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Building

Quarterly analysis of building 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 five-point gain in 2024Q3, the **FNB/BER Building Confidence Index** remained unchanged in 2024Q4 at a level of 40.

While **architects** recorded lower sentiment in 2024Q4, **quantity surveyor** confidence recovered somewhat. In both instances sentiment is marginally below its long-term average.

Encouragingly **residential builders** registered a 10-point jump in confidence. Moreover, this was supported by an improvement in the underlying indicators measuring activity and overall profitability.

Meanwhile, confidence among **non-residential builders** slipped by 3 points to 54 in 2024Q4. Nonetheless, sentiment remains well above the long-term average.

Importantly, across the board the rating of insufficient demand for new work (a proxy for order books) remained concerningly high. This means that the outlook for activity is uncertain, despite the uptick in work this quarter.

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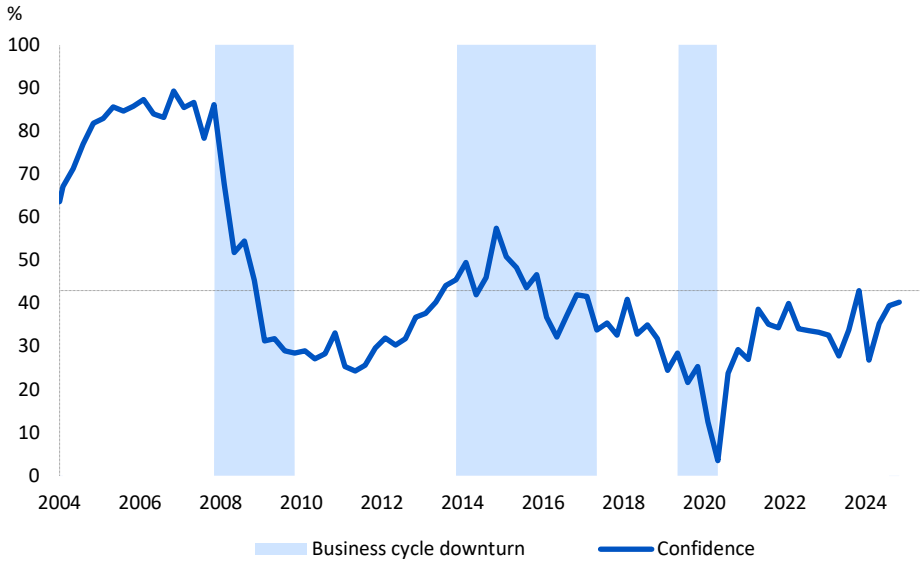
Introduction

The report outlines some of the key findings of the BER's 2024Q4 Building and Construction Survey, including the **FNB/BER Building Confidence Index** as well as related data.

Summary of the 2024Q4[1] building survey results

The **FNB/BER Building Confidence Index** remained unchanged at 40 in 2024Q4 following two consecutive quarters of improvement (Figure 1). Put differently, this means that the minority of firms (40%) are satisfied with prevailing business conditions.

Figure 1: FNB/BER Building Confidence Index



Source: BER

Confidence was lifted by gains among building main contractors (+10), quantity surveyors (+5), and manufacturers of building materials (+2). However, declines in sentiment among hardware retailers (-7), architects (-3), and subcontractors (-2) offset these positive contributions.

Overall, the picture in terms of activity was mixed. Main contractor activity improved in 2024Q4, with residential activity in particular faring better. However, activity growth deteriorated among sub-contractors, architects and quantity surveyors.

In the case of architects and quantity surveyors, activity was above the long-term average. This, along with architects' expectations for better business conditions and activity next quarter, is encouraging. Business conditions and activity are expected to improve next quarter, which should have a positive impact on the broader building value chain.

[1] The survey was conducted between 24 October 2024 and 11 November 2024.

ARCHITECT ACTIVITY DECLINED IN Q4 BUT REMAINS ABOVE ITS LONG-TERM AVERAGE

The average activity index among **architects** fell from a net balance of -4% to -13% in 2024Q4. This was driven by a broad-based decline across the various sub-indices (Table 1).

Table 1: Architect activity, net balances

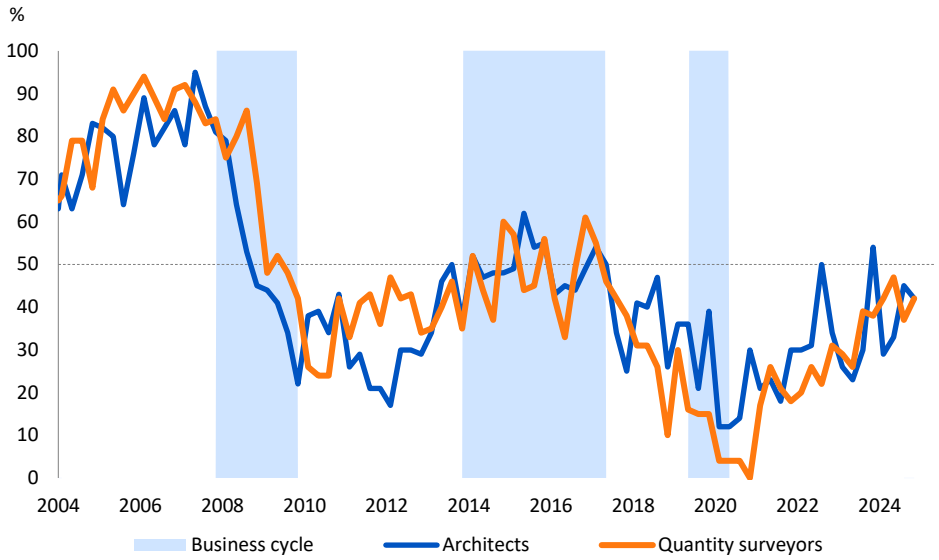
Net %	2024Q2	2024Q3	2024Q4	Long term average
Sketch plan projects	-15	-2	-12	-15
Working drawing commissions	-13	2	-9	-23
Commissioned projects	-40	-11	-18	-32

Source: BER

As a result, sentiment among architects dropped by 3 index points to 42 in 2024Q4 (Figure 2). However, despite the fall in both confidence and activity, all the activity sub-indices remain above their long-term averages. Moreover, the index measuring employment ticked up. Broadly, this suggests that the architectural sub-sector remains relatively stable.

Encouragingly, architects expect business conditions and activity to improve next quarter, which bodes well for a likely rebound in confidence should it materialise.

Figure 2: Architect and quantity surveyor confidence



Source: BER

Similar to architects, **quantity surveyor** activity also declined, although the drop was less pronounced. The average activity index[2] for quantity surveyors fell from a net balance of -11% to -13% in 2024Q4.

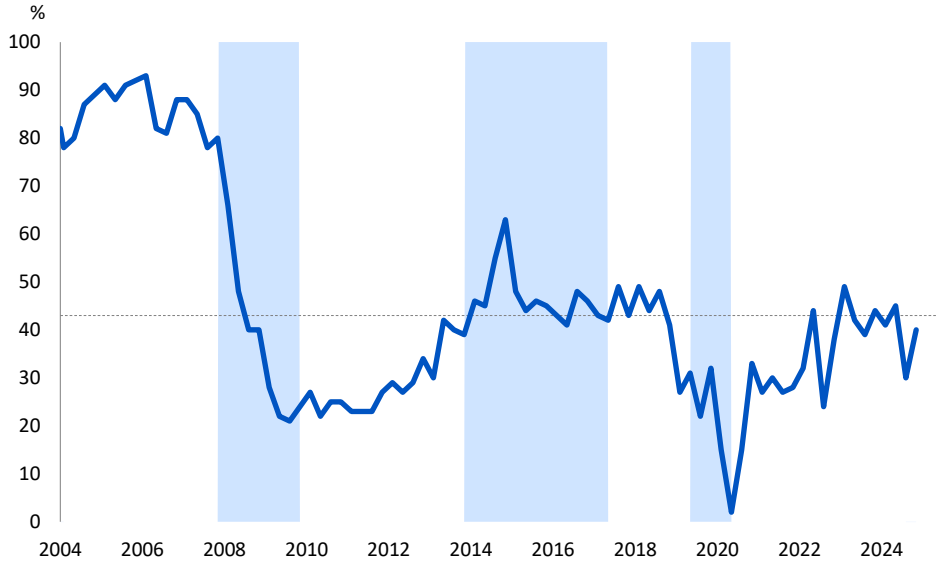
Despite this decline in activity, confidence among quantity surveyors increased from 37 to 42 in 2024Q4 (Figure 2). However, in contrast to architects, quantity surveyors expect business conditions and activity to worsen again next quarter.

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

RESIDENTIAL ACTIVITY SUPPORTS JUMP IN SENTIMENT

Encouragingly, confidence among **residential builders** jumped by 10 points to reach a level of 40 in 2024Q4 (Figure 3). Furthermore, business conditions realised came in better than expected.

