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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.

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Executive summary

Following a nine-point drop in Q1, manufacturing business confidence remained unchanged at 17 points in 2023Q2. While not as poor as the record-low 5 points reached during the strictest time of SA's COVID-19 lockdown in 2020Q2, the current level is near low points reached in previous business cycle downswings and less than half of the long-term average level of 39.

The second quarter (particularly during the survey period) was another tough quarter in terms of electricity supply disruptions. This not only weighed on production and capacity, and hurts profitability, but on its own, also negatively impacted sentiment. A further drag on sentiment was that both domestic and export sales volumes declined notably. At the same time, selling price inflation on both counts also moderated following a few quarters of above-average price growth.

Following a significant decline in Q1, production volumes fell for a fifth consecutive quarter. Amid a decline in production, the number of factory workers also ticked down and, likely due to load-shedding, workers also worked significantly fewer hours than usual. The cost of load-shedding mitigation is also evident in the indicator tracking production cost remaining well above the long-term average. With both sales volumes and selling prices coming down, the higher cost means that profitability was likely under significant pressure – again weighing on confidence. Given this challenging business environment and low business confidence, fixed investment outlays were scaled back further with any capex plans geared towards alternative energy.

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Introduction

The South African (SA) manufacturing sector performed surprisingly well in the first quarter of 2023 (2023Q1) as the sector expanded on a quarterly basis following a contraction in the fourth quarter of 2022. Still, output was down on an annual basis, and total value added by the sector remains below its pre-pandemic peak. The latest Absa Manufacturing Survey results suggests that the sector continued to face headwinds in its recovery during the second quarter of 2023.

This report provides an overview of the situation in the manufacturing sector as it developed during 2023Q2, expectations for 2023Q3 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].

A brief overview of the latest official data

SA ECONOMY SKIRTS A RECESSION IN Q1

The stop-start nature of SA real GDP outcomes since the 2020 crash continued in early 2023, with real GDP increasing by 0.4% quarter-on-quarter (q-o-q) after an (upwardly) revised 1.1% quarterly decline in 2022Q4. While it is a relief that the economy did not enter a technical recession, the underlying weakness and lack of momentum in the economy is highlighted by the annual (seasonally adjusted, sa) growth rate. Albeit from a high base, this slowed sharply to only 0.2%, from 1.3% in 2022Q4. In terms of the sectoral GDP split, in stark contrast to 2022Q4 when, according to the revised estimates, eight sectors contracted on a quarterly basis, 'only' two sectors posted quarterly declines in 2023Q1. The manufacturing sector expanded by 1.5% q-o-q following a 1.2% decline in the first quarter. On an annual (sa) basis, the contraction deepened from 1.1% in Q1 to 3.8% in Q2.

The latest high-frequency data showed an unexpected improvement in factory output in April. According to Statistics South Africa (Stats SA), manufacturing production rose by an above-consensus 3.4% year-on-year (y-o-y) in April, ending a streak of contractions. Growth in manufacturing production was broad-based, with iron and machinery manufacturers reporting the highest growth rate (+5.3% y-o-y). This contributed about a third of the increase in the headline reading. A base effect boost from the flooding in KwaZulu-Natal in April 2022 also contributed to annual growth. Still, monthly manufacturing production growth defied the odds of a contraction, rising instead by 0.5% (sa) in April.

[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).

GLOBAL FACTORY ACTIVITY EXPANDS, BUT CONCERNS ABOUT DEMAND

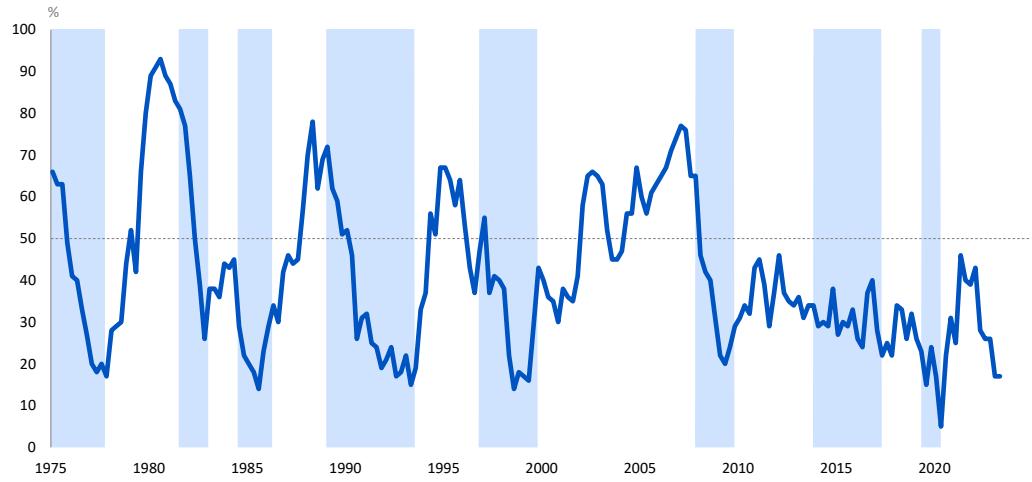
The J.P. Morgan global manufacturing Purchasing Managers' Index (PMI) was unchanged for a third month at 49.6 in May. The business activity index pointed to faster output growth, largely due to fewer supply chain disruptions and raw material shortages. However, the headline index was dragged down by new orders and particularly new export orders remaining in negative terrain. When considering SA's main trading partners, the US and Eurozone manufacturing sectors contracted, but China and India reported growth. In general, the economic recovery of China following the exit of its stringent zero-COVID policy at the end of last year has not been as fast as some had expected (or hoped for). Still, even a normalisation of business in China will provide a significant boost to global growth in 2023.

The 2023Q2 Absa Manufacturing Survey results

BUSINESS CONFIDENCE UNCHANGED AT A LOW LEVEL

Following a nine-point drop in Q1, manufacturing business confidence remained unchanged at 17 points in 2023Q2. While not as poor as the record-low 5 points reached during the strictest time of SA's COVID-19 lockdown in 2020Q2, the current level is near low points reached in previous business cycle downswings and less than half of the long-term average level of 39 – see Figure 1. Indeed, over the almost 50-year history illustrated in the figure, confidence has only been this low a few times. The subdued sentiment is broad based among subsectors. Chemical producers[2] are the least pessimistic, with a confidence reading of just 18.

Figure 1: Less than two out of ten respondents satisfied with prevailing business conditions



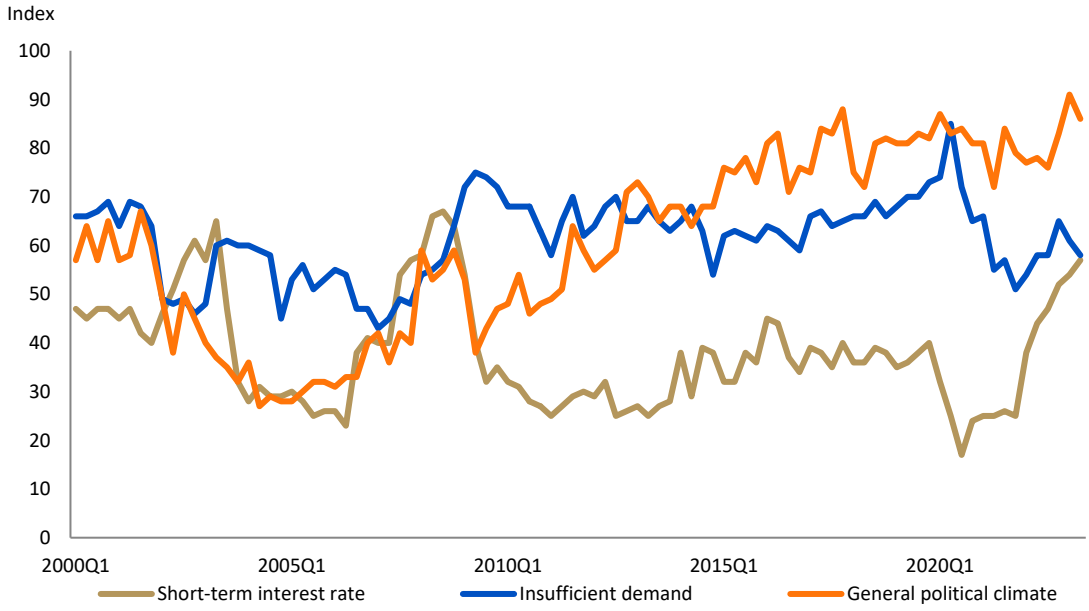
Source: BER, SARB
Note: Business cycle downturns are shaded

[2] Chemicals refers to the full chemical products, rubber & plastics subsector. In the main text of the document, subsectors will be referred to by mentioning the main subcategory within the subsector, the footnote on the first page of the **Survey results** section provides all the subcategories included per subsector.

Despite a sharp deterioration in sentiment in the consumer-facing sectors, manufacturers remain the most pessimistic of the sectors included in the composite RMB/BER Business Confidence Index. This is partly because the sector is likely one of the most negatively impacted by load-shedding. The second quarter (particularly during the survey period) was another tough quarter in terms of electricity supply disruptions. This not only weighs on production and capacity, and hurts profitability, but on its own also negatively impacts sentiment.

Load-shedding likely contributed to the general political climate constraint remaining near record-high levels in 2023Q2. It was also very frequently mentioned in the commentary by respondents. Considering some of the other constraints surveyed, the significant rise in the short-term interest rate as a serious constraint on business stands out. Indeed, as the insufficient demand constraint has been coming down as the pandemic hit on the economy fades, while the interest rate constraint ticked up, the indices tracking the respective constraints are now virtually at the same level – see Figure 2. It must be noted that most responses were received before the SA Reserve Bank (SARB) hiked the repo rate by another 50 basis points in late May, which would have likely resulted in a further uptick in the constraint indicator. Already before this interest rate hike, higher borrowing costs (in a still high-inflation environment) were mentioned by respondents to the survey. On a more positive note, the index tracking the raw material constraint came down further. This is likely more driven by an improvement in global supply chain dynamics as some respondents still flagged issues at local ports and domestic logistics in their commentary.

