BER | BUREAU *for* ECONOMIC RESEARCH

Building

Quarterly analysis of building activity

Stellenbosch UNIVERSITY IYUNIVESITHI UNIVERSITEIT

EDITOR:

Craig Lemboe

✉ cjl@sun.ac.za
📞 +27 (21) 808 9780

TECHNICAL ASSISTANCE:

Nicolaas van der Wath

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

Executive summary

After rising to an eight-year high in 2023Q4, the **FNB/BER Building Confidence Index** fell sharply to 27 in 2024Q1. The decline was broad-based with four of the six sectors recording a fall in sentiment in excess of 20 points.

The index measuring activity among **architects** moved higher in 2023Q4. This was more than reversed in 2024Q1. As a result, the confidence of architects was 25 index points lower (at 29) compared to 2023Q4. **Quantity surveyor** activity was also weaker – although not to the same extent as architects. Despite this, their sentiment edged 4 points higher to 42.

Residential builder confidence decreased to 41 in 2024Q1, from 44 in 2023Q4. Much keener tendering price competition kept profit margins under pressure, likely explaining the lower business mood. Encouragingly, building activity was somewhat better.

Conversely, **non-residential builder** activity deteriorated. In addition, the rating of new demand as a business constraint (a proxy for order books) moved significantly higher. This suggests that, going forward, activity may weaken further. The trend in terms of activity does not fully explain the 19-index-point fall in sentiment (to 35), especially given that the index measuring overall profitability remained well above its long-term average.

Table of Content

Introduction

This report outlines some of the key findings of the BER's 2024Q1 Building and Construction Survey, including the **FNB/BER Building Confidence Index** and the **FNB/BER Civil Confidence Index**, as well as related data.

Summary of the 2024Q1[1] building and construction survey results

After rising to 43 in 2023Q4, the **FNB/BER Building Confidence Index** fell to 27 in 2024Q1 (Figure 1). This means that more than 70% of building firms are dissatisfied with prevailing business conditions.

The "core" building confidence index – which excludes building material manufacturers and hardware retailers – was similarly lower at 37, from 48 in 2023Q4. This returns the index to the average level registered in 2023H1.

Figure 1: FNB/BER Building Confidence Index

Source: BER

In terms of the sub-sectors, the following changes in confidence were recorded (compared to 2023Q4): building material manufacturers (-29), architects and building sub-contractors (-25), hardware retailers (-23), main contractors (+1) and quantity surveyors (+4).

Underpinning the increased pessimism was lower activity among sub-contractors and architects and weaker sales growth in the case of hardware retailers and building material manufacturers.

Overall, the surge in building activity registered since 2022Q3 seems to have normalised.

---

[1] The survey was conducted between 8 and 26 February 2024.

ARCHITECT ACTIVITY FALLS SIGNIFICANTLY IN Q1

In 2023Q4, **architects** recorded their biggest quarterly jump in confidence on record of 24 index points to 54. This was reversed in 2024Q1 with sentiment falling back to 29 (Figure 2). This was in step with average activity[2] which improved in 2023Q4 but is notably lower in 2024Q1. Indeed, the index measuring activity registered a level of -34% this quarter, its worst level since 2021Q3.

As with architects, average activity[3] among **quantity surveyors** also moved lower (albeit to a lesser extent) to a net balance of -8% in 2024Q1 from +3% in 2023Q4. Despite the weaker activity, business confidence moved higher to 42, from 38 in 2023Q4.

Figure 2: Architect and quantity surveyor confidence
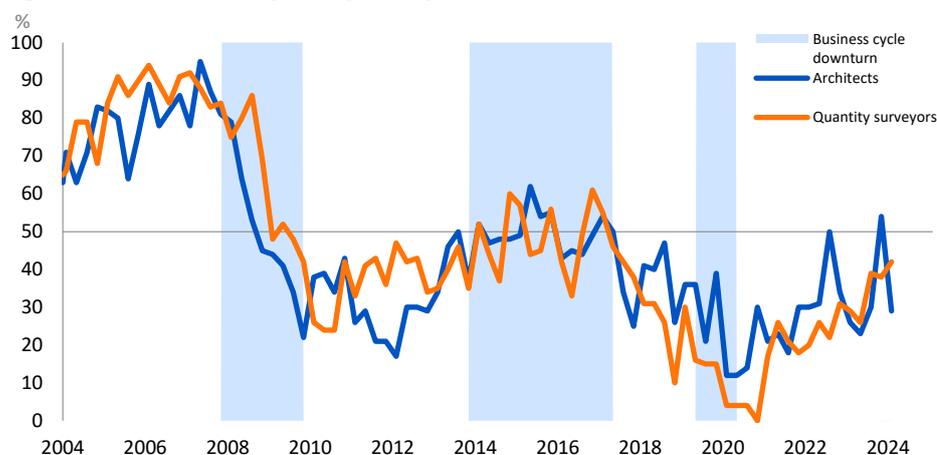
Source: BER

According to Statistics South Africa (Stats SA), the real value of residential building plans passed fell by 32% year-on-year (y-o-y) in 2023Q4, following a 20.8% y-o-y fall in 2023Q3. Meanwhile, the real value of non-residential plans passed was 33% lower on an annual basis in 2023Q4, from a 16.5% y-o-y contraction in 2023Q3. The value of plans for additions and alterations registered a 12.6% decline in 2023Q4. Overall, the real value of total building plans passed fell noticeably by 26.8% y-o-y in 2023Q4.

Based on these survey results, this dismal performance registered in 2023Q4 is set to continue in 2024Q1. Such weakness in the building pipeline holds dire consequences for the rest of the building construction value chain.
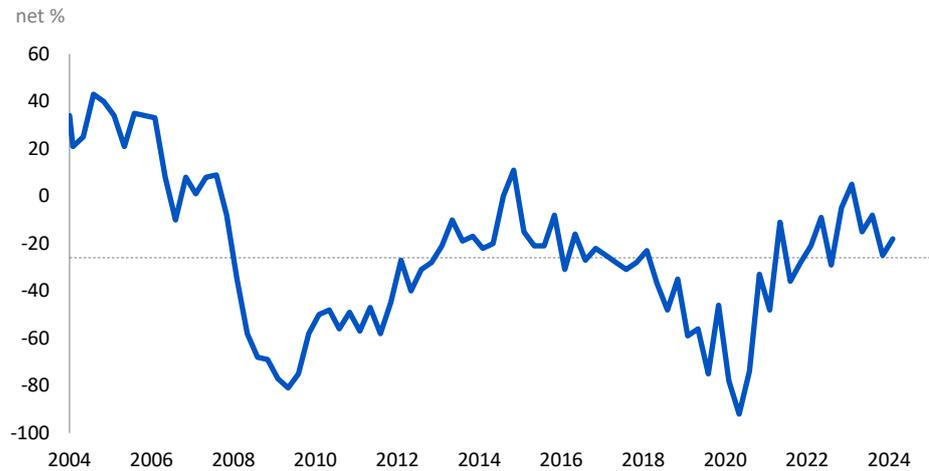
---

[2] Activity for architects is the average of the net balance for projects at sketch plan phase, at working drawing stage and commissioned project stage.

