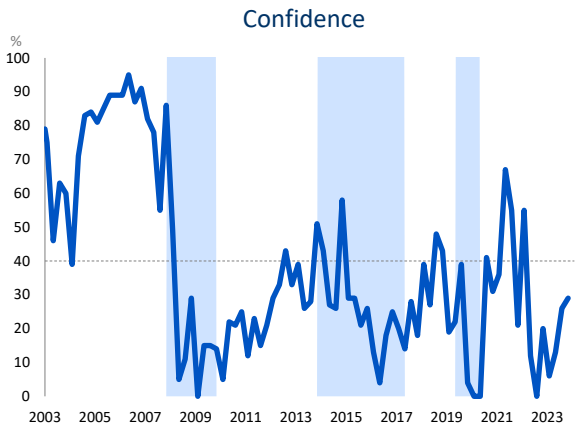


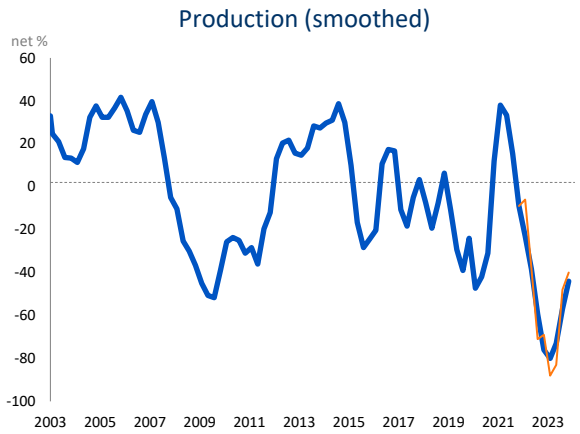
[11] Chemicals, Rubber & Plastics: Refined petroleum & coke (SIC code 331-3) (NOT COVERED), basic chemicals (334), other chemical products (335-6), rubber (337) and plastics (338). In 2017, this sector contributed 16.6% to production and 15.4% to manufactured exports, petroleum and other excluded in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

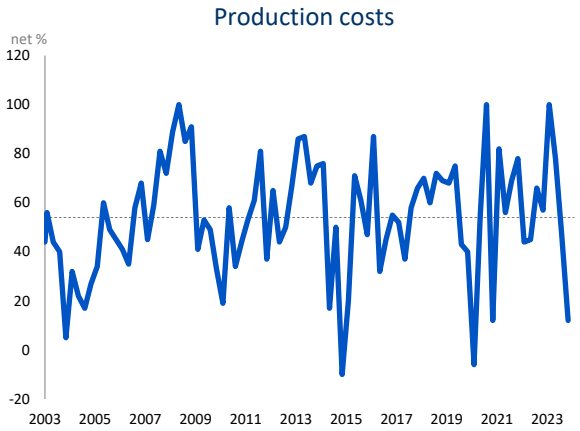
μ – average
σ – standard deviation
Δ – change from previous period
σ_Δ – volatility (standard deviation of the changes)
All of the above calculated over the last 20 years
See technical note for further details

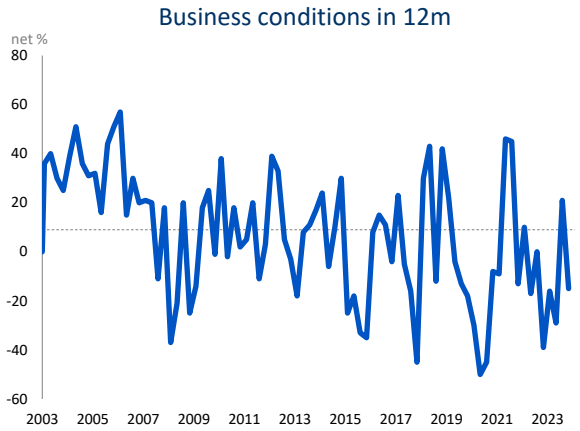
GLASS AND NON-METALLIC MINERAL PRODUCTS[12]