Figure 2: General political climate remains the most serious constraint on business conditions



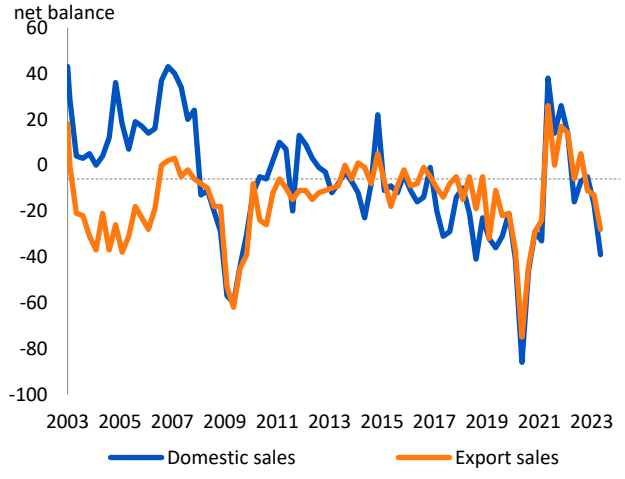
Source: BER

SALES VOLUMES RECORD SHARP DECLINE EVEN AS SELLING PRICE INFLATION SLOWS SIGNIFICANTLY

The net majority reporting a decline in domestic sales volumes more than doubled from 17 to 39% in 2023Q2. This is well below the long-term average reading and the steepest decline since the second half of 2020 – see Figure 3. The deterioration was broad based among subsectors with only textile producers reporting an increase in domestic sales volumes. The overall decline in volumes was despite a marked slowdown in selling price inflation, which can sometimes support volumes. After almost two years of well above-average selling price growth, the indicator tracking domestic prices fell by 19 to 31 – see Figure 4. This reflects the slowest rate of price increases since 2020Q4.

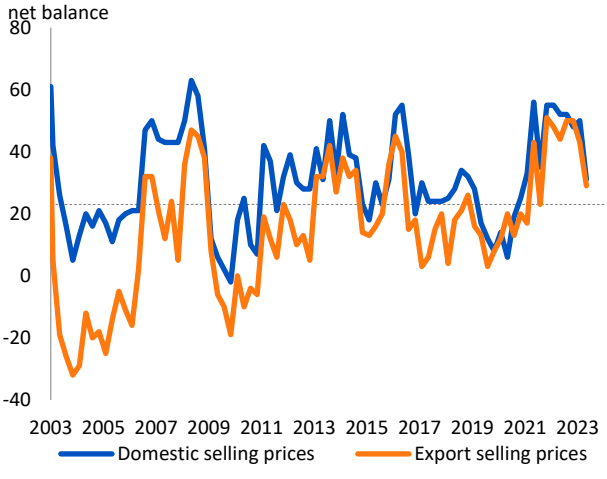
As illustrated in the figures below, the demand dynamics on the export front were not much better. The net majority reporting a decline in export sales roughly doubled from 13 to 28, while selling price inflation slowed sharply. The slowdown in selling prices was despite a significant weakening of the rand exchange rate, which normally leads to an increase as exporters receive more rand income for the same foreign-currency denominated product. From a subsector perspective, the main drag on export sales volumes came from chemicals producers. A large net majority of 73% reported a decline in volumes. The sector contributes roughly a fifth to manufacturing exports (excluding petroleum and other manufacturing) so this weighs heavily on the total reading. Encouragingly for the long-term export outlook, respondents turned less downbeat about the expected volume of exports in 12 months' time. A net 4% still expects a decline, but this is better than the net 15% expecting this last quarter. Indeed, even over the shorter term, respondents expect Q3 to be better relative to Q2. It must be noted that some respondents expressed concerns about long-term trade and diplomatic relationship with the US in particular amid heightened geopolitical tension at the time of the survey[3].

Figure 3: Domestic and export volumes move sharply lower



Source: BER

Figure 4: Selling price inflation slows markedly



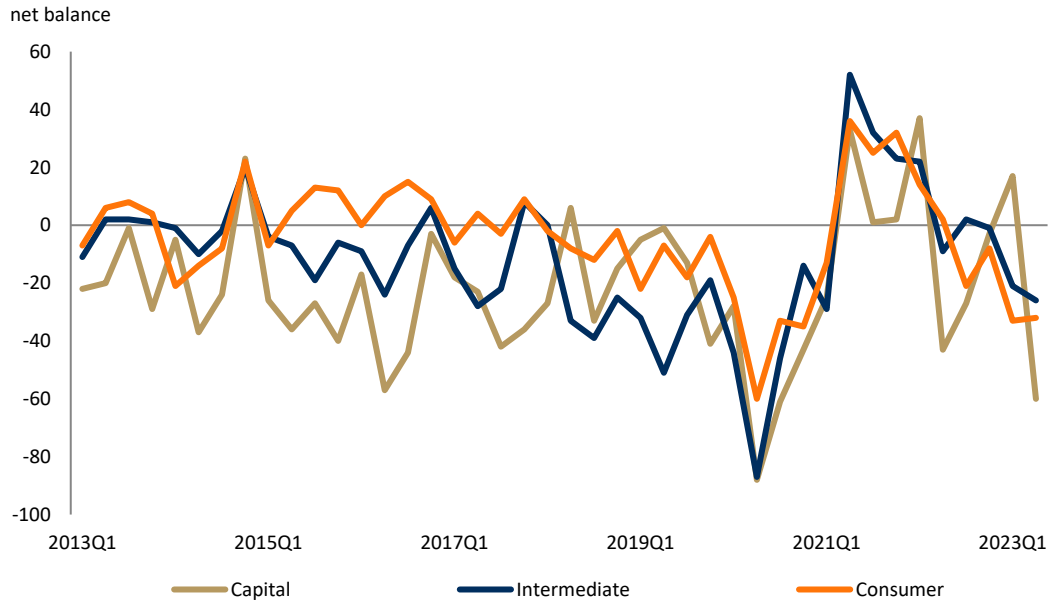
Source: BER

[3] About half of the responses were received before the US accusation that SA supplied weapons to Russia. This contributed to the rand weakening to a record low level against the US dollar and euro, but also brought back into focus concerns about SA being excluded from the African Growth and Opportunity Act (AGOA).

PRODUCTION VOLUMES DECLINE FOR FIFTH CONSECUTIVE QUARTER

Following a significant decline in Q1, production volumes fell further in Q2, with a (sa) net majority of 26% reporting a decline from 23% in Q1. While manufacturing output picked up on a q-o-q basis in Q1, it was down on an annual basis, which corresponds to the survey question which tracks the change relative to the same quarter in the previous year. The latest survey outcome suggests that output may again decline on an annual basis in Q2. However, it must be noted that the base effect from the slump in production in 2022Q2 due to the flooding in KwaZulu-Natal may not be fully reflected in the survey outcome. For example, transport producers are one of the most pessimistic subsectors regarding production (with a net 69% reporting a decline), but transport production should look better y-o-y merely on the back of the Prospecton Toyota plant being operational in 2023Q2 and not producing cars for a large part of 2022Q2. The big net majority reporting a decline in the transport sector weighs heavily on the capital goods industry grouping[4] and explains why it performed weaker compared to the consumer and intermediate goods – see Figure 5 below. The electricity intensive nature of some of the other subsectors included with capital goods probably adds to the underperformance. Still, all groupings reported a decline in production volumes. The consumer goods grouping saw a slight uptick relative to Q1 (although still in negative terrain) driven by food and beverages production being somewhat better in Q2.

Figure 5: Production volumes down across the board



Source: BER

Amid a decline in production, the number of factory workers also ticked down. More notably was that the indicator tracking the average hours worked per factory worker deteriorating from -20 to -32. This compares to a long-term average reading of -13 and suggests that workers are working significantly less hours than usual. Some commentary suggests that this is to a large extent due to load-shedding, when some factories are not able to operate and are forced to send workers home. The increase in capacity underutilisation tells a similar story with more

[4] For a description of the subsectors included per industry grouping, please see the Capital, intermediary and consumer goods section below.

factories not producing at full capacity. Official Stats SA data measuring the same, (although with a significant lag), shows that while insufficient demand remains the biggest reason for underutilisation of capital, 'other reasons' (which include load-shedding) account for an increasing share of why production is not taking place at full capacity.

The impact of load-shedding, or rather the cost of load-shedding mitigation, is also evident in the indicator tracking production cost (per unit of production) remaining well above the long-term average. The indicator edged down from 85 to 84, which compares to a long-term average of 61. The cost of running diesel generators was frequently mentioned by respondents to the survey. At the same time, respondents flagged that consumers have become increasingly hesitant to absorb higher prices. In all, as both sales volumes and selling prices came down, the higher cost means that profitability was likely under significant pressure – again weighing on confidence.

FIXED INVESTMENT OUTLAYS SCALED BACK FURTHER

For a second consecutive quarter, a sizable net majority reported a decline in fixed investment outlays compared to the same quarter last year. This is not surprising given the decline in production and relatively high underutilisation ratio warranting little investment in additional capacity. Some of the comments highlight that the investment that is taking place is mainly focussed on renewable energy (solar). This should help to make the sector more resilient against Eskom load-shedding over time and also makes it less sensitive to (high) electricity price increases (something else which was frequently mentioned by the comments). However, the sector risks falling behind technological advancements and capacity enhancements as capital previously set aside for such projects is now (reportedly) being diverted to investment in alternative energy.

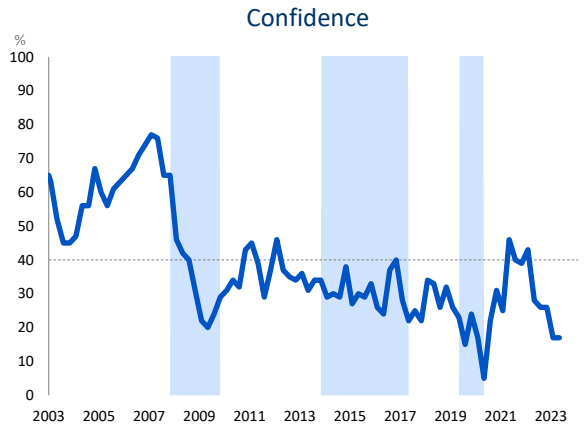
Outlook

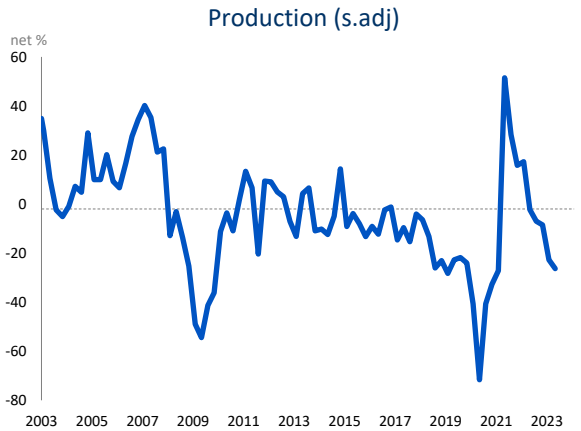
Manufacturing respondents turned even more downbeat about expected business conditions in the future compared to the previous quarter. Indeed, the index tracking expected business conditions in 12 months' time tumbled to an all-time low of -59%. However, while it is difficult to see how business conditions can improve meaningfully over the short term, the situation should look somewhat better in a year's time. For starters, while Eskom load-shedding could get worse over the coming winter months, by this time next year, several big electricity generation units should be back online. This should, hopefully, shield SA from the high and intense load-shedding stages experienced over the survey period. This would not only benefit manufacturers directly, but may also help with a stronger recovery in domestic demand. Furthermore, the SA Reserve Bank (SARB) may also have started, or will at least be close to starting, a mild interest rate cutting cycle. Given global monetary policy dynamics, a stronger rand (at least compared to the record lows experienced during the survey period) is also likely. This means that some of the key constraints on the manufacturing sector should be alleviated somewhat over the longer term. That said, the near-term business environment is set to remain very challenging.

