Bi-Annual Economic and Capacity Survey

July – December 2017

Published by
The Consulting Engineers South Africa (CESA)

March 2018

Report prepared by

Industry Insight CC
www.industryinsight.co.za

Table of contents:

1. Economic overview

1.1 International Developments

The outlook for the global economy remains optimistic, according to the latest World Economic Outlook report (January 2018) released by the International Monetary Fund (IMF). The IMF expect the world economy to grow by 3.9 percent in both 2018 and 2019. This is an upward revision of 0.2 per cent in both years, which may sound small, but is quite significant. Advanced economies largely drove this upward revision, with the outlook for emerging markets remaining more or less the same since their last report in October of 2017. Overall, although still relatively modest, this has been one of the most synchronised upswings in the global economy, since the recovery from the global financial crisis in 2010. Roughly 120 economies, who make up more than 75 percent of global growth, saw their economies expand on a year on year basis in 2017, according to the IMF's estimates.

The upward revision in global growth forecasts in largely due to an upwards revision in the growth forecast for advanced economies. Overall, the IMF expect advanced economies to grow by 2.3 percent and 2.2 percent in 2018 and 2019 respectively. The upward revision is due to the expectation that favourable global financial conditions, and strong sentiment, will contribute to maintaining the uptick in both investment and demand driven indicators. In addition to this, the relatively large tax reform in the US is expected to support growth in the short term, as well as for close trading partners of the US such as Canada and Mexico due to spillovers from increased trade. The cumulative effect of the tax cuts make up almost half of the upward revision to the growth forecast for advanced economies. The IMF does however warn that further down the road (in the medium term), the fiscal consequences of the tax reform is set to have a more negative effect on the US economy, which has already racked up a massive fiscal deficit.

The IMF's growth forecast for emerging markets is largely unchanged, with a range of varying activity amoung the different economies. Overall, emerging markets are expected to grow by 4.9 percent and 5.0 percent respectively in 2018 and 2019. Emerging and developing Asia (who account for more than half of the world's growth) are expected to grow in excess of 6.5 percent, largely unchanged since the last report. Growth in China is still expected to moderate somewhat, but by less than initially expected due to stronger demand. In Latin America, an upward revision is expected due to the Mexican economy benefiting from the US tax reform, as well the expectation that Brazil is to recover from their recession in a stronger manner. Overall, growth for Sub-Saharan Africa has remained unchanged since the last report, with growth of 3.3 percent and 3.5 percent expected in 2018 and 2019.

Table 1: Global economic outlook

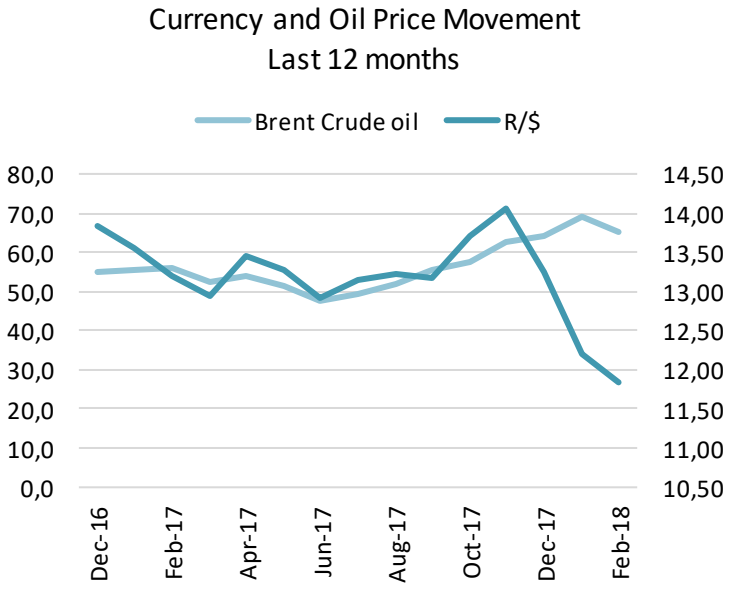
	2014	2015	2016	2017	2018	2019
World	3.4%	3.2%	3.1%	3.7%	3.9%	3.9%
Advanced Economies	1.8%	2.1%	1.7%	2.3%	2.3%	2.2%
US	2.4%	2.6%	1.6%	2.3%	2.7%	2.5%
Eurozone	0.8%	2.0%	1.7%	2.4%	2.2%	2.0%
UK	2.9%	2.2%	1.8%	1.7%	1.5%	1.5%
Emerging markets	4.6%	4.1%	4.1%	4.7%	4.9%	5.0%
Brazil	0.1%	-3.8%	-3.6%	1.1%	1.9%	2.1%
Russia	0.6%	-3.7%	-0.2%	1.8%	1.7%	1.5%
India	7.3%	7.6%	6.8%	6.7%	7.4%	7.8%
China	7.4%	6.9%	6.7%	6.8%	6.6%	6.4%
Sub-Saharan Africa	5.0%	3.4%	1.4%	2.7%	3.3%	3.5%
SA	1.5%	2.0%	0.3%	0.9%	0.9%	0.9%