Indicator	Unit	μ-σ	μ	μ+σ	22Q1	22Q2	22Q3	22Q4	23Q1	23Q2	23Q3	23Q4	Δ	Δσ
Confidence	%	9	36	63	55	12	0	20	6	13	26	**29**	3	18
Production	Net %	-43	-5	32	-6	-38	-71	-69	-88	-83	-48	**-40**	8	31
Smoothed	Net %	-37	-5	26	-23	-38	-59	-76	-80	-73	-57	**-44**	13	23
Production costs	Net %	31	55	78	44	45	66	57	100	78	46	**12**	-34	28
Business conditions in 12m	Net %	-20	6	32	10	-17	0	-39	-16	-29	21	**-15**	-36	28







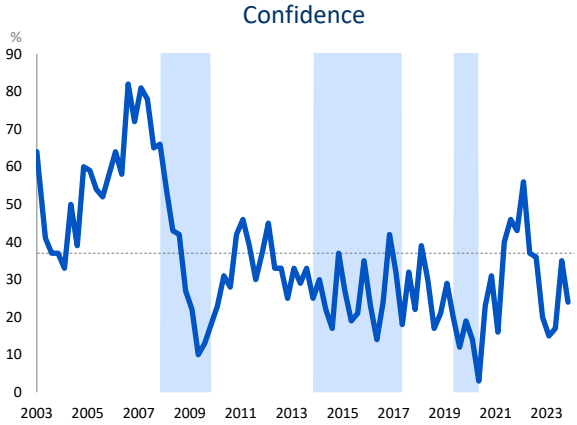


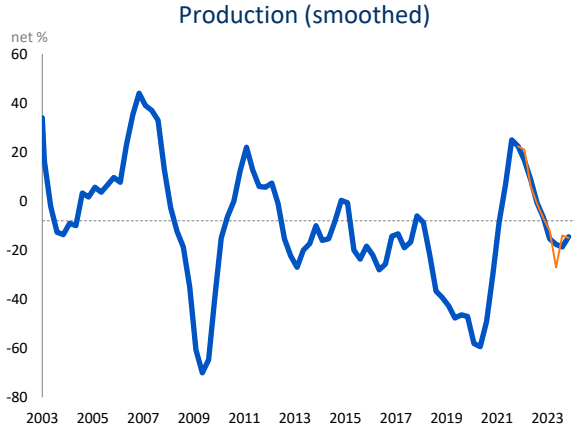
[12] Glass & Non-metallic minerals: Glass & glass products, fibreglass (SIC code 341), other non-metallic mineral products (bricks, tiles, cement, prefab concrete, asphalt, mica products) (342). In 2017, this sector contributed 4.4% to production, excluding petroleum and other.

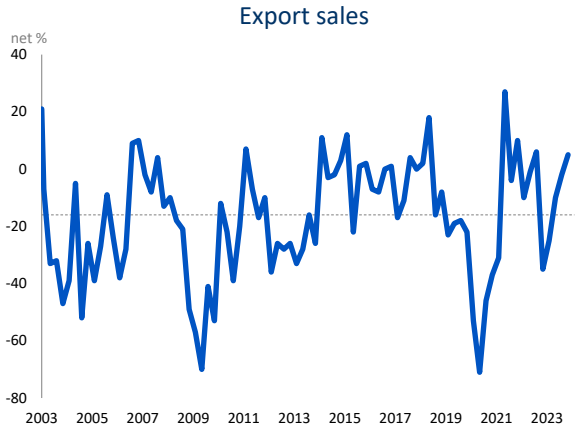
μ – average
σ – standard deviation
Δ – change from previous period
σ_Δ – volatility (standard deviation of the changes)
All of the above calculated over the last 20 years
See technical note for further details

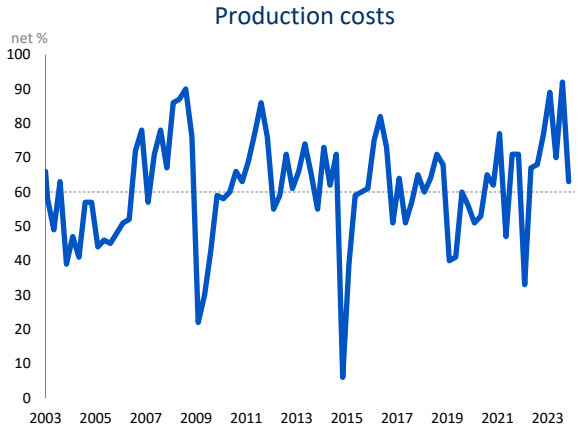
BASIC METALS, METAL PRODUCTS AND MACHINERY[13]