Survey results

MANUFACTURING: TOTAL[5]

Indicator	Unit	μ-σ	μ	μ+σ	21Q3	21Q4	22Q1	22Q2	22Q3	22Q4	23Q1	23Q2	Δ	σ Δ
Confidence	%	22	38	53	40	39	43	28	26	26	17	**17**	0	7
Activity & prices														
Production	Net %	-27	-5	17	25	22	22	-10	-10	-3	-18	**-34**	-16	17
Seasonally adjusted	Net %	-27	-5	17	28	16	17	-2	-7	-8	-23	**-26**	-3	16
Employment	Net %	-28	-15	-2	-6	2	-7	-4	-14	-11	-17	**-19**	-2	9
Average hours worked / worker	Net %	-28	-13	2	-1	1	0	-9	-16	-16	-20	**-32**	-12	12
Domestic sales	Net %	-32	-7	17	14	26	14	-16	-7	-5	-17	**-39**	-22	17
Domestic selling prices	Net %	15	30	46	35	55	55	52	52	48	50	**31**	-19	12
Export sales	Net %	-32	-15	1	0	17	14	-6	5	-11	-13	**-28**	-15	14
Export selling prices	Net %	-6	15	36	23	51	48	44	50	50	43	**29**	-14	13
Production costs	Net %	45	61	77	70	81	67	76	81	89	85	**84**	-1	12
Stocks & investment														
Finished goods rel. to demand	Net %	1	10	18	-4	-9	-14	-1	5	1	-4	**-4**	0	7
Smoothed	Net %	2	10	17	-7	-9	-8	-3	2	1	-2	**-4**	-2	5
Capacity underutilisation	%	65	72	79	67	61	65	64	68	68	74	**78**	4	5
Smoothed	%	66	72	78	63	64	63	66	67	70	73	**76**	3	4
Fixed investment	Net %	-14	1	16	-5	7	13	-5	1	2	-15	**-20**	-5	10
Constraints														
Insufficient demand	Net %	54	62	70	57	51	54	58	58	65	61	**58**	-3	5
Political climate	Net %	42	62	81	84	79	77	78	76	83	91	**86**	-5	6
Expected in 12 months														
Business conditions	Net %	-32	-12	8	2	-9	-5	-17	-20	-29	-45	**-59**	-14	15
Smoothed	Net %	-30	-12	6	0	-4	-10	-14	-22	-31	-44	**-52**	-8	12
Fixed investment	Net %	-14	0	15	3		16		-6		-13		-7	13

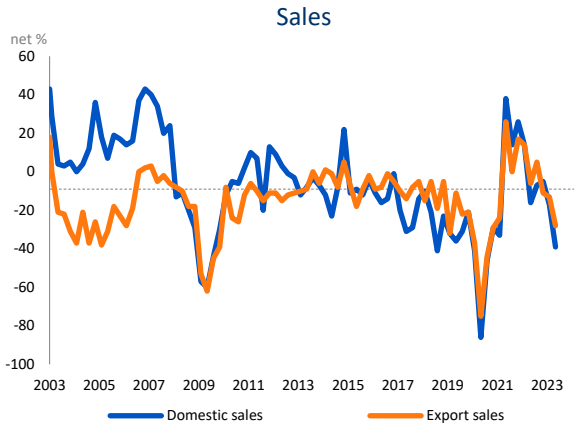


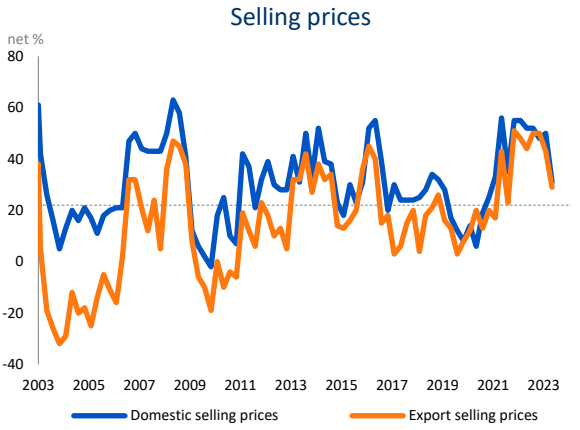


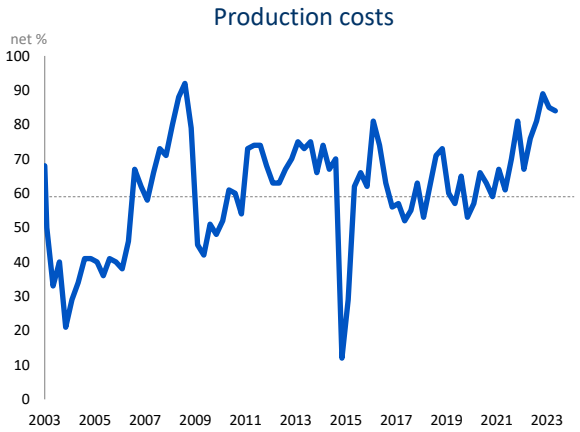
[5] The total consists of 1) food & beverages, 2) textiles, clothing, leather & footwear, 3) wood, paper, printing & publishing, 4) chemical products, rubber & plastics, 5) glass & non-metallic mineral products, 6) basic metals, metal products & machinery, 7) electrical machinery, radio, TV and professional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

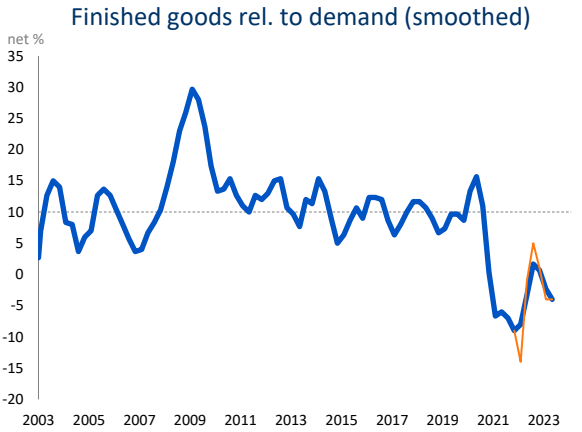
μ – average
σ – standard deviation
Δ – change from previous period
σΔ – volatility (standard deviation of the changes)
All of the above calculated over the last 20 years
See technical note for further details

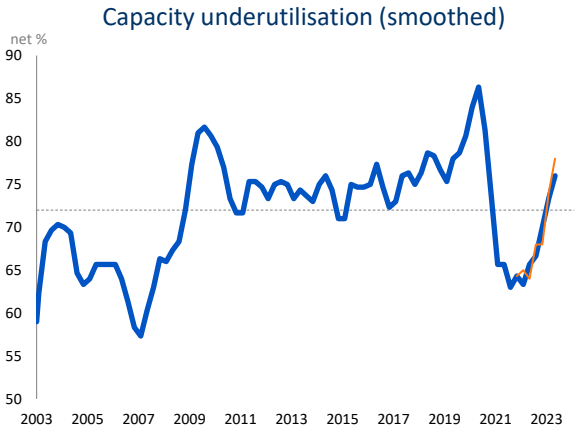
MANUFACTURING: TOTAL

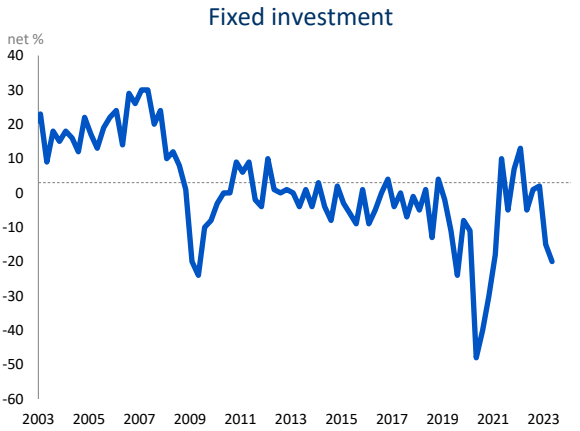


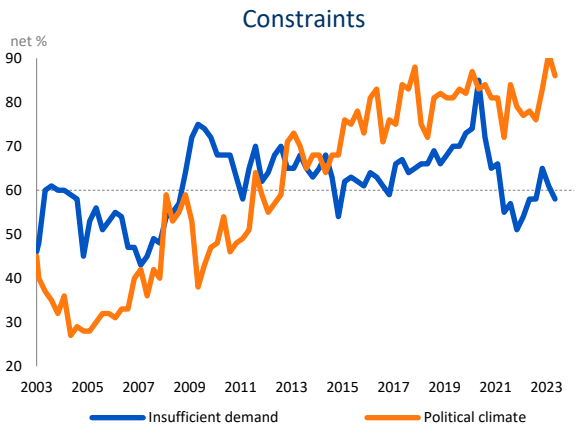


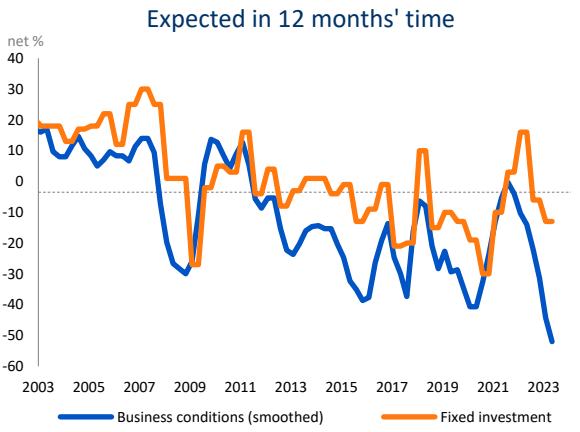






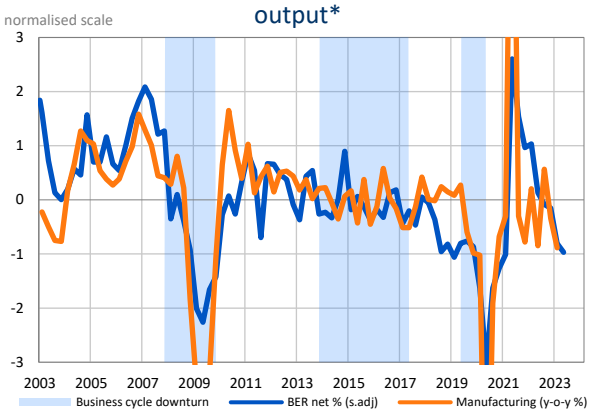




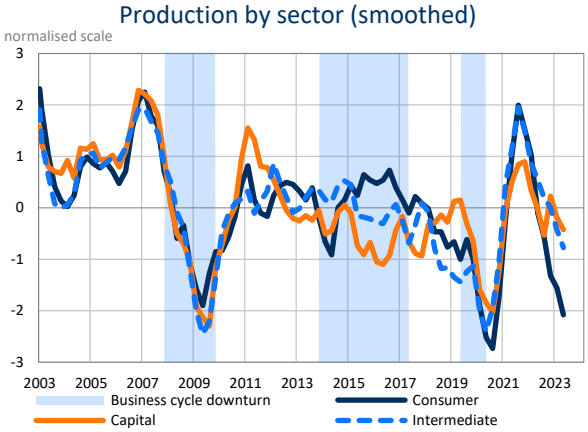


SUMMARY

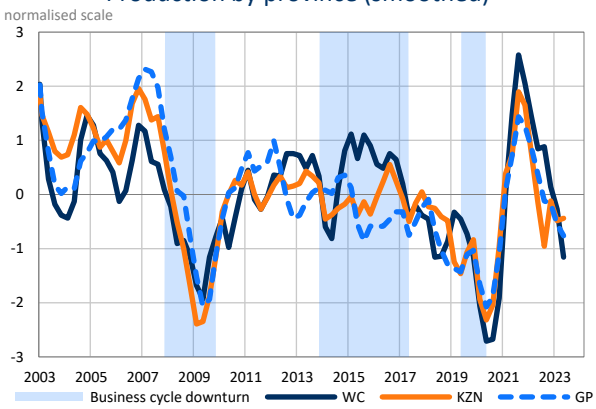
Production & actual manufacturing output*