[3] Activity for quantity surveyors, is the average of activity at sketch plan stage, at bills of quantity stage and commissioned projects stage.

RESIDENTIAL BUILDING ACTIVITY LESS NEGATIVE IN Q1

Whereas a net 25% of respondents indicated that **residential building** activity was lower in 2023Q4 than a year earlier, only 18% noted as such in 2024Q1 (Figure 3). This was in line with their expectations. Stats SA data revealed that the real value of residential building investment declined by 9% y-o-y in 2023Q4. This quarter's survey results suggest that the decline in 2024Q1 will likely be less pronounced.
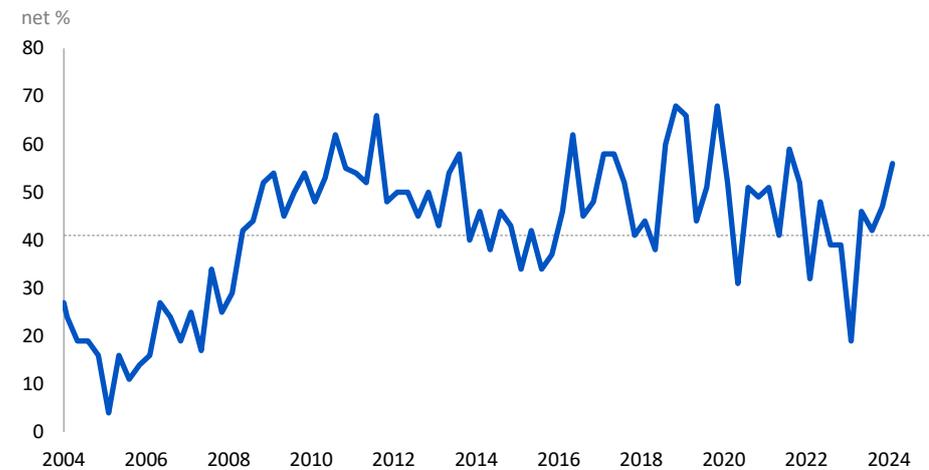
Figure 3: Residential builders, growth in activity

net %

Source: BER

Despite the uptick in activity, overall profitability was largely unchanged. After deteriorating from -34% to -48% in 2023Q4, the index measuring growth in profitability remained relatively weak (albeit stable) at -47% in 2024Q1. This is partly explained by a rise in competition for tenders – which means that profit margins are under strain. While a net 47% of respondents stated that tendering price competition was keener compared to a year earlier in 2023Q4, 56% stated as such in 2024Q1 (Figure 4).

Figure 4: Residential builders, tendering price competition

net %

Source: BER

In terms of the constraints, the results were mixed. The rating of the lack of skilled labour as a constraint moved to 47% - its highest level since the end of 2016 - while the access to credit constraint ticked up only marginally. Meanwhile, the rating of the shortage of building material

as a business constraint eased to 28%, from 32% in 2023Q4. Lastly, at 74%, the rating of the lack of new demand as a business constraint is also reasonably elevated (Figure 5).

Figure 5: Residential builders, insufficient demand as a business constraint

Source: BER

In all, the underlying data supports the slight decrease in residential builder sentiment to 41, from 44 in 2023Q4.

Source: BER

NON-RESIDENTIAL BUILDER CONFIDENCE FALLS IN Q1

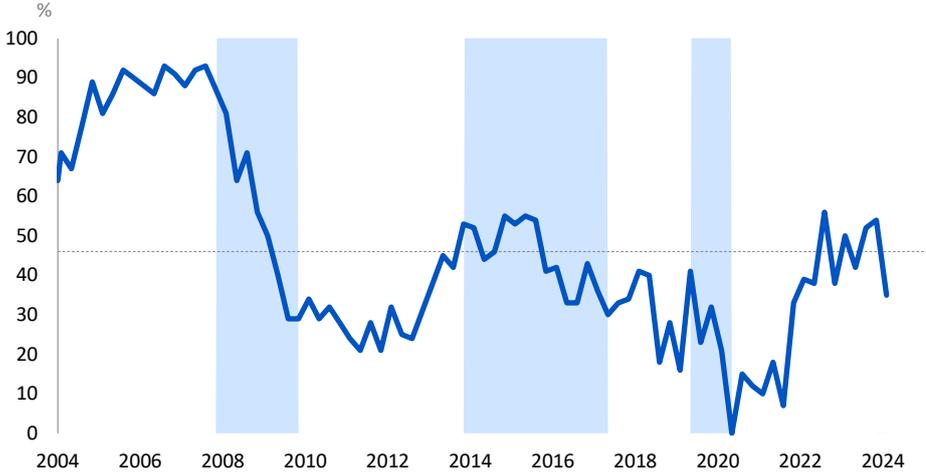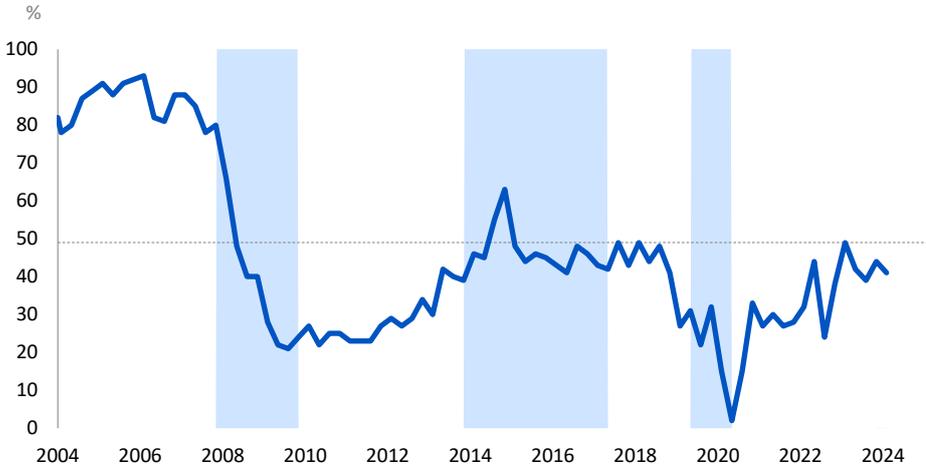Sentiment among **non-residential builders** increased to 52 in 2023Q3 and by a further two points to 54 in 2023Q4 (Figure 6). This quarter sentiment declined significantly to 35, its lowest since early-2021.

Figure 6: Non-residential builder confidence

Source: BER

The index measuring the growth in building activity fell to -27% in 2024Q1, from -17% in 2023Q4 (Figure 7). This is in line with the long-term average for the series, so not necessarily a downbeat number[4]. Indeed, in 2023Q4, the real value of non-residential investment accelerated to 2.1% y-o-y, from 0.1% y-o-y in 2023Q3 (according to Stats SA). Based on these survey results, a mild slowdown is likely in 2024Q1.

Figure 7: Non-residential builders, growth in activity

Source: BER

Interestingly, and unlike residential builders, despite the weaker activity growth tendering, price competition was less keen. As a result, overall profitability remained at a reasonably low

---

[4] The decline in the index needs to be considered in the context of base effects (in 2023Q1, the activity index was at +4%).

level. A net 14% of respondents stated that overall profitability was lower than a year earlier in 2024Q1, from 8% in 2023Q4.