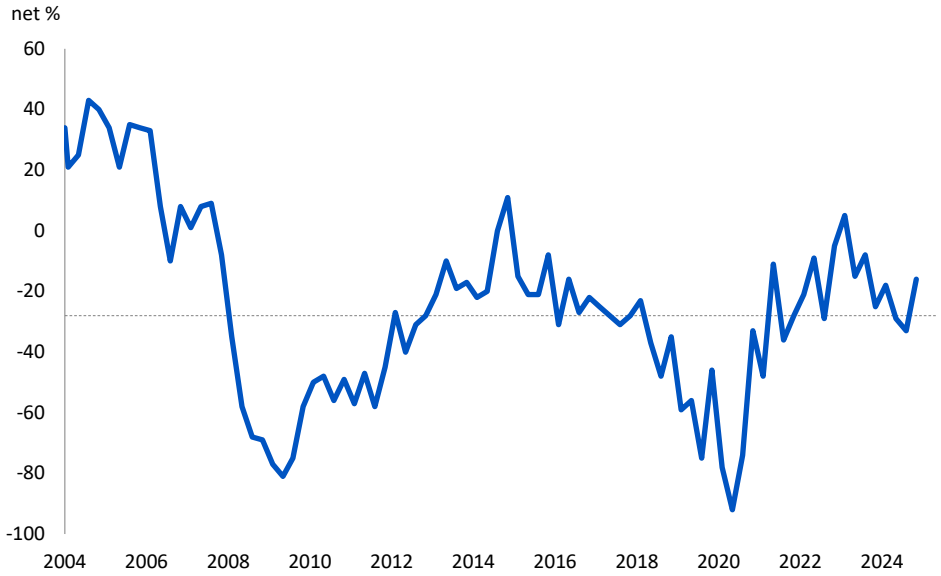
Figure 3: Residential builder confidence



Source: BER

In support, the headline activity indicator (as well as the other underlying indicators such as overall profitability and employment) provided impetus to the higher sentiment registered in the residential building sector in 2024Q4 (Figure 4). Whereas in 2024Q3 a net 33% of respondents reported lower activity relative to a year earlier, 16% stated as such in 2024Q4.

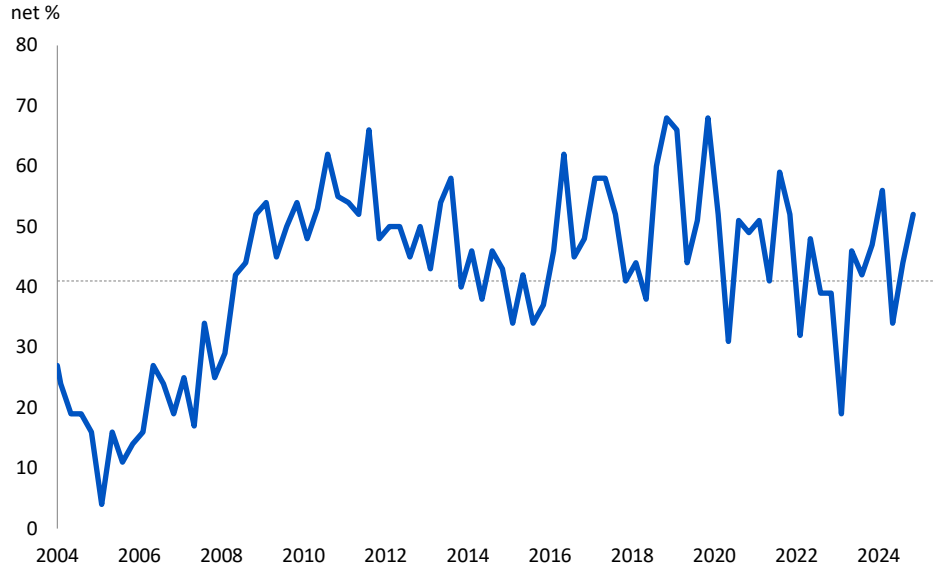
Figure 4: Residential builders, growth in building activity



Source: BER

After moving sideways over the previous year, a net 52% of respondents noted an intensification in tendering price competition in 2024Q4 compared to the 44% in 2024Q3 (Figure 5). This is at odds with the improvement in other indicators.

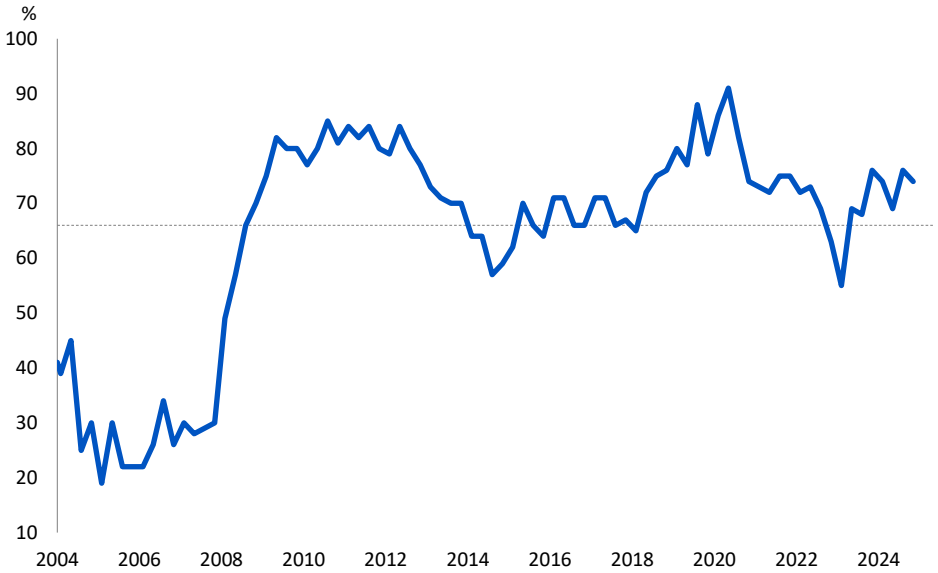
Figure 5: Residential builders, tendering price competition



Source: BER

Despite the rating of insufficient demand as a constraint on business activity slipping two percentage points (%pts) to 74% in 2024Q4, it remains well above its long-term average (Figure 6). Put differently, order books remain weak.

Figure 6: Residential builders, insufficient demand for new work as a business contraint



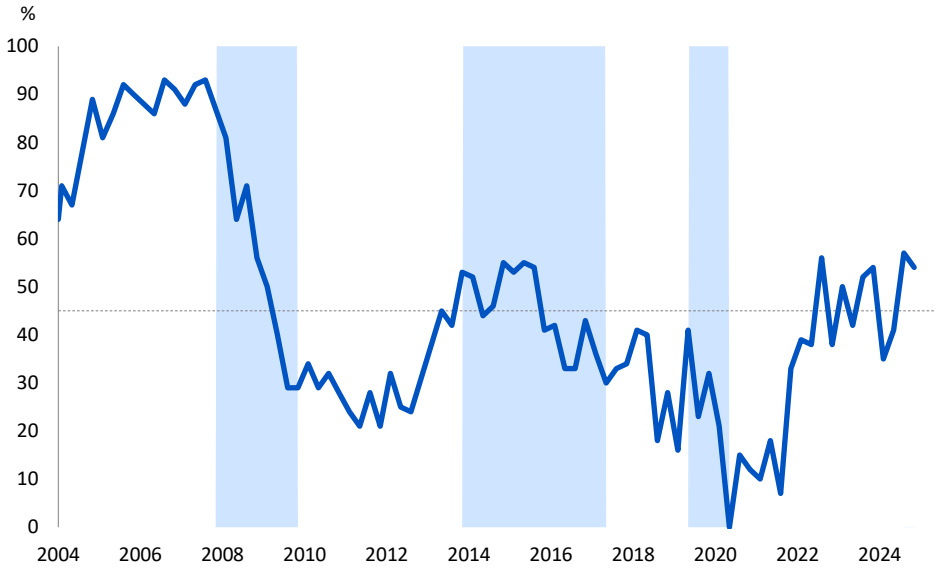
Source: BER

The other constraints broadly moved sideways, with the exception of firms' inadequate access to credit which rose by 10%pts to reach 40% in 2024Q4.

NON-RESIDENITAL BUILDING SECTOR STILL FARING WELL

Confidence in the **non-residential** building sector receded from 57 in 2024Q3 to 54 in 2024Q4 (Figure 7). Realised business conditions, however, deteriorated more noticeably. A net 11% of respondents indicated that business conditions were better in 2024Q4 than a year ago, down from 30% in 2024Q3.

