

Construction

Quarterly analysis of construction activity

Fourth quarter 2020

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Contents

- Introduction 1
- Summary of the 2020Q4 construction survey results 1
 - Confidence of civil contractors stuck below 20 1
- In conclusion 3
- Survey results 4
 - Civil construction 4
- Technical note 5

Introduction

This report outlines some of the key findings of the BER’s 2020Q4 Construction Survey, including the **FNB/BER Civil Confidence Index**, as well as related data.

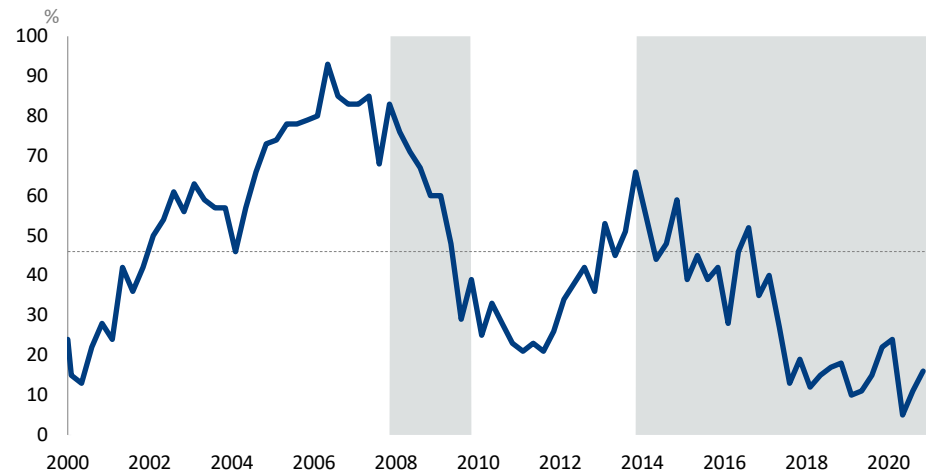
Summary of the 2020Q4¹ construction survey results

Confidence of civil contractors stuck below 20

The **FNB/BER Civil Confidence Index** gained five points in 2020Q4 to register a level of 16. Despite the uptick in confidence, the current level is still very weak and below the pre-pandemic level (Figure 1).

The rating of business conditions also improved marginally. A net 57% of respondents indicated that business conditions had deteriorated compared to a year ago in 2020Q3, 51% stated as such in 2020Q4.

Figure 1: FNB/BER Civil Confidence Index



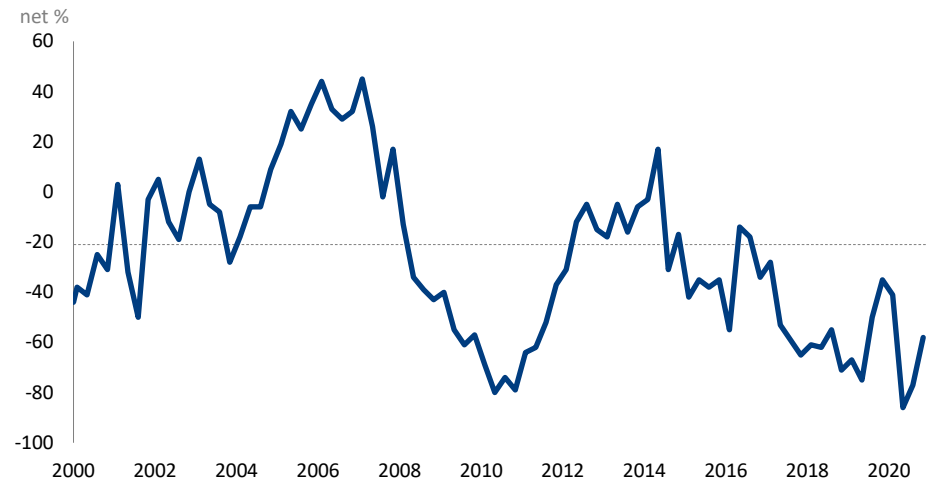
Source: BER

The measure of activity growth still below pre-pandemic level

The rise in confidence was underpinned by better construction activity. A net 58% reported lower activity relative to a year ago in 2020Q4, from 77% that reported as such in 2020Q3 (Figure 2). Although better than in 2020Q2 and 2020Q3, the level of the activity index remains below that registered in 2019H2 and 2020Q1.