Indicator	Unit	μ-σ	μ	μ+σ	22Q1	22Q2	22Q3	22Q4	23Q1	23Q2	23Q3	23Q4	Δ	Δσ
Confidence	%	17	35	52	56	37	36	20	15	17	35	**24**	-11	11
Production	Net %	-39	-11	18	21	6	-1	-7	-12	-27	-14	**-15**	-1	22
Smoothed	Net %	-35	-11	14	17	9	-1	-7	-15	-18	-19	**-15**	4	18
Export sales	Net %	-37	-17	3	-10	-1	6	-35	-25	-10	-2	**5**	7	19
Production costs	Net %	46	62	77	33	67	68	77	89	70	92	**63**	-29	17
Business conditions in 12m	Net %	-40	-18	4	-9	-12	-17	-40	-72	-58	-19	**-42**	-23	17







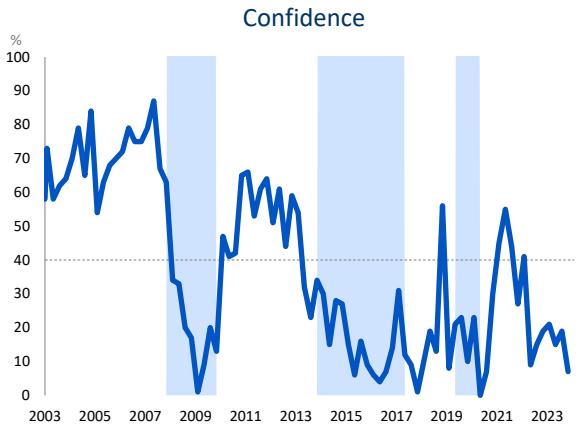


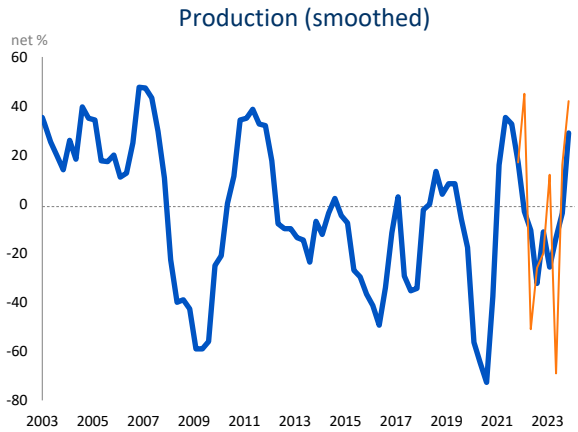
[13] Basic metals, Metal Products & Machinery: Basic iron & steel (SIC code 351), basic precious (gold, platinum, silver) & non-ferrous metal (aluminium, copper, lead, nickel, tin, zinc) products (352), structural metal products (353-4), other fabricated metal products (355), general purpose machinery (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.

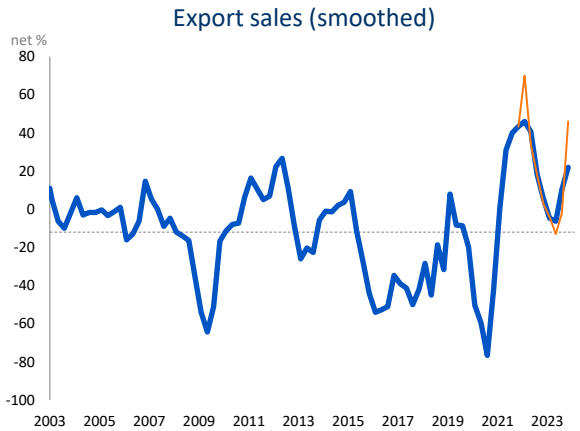
μ – average
σ – standard deviation
Δ – change from previous period
σ_Δ – volatility (standard deviation of the changes)
All of the above calculated over the last 20 years
See technical note for further details