There was a sharp increase in the rating of the lack of new demand as a business constraint this quarter to 72%, from 62% in 2023Q4 (Figure 8). This is the highest level since 2022Q2 and likely weighed on confidence.

Figure 8: Non-residential builders, insufficient demand as a business constraint

Source: BER

CONCLUSION

The **FNB/BER Building Confidence Index** fell noticeably to 27 in 2024Q1, from 43 in 2023Q4.

The decline was broad-based with four of the six sectors surveyed recording a more than 20 index point fall in sentiment.

From a segment perspective, there was some divergence this quarter. While residential building activity improved, non-residential building activity deteriorated (although back to average levels). In contrast, overall profitability among non-residential builders was markedly better than among their residential counterparts.

Looking ahead, while building activity stabilised this quarter, the uptick in the rating of the lack of new building demand as a business constraint as well as the sharp weakening in activity at the start of the building value chain argues that the sector is likely to struggle, again, in coming quarters.

Survey results

BUILDING: TOTAL[5]

Indicator	Unit	μ-σ	μ	μ+σ	22Q2	22Q3	22Q4	23Q1	23Q2	23Q3	23Q4	24Q1	Δ	σ Δ
Confidence	%	23	45	68	42	36	38	49	42	44	48	**39**	-9	7
Activity	Net %	-58	-26	6	-10	-19	-15	5	-16	-7	-22	**-21**	1	13
Tendering competition	Net %	29	45	61	48	44	38	25	47	44	48	**47**	-1	8
Insufficient demand	%	46	65	84	74	67	66	57	68	66	71	**73**	2	5

Confidence

Activity

Tendering competition

Insufficient demand

[5] Combined residential and non-residential building activity of contractors and sub-contractors.

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

12

BUILDING: TOTAL

Activity: residential & non-residential

net %

Legend: Residential, Non-residential

Activity by province (smoothed)

net %

Legend: GP, KZN, WC

Activity: contractors & sub-contractors

net %

Legend: Contractors, Sub-contractors

Activity pipeline
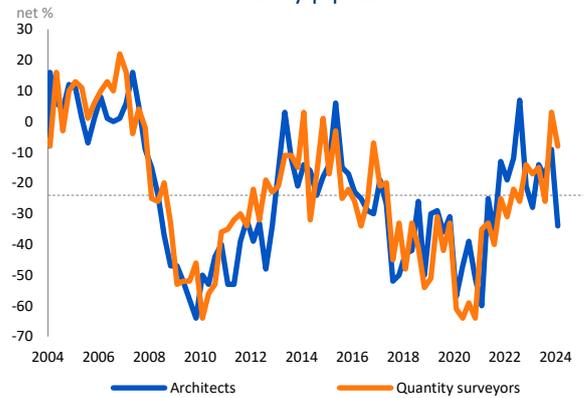
net %

Legend: Architects, Quantity surveyors

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

13

BUILDING: RESIDENTIAL[6]

Indicator	Unit	μ-σ	μ	μ+σ	22Q2	22Q3	22Q4	23Q1	23Q2	23Q3	23Q4	24Q1	Δ	σ Δ
Confidence	%	23	45	68	44	24	38	49	42	39	44	**41**	-3	8
Activity	Net %	-56	-26	5	-9	-29	-5	5	-15	-8	-25	**-18**	7	15
Seasonally adjusted	Net %	-56	-26	5	-12	-21	-9	5	-19	-1	-28	**-18**	10	13
Tendering competition	Net %	28	43	57	48	39	39	19	46	42	47	**56**	9	11
Insufficient demand	%	45	64	84	73	69	63	55	69	68	76	**74**	-2	6

_____
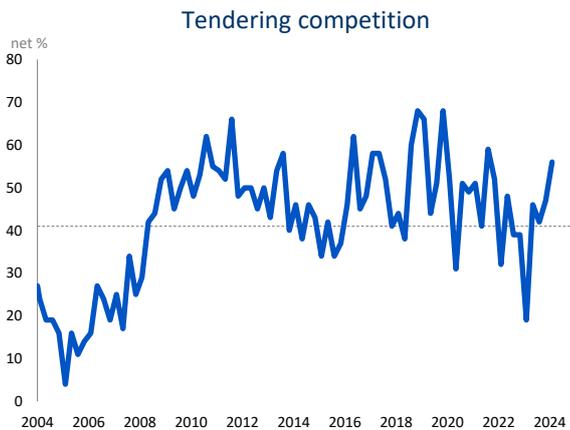
[6] The residential sector covers the construction of and additions to houses, town houses and flats for which building plans were submitted to a local authority. Other sporadic residential structures, such as tourist accommodation and casinos, and informal structures are not covered. The section on the building material retail trade provides additional information on activity related to additions and the informal sector.

μ - average
σ – standard deviation
Δ – change from previous period
σΔ – volatility (standard deviation of the changes)
All above calculated over the last 20 years
See technical note for further details
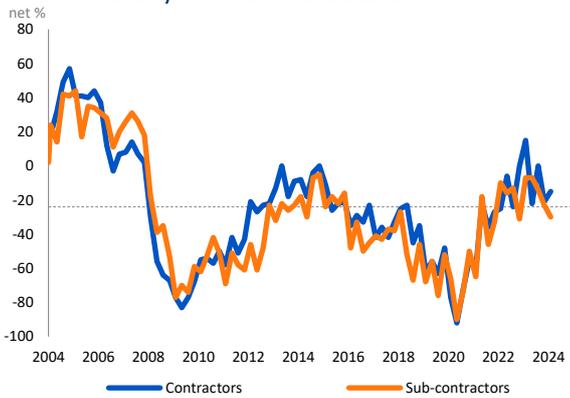
14

BUILDING: NON-RESIDENTIAL[7]

| Indicator	Unit	μ-σ	μ	μ+σ	22Q2	22Q3	22Q4	23Q1	23Q2	23Q3	23Q4	24Q1	Δ	σ Δ
Confidence	%	22	46	70	38	56	38	50	42	52	54	**35**	-19	10
Activity	Net %	-63	-27	9	-12	-4	-29	4	-17	-5	-17	**-27**	-10	16
Tendering competition	Net %	28	49	70	48	52	38	32	50	48	50	**35**	-15	10
Insufficient demand	%	46	66	85	76	65	69	59	67	63	62	**72**	10	6

Confidence

Activity

Tendering competition

Insufficient demand

[7] The non-residential sector covers offices, banks, shops (retail), industrial (factories), warehouses and other structures (such as churches, sport clubs, schools and hospitals).