Source: IMF World Economic Outlook January 2018

1.2 Domestic Economy

The year got off to a relatively good start, with economists and market analysts hailing the win of Cyril Ramaphosa in the ANC's December elective conference, as well as the eventual resignation of ex-president Jacob Zuma. This has boosted confidence indices in the short term such as the SACCI business confidence index which ticked up to 96.4 points, the highest in just over two and half years. Under the past president Jacob Zuma, the index plunged from levels above 120 in 2011 to a low of 89.6 in August of 2016. A Ramaphosa presidency brings with it the perception that policy will have a clear direction, and that corruption will be stifled. This in turn will certainly lead to an increase in consumer and business confidence which has been seriously lacking, and will lead to the return of much needed investment in the South African economy by local and foreigners. The expropriation of land has however put somewhat of a dampener on confidence.

According to latest Gross Domestic Product (GDP) data released by Stats SA, the value add in the construction sector declined for the 4th consecutive quarter in the 4th quarter of 2017, down by 1 percent y-y (seasonally adjusted annualised rate), averaging a decline of 0.3 percent in 2017 compared a muted increase of 1.1 percent in 2016. Economic growth was higher than expected in the 4th quarter, at 3.1 percent, following an increase of 2.3 percent in the previous quarter. Growth in the 4th quarter was largely supported by accelerated growth in the mining sector (up by 8.9 percent) and a massive 34.7 percent increase in the agriculture sector. Economic growth averaged a higher than expected 1.3 percent in 2017, compared to a revised 0.6 percent in 2016. The latest results drastically outperformed expectations. Several sectors did however experience negative growth during 2017, including manufacturing (-0.2%), construction (-0.3%), and wholesale and retail trade (-0.6%), which are all key industries in the South African economy.



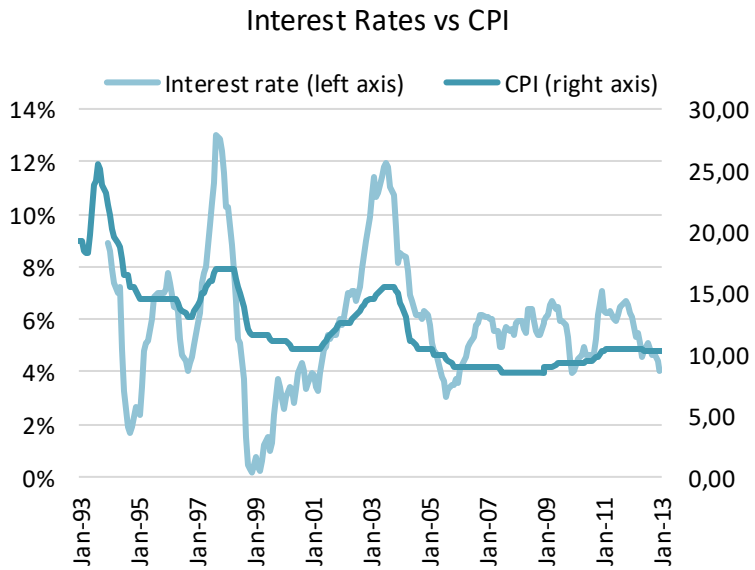


Table 2: Macro economic growth projections (Industry Insight Forecast Report 2018Q1)