¹ The survey was conducted between 5 October and 16 November 2020.

Figure 2: Civil contractors, growth in activity



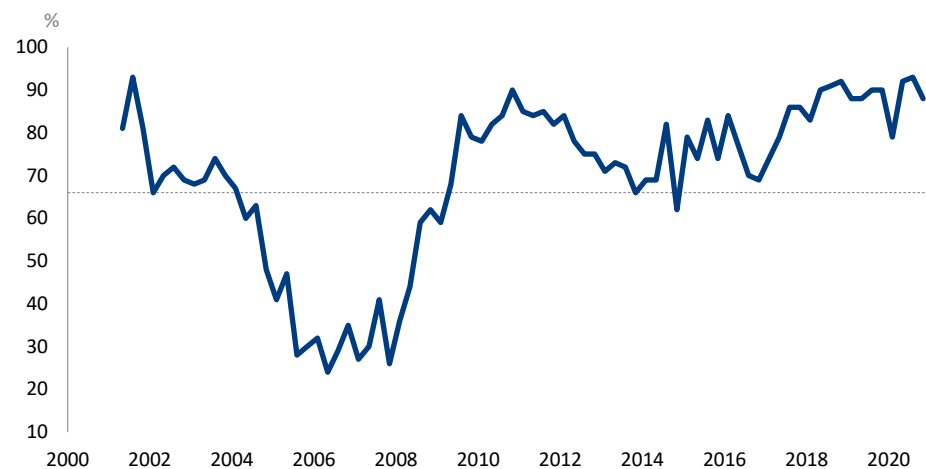
Source: BER

Likewise, other indicators also point to better business conditions. The index measuring tendering price competition decreased. In 2020Q4, a net 67% of respondents reported that tendering competition intensified compared to a year earlier, down from 76% in 2020Q3. The increase in construction activity and the decline in tendering price competition resulted in better profitability. A net 58% of civil contractors reported that profitability was lower relative to a year ago in 2020Q4, down from 94% in 2020Q3.

88% of respondents remain concerned about the lack of new demand

The survey produced mixed views on the outlook for the sector. Positively, a net of only 33% of respondents expect activity growth to be lower in 2021Q1 compared to a year earlier. However, the picture is less rosy from the perspective of order books. In 2020Q3, 93% indicated that the insufficient demand for new construction work constrained normal business operations, a still very high 88% stated as such in 2020Q4 (Figure 3).