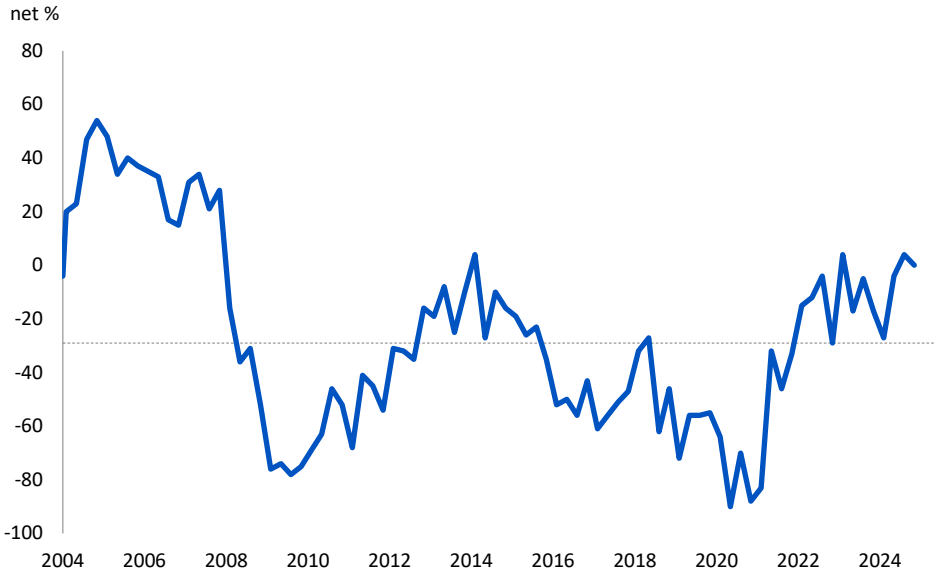
Figure 7: Non-residential builder confidence



Source: BER

The activity index for non-residential builders was flat this quarter. This means that respondents reported neither an increase nor a decrease in the growth in business activity in 2024Q4 compared to a net 4% who noted higher activity in 2024Q3 (Figure 8). Nonetheless, it remains well above the long-term average.

Figure 8: Non-residential builders, growth in building acivity

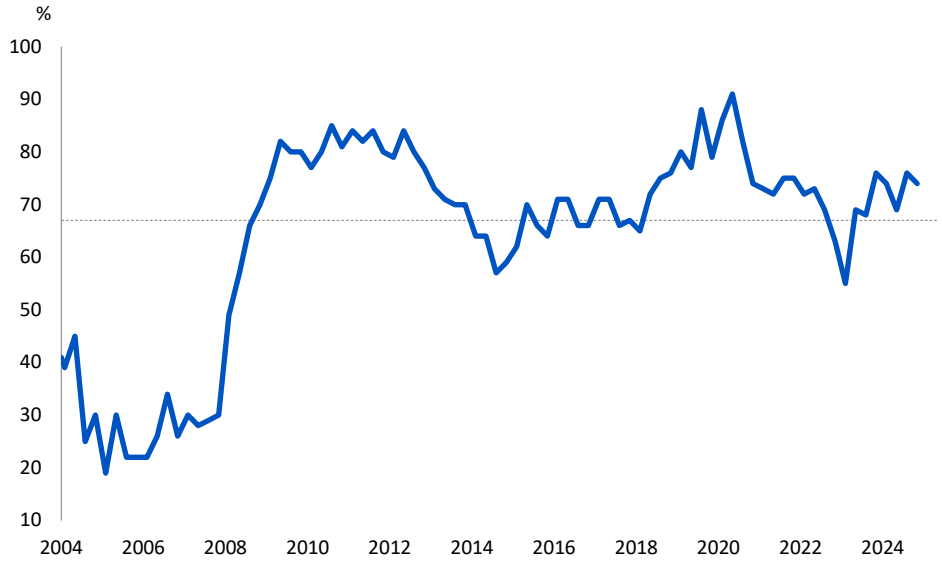


Source: BER

Tendering price competition moved sideways from a net 57% in 2024Q3 to 56% in 2024Q4. Meanwhile, the rating of insufficient demand as a business constraint was substantially weaker,

following a 10% jump to 73 in 2024Q4 (Figure 9). This has now returned to above the long-term average.

Figure 9: Non-residential builders, insufficient demand for new work



Source: BER

Conclusion

The **FNB/BER Building Confidence Index** remained unchanged from 2024Q3 at a level of 40 in 2024Q4.

Building activity improved in 2024Q4, remaining well above its long-term average. The residential building sector saw a significant increase in work (or rather, a moderation in the decline), which in turn boosted overall profitability and employment. In contrast, the index measuring activity growth for non-residential builders deteriorated, although it remains above its long-term average.

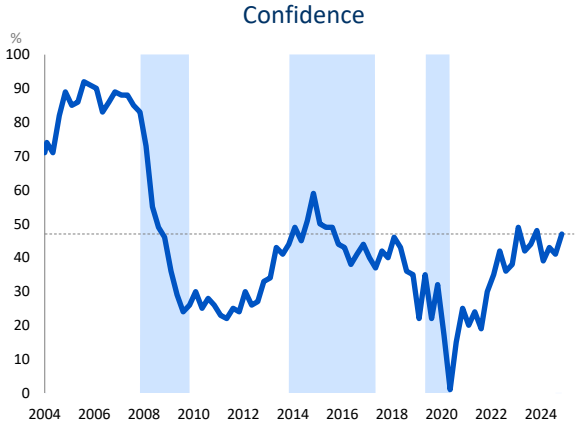
The confidence of architects and activity moved lower in 2024Q4. Overall, however, the sub-sector is still faring well. Encouragingly, architects expect business conditions and activity to improve in 2025Q1, which bodes well for the broader building sector moving forward.

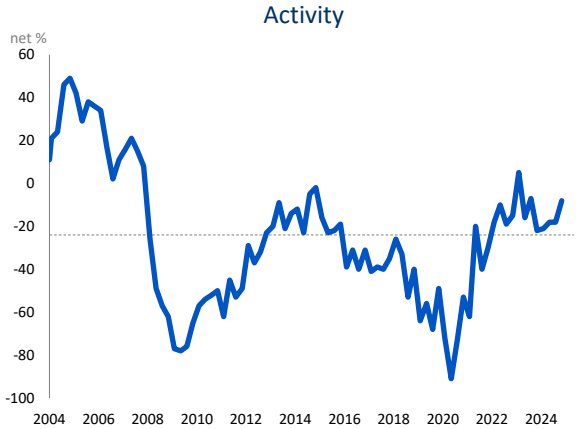
.

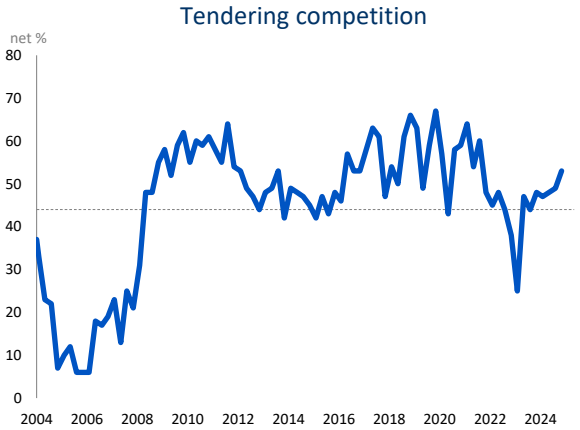
Survey results

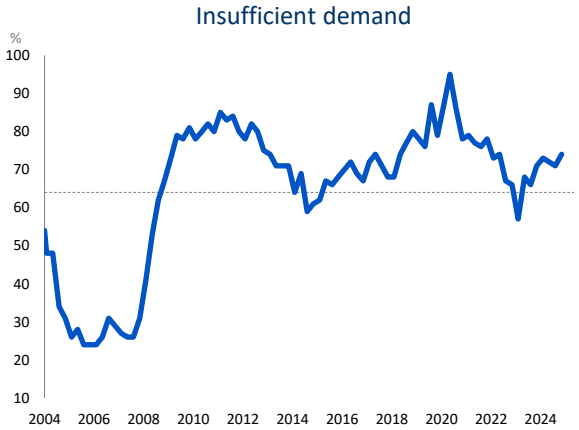
BUILDING: TOTAL[3]

Indicator	Unit	μ-σ	μ	μ+σ	23Q1	23Q2	23Q3	23Q4	24Q1	24Q2	24Q3	24Q4	Δ	σ_{Δ}
Confidence	%	23	44	65	49	42	44	48	39	43	41	**47**	6	7
Activity	Net %	-58	-28	2	5	-16	-7	-22	-21	-18	-18	**-8**	10	13
Tendering competition	Net %	31	46	62	25	47	44	48	47	48	49	**53**	4	7
Insufficient demand	%	48	66	85	57	68	66	71	73	72	71	**74**	3	5