Macro-Economic Forecasts	*2013*	*2014*	*2015*	*2016*	*2017*
GDP	1,4%	0,3%	0,8%	1,5%	1,8%
Household consumption	1,7%	0,8%	0,9%	1,4%	1,6%
Government consumption	0,5%	2,0%	0,0%	1,9%	1,2%
Gross Fixed capital formation	2,8%	-3,9%	-0,1%	1,6%	2,4%
Imports	5,4%	-3,7%	2,1%	4,3%	4,2%
Exports	3,9%	-0,1%	1,4%	5,0%	4,4%
Prime Lending rate	10,75%	11,00%	10,25%	10,25%	9,50%
ZAR/US$	13,80	13,20	12,50	12,10	11,50
CPI Inflation	6,20	6,00	5,30	5,20	5,50

1.3 Gross fixed capital formation

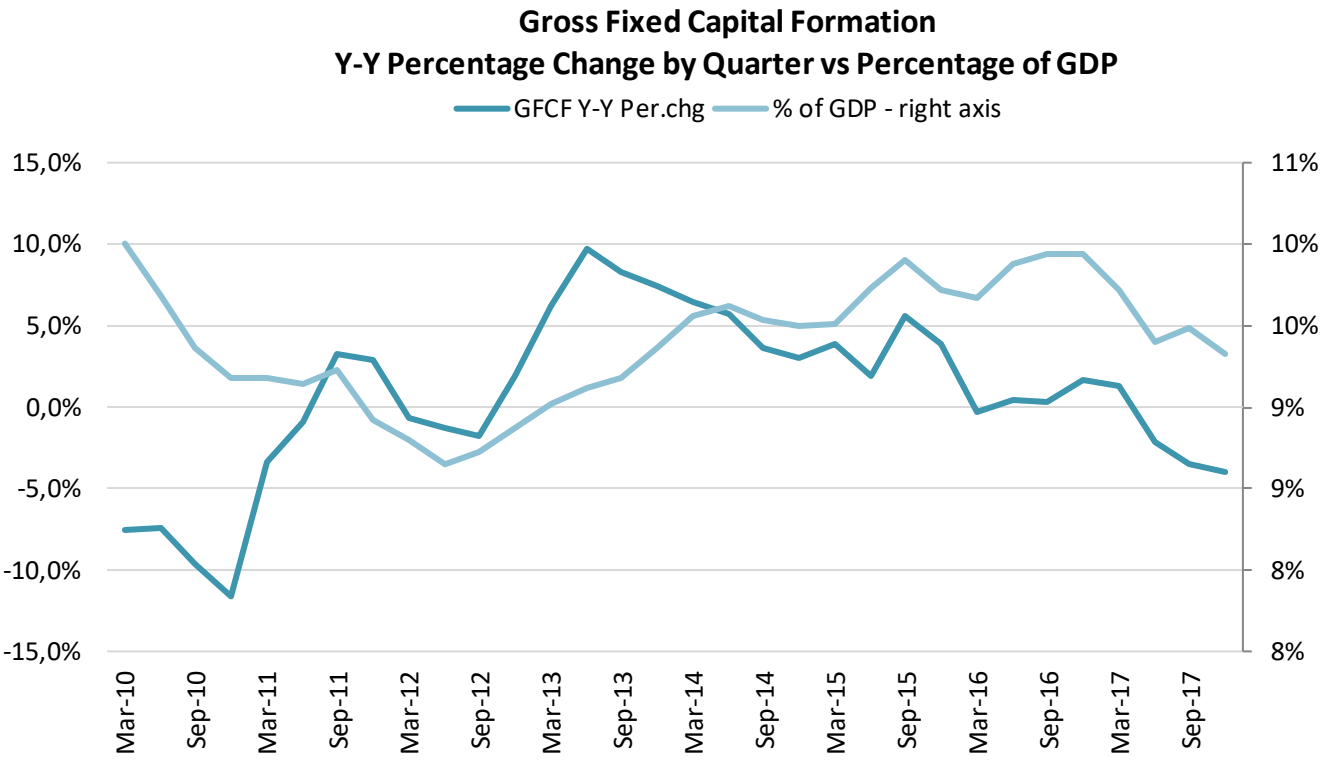


Figure 1: GFCF (Y-Y percentage changes vs Percentage of GDP) Source SARB Quarterly Bulletin

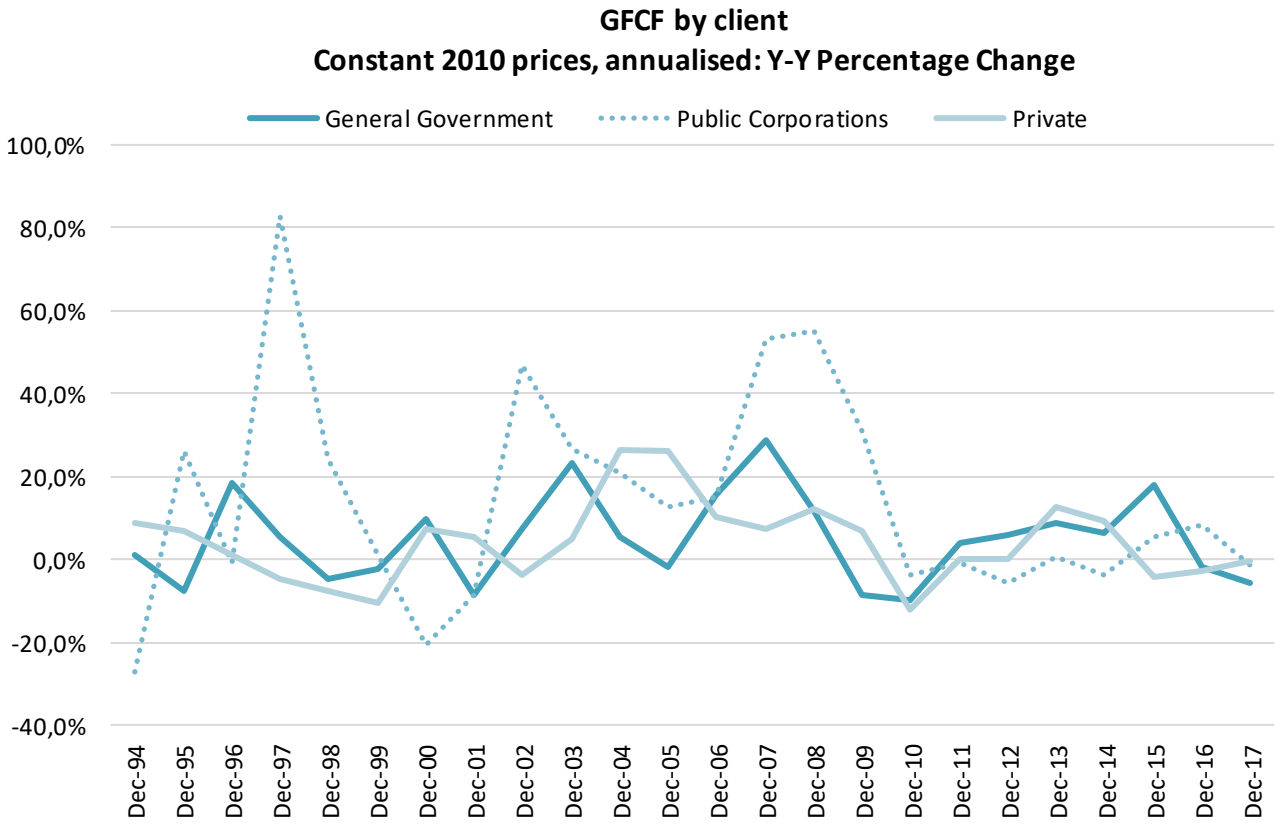
Gross fixed capital formation (GFCF) fell by 3.9 percent in December of 2017, the third consecutive contraction, following contractions of 2.1 percent and 3.9 percent in the 2nd and 3rd quarters of 2017 respectively. Investment was negatively affected by a slowdown in government investment, as well as general economic conditions not facilitating growth in the sector, although an increase in confidence to some degree. Investment by general government saw the biggest decline in 2017, with a contraction of 5.5 percent y-y, the biggest y-y contraction since the financial crisis in 2009/2010. Investment by public corporations declined by 1.3 percent y-y, off the back of 8.5 percent growth in 2016. Investment from the private sector decreased just marginally, by 0.4 percent, the third year of consecutive declines in investment in construction from the private sector.