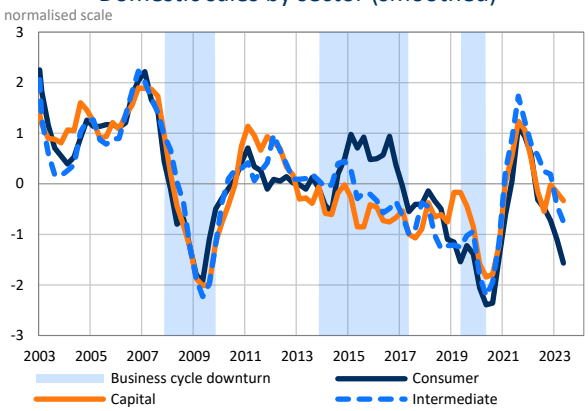
Production by sector (smoothed)



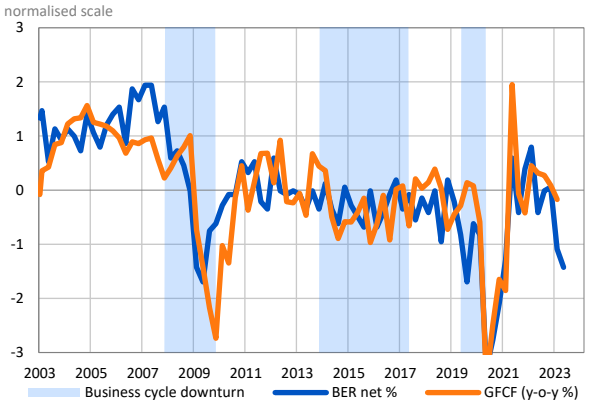
Production by province (smoothed)



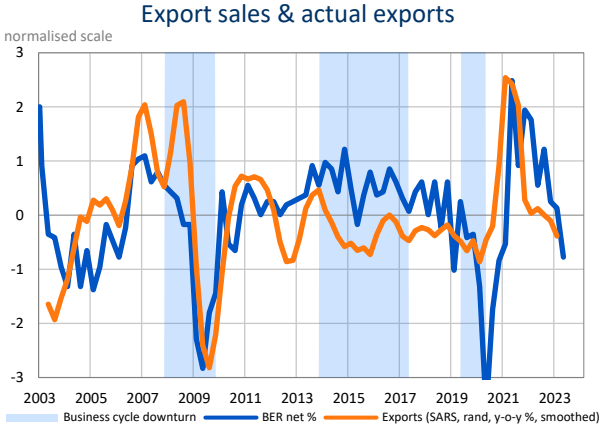
Domestic sales by sector (smoothed)



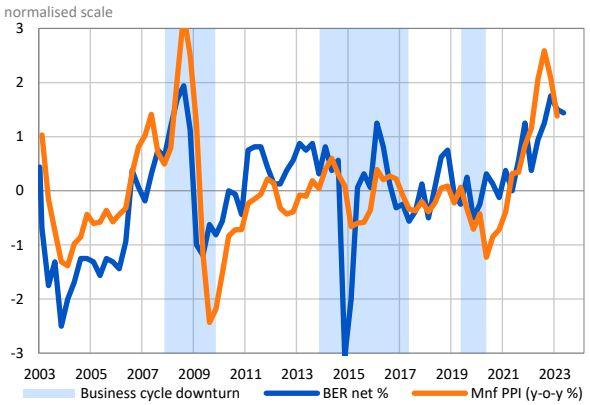
Fixed investment & Private GFCF



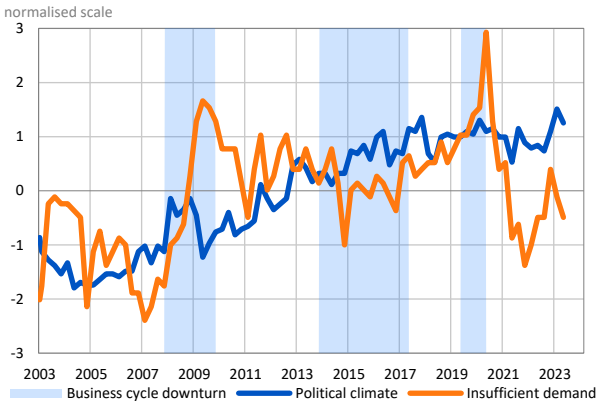
Export sales & actual exports



Production cost & PPI-inflation



Constraints



CAPITAL[6], INTERMEDIARY[7] AND CONSUMER[8] GOODS

Indicator	Unit	μ-σ	μ	μ+σ	21Q3	21Q4	22Q1	22Q2	22Q3	22Q4	23Q1	23Q2	Δ	Δσ
Capital goods														
Confidence	%	15	36	57	33	23	38	11	15	24	13	**10**	-3	11
Smoothed	%	16	36	56	30	31	24	21	17	17	16	**12**	-4	8
Production	Net %	-42	-10	22	1	2	37	-43	-27	-3	17	**-60**	-77	29
Smoothed	Net %	-37	-10	16	12	13	-1	-11	-24	-4	-15	**-22**	-7	20
Domestic sales	Net %	-44	-12	19	9	17	24	-38	-36	-8	5	**-48**	-53	26
Smoothed	Net %	-40	-12	15	21	17	1	-17	-27	-13	-17	**-22**	-5	19
Export sales	Net %	-41	-18	5	21	16	32	-6	13	3	-12	**-25**	-13	23
Smoothed	Net %	-36	-18	0	23	23	14	13	3	1	-11	**-19**	-8	18
Intermediate goods														
Confidence	%	20	36	52	40	41	46	32	31	20	15	**20**	5	8
Smoothed	%	21	36	51	44	42	40	36	28	22	18	**18**	0	7
Production	Net %	-32	-7	18	32	23	22	-9	2	-1	-21	**-26**	-5	20
Smoothed	Net %	-28	-7	15	36	26	12	5	-3	-7	-16	**-24**	-8	17
Domestic sales	Net %	-37	-10	17	17	24	17	-15	8	-5	-19	**-36**	-17	21
Smoothed	Net %	-33	-10	14	31	19	9	3	-4	-5	-20	**-28**	-8	17
Export sales	Net %	-33	-16	1	-5	19	-1	0	6	-22	-7	**-23**	-16	16
Smoothed	Net %	-31	-16	-1	16	4	6	2	-5	-8	-17	**-15**	2	12
Consumer goods														
Confidence	%	26	41	56	46	43	40	29	22	37	21	**15**	-6	10
Smoothed	%	27	41	54	44	43	37	30	29	27	24	**18**	-6	7
Production	Net %	-19	0	19	25	32	14	2	-21	-8	-33	**-32**	1	17
Smoothed	Net %	-16	0	16	31	24	16	-2	-9	-21	-24	**-33**	-9	14
Domestic sales	Net %	-23	-1	21	11	34	5	-9	-17	-4	-23	**-38**	-15	18
Smoothed	Net %	-20	-1	18	20	17	10	-7	-10	-15	-22	**-31**	-9	13
Export sales	Net %	-31	-12	6	-5	16	27	-14	-1	-5	-21	**-35**	-14	17
Smoothed	Net %	-28	-12	3	7	13	10	4	-7	-9	-20	**-28**	-8	13

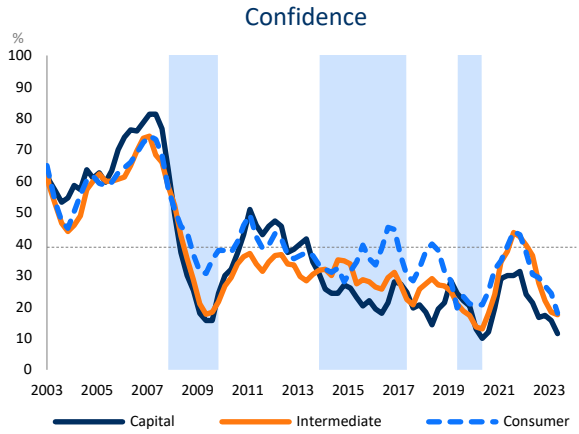
[6] Capital goods: Structural metal products (SIC code 353-4), general purpose machinery (356), special purpose machinery & machine tools (357), electrical motors & generators (361), medical appliances, photo equipment (374-6), motor vehicles & bodies (381-2), parts & accessories (383), other transport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

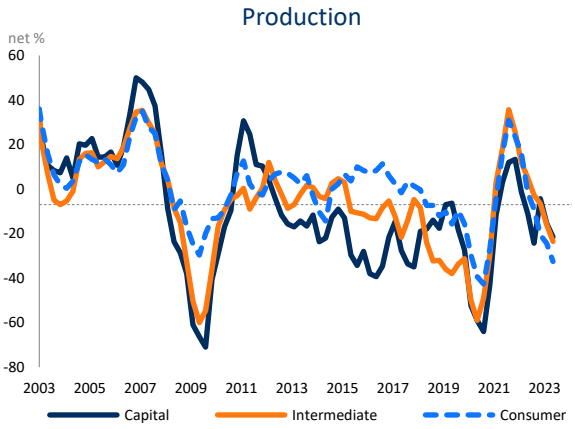
[7] Intermediary goods: Grain mill products, starches & animal feeds (303), spinning, weaving & finishing of textiles, yarns (311), knitted & crocheted fabrics (313), sawmilling, preserving of timber, bark grinding & compressing (321), wood & wood products (322), paper and products (323), basic chemicals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