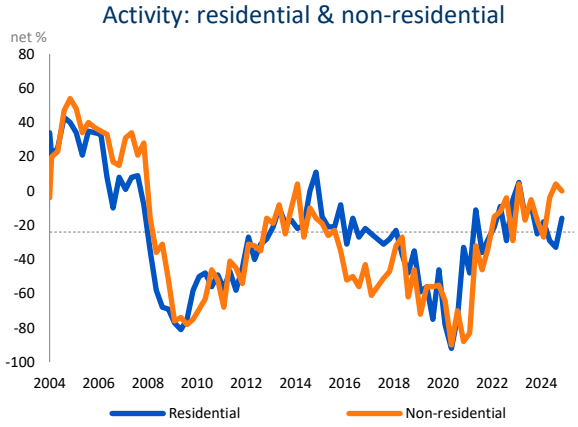


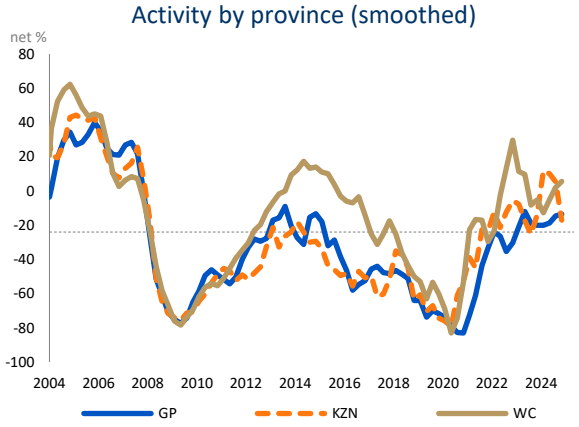


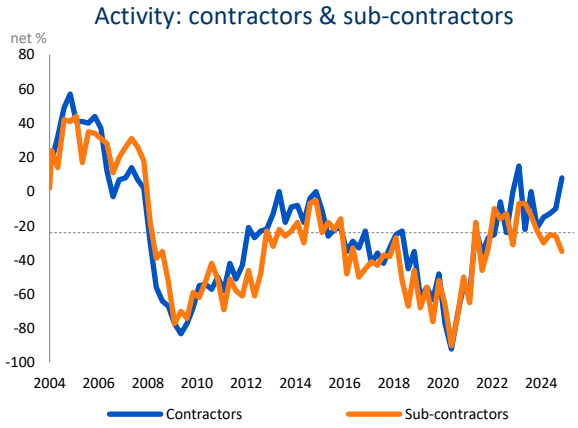
[3] Combined residential and non-residential building activity of contractors and sub-contractors.

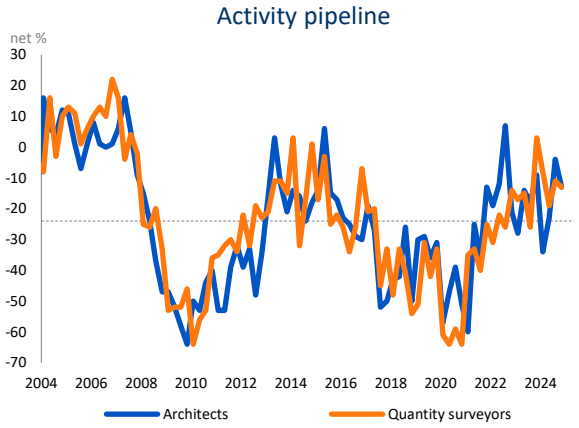
μ - average
σ – standard deviation
Δ – change from previous period
σ_{Δ} – volatility (standard deviation of the changes)
All above calculated over the last 20 years
See technical note for further details

BUILDING: TOTAL





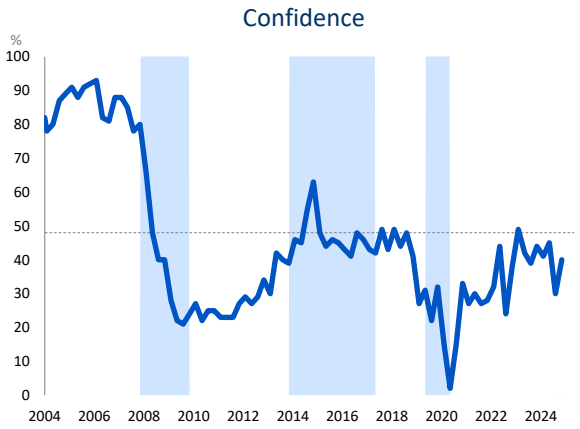


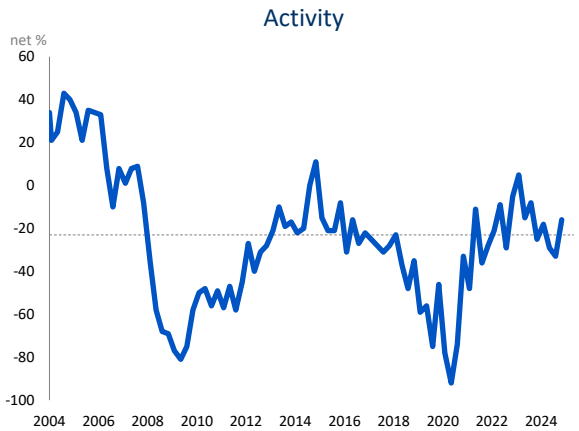


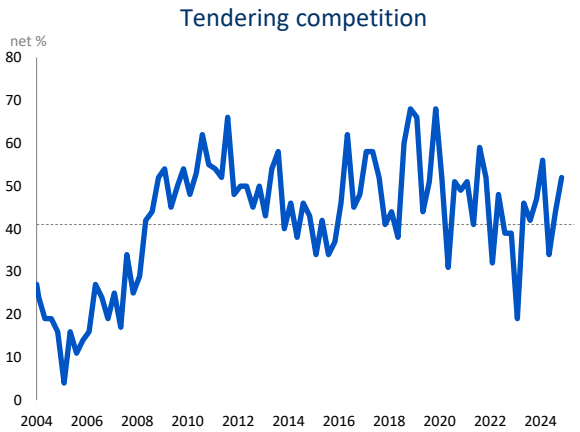
μ - average
σ – standard deviation
Δ – change from previous period
σ_Δ – volatility (standard deviation of the changes)
All above calculated over the last 20 years
See technical note for further details

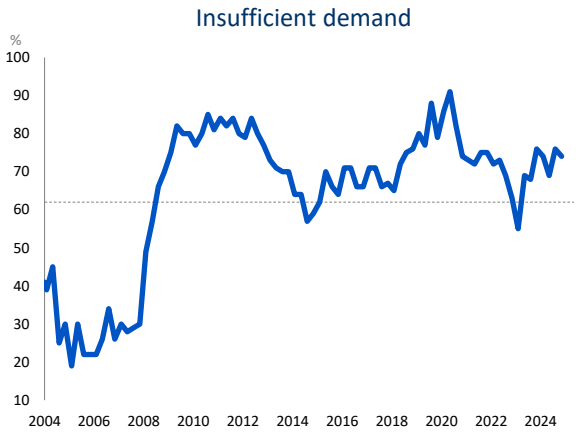
BUILDING: RESIDENTIAL[4]

Indicator	Unit	μ-σ	μ	μ+σ	23Q1	23Q2	23Q3	23Q4	24Q1	24Q2	24Q3	24Q4	Δ	σ_{Δ}
Confidence	%	22	43	65	49	42	39	44	41	45	30	**40**	10	8
Activity	Net %	-56	-28	0	5	-15	-8	-25	-18	-29	-33	**-16**	17	15
Seasonally adjusted	Net %	-56	-28	0	5	-19	-1	-28	-18	-33	-26	**-19**	7	13
Tendering competition	Net %	30	44	57	19	46	42	47	56	34	44	**52**	8	11
Insufficient demand	%	47	66	84	55	69	68	76	74	69	76	**74**	-2	6







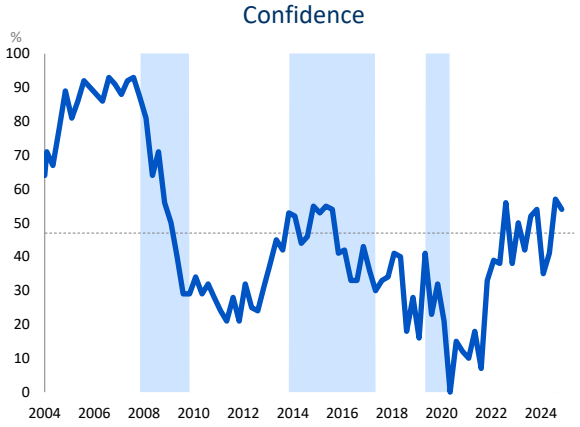


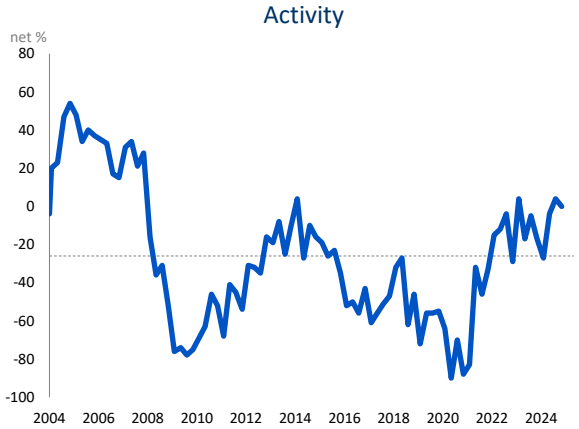
[4] The residential sector covers the construction of and additions to houses, town houses and flats for which building plans were submitted to a local authority. Other sporadic residential structures, such as tourist accommodation and casinos, and informal structures are not covered. The section on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