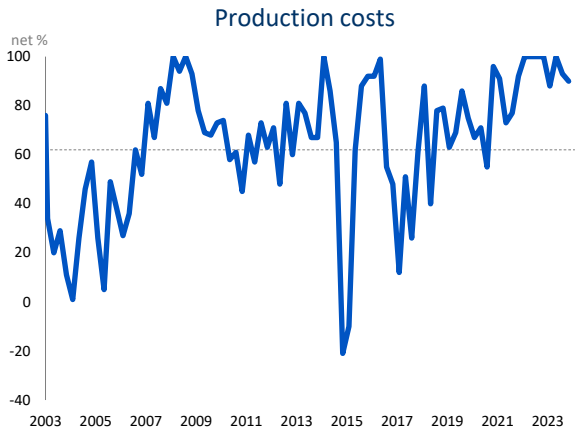
MOTOR VEHICLES, PARTS AND TRANSPORT EQUIPMENT[14]

Indicator	Unit	μ-σ	μ	μ+σ	22Q1	22Q2	22Q3	22Q4	23Q1	23Q2	23Q3	23Q4	Δ	Δσ
Confidence	%	11	36	61	41	9	15	19	21	15	19	**7**	-12	15
Production	Net %	-43	-5	34	45	-51	-26	-20	12	-69	16	**42**	26	41
Smoothed	Net %	-34	-4	25	-3	-11	-32	-11	-26	-14	-4	**29**	33	26
Export sales	Net %	-45	-11	24	70	34	18	3	-4	-13	-2	**46**	48	38
Smoothed	Net %	-37	-11	15	46	41	18	6	-5	-6	10	**22**	12	23
Production costs	Net %	40	67	94	100	100	100	100	88	100	93	**90**	-3	23
Business conditions in 12m	Net %	-54	-21	12	-15	-27	-27	-16	-45	-90	-62	**-69**	-7	29







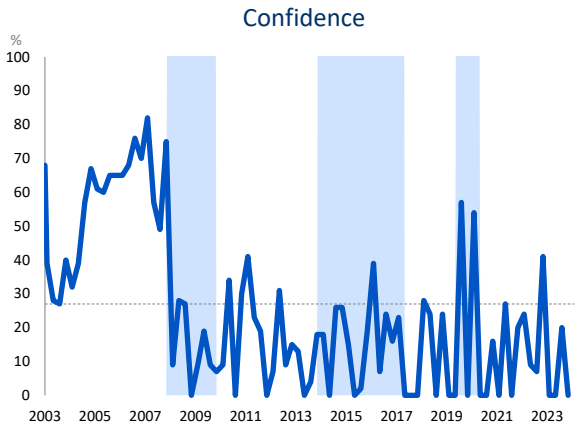


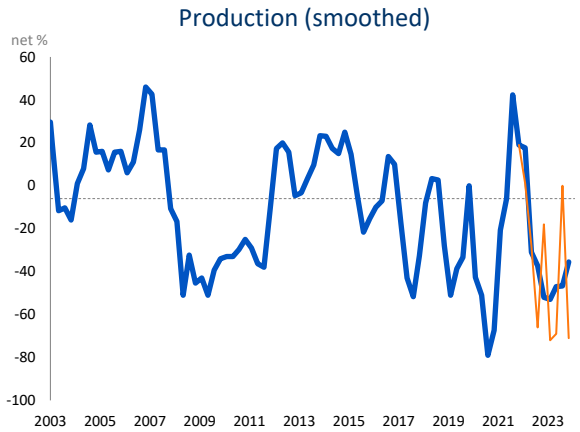
[14] Transport equipment: Motor vehicles & bodies (SIC code 381-2), parts & accessories (383), other transport equipment (384-7). In 2017, this sector contributed 7.7% to production and 16.1% to manufactured exports, petroleum and other excluded in both cases.