Figure 3: Civil contractors, lack of new demand as a business constraint



Source: BER

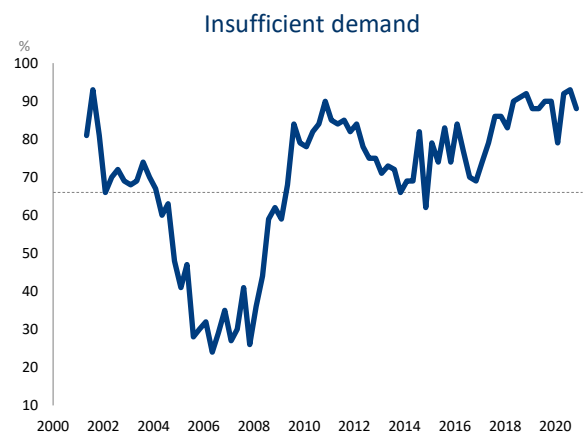
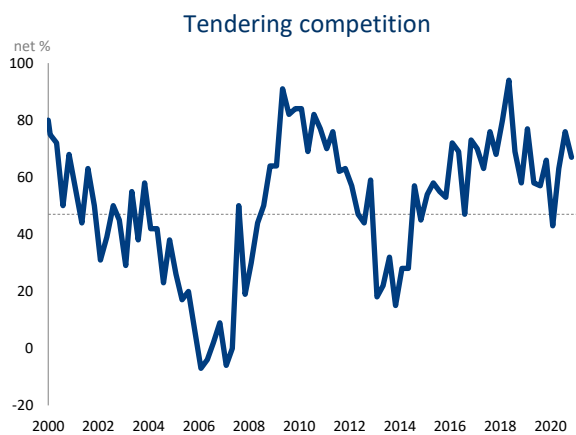
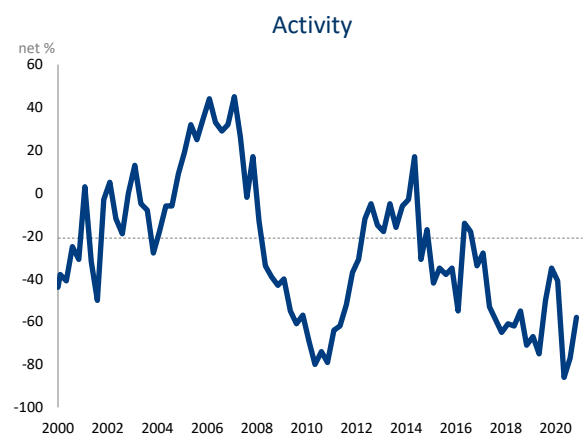
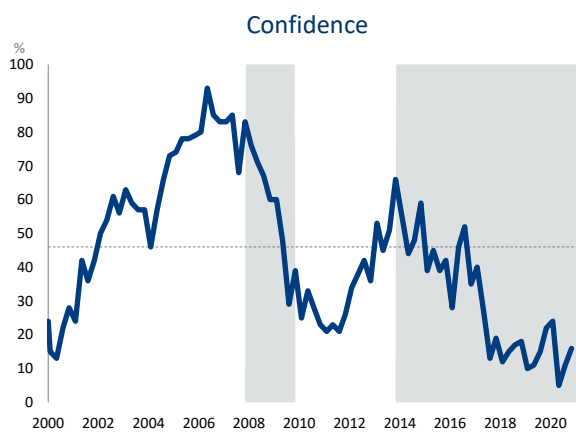
In conclusion

The **FNB/BER Civil Construction Index** gained five points to reach a still very depressed 16 in 2020Q4. Construction activity growth improved and tendering price competition eased. This resulted in better overall profitability. Crucially, the outlook for work over the medium term remains uncertain.

Survey results

Civil construction

Indicator	Unit	$\mu-\sigma$	μ	$\mu+\sigma$	19Q1	19Q2	19Q3	19Q4	20Q1	20Q2	20Q3	20Q4	Δ	σ_{Δ}
Confidence	%	23	45	68	10	11	15	22	24	5	11	16	5	9
Activity	Net %	-59	-25	8	-67	-75	-50	-35	-41	-86	-77	-58	19	17
Tendering competition	Net %	25	49	73	77	58	57	66	43	63	76	67	-9	15
Insufficient demand	%	50	69	89	88	88	90	90	79	92	93	88	-5	12



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

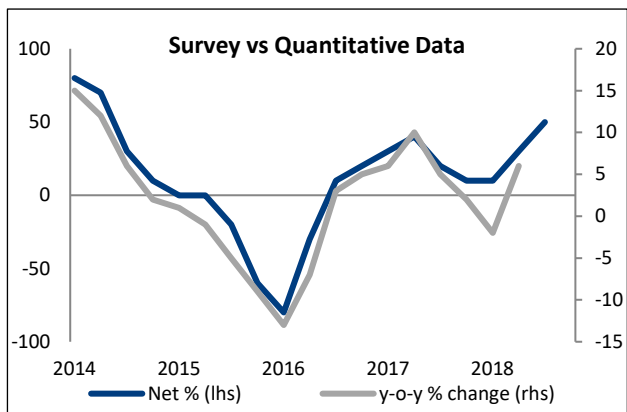
“lower”. The percentage rating it as the “same” is ignored. The net percentage in this example is therefore 50%, being the difference between the 70% “higher” and the 20% “lower”. A net percentage of -10%, for instance, would indicate a decline in activity compared to a year ago. Take note that this 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 (3qcm) 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 ($\mu-\sigma$) and above ($\mu+\sigma$) 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.