GFCF as a percentage of GDP averaged at 9.5 percent in 2017 overall, and was 9.3 percent in the 4th quarter. The NDP has, what may seem to be a somewhat unachievable target of 30 percent contribution of GFCF to GDP by 2030. All economic indicators currently suggest that investment in relation to GDP is likely to slow over the medium term, due to slower government spending, financial constraints experienced by SOE's and continued weak private sector confidence.

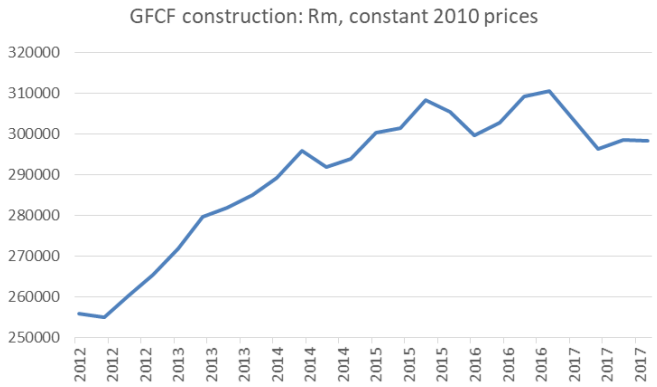
Table 3: GFCF Residential, Non-Residential and Construction works, by client 2017 Constant prices

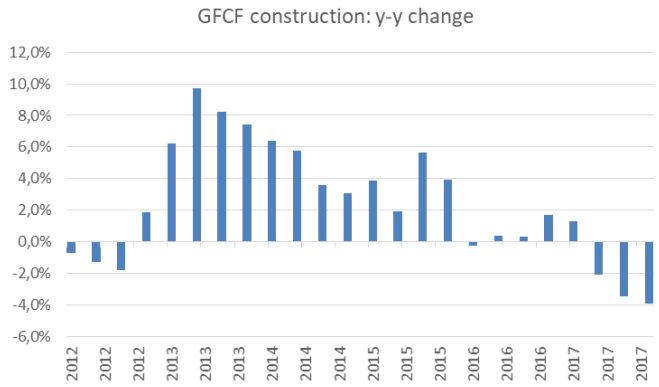
2017	*Government*	*SOE's*	*Private*	*Total*
Residential	1,103	38	56,117	57,259
Non-residential	21,833	2,034	29,243	53,112
Civil works	57,210	86,204	45,386	188,801
Total	80,148	88,277	130,747	299,173

Source: South African Reserve Bank Quarterly Bulletin



Gross Fixed Capital Formation Construction





According to SARB, a total of R297bn was spent on construction infrastructure in 2017 (in constant prices), including investment in residential and non-residential buildings and construction works, representing a decrease of 2.6 percent y-y (adjusted for inflation). This would also include purchases of machinery and equipment, often imported, used in the construction process such as the installation of turbines. Investment in Buildings (residential and non-residential buildings), decreased by 4.0 percent (constant prices) to R102 bn, while investment in construction works (largely civil construction including investment in energy, transport and water), decreased by 1.8 percent to R194 bn.

2. CESA Survey: Background

A total of 61 questionnaires were returned via both an on-line and hard copy system. The sample represents a fee income of R2.38bn, and 5428 employees for the period July – December 2017.