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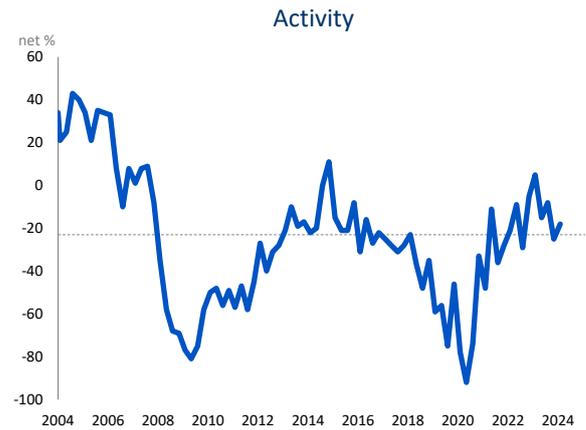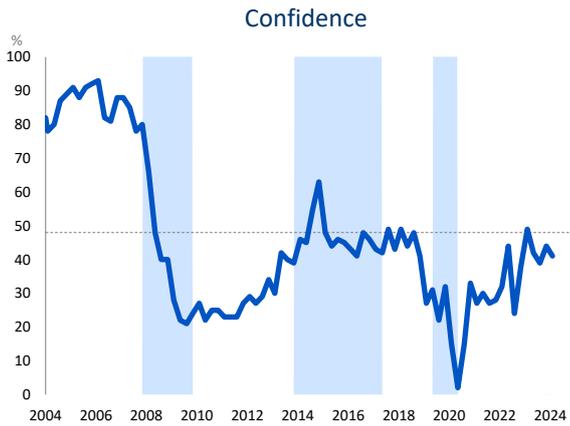*σΔ – volatility (standard deviation of the changes)*
All above calculated over the last 20 years
See technical note for further details

ARCHITECTS AND QUANTITY SURVEYORS[8]

Indicator	Unit	μ-σ	μ	μ+σ	22Q2	22Q3	22Q4	23Q1	23Q2	23Q3	23Q4	24Q1	Δ	σ Δ
Architects														
Confidence	%	24	45	66	31	50	34	26	23	30	54	**29**	-25	11
Activity	Net %	-45	-25	-4	-12	7	-21	-28	-14	-18	-9	**-34**	-25	12
Quantity surveyors														
Confidence	%	21	46	71	26	22	31	29	26	39	38	**42**	4	9
Activity	Net %	-45	-23	-2	-22	-26	-14	-17	-15	-26	3	**-8**	-11	13

Architects: Confidence

Architects: Activity

Quantity surveyors: Confidence

Quantity surveyors: Activity

---

[8] According to the Standard Industrial Classification of all Economic Activities (SIC), architects and quantity surveyors are not part of the building and construction sector; they are classified as "business services". However, the BER includes them here, as they provide additional information on developments in the building sector.

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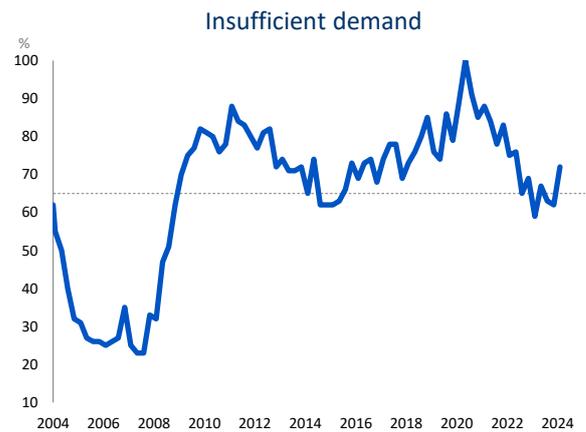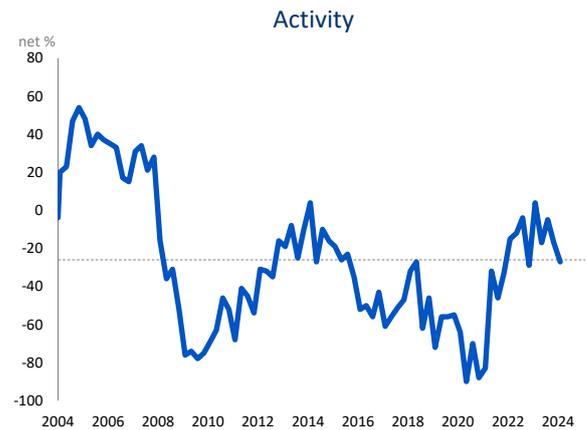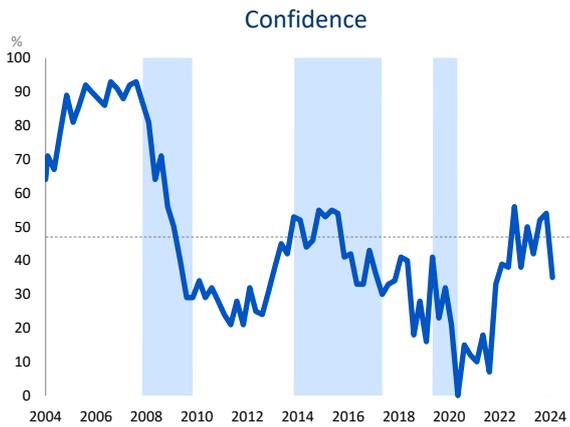*σ_Δ – volatility (standard deviation of the changes)*
All above calculated over the last 20 years
See technical note for further details

BUILDING: CONTRACTORS AND SUB-CONTRACTORS[9]

Indicator	Unit	μ-σ	μ	μ+σ	22Q2	22Q3	22Q4	23Q1	23Q2	23Q3	23Q4	24Q1	Δ	σ Δ
Contractors														
Confidence	%	20	44	68	46	29	46	43	43	41	41	**42**	1	8
Activity	Net %	-58	-24	9	-6	-24	0	15	-22	0	-21	**-15**	6	14
Sub-contractors														
Confidence	%	26	48	69	38	45	30	57	40	47	58	**33**	-25	11
Activity	Net %	-61	-28	5	-16	-13	-31	-7	-7	-14	-23	**-30**	-7	16

Contractors: Confidence

Contractors: Activity

Sub-contractors: Confidence

Sub-contractors: Activity

[9] Sub-contractors cover the building trades, such as electricians, plumbers, painters and shop fitters.

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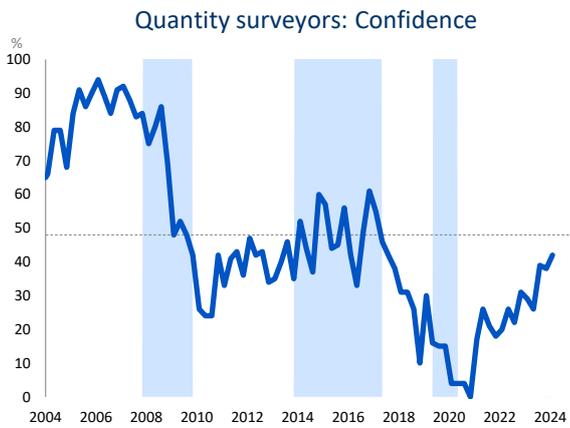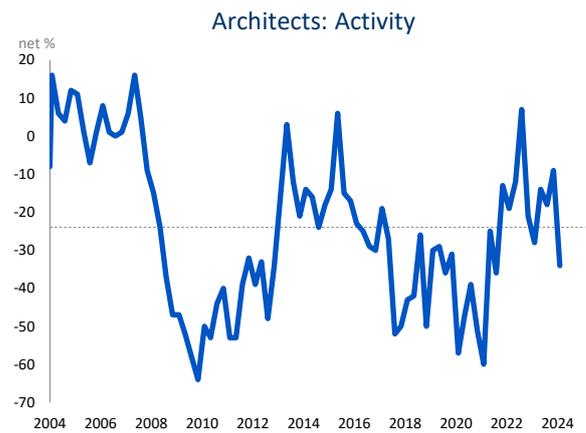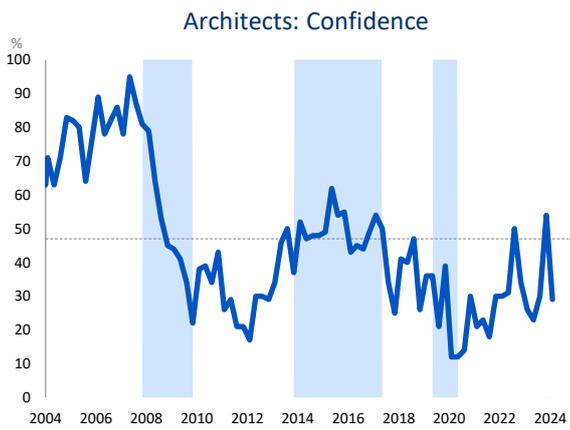*σ_Δ – volatility (standard deviation of the changes)*
All above calculated over the last 20 years
See technical note for further details