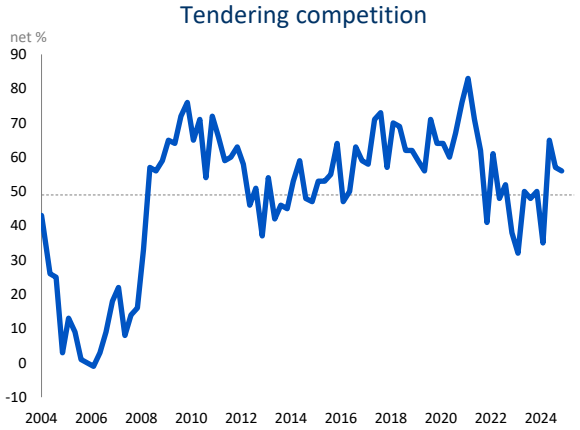
μ - average
σ – standard deviation
Δ – change from previous period
σ_{Δ} – volatility (standard deviation of the changes)
All above calculated over the last 20 years
See technical note for further details

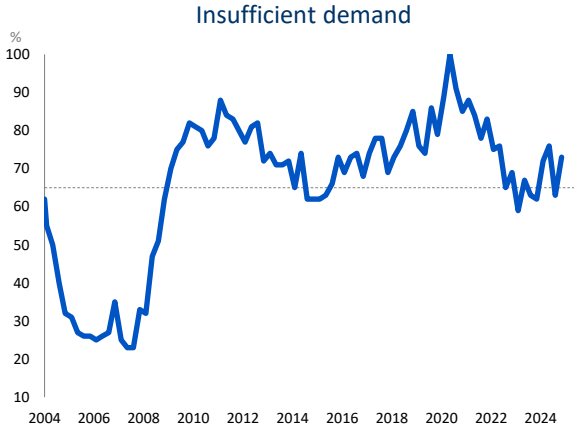
BUILDING: NON-RESIDENTIAL[5]

Indicator	Unit	μ-σ	μ	μ+σ	23Q1	23Q2	23Q3	23Q4	24Q1	24Q2	24Q3	24Q4	Δ	σ_{Δ}
Confidence	%	22	45	68	50	42	52	54	35	41	57	**54**	-3	10
Activity	Net %	-63	-29	6	4	-17	-5	-17	-27	-4	4	**0**	-4	16
Tendering competition	Net %	30	50	70	32	50	48	50	35	65	57	**56**	-1	10
Insufficient demand	%	47	67	86	59	67	63	62	72	76	63	**73**	10	6







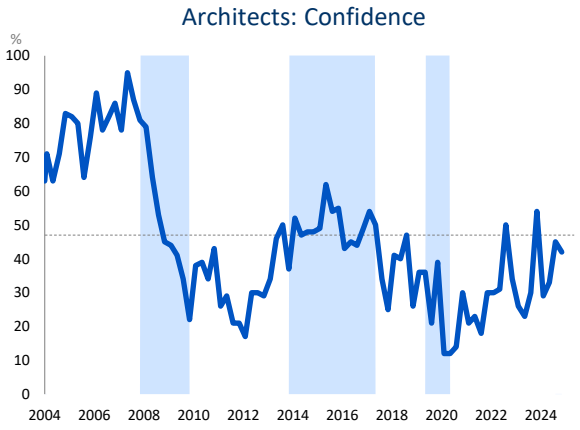


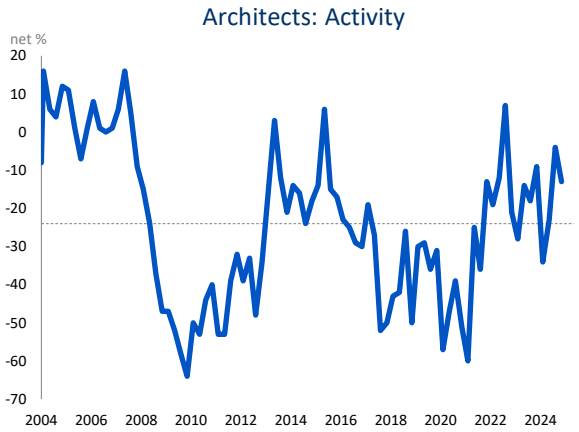
[5] The non-residential sector covers offices, banks, shops (retail), industrial (factories), warehouses and other structures (such as churches, sport clubs, schools and hospitals).

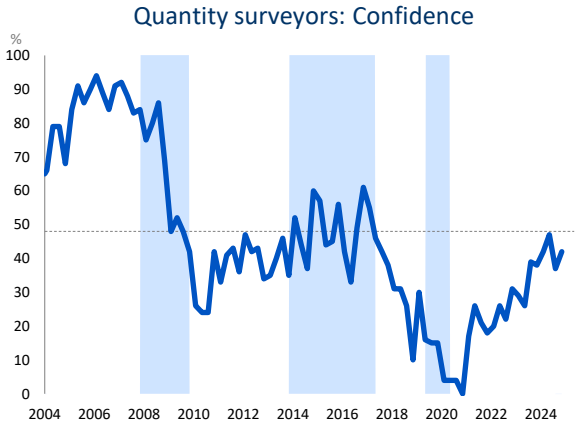
μ - average
σ – standard deviation
Δ – change from previous period
σ_{Δ} – volatility (standard deviation of the changes)
All above calculated over the last 20 years
See technical note for further details

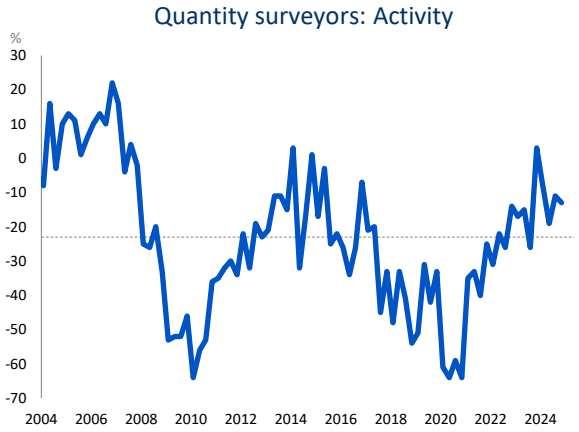
ARCHITECTS AND QUANTITY SURVEYORS[6]

Indicator	Unit	μ-σ	μ	μ+σ	23Q1	23Q2	23Q3	23Q4	24Q1	24Q2	24Q3	24Q4	Δ	σ_{Δ}
Architects														
Confidence	%	24	44	64	26	23	30	54	29	33	45	**42**	-3	11
Activity	Net %	-45	-26	-6	-28	-14	-18	-9	-34	-23	-4	**-13**	-9	13
Quantity surveyors														
Confidence	%	20	45	69	29	26	39	38	42	47	37	**42**	5	9
Activity	Net %	-45	-24	-3	-17	-15	-26	3	-8	-19	-11	**-13**	-2	13







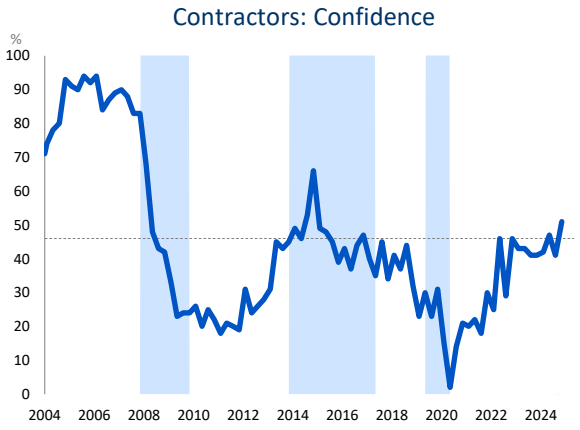


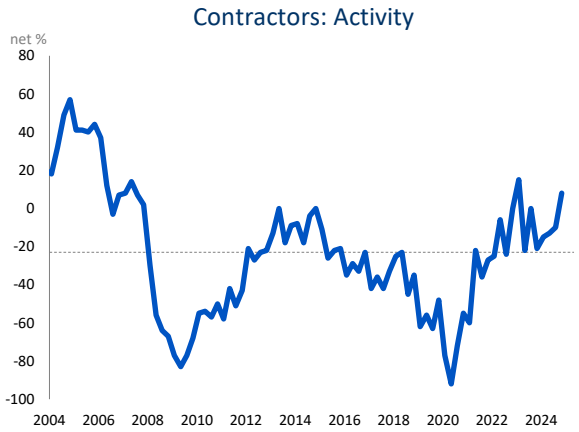
[6] According to the Standard Industrial Classification of all Economic Activities (SIC), architects and quantity surveyors are not part of the building and construction sector; they are classified as "business services". However, the BER includes them here, as they provide additional information on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

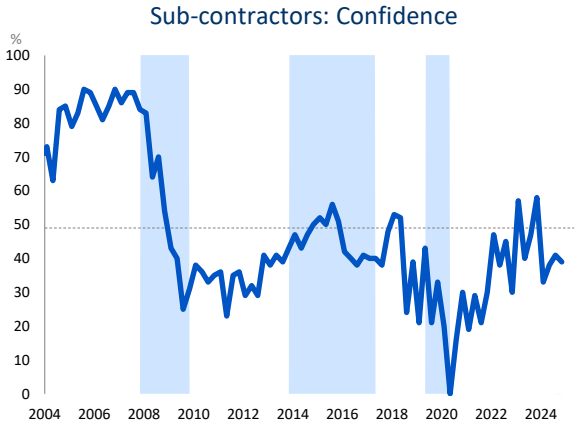
μ - average
σ – standard deviation
Δ – change from previous period
σ_{Δ} – volatility (standard deviation of the changes)
All above calculated over the last 20 years
See technical note for further details