The analysis of the questionnaires completed by active firms in the consulting engineering profession provides a proxy for current and expected working conditions for the profession, which can be measured on a regular basis.

CESA welcomes commentary received from firms and invites all members to actively participate in sending commentary on either the survey or conditions in the work place thereby increasing the relevance of these reports.

The survey is re-evaluated on a continuous basis to ensure that the questions asked are pertinent to current conditions in the industry. Several new questions were included in the current survey to improve the compilation of benchmark indicators.

3. Prevailing conditions in the Consulting Engineering Industry

3.1 Financial Indicators

Fee earnings in the last six months of 2017 increased by 2.0 percent (in current prices) compared to the first six months of 2017, which was relatively unchanged compared to the same period in 2016 (which was an increase of 1.0 percent). The increase was better than the expected 0.4 percent increase as reported by firms in the previous survey with regards to the outlook for the last six months of 2017.

Larger firms reported an increase of 4.0 percent, while earnings for medium SIZE firms was 27 percent lower. Smaller firms saw the biggest increase of 17.0 percent, but micro firms saw a decrease of 4.1 percent.

Fee income rose to R27.1 billion, anualised, at current prices as at December 2017.

Earnings are expected to decrease in the first half of 2018, with all size firms expecting a decrease of some sort. Large firms expect a decrease of 6.6 percent, with smaller firms the most negative, expecting a decrease of 8.1 percent. Considering trends in the indicators, as reported by respondents in this survey, we maintain our view that it is likely that earnings have reached an upper turning point with a softer growth outlook in the medium term.

A summary of fee earnings by firm size, as well as projected earnings for the last six months of 2018 is provided in the table below.

Table 4: Fee earnings, actual vs projected by firm size

Firm size category	Actual (December 2017 vs June 2017)	Projected for June 2018
Large	3.9%	-6.6%
Medium	-26.6%	-4.2%
Small / Micro	6.7%	-6.7%
Total	5%	-6.5%

3.1.2 Outsourcing

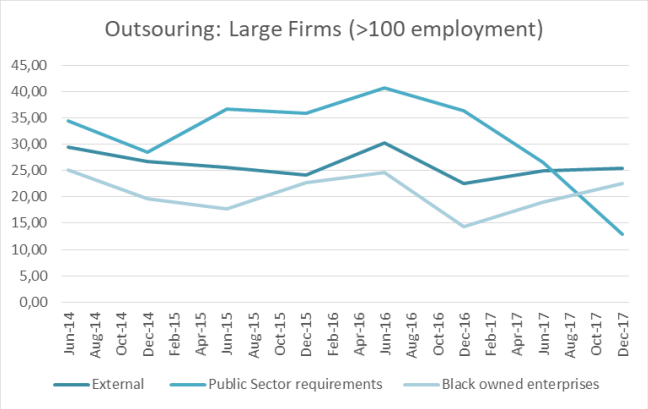
On average firms **outsourced** a higher percentage of turnover due to outsourcing to external enterprises, compared to for transformation purposes or for procurement reasons as laid down by public sector clients. However in this survey, outsourcing as prescribed by public sector clients fell to an average of 11.8 percent (from 14.2 percent in the previous survey). Outsourcing to black owned entities also moderated, and was 13.1 percent of turnover in this survey, compared to 16.9 percent in the June 2017 survey.

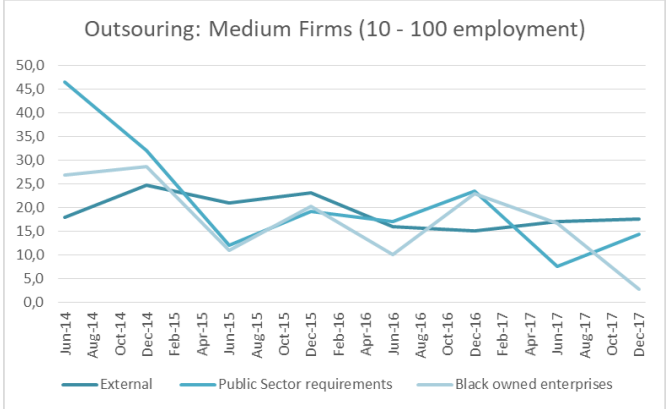
Larger firms outsourced 25.5percent to external enterprises, 12.9 percent for procurement purposes laid down by the public sector (compared to 26.6 percent) but increased outsourcing to black owned enterprises from 18.9 percent to 22.6 percent, the second consecutive increase.