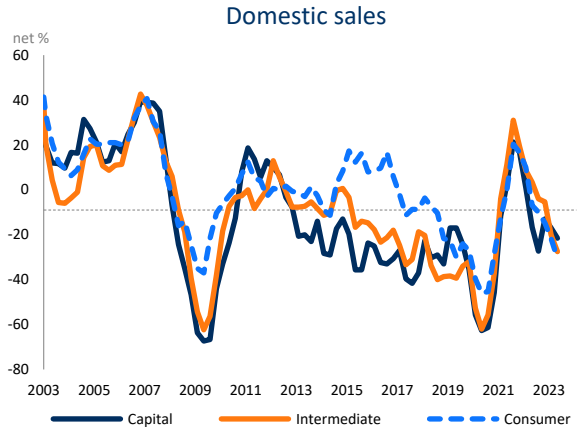
[8] Consumer goods: Meat, fish, fruit, vegetables, oils & fats (301), dairy products (302), other (304), beverages (305), tobacco (306), other textiles (312), wearing apparel & articles of fur (314-5), leather (316), footwear (317), other chemical products (335-6), computers & office machines, household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

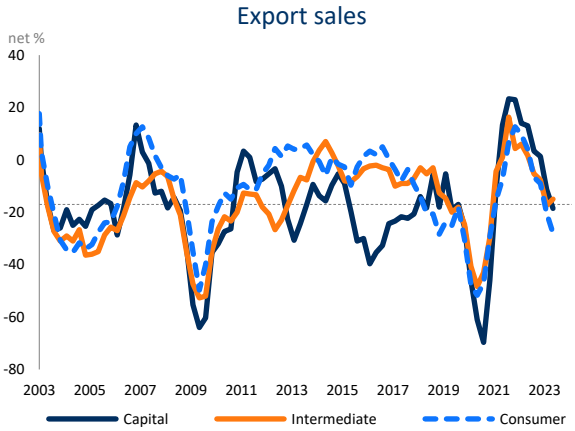
μ – average
σ – standard deviation
Δ – change from previous period
σ_Δ – volatility (standard deviation of the changes)
All of the above calculated over the last 20 years
See technical note for further details

CAPITAL, INTERMEDIARY AND CONSUMER GOODS





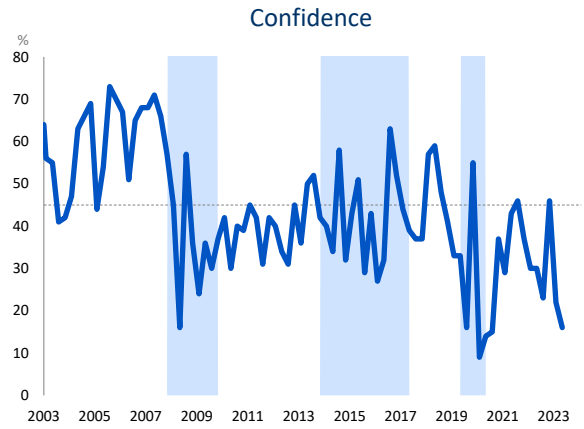


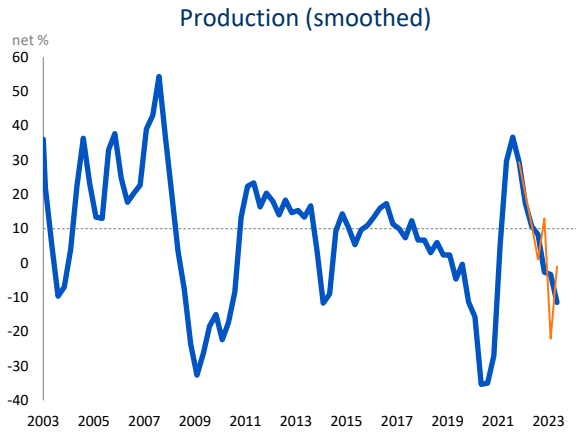


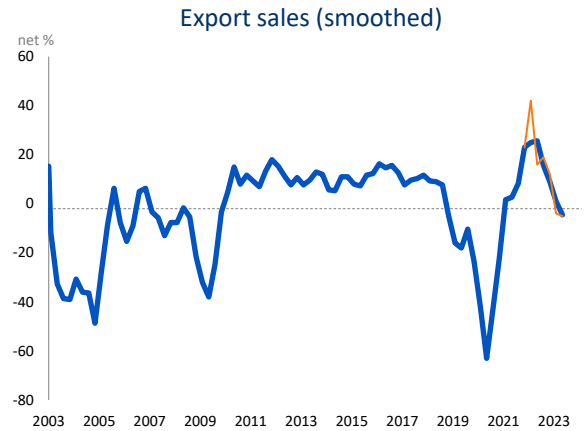
μ – average
σ – standard deviation
Δ – change from previous period
σ_Δ – volatility (standard deviation of the changes)
All of the above calculated over the last 20 years
See technical note for further details

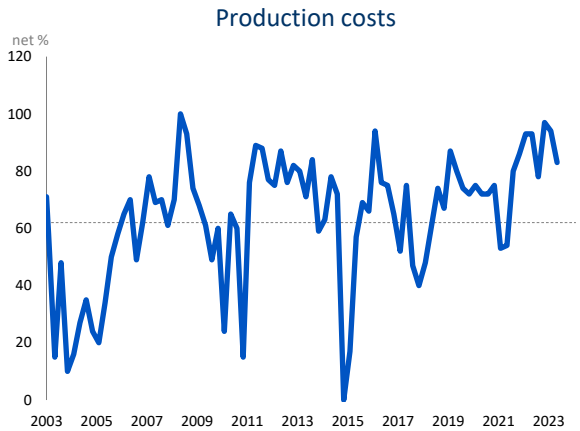
FOOD AND BEVERAGES[9]

Indicator	Unit	μ-σ	μ	μ+σ	21Q3	21Q4	22Q1	22Q2	22Q3	22Q4	23Q1	23Q2	Δ	Δσ
Confidence	%	28	43	58	46	37	30	30	23	46	22	**16**	-6	15
Production	Net %	-16	8	31	47	21	20	11	1	13	-22	**-1**	21	22
Smoothed	Net %	-11	8	26	37	29	17	11	8	-3	-3	**-12**	-9	17
Export sales	Net %	-26	-3	21	10	17	42	16	19	12	-4	**-5**	-1	21
Smoothed	Net %	-22	-3	17	8	23	25	26	16	9	1	**-5**	-6	16
Production costs	Net %	42	64	86	80	86	93	93	78	97	94	**83**	-11	19
Business conditions in 12m	Net %	-28	-8	12	29	4	22	-15	-23	-11	-18	**-53**	-35	22







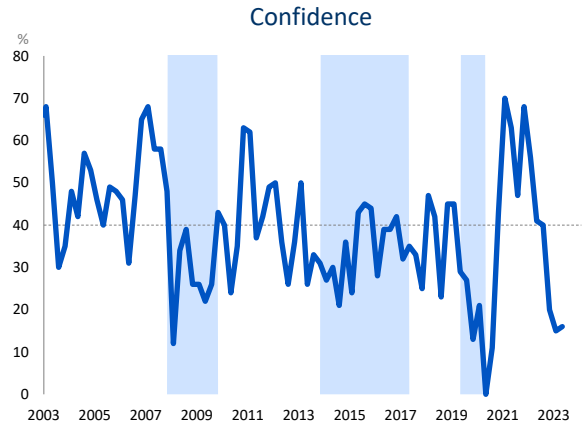


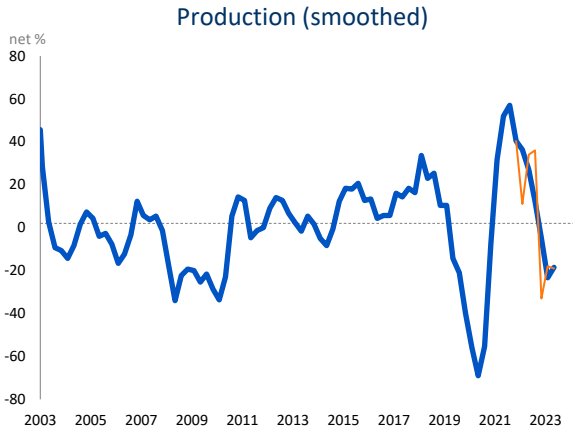
[9] Food & Beverages: Meat, fish, vegetables, oils & fats (SIC code 301), dairy products (302), grain mill products, starches & animal feeds (303), other food (304) and beverages (305). In 2017, this sector contributed 28.4% to production and 11.1% to manufactured exports, petroleum and other excluded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

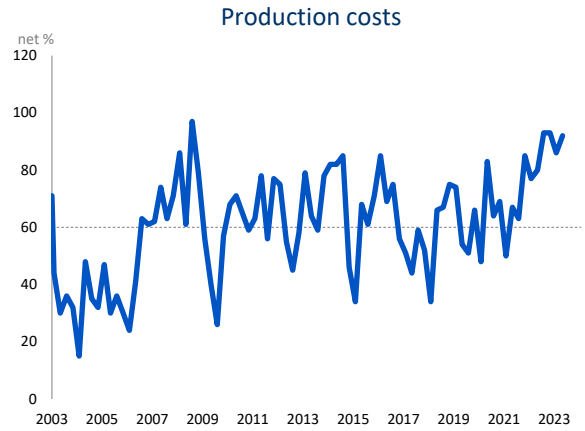
μ – average
σ – standard deviation
Δ – change from previous period
σ_Δ – volatility (standard deviation of the changes)
All of the above calculated over the last 20 years
See technical note for further details

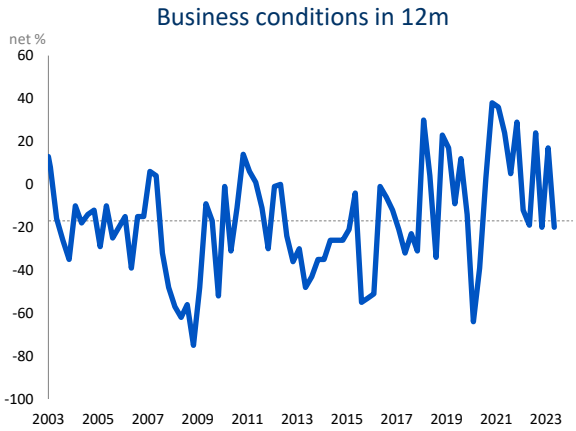
TEXTILES, CLOTHING LEATHER AND FOOTWEAR[10]