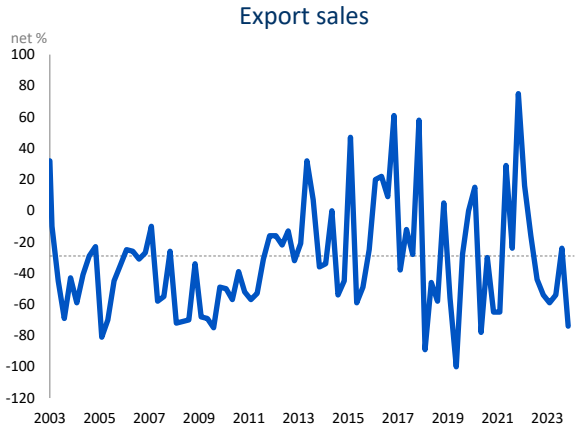
μ – average
σ – standard deviation
Δ – change from previous period
σ_Δ – volatility (standard deviation of the changes)
All of the above calculated over the last 20 years
See technical note for further details

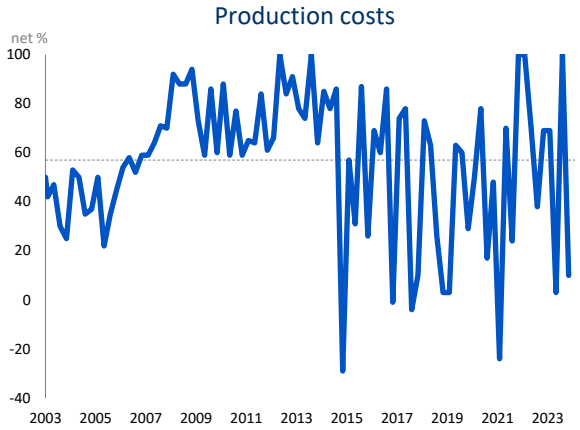
FURNITURE AND OTHER[15]

Indicator	Unit	μ-σ	μ	μ+σ	22Q1	22Q2	22Q3	22Q4	23Q1	23Q2	23Q3	23Q4	Δ	Δσ
Confidence	%	0	24	48	24	9	7	41	0	0	20	**0**	-20	22
Production	Net %	-52	-12	29	1	-28	-66	-18	-72	-69	0	**-71**	-71	49
Smoothed	Net %	-40	-12	17	18	-31	-37	-52	-53	-47	-47	**-36**	11	27
Export sales	Net %	-67	-32	3	16	-16	-44	-54	-59	-54	-24	**-74**	-50	44
Production costs	Net %	28	58	87	100	71	38	69	69	3	100	**10**	-90	40
Business conditions in 12m	Net %	-55	-20	15	7	-9	-73	-49	-80	-100	20	**-16**	-36	40







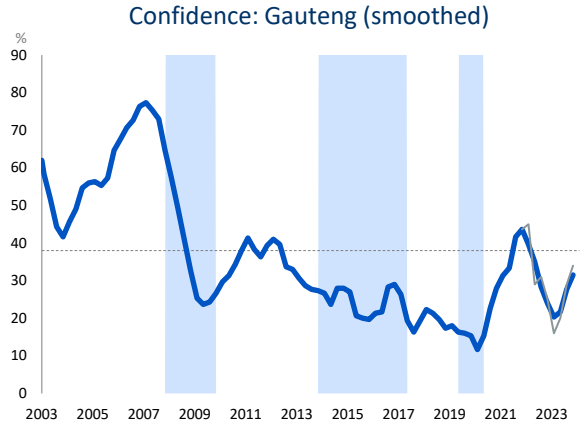


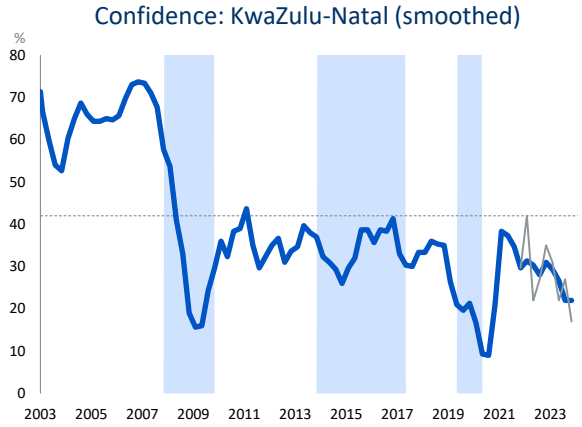
[15] Furniture & Other: Furniture (SIC code 391), other (e.g. jewellery, musical instruments, games & toys, recycling NOT COVERED) (392), tobacco (306). In 2017, this sector contributed 1.2% to production and 1.0% to manufactured exports, petroleum and other excluded in both cases. We recommend that 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.