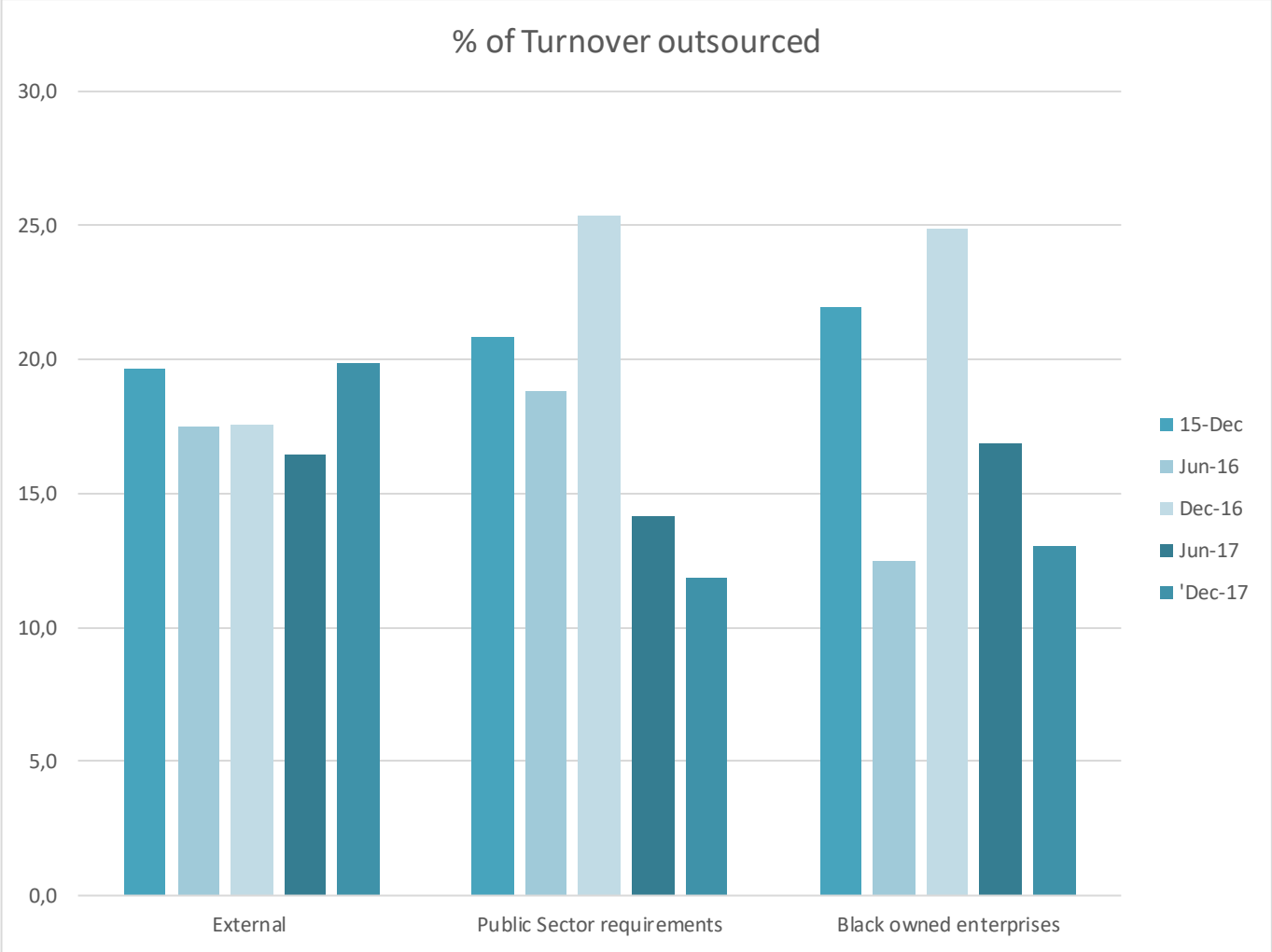
Figure 3: Matrix distribution of average percentage outsourced by firms, according to main purpose