Indicator	Unit	μ-σ	μ	μ+σ	21Q3	21Q4	22Q1	22Q2	22Q3	22Q4	23Q1	23Q2	Δ	Δσ
Confidence	%	24	38	53	47	68	56	41	40	20	15	**16**	1	14
Production	Net %	-28	0	27	46	64	11	34	36	-33	-18	**-19**	-1	26
Smoothed	Net %	-22	0	22	57	40	36	27	12	-5	-23	**-19**	4	21
Production costs	Net %	43	61	80	63	85	77	80	93	93	86	**92**	6	16
Business conditions in 12m	Net %	-42	-18	7	5	29	-12	-19	24	-20	17	**-20**	-37	25







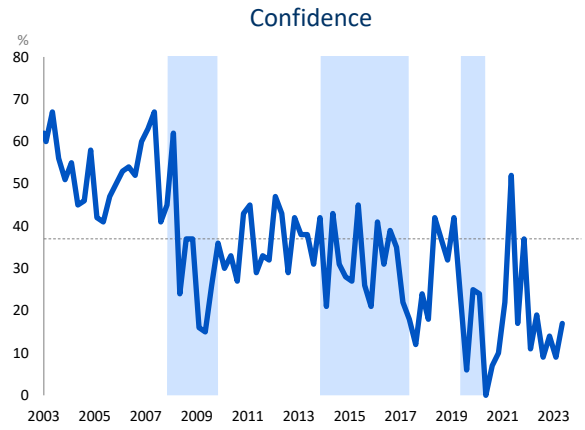


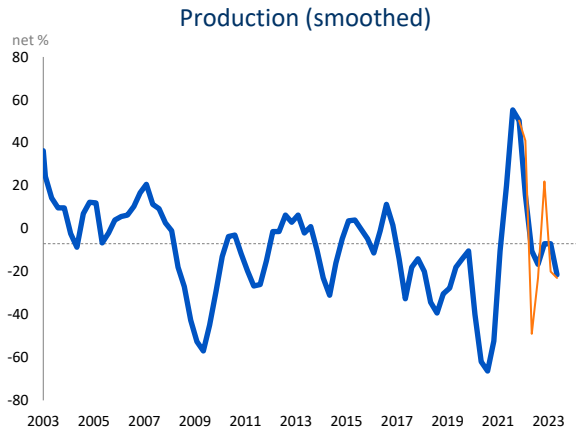
[10] Textiles, Clothing, Footwear & Leather: spinning, weaving & finishing of textiles, yarns (SIC code 311), other textiles (312), knitted & crocheted fabrics (313), wearing apparel & articles of fur (314-5), leather (316) and footwear (317). In 2017, this sector contributed 3.7% to production excluding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

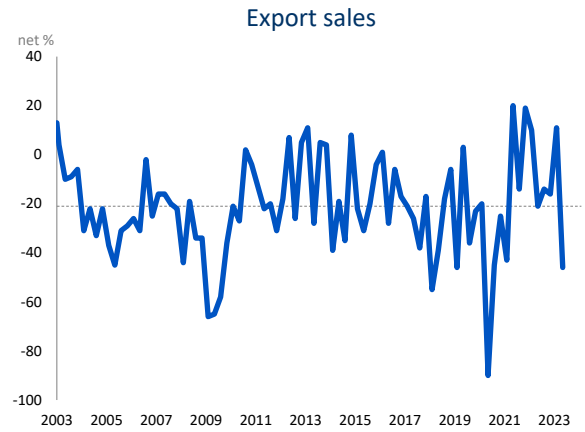
μ – average
σ – standard deviation
Δ – change from previous period
σ_Δ – volatility (standard deviation of the changes)
All of the above calculated over the last 20 years
See technical note for further details

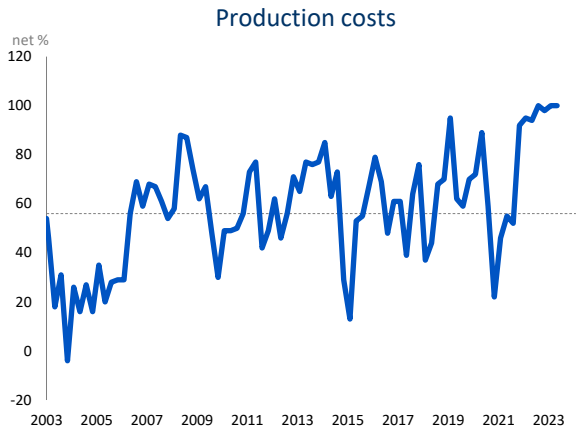
WOOD, PAPER, PRINTING AND PUBLISHING[11]

Indicator	Unit	μ-σ	μ	μ+σ	21Q3	21Q4	22Q1	22Q2	22Q3	22Q4	23Q1	23Q2	Δ	Δσ
Confidence	%	19	34	49	17	37	11	19	9	14	9	**17**	8	13
Production	Net %	-38	-10	19	55	55	41	-49	-23	22	-20	**-23**	-3	29
Smoothed	Net %	-31	-10	12	55	50	16	-10	-17	-7	-7	**-22**	-15	23
Export sales	Net %	-42	-22	-2	-14	19	10	-21	-14	-16	11	**-46**	-57	25
Production costs	Net %	36	59	82	52	92	95	94	100	98	100	**100**	0	18
Business conditions in 12m	Net %	-34	-11	12	11	15	-15	-22	-27	-42	-47	**-57**	-10	26









[11] 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
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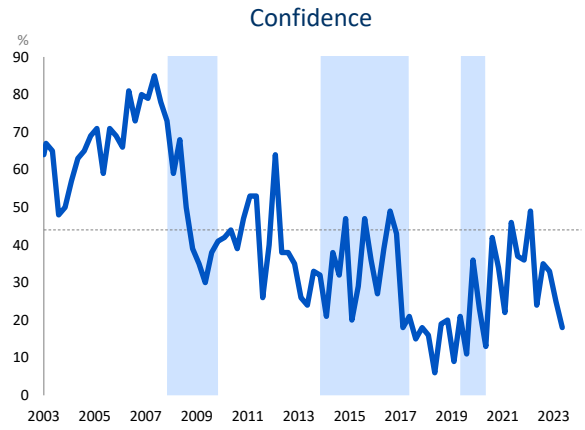
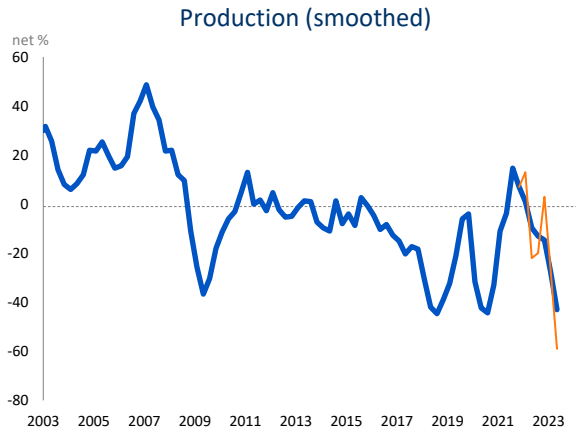
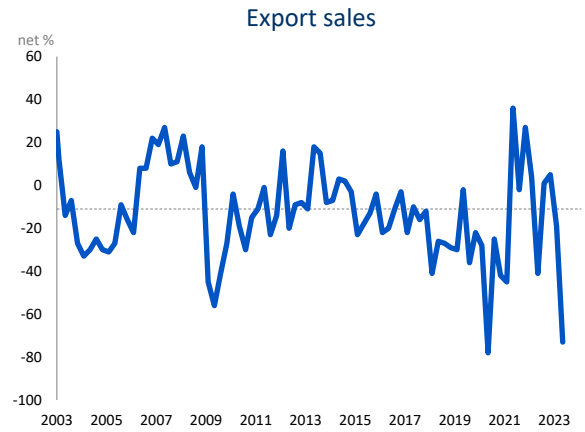
Δ – change from previous period
σ_Δ – volatility (standard deviation of the changes)
All of the above calculated over the last 20 years
See technical note for further details

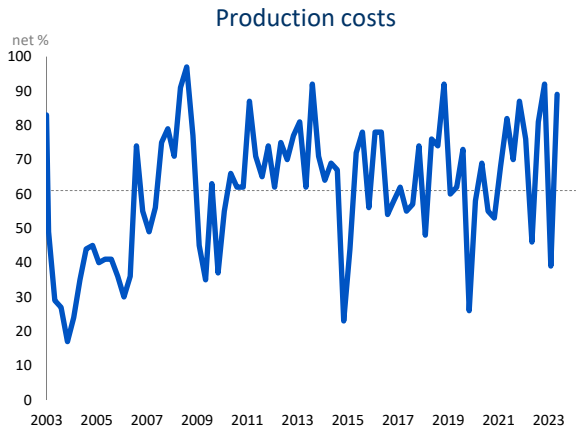
CHEMICAL, RUBBER AND PLASTIC PRODUCTS[12]

Indicator	Unit	μ-σ	μ	μ+σ	21Q3	21Q4	22Q1	22Q2	22Q3	22Q4	23Q1	23Q2	Δ	Δσ
Confidence	%	22	41	61	37	36	49	24	35	33	25	**18**	-7	12
Production	Net %	-29	-4	21	-4	12	13	-22	-20	3	-27	**-59**	-32	23
Smoothed	Net %	-25	-4	17	15	7	1	-10	-13	-15	-28	**-43**	-15	15
Export sales	Net %	-35	-13	8	-2	27	4	-41	1	5	-19	**-73**	-54	23
Production costs	Net %	43	61	80	70	87	76	46	81	92	39	**89**	50	19
Business conditions in 12m	Net %	-36	-9	17	6	-17	-19	-22	-27	-21	-41	**-68**	-27	22







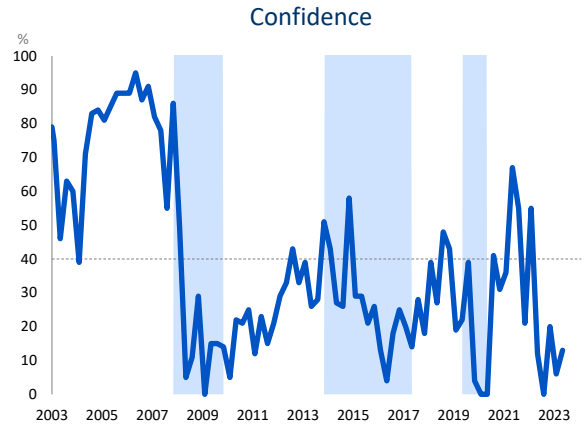


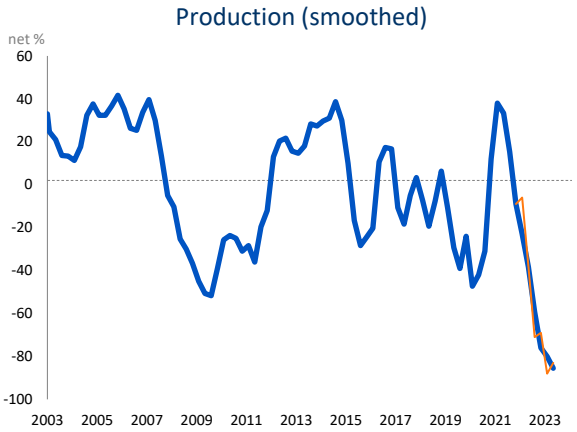
[12] Chemicals, Rubber & Plastics: Refined petroleum & coke (SIC code 331-3) (NOT COVERED), basic chemicals (334), other chemical products (335-6), rubber (337) and plastics (338). In 2017, this sector contributed 16.6% to production and 15.4% to manufactured exports, petroleum and other excluded in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