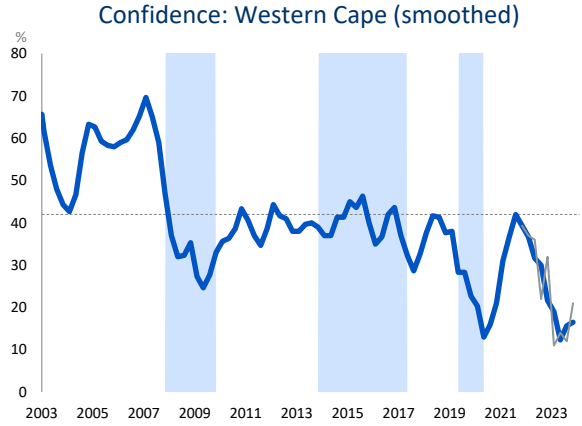
μ – average
σ – standard deviation
Δ – change from previous period
σ_Δ – volatility (standard deviation of the changes)
All of the above calculated over the last 20 years
See technical note for further details

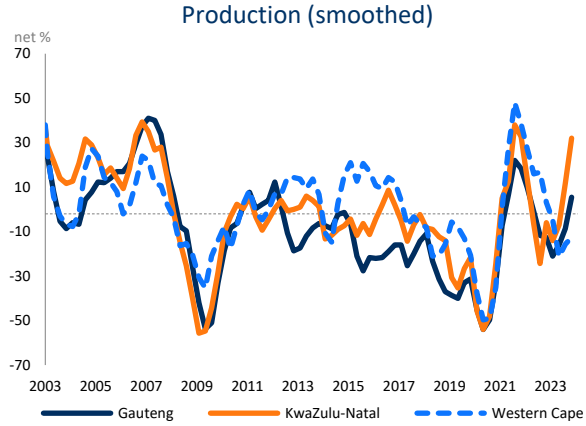
BY PROVINCE

Indicator	Unit	μ-σ	μ	μ+σ	22Q1	22Q2	22Q3	22Q4	23Q1	23Q2	23Q3	23Q4	Δ	Δσ
Gauteng														
Confidence	%	18	35	53	45	29	31	25	16	20	29	**34**	5	8
Smoothed	%	18	35	52	40	35	28	24	20	22	28	**32**	4	7
Production	Net %	-33	-9	16	20	-11	-12	-12	-14	-37	3	**8**	5	18
Smoothed	Net %	-30	-9	13	10	-1	-12	-13	-21	-16	-9	**6**	15	15
KwaZulu-Natal														
Confidence	%	20	38	56	42	22	27	35	31	22	27	**17**	-10	11
Smoothed	%	22	38	54	31	30	28	31	29	27	22	**22**	0	8
Production	Net %	-31	-3	25	37	-52	-5	-16	3	-29	5	**59**	54	27
Smoothed	Net %	-25	-3	19	13	-7	-24	-6	-14	-7	12	**32**	20	18
Western Cape														
Confidence	%	24	39	53	37	36	22	32	11	14	12	**21**	9	11
Smoothed	%	26	39	52	37	32	30	22	19	12	16	**17**	1	8
Production	Net %	-23	0	24	26	21	1	28	-20	-22	-22	**-3**	19	23
Smoothed	Net %	-19	0	19	27	16	17	3	-5	-21	-16	**-13**	3	17









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

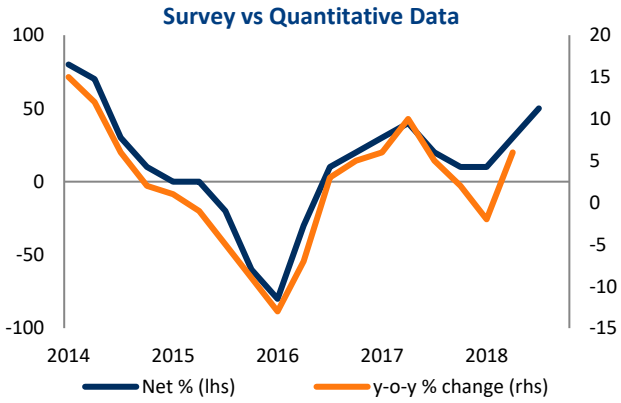
Net percentage (net %)

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 (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.