BUILDING: PROVINCES

Indicator	Unit	μ-σ	μ	μ+σ	22Q2	22Q3	22Q4	23Q1	23Q2	23Q3	23Q4	24Q1	Δ	σ Δ
Gauteng														
Confidence	%	16	40	64	25	19	27	36	36	32	32	**37**	5	10
Smoothed	%	16	40	63	24	24	27	33	35	33	34	**35**	1	5
Activity	Net %	-67	-31	4	-20	-42	-44	-5	-14	-17	-26	**-17**	9	17
Smoothed	Net %	-65	-31	2	-26	-35	-30	-21	-12	-19	-20	**-22**	-2	9
KwaZulu-Natal														
Confidence	%	24	47	71	60	55	60	70	33	57	57	**56**	-1	18
Smoothed	%	27	47	68	55	58	62	54	53	49	57	**57**	0	6
Activity	Net %	-67	-31	5	-10	-27	0	10	-33	-29	-14	**0**	14	23
Smoothed	Net %	-64	-31	2	-21	-12	-6	-8	-17	-25	-14	**-7**	7	9
Western Cape														
Confidence	%	24	49	75	29	45	43	53	42	48	61	**32**	-29	9
Smoothed	%	24	49	74	33	39	47	46	48	50	47	**47**	0	5
Activity	Net %	-55	-16	22	-12	30	22	37	-25	17	-17	**-16**	1	19
Smoothed	Net %	-53	-16	20	-3	13	30	11	10	-8	-5	**-17**	-12	10

Confidence: Gauteng (smoothed)

Confidence: KwaZulu-Natal (smoothed)

Confidence: Western Cape (smoothed)

Activity by province (smoothed)

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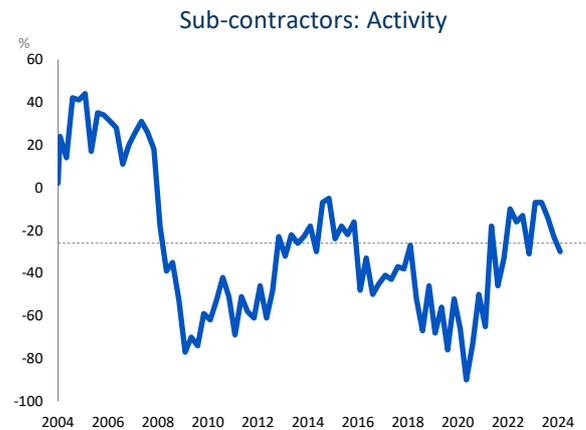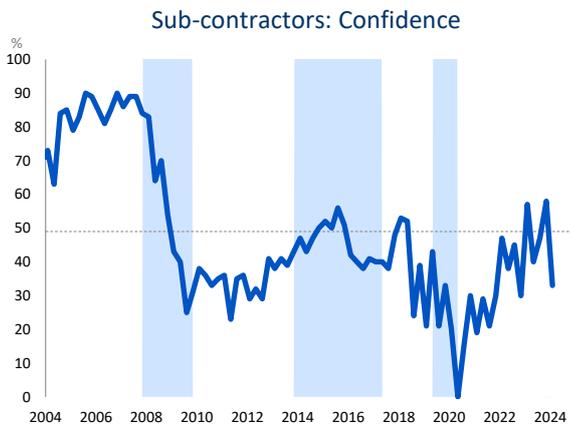*σ_Δ – volatility (standard deviation of the changes)*
All above calculated over the last 20 years
See technical note for further details

18

BUILDING MATERIALS RETAIL TRADE[10]

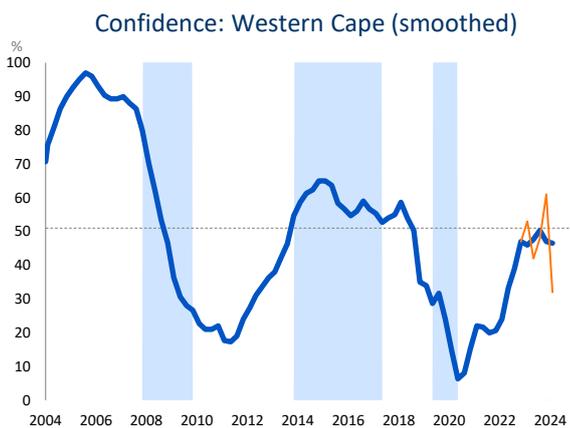| Indicator	Unit	μ-σ	μ	μ+σ	22Q2	22Q3	22Q4	23Q1	23Q2	23Q3	23Q4	24Q1	Δ	σ Δ
Confidence	%	24	47	70	52	56	39	35	22	20	38	**15**	-23	16
Smoothed	%	26	47	68	57	49	43	32	26	27	24	**27**	3	6
Sales volumes	Net %	-44	-12	20	-23	-14	-29	-41	-39	-54	-21	**-69**	-48	27
Smoothed	Net %	-39	-12	16	-18	-22	-28	-36	-45	-38	-48	**-45**	3	12
Sales prices	Net %	9	37	64	58	93	74	57	66	46	41	**79**	38	22
Smoothed	Net %	12	36	61	74	75	75	66	56	51	55	**60**	5	10

Confidence (smoothed)

Sales volumes (smoothed)

Sales prices (smoothed)

---

[10] Hardware, paint, glass and other building material retailers. Developments in the building material retail trade provides additional information on activity related to additions and the informal sector.