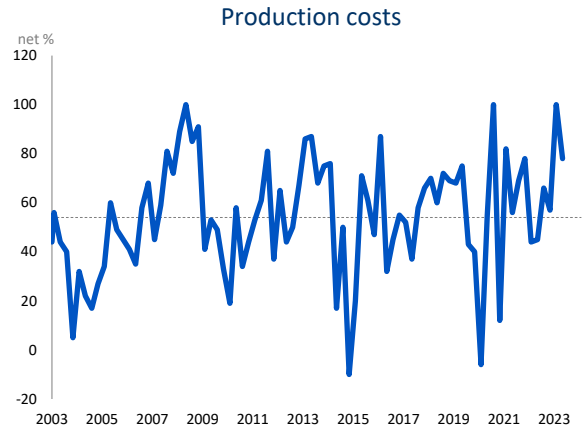
μ – average
σ – standard deviation
Δ – change from previous period
σ_Δ – volatility (standard deviation of the changes)
All of the above calculated over the last 20 years
See technical note for further details

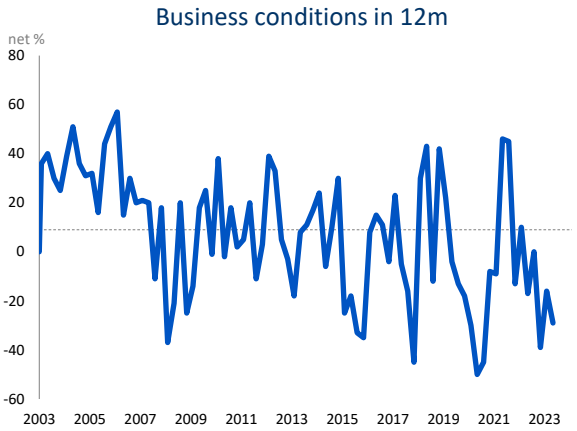
GLASS AND NON-METALLIC MINERAL PRODUCTS[13]

Indicator	Unit	μ-σ	μ	μ+σ	21Q3	21Q4	22Q1	22Q2	22Q3	22Q4	23Q1	23Q2	Δ	Δσ
Confidence	%	10	37	64	55	21	55	12	0	20	6	**13**	7	18
Production	Net %	-41	-4	33	4	-25	-6	-38	-71	-69	-88	**-83**	5	30
Smoothed	Net %	-36	-4	27	15	-9	-23	-38	-59	-76	-80	**-86**	-6	22
Production costs	Net %	31	54	78	69	78	44	45	66	57	100	**78**	-22	28
Business conditions in 12m	Net %	-19	7	32	45	-13	10	-17	0	-39	-16	**-29**	-13	27







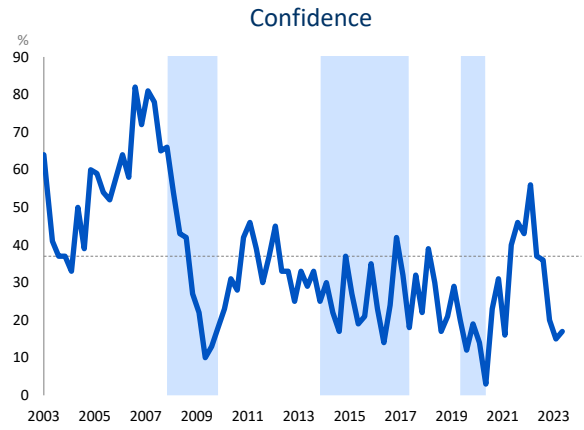


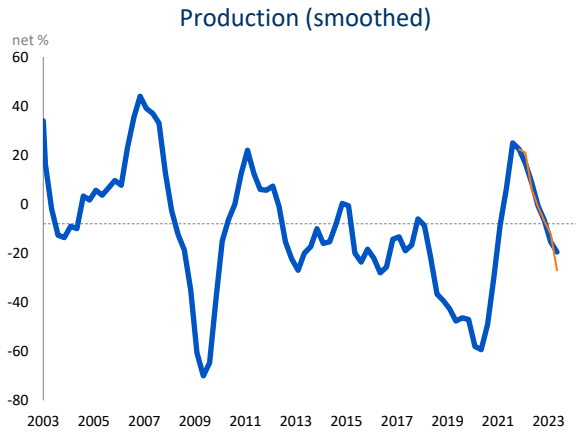
[13] Glass & Non-metallic minerals: Glass & glass products, fibreglass (SIC code 341), other non-metallic mineral products (bricks, tiles, cement, prefab concrete, asphalt, mica products) (342). In 2017, this sector contributed 4.4% to production, excluding petroleum and other.

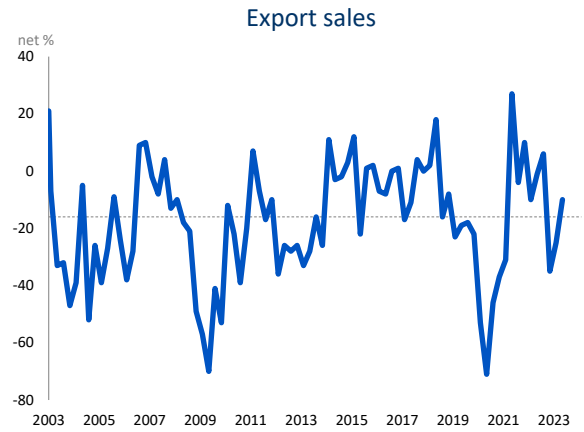
μ – average
σ – standard deviation
Δ – change from previous period
σ_Δ – volatility (standard deviation of the changes)
All of the above calculated over the last 20 years
See technical note for further details

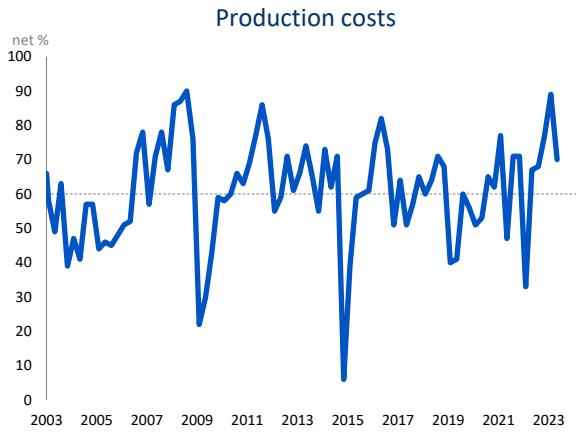
BASIC METALS, METAL PRODUCTS AND MACHINERY[14]

Indicator	Unit	μ-σ	μ	μ+σ	21Q3	21Q4	22Q1	22Q2	22Q3	22Q4	23Q1	23Q2	Δ	Δσ
Confidence	%	18	35	52	46	43	56	37	36	20	15	**17**	2	11
Production	Net %	-39	-11	18	23	23	21	6	-1	-7	-12	**-27**	-15	22
Smoothed	Net %	-35	-11	14	25	22	17	9	-1	-7	-15	**-20**	-5	18
Export sales	Net %	-38	-18	2	-4	10	-10	-1	6	-35	-25	**-10**	15	19
Production costs	Net %	46	61	76	71	71	33	67	68	77	89	**70**	-19	17
Business conditions in 12m	Net %	-39	-17	5	-18	-21	-9	-12	-17	-40	-72	**-58**	14	17







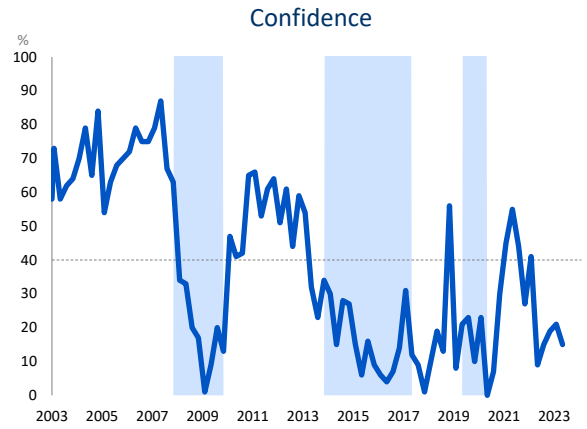


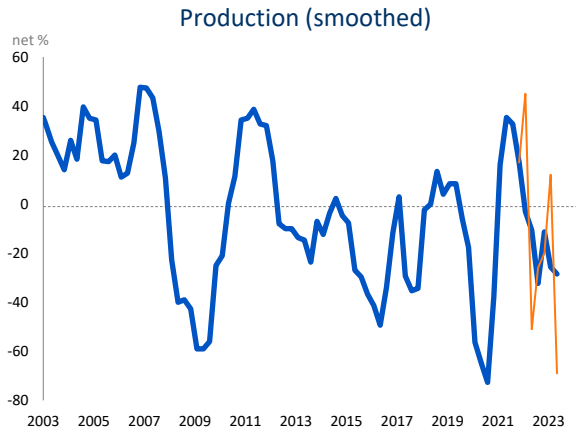
[14] Basic metals, Metal Products & Machinery: Basic iron & steel (SIC code 351), basic precious (gold, platinum, silver) & non-ferrous metal (aluminium, copper, lead, nickel, tin, zinc) products (352), structural metal products (353-4), other fabricated metal products (355), general purpose machinery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

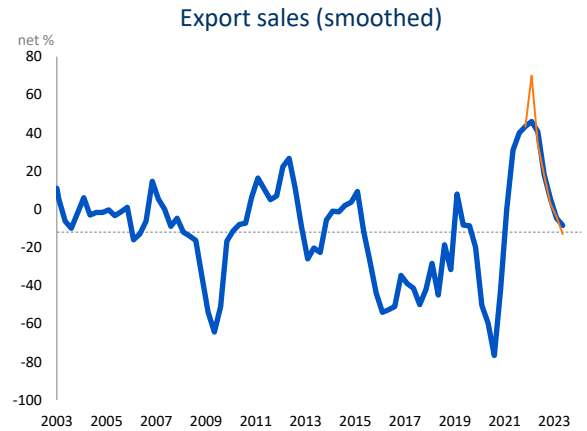
μ – average
σ – standard deviation
Δ – change from previous period
σ_Δ – volatility (standard deviation of the changes)
All of the above calculated over the last 20 years
See technical note for further details