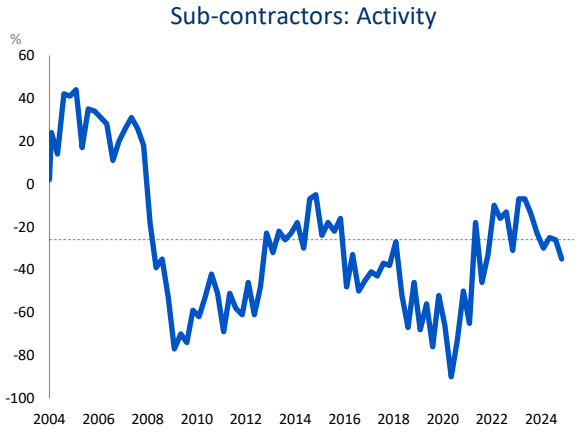
BUILDING: CONTRACTORS AND SUB-CONTRACTORS[7]

Indicator	Unit	μ-σ	μ	μ+σ	23Q1	23Q2	23Q3	23Q4	24Q1	24Q2	24Q3	24Q4	Δ	σ_{Δ}
Contractors														
Confidence	%	20	43	66	43	43	41	41	42	47	41	**51**	10	8
Activity	Net %	-57	-26	4	15	-22	0	-21	-15	-13	-10	**8**	18	14
Sub-contractors														
Confidence	%	25	46	67	57	40	47	58	33	38	41	**39**	-2	10
Activity	Net %	-61	-30	1	-7	-7	-14	-23	-30	-25	-26	**-35**	-9	16









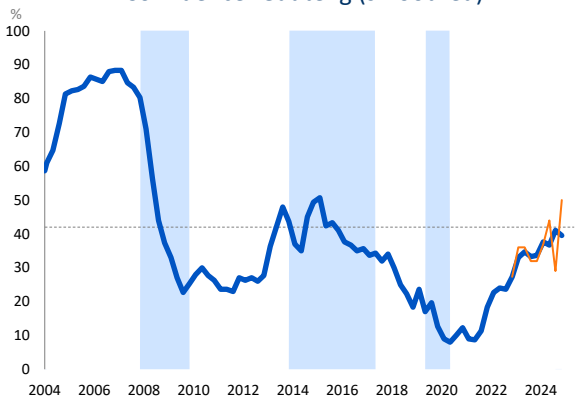
[7] Sub-contractors cover the building trades, such as electricians, plumbers, painters and shop fitters.

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

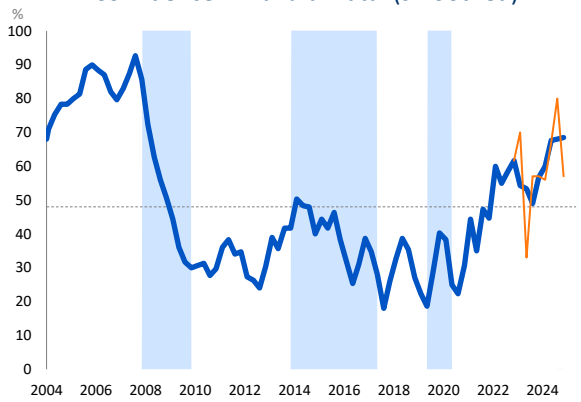
BUILDING: PROVINCES

Indicator	Unit	μ-σ	μ	μ+σ	23Q1	23Q2	23Q3	23Q4	24Q1	24Q2	24Q3	24Q4	Δ	σ Δ
Gauteng														
Confidence	%	15	39	62	36	36	32	32	37	44	29	**50**	21	10
Smoothed	%	16	39	61	33	35	33	34	38	37	41	**40**	-1	4
Activity	Net %	-66	-33	0	-5	-14	-17	-26	-17	-17	-22	**-5**	17	17
Smoothed	Net %	-65	-33	-1	-21	-12	-19	-20	-20	-19	-15	**-14**	1	8
KwaZulu-Natal														
Confidence	%	24	47	70	70	33	57	57	56	67	80	**57**	-23	18
Smoothed	%	27	47	67	54	53	49	57	60	68	68	**69**	1	6
Activity	Net %	-67	-32	3	10	-33	-29	-14	0	50	-20	**-14**	6	24
Smoothed	Net %	-64	-32	0	-8	-17	-25	-14	12	10	5	**-17**	-22	10
Western Cape														
Confidence	%	23	48	72	53	42	48	61	32	44	56	**56**	0	9
Smoothed	%	24	48	72	46	48	50	47	46	44	52	**56**	4	5
Activity	Net %	-54	-18	17	37	-25	17	-17	-16	-5	6	**5**	-1	19
Smoothed	Net %	-52	-18	15	11	10	-8	-5	-13	-5	2	**6**	4	10

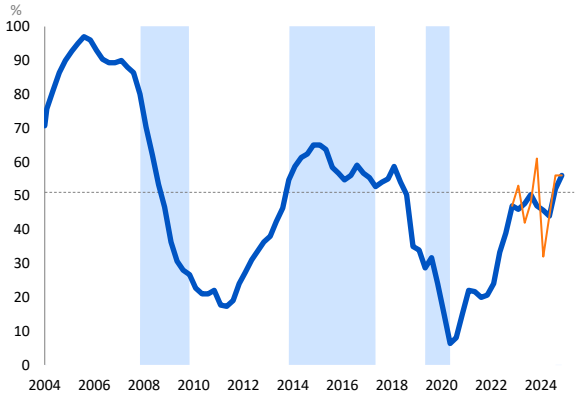
Confidence: Gauteng (smoothed)



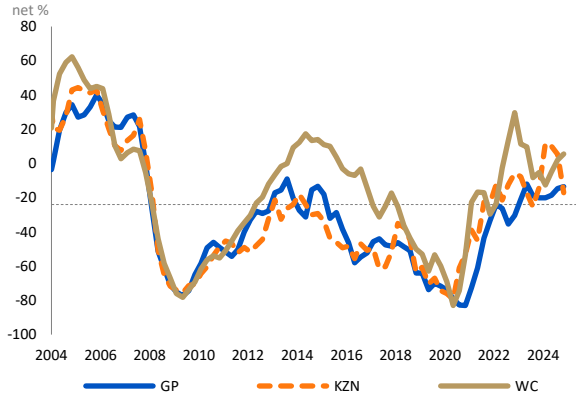
Confidence: KwaZulu-Natal (smoothed)



Confidence: Western Cape (smoothed)



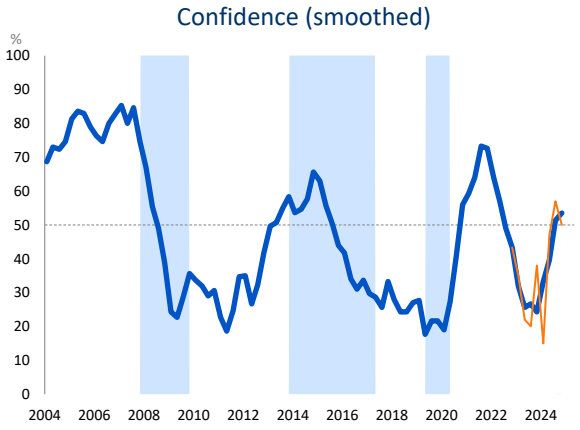
Activity by province (smoothed)

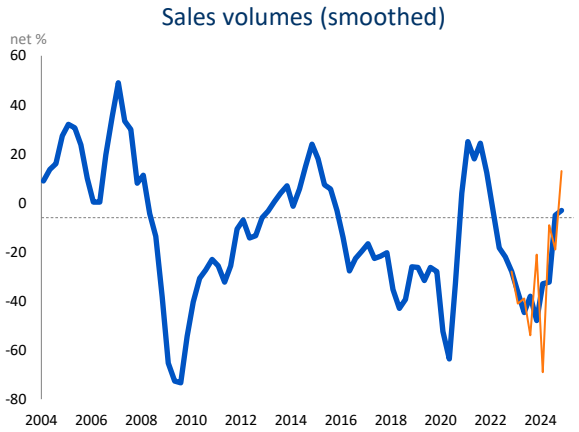


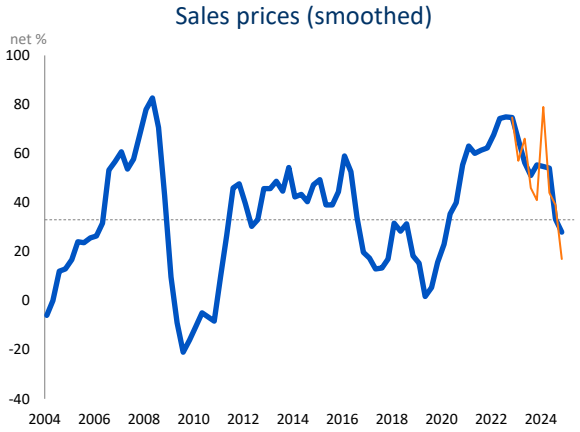
μ - average
σ – standard deviation
Δ – change from previous period
σΔ – volatility (standard deviation of the changes)
All above calculated over the last 20 years
See technical note for further details