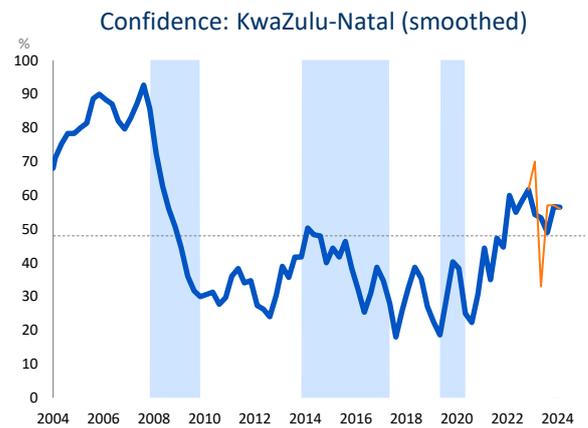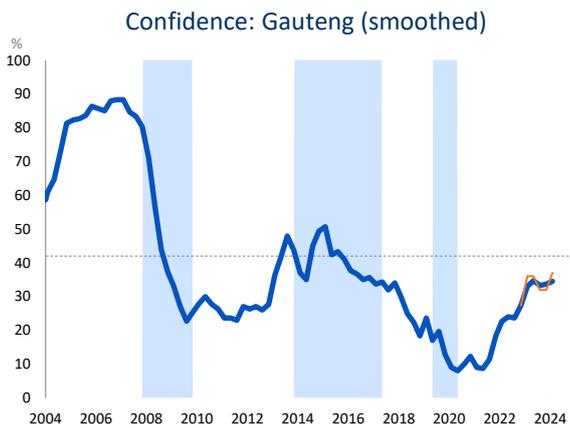*μ - average*
σ – standard deviation
Δ – change from previous period
σΔ – volatility (standard deviation of the changes)
All above calculated over the last 20 years
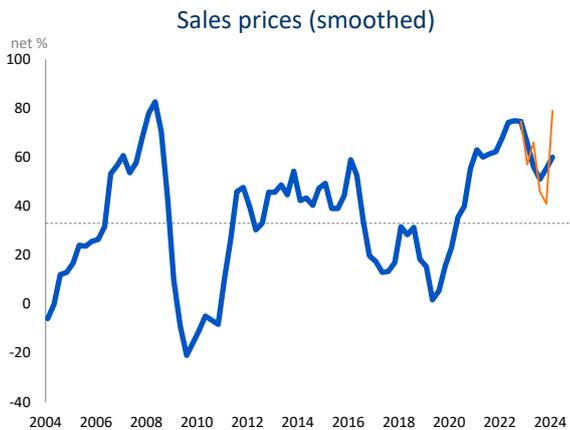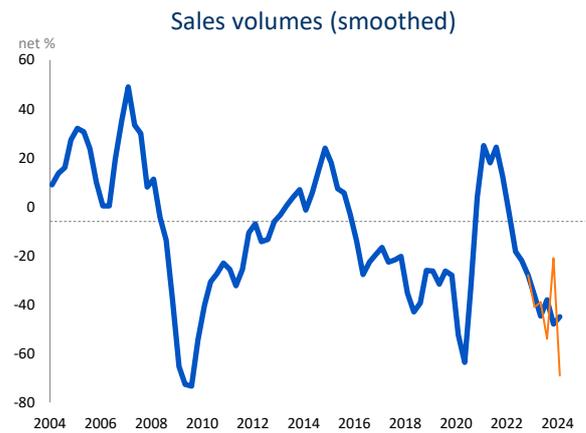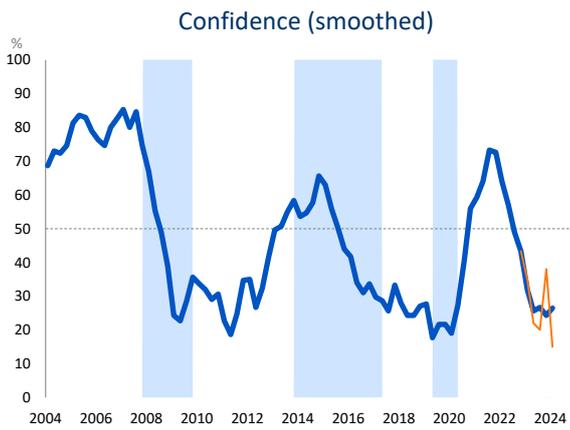*See technical note for further details*

BUILDING MATERIALS MANUFACTURING[11]

Indicator	Unit	μ-σ	μ	μ+σ	22Q2	22Q3	22Q4	23Q1	23Q2	23Q3	23Q4	24Q1	Δ	σ Δ
Confidence	%	9	36	63	12	0	20	6	13	26	29	**0**	-29	18
Smoothed	%	11	36	60	22	11	9	13	15	23	18	**15**	-3	7
Production volume	Net %	-43	-5	32	-38	-71	-69	-88	-83	-48	-40	**22**	62	31
Smoothed	Net %	-37	-5	26	-38	-59	-76	-80	-73	-57	-22	**-9**	13	14
Production costs	Net %	31	55	78	45	66	57	100	78	46	12	**40**	28	28
Smoothed	Net %	38	55	71	52	56	74	78	75	45	33	**26**	-7	10
Expected conditions in 12m	Net %	-20	6	32	-17	0	-39	-16	-29	21	-15	**51**	66	29
Smoothed	Net %	-14	6	25	-2	-19	-18	-28	-8	-8	19	**18**	-1	11

Confidence (smoothed)

Production volume (smoothed)

Production costs (smoothed)

Expected conditions in 12m (smoothed)
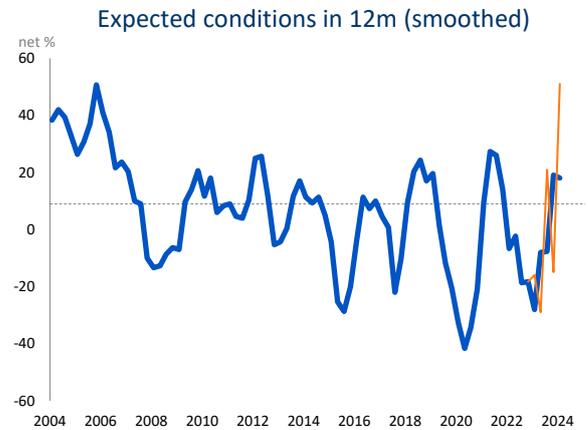
[11] Covering glass and non-metallic mineral (i.e. bricks, tiles, cement, prefab concrete, asphalt and mica products) manufacturing.

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

SUMMARY

Building: total activity & GFCF

normalised scale

Business cycle downturn — BER net % — GFCF resid & non-resid (y-o-y %)
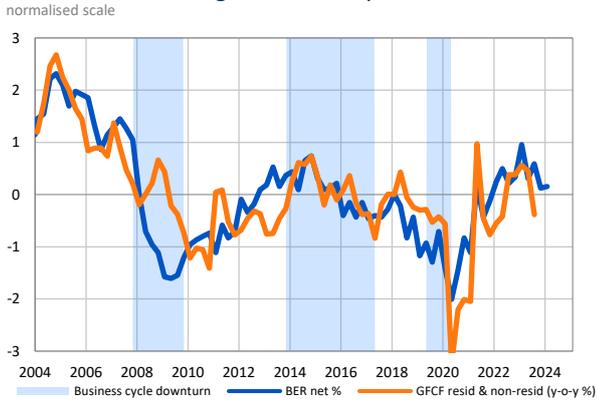
Building: total activity: realised & exp.

normalised scale

Business cycle downturn — Realised — Expected

Building: residential activity & GFCF

normalised scale

Business cycle downturn — BER net % — GFCF resid (y-o-y %)