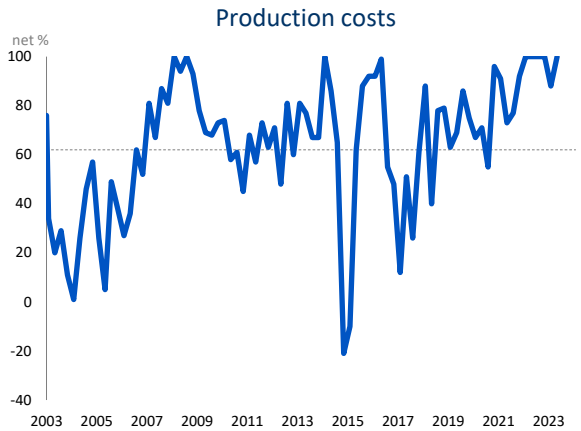
MOTOR VEHICLES, PARTS AND TRANSPORT EQUIPMENT[15]

Indicator	Unit	μ-σ	μ	μ+σ	21Q3	21Q4	22Q1	22Q2	22Q3	22Q4	23Q1	23Q2	Δ	Δσ
Confidence	%	12	37	62	44	27	41	9	15	19	21	**15**	-6	15
Production	Net %	-43	-5	34	9	-3	45	-51	-26	-20	12	**-69**	-81	41
Smoothed	Net %	-34	-5	25	33	17	-3	-11	-32	-11	-26	**-29**	-3	26
Export sales	Net %	-46	-12	23	26	34	70	34	18	3	-4	**-13**	-9	38
Smoothed	Net %	-37	-11	14	40	43	46	41	18	6	-5	**-9**	-4	23
Production costs	Net %	37	65	93	77	92	100	100	100	100	88	**100**	12	23
Business conditions in 12m	Net %	-52	-19	15	-14	-9	-15	-27	-27	-16	-45	**-90**	-45	29







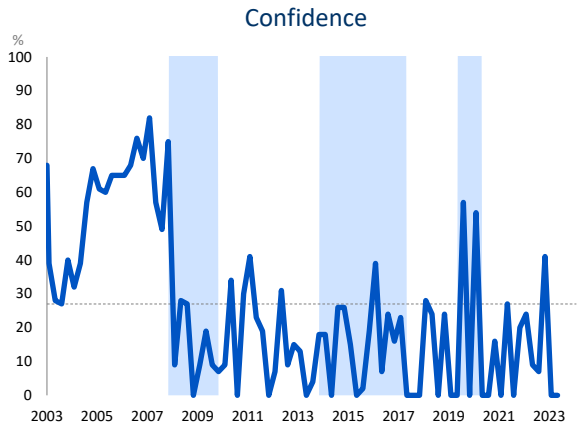


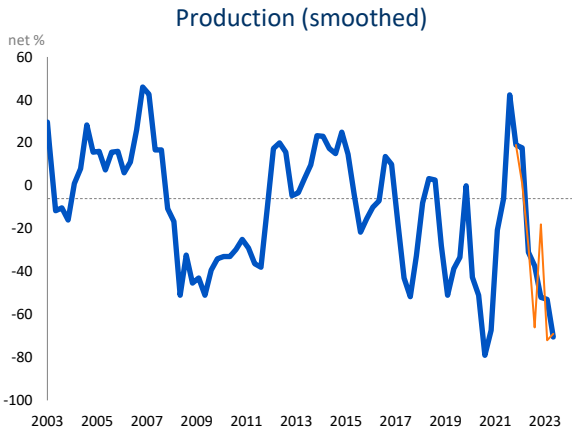
[15] Transport equipment: Motor vehicles & bodies (SIC code 381-2), parts & accessories (383), other transport equipment (384-7). In 2017, this sector contributed 7.7% to production and 16.1% to manufactured exports, petroleum and other excluded in both cases.

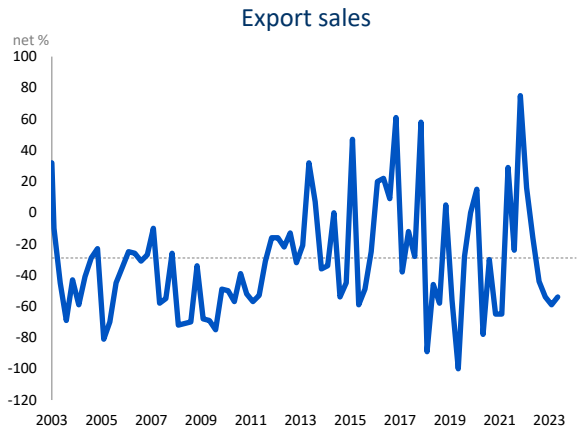
μ – average
σ – standard deviation
Δ – change from previous period
σ_Δ – volatility (standard deviation of the changes)
All of the above calculated over the last 20 years
See technical note for further details

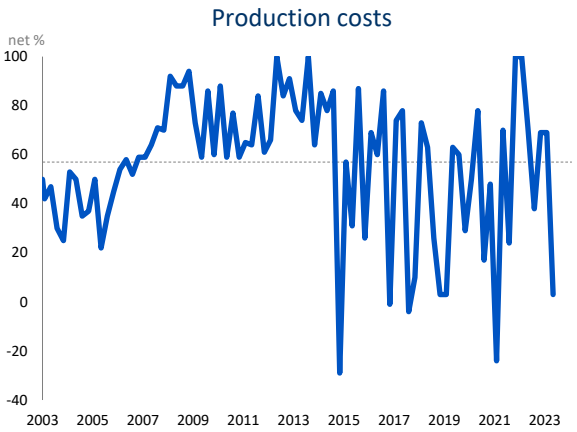
FURNITURE AND OTHER[16]

Indicator	Unit	μ-σ	μ	μ+σ	21Q3	21Q4	22Q1	22Q2	22Q3	22Q4	23Q1	23Q2	Δ	Δσ
Confidence	%	1	25	48	0	20	24	9	7	41	0	**0**	0	22
Production	Net %	-51	-11	28	-24	80	1	-28	-66	-18	-72	**-69**	3	48
Smoothed	Net %	-40	-11	18	42	19	18	-31	-37	-52	-53	**-71**	-18	27
Export sales	Net %	-67	-32	3	-24	75	16	-16	-44	-54	-59	**-54**	5	43
Production costs	Net %	28	57	86	24	100	100	71	38	69	69	**3**	-66	37
Business conditions in 12m	Net %	-55	-20	15	100	-19	7	-9	-73	-49	-80	**-100**	-20	37









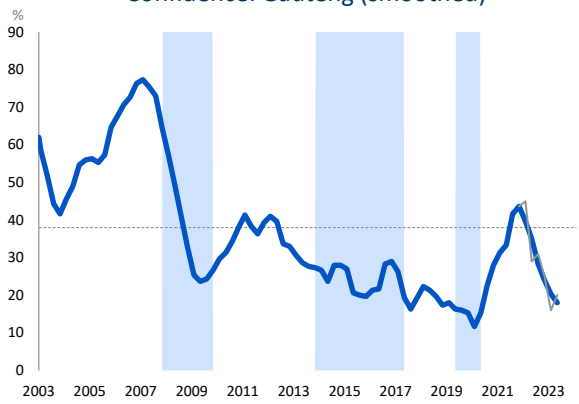
[16] Furniture & Other: Furniture (SIC code 391), other (e.g. jewellery, musical instruments, games & toys, recycling NOT COVERED) (392), tobacco (306). In 2017, this sector contributed 1.2% to production and 1.0% to manufactured exports, petroleum and other excluded in both cases. We recommend that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

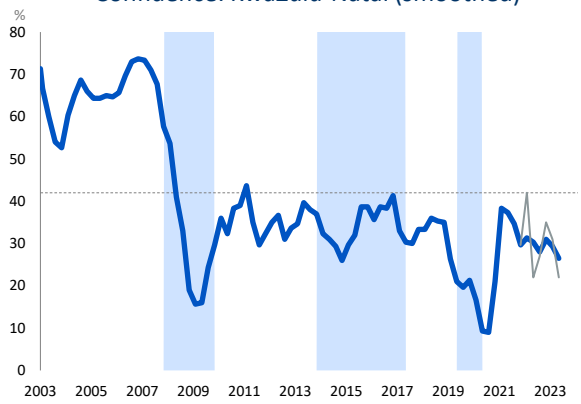
BY PROVINCE

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

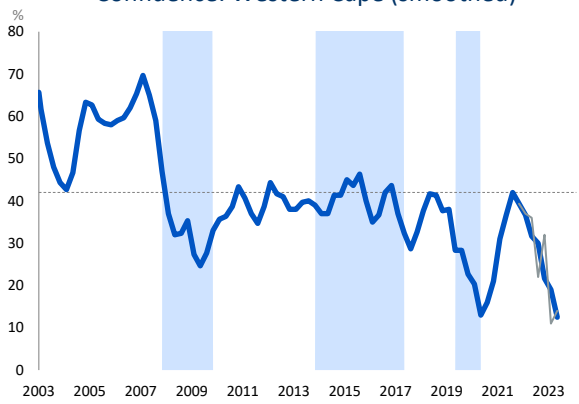
Confidence: Gauteng (smoothed)



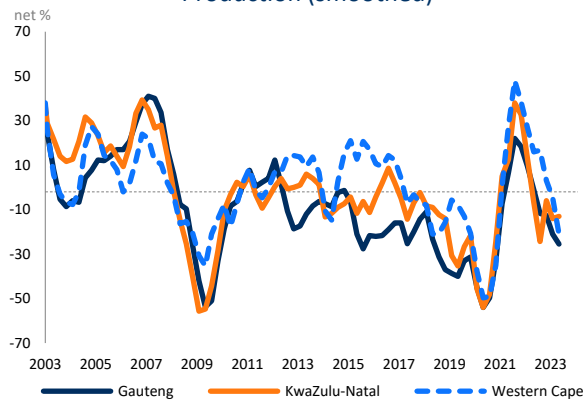
Confidence: KwaZulu-Natal (smoothed)



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

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

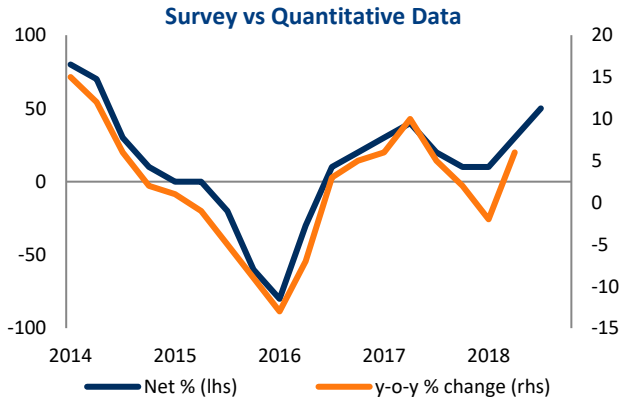
Net percentage (net %)

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.