BUILDING MATERIALS RETAIL TRADE[8]

Indicator	Unit	μ-σ	μ	μ+σ	23Q1	23Q2	23Q3	23Q4	24Q1	24Q2	24Q3	24Q4	Δ	σ Δ
Confidence	%	23	46	68	35	22	20	38	15	47	57	**50**	-7	16
Smoothed	%	26	46	66	32	26	27	24	33	40	51	**54**	3	6
Sales volumes	Net %	-44	-13	19	-41	-39	-54	-21	-69	-9	-19	**13**	32	27
Smoothed	Net %	-39	-13	14	-36	-45	-38	-48	-33	-32	-5	**-3**	2	12
Sales prices	Net %	10	37	65	57	66	46	41	79	44	39	**17**	-22	22
Smoothed	Net %	13	37	61	66	56	51	55	55	54	33	**28**	-5	10





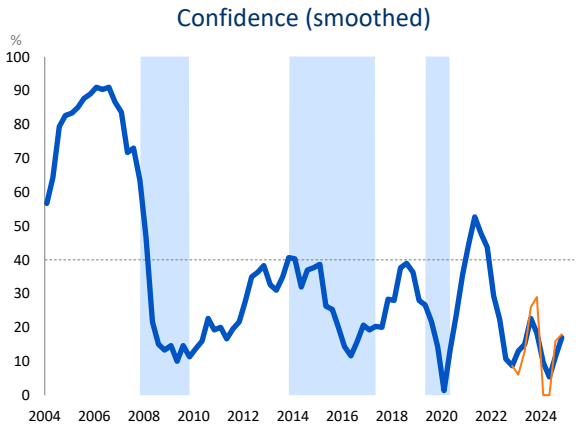


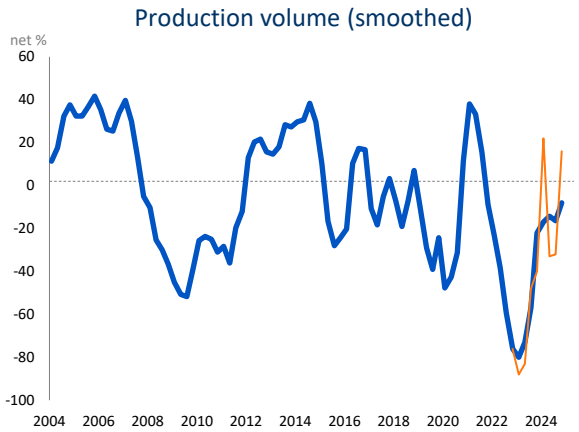
[8] Hardware, paint, glass and other building material retailers. Developments in the building material retail trade provides additional information on activity related to additions and the informal sector.

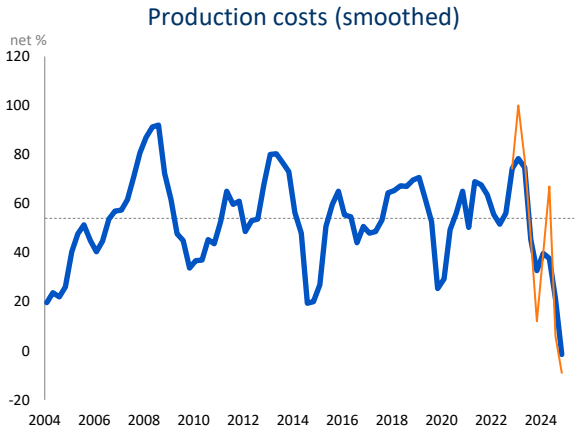
μ - average
σ – standard deviation
Δ – change from previous period
σΔ – volatility (standard deviation of the changes)
All above calculated over the last 20 years
See technical note for further details

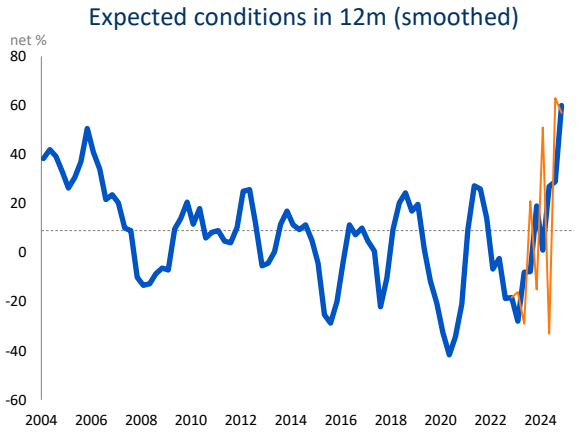
BUILDING MATERIALS MANUFACTURING[9]

Indicator	Unit	μ-σ	μ	μ+σ	23Q1	23Q2	23Q3	23Q4	24Q1	24Q2	24Q3	24Q4	Δ	σ Δ
Confidence	%	7	33	59	6	13	26	29	0	0	16	**18**	2	17
Smoothed	%	9	33	57	13	15	23	18	10	5	11	**17**	6	7
Production volume	Net %	-44	-7	29	-88	-83	-48	-40	22	-33	-32	**16**	48	32
Smoothed	Net %	-38	-7	24	-80	-73	-57	-22	-17	-14	-16	**-8**	8	14
Production costs	Net %	30	55	79	100	78	46	12	40	67	6	**-9**	-15	29
Smoothed	Net %	38	55	72	78	75	45	33	40	38	21	**-2**	-23	11
Expected conditions in 12m	Net %	-21	6	33	-16	-29	21	-15	51	-33	63	**57**	-6	32
Smoothed	Net %	-14	6	25	-28	-8	-8	19	1	27	29	**60**	31	12





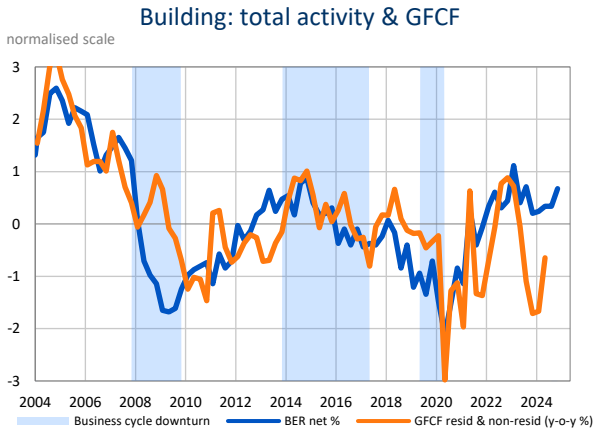


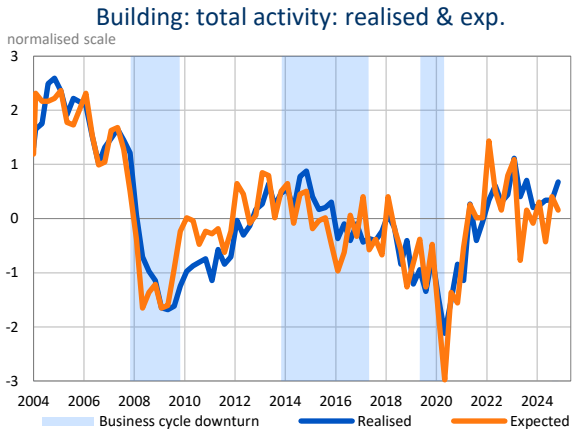


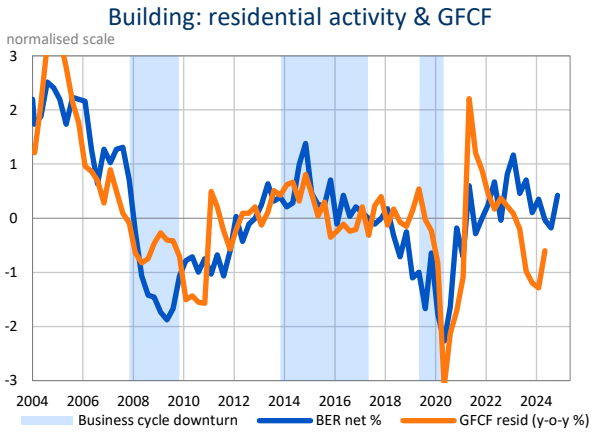
[9] Covering glass and non-metallic mineral (i.e. bricks, tiles, cement, prefab concrete, asphalt and mica products) manufacturing.