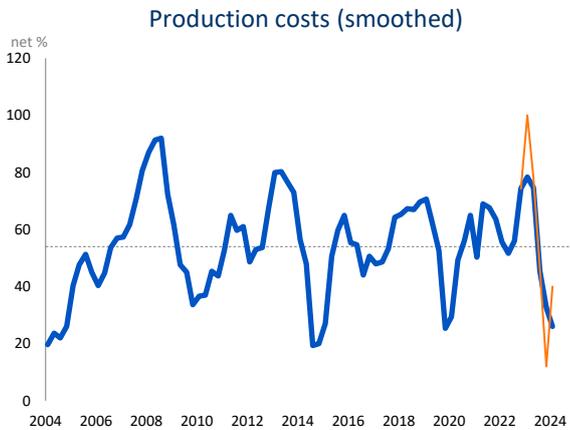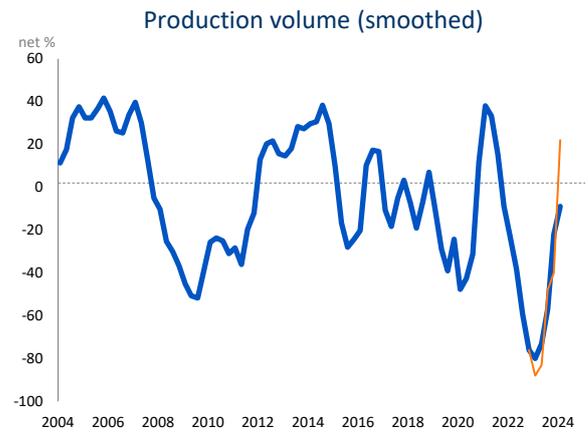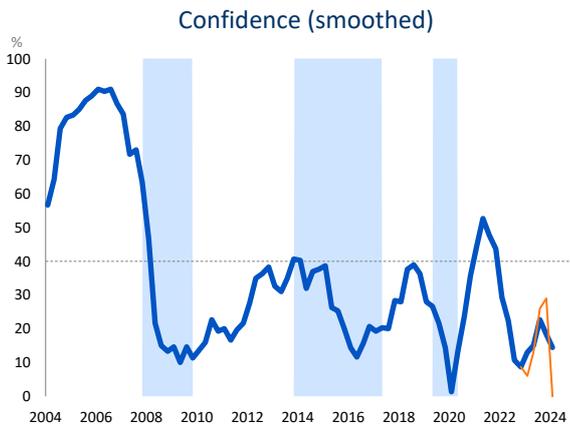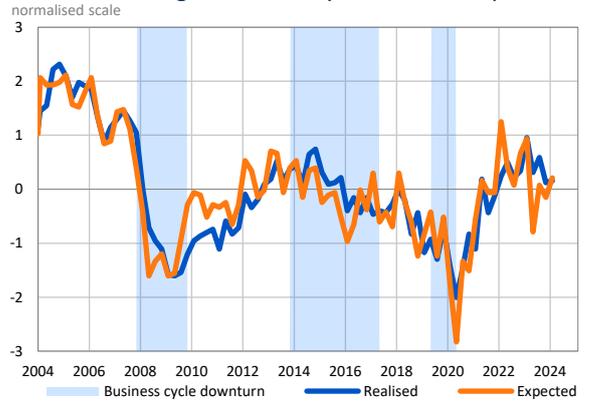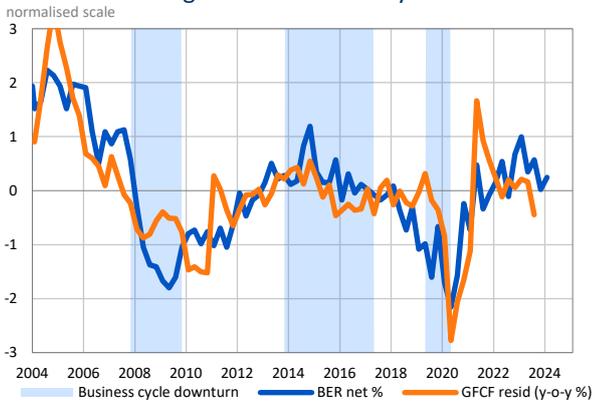## Building: total activity by prov. (smoothed)

normalised scale

Business cycle downturn — GP — KZN -- WC

Building: non-residential activity & GFCF

normalised scale

Business cycle downturn — BER net % — GFCF non-resid (y-o-y %)
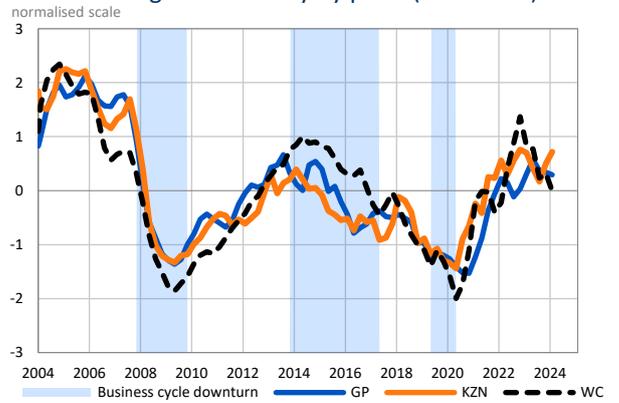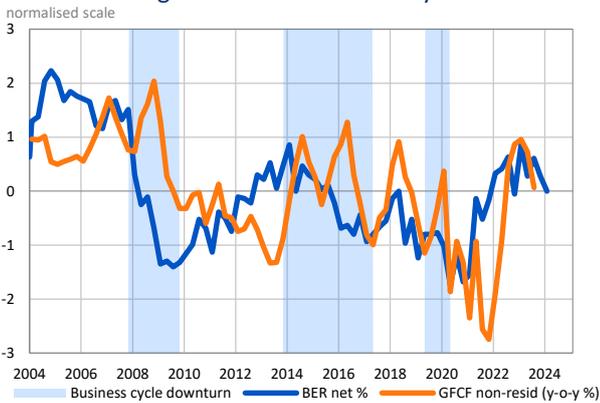
Building: resid. & non-resid. activity

normalised scale

Business cycle downturn — Resid — Non-resid
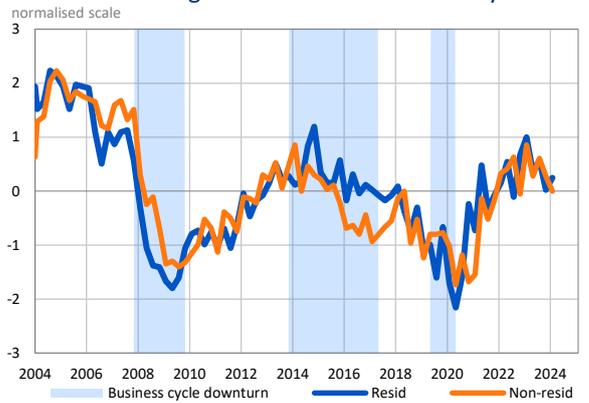
Civil constr: total activity & GFCF

normalised scale

Business cycle downturn — BER net % — GFCF Civil (y-o-y %)
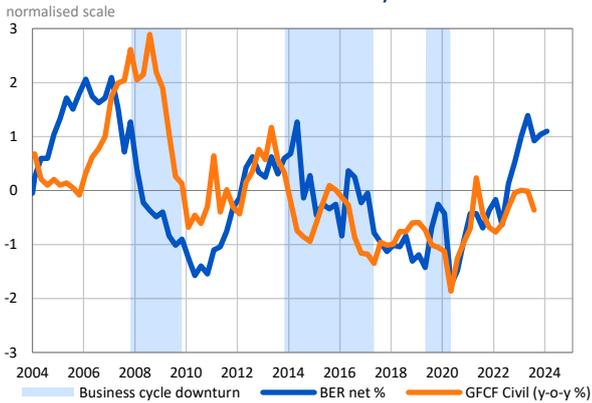
Pipeline: contracts awarded

normalised scale

Business cycle downturn — Architects — Building plans (smoothed)

21
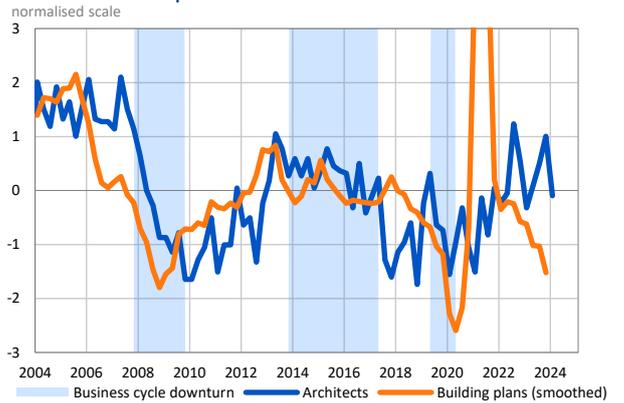
BUILDING PLANS PASSED AND COMPLETED

Indicator (thousand sqm)	South Africa	Western Cape	Eastern Cape	Northern Cape	Free State	KwaZulu-Natal	North West	Gauteng	Mpuma-langa	Limpopo
Recorded building plans passed						**23Q4**				
Dwelling-houses < 80 square metres	76.9	25.7	9.8	0.3	2.9	2.7	12.7	21.1	1.3	0.4
Dwelling-houses >= 80 square metres	819.0	290.4	53.0	9.9	31.6	80.9	49.8	209.6	56.7	37.2
Flats and townhouses	362.4	133.4	2.9	0.2	2.5	45.9	5.4	157.4	9.9	4.8
Other residential buildings	22.3	7.9	2.3	3.1	0.1	0.0	1.6	1.4	5.8	0.1
Office and banking space	42.7	8.0	0.7	0.0	0.0	5.7	0.3	14.0	13.9	0.0
Shopping space	77.9	9.4	6.9	0.0	2.9	3.2	2.2	16.5	32.9	3.9
Industrial and warehouse space	324.1	56.7	13.3	1.2	22.5	78.4	15.6	125.7	10.8	0.0
Other non-residential buildings	109.4	45.0	7.1	13.7	0.4	12.2	5.5	16.9	8.4	0.2
Additions and alterations: Dwelling-houses	574.1	185.4	53.1	7.1	14.7	74.6	24.2	170.7	35.0	9.4
Additions and alterations: Other buildings	277.4	100.4	46.7	1.1	5.3	33.8	2.4	78.8	8.2	0.7
Total	**2686**	**862**	**196**	**36**	**83**	**337**	**120**	**812**	**183**	**57**
y-o-y % change	**-21.9**	**-28.6**	**-10.1**	**-4.9**	**27.9**	**-25.8**	**-21.5**	**-17.7**	**-22.8**	**-30.1**
Buildings reported as completed						**23Q4**				
Dwelling-houses < 80 square metres	89.4	34.3	6.3	0.4	0.0	0.5	8.4	38.8	0.2	0.5
Dwelling-houses >= 80 square metres	633.3	230.8	44.8	3.5	5.2	74.3	59.7	175.4	18.1	21.4
Flats and townhouses	334.2	180.5	8.1	0.0	2.6	13.8	6.1	116.9	3.5	2.7
Other residential buildings	34.9	30.9	0.0	0.0	0.0	3.7	0.3	0.0	0.0	0.0
Office and banking space	54.6	12.4	2.9	0.0	0.0	11.3	5.2	16.6	6.2	0.0
Shopping space	119.3	13.9	1.3	3.5	0.0	66.7	19.0	2.0	0.8	12.1
Industrial and warehouse space	256.5	65.3	6.0	0.0	0.0	97.6	6.3	76.2	0.8	4.3
Other non-residential buildings	45.4	8.9	15.4	0.6	0.0	15.4	1.2	3.5	0.3	0.0
Additions and alterations: Dwelling-houses	195.5	75.7	29.6	2.1	2.5	21.1	8.2	52.5	2.7	1.0
Additions and alterations: Other buildings	115.9	51.9	21.2	0.0	0.0	29.7	1.8	10.2	0.0	1.2
Total	**1879**	**705**	**136**	**10**	**10**	**334**	**116**	**492**	**33**	**43**
y-o-y % change	**-4.4**	**-5.3**	**121.7**	**-41.1**	**25.6**	**65.0**	**15.1**	**-36.0**	**9.4**	**28.7**

Source: Statistics South Africa

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 activity, employment etc. (for which official figures are published), but also provide unique information, such as business confidence, tendering prices, business conditions, constraint indicators 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 building activity 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. The BER also took responsibility for a quantitative building cost survey in that year. The breadth of the building survey was expanded on two occasions: 1) architects and quantity surveyors were added in 1986 in order to track developments along the whole building pipeline (i.e. from the initiation to the completion of projects) and 2) civil engineering contractors were added in 1997.

Consult the BER web page (**www.ber.ac.za**) for more information about the business tendency and building cost survey methods.

THE UNIQUE UNITS OF MEASUREMENT OF QUALITATIVE SURVEYS

Net percentage (net %)

The responses related to the <u>change in activity, prices, employment, business conditions etc.</u> are presented as a "net percentage" (also called a "net balance" or a "net majority"). If, for example, the percentages of respondents rating building activity 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 activity. The net percentage is calculated as the percentage of respondents rating "activity" 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 activity compared to a year ago. Take note that this does not mean a year-on-year contraction of 10%. It only means that the activity of a majority of 10% of the respondents was lower compared to a year ago.

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

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

Survey vs Quantitative Data

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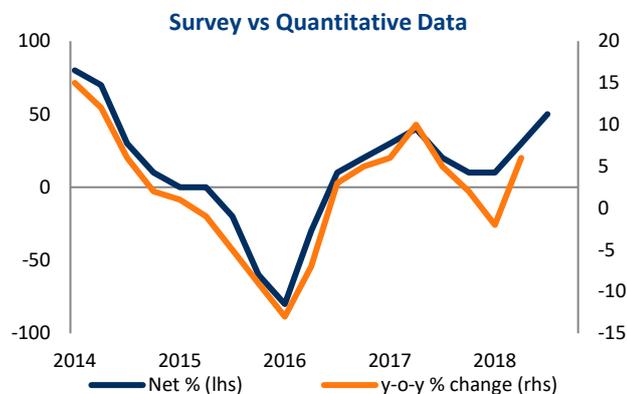
Percentage (%)

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

In the case of <u>business confidence</u>, 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 <u>constraints</u>, 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

Three-quarter centred moving average (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: σ_Δ)

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.