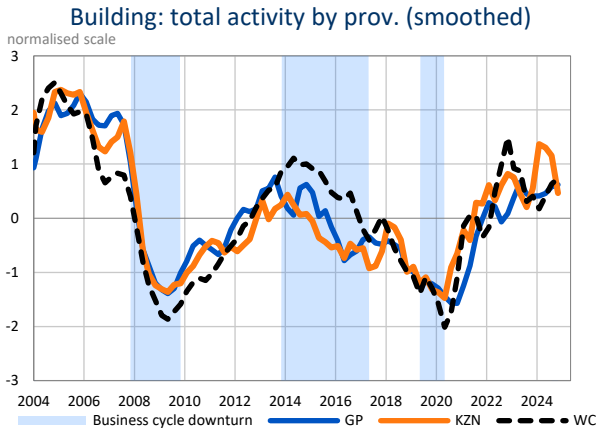
μ - average
σ – standard deviation
Δ – change from previous period
σΔ – volatility (standard deviation of the changes)
All above calculated over the last 20 years
See technical note for further details

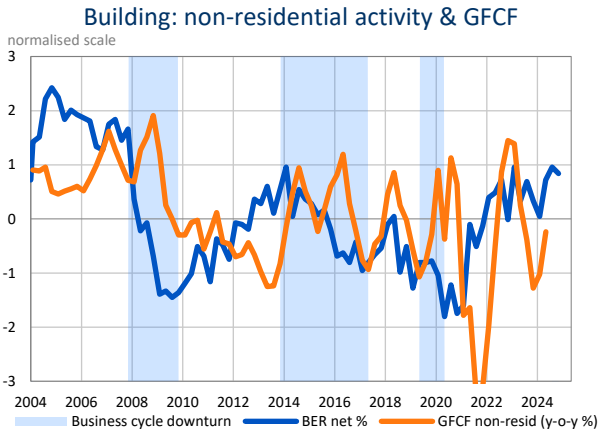
SUMMARY

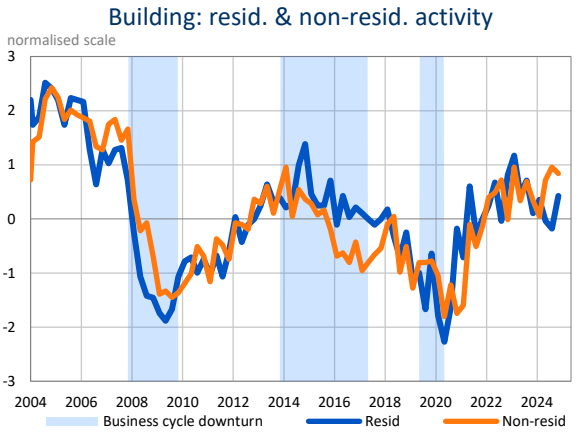

Building: total activity & GFCF
normalised scale
3
2
1
0
-1
-2
-3
2004 2006 2008 2010 2012 2014 2016 2018 2020 2022 2024
Business cycle downturn
BER net %
GFCF resid & non-resid (y-o-y %)

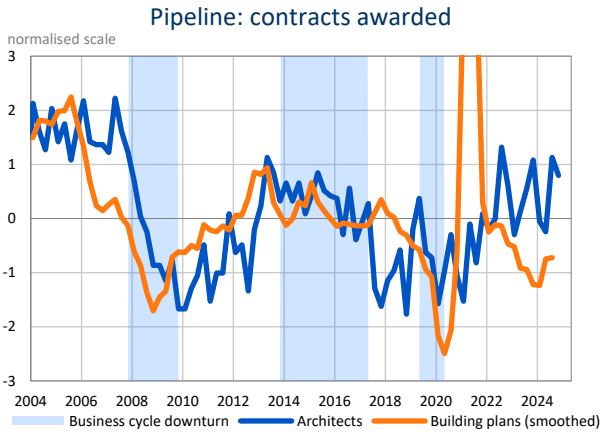

Building: total activity: realised & exp.
normalised scale
3
2
1
0
-1
-2
-3
2004 2006 2008 2010 2012 2014 2016 2018 2020 2022 2024
Business cycle downturn
Realised
Expected


Building: residential activity & GFCF
normalised scale
3
2
1
0
-1
-2
-3
2004 2006 2008 2010 2012 2014 2016 2018 2020 2022 2024
Business cycle downturn
BER net %
GFCF resid (y-o-y %)


Building: total activity by prov. (smoothed)
normalised scale
3
2
1
0
-1
-2
-3
2004 2006 2008 2010 2012 2014 2016 2018 2020 2022 2024
Business cycle downturn
GP
KZN
WC


Building: non-residential activity & GFCF
normalised scale
3
2
1
0
-1
-2
-3
2004 2006 2008 2010 2012 2014 2016 2018 2020 2022 2024
Business cycle downturn
BER net %
GFCF non-resid (y-o-y %)


Building: resid. & non-resid. activity
normalised scale
3
2
1
0
-1
-2
-3
2004 2006 2008 2010 2012 2014 2016 2018 2020 2022 2024
Business cycle downturn
Resid
Non-resid


Pipeline: contracts awarded
normalised scale
3
2
1
0
-1
-2
-3
2004 2006 2008 2010 2012 2014 2016 2018 2020 2022 2024
Business cycle downturn
Architects
Building plans (smoothed)

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						**24Q3**				
Dwelling-houses < 80 square metres	57.7	16.8	5.4	0.3	5.6	1.4	0.9	25.6	1.2	0.4
Dwelling-houses >= 80 square metres	843.3	282.3	46.1	8.0	26.3	74.7	43.5	229.0	95.2	38.2
Flats and townhouses	358.3	160.4	12.8	0.2	3.1	76.5	2.8	92.0	6.5	3.9
Other residential buildings	72.1	12.1	0.0	0.4	0.0	28.9	27.2	0.8	2.6	0.0
Office and banking space	40.4	3.5	5.5	0.0	1.3	0.7	0.0	17.6	2.5	9.3
Shopping space	310.6	76.2	3.3	0.9	3.9	40.8	49.9	114.8	18.8	2.0
Industrial and warehouse space	358.9	59.9	22.0	20.3	1.7	24.9	16.3	149.4	55.5	8.9
Other non-residential buildings	96.8	36.0	5.0	0.0	0.6	25.3	1.8	24.9	2.6	0.6
Additions and alterations: Dwelling-houses	554.6	193.2	47.8	6.2	16.6	65.5	18.8	154.9	43.7	8.0
Additions and alterations: Other buildings	176.8	48.9	26.9	2.5	7.2	22.1	2.6	50.4	12.6	3.7
Total	**2870**	**889**	**175**	**39**	**66**	**361**	**164**	**859**	**241**	**75**
y-o-y % change	**-19.6**	**-30.6**	**-34.8**	**38.2**	**-27.3**	**-19.8**	**45.3**	**-14.3**	**-2.9**	**-11.4**
Buildings reported as completed						**24Q3**				
Dwelling-houses < 80 square metres	60.2	15.3	2.0	0.0	0.1	1.7	2.2	38.0	0.2	0.7
Dwelling-houses >= 80 square metres	552.4	193.9	38.4	2.2	3.6	56.4	28.7	191.8	18.8	18.6
Flats and townhouses	193.5	101.9	2.4	0.0	0.0	26.3	7.3	53.6	2.1	0.0
Other residential buildings	7.2	4.8	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.0
Office and banking space	32.3	2.1	1.6	1.1	0.0	1.7	2.2	14.0	0.0	9.6
Shopping space	93.3	11.1	0.9	0.0	0.9	33.1	1.8	45.6	0.0	0.0
Industrial and warehouse space	231.1	20.8	1.1	3.0	0.0	36.3	7.0	157.4	4.6	1.1
Other non-residential buildings	31.4	25.1	2.5	0.2	0.0	2.9	0.3	0.3	0.0	0.0
Additions and alterations: Dwelling-houses	168.5	52.0	19.1	3.7	2.3	21.6	19.2	38.2	9.9	2.6
Additions and alterations: Other buildings	52.0	21.1	6.0	1.9	0.0	4.7	2.5	14.4	1.4	0.0
Total	**1422**	**448**	**74**	**12**	**7**	**185**	**71**	**556**	**37**	**32**
y-o-y % change	**-16.1**	**-30.0**	**-37.4**	**7.4**	**-63.7**	**16.1**	**42.6**	**-4.8**	**-13.0**	**-54.0**

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.

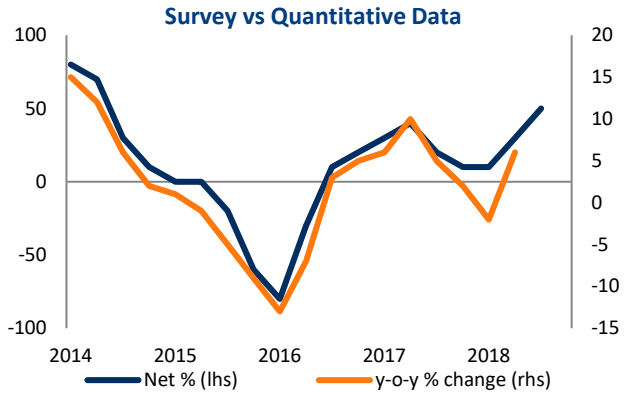
THE UNIQUE UNITS OF MEASUREMENT OF QUALITATIVE SURVEYS

Net percentage (net %)

The responses related to the change in activity, 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 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).



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

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.