Table 5: Average percentage of turnover outsourced, for consulting services only, by firm, size and purpose

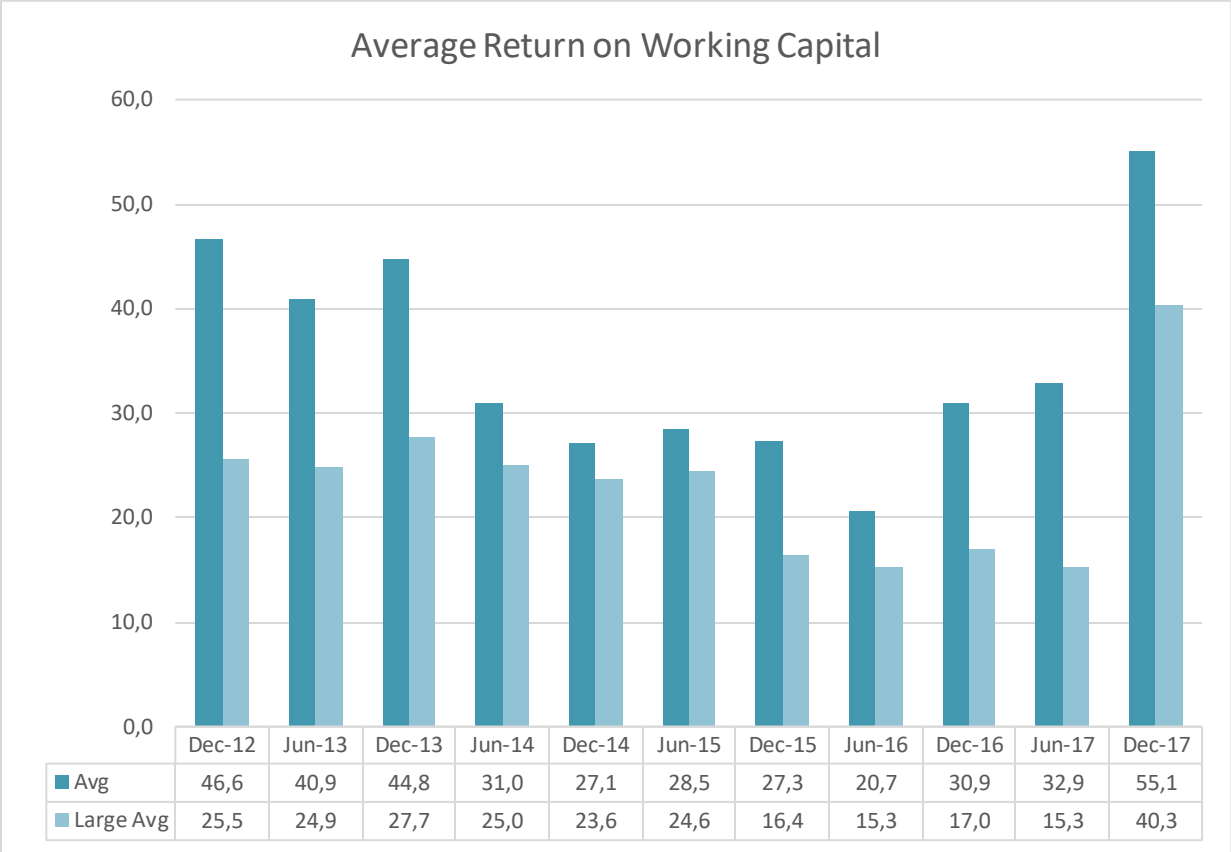
	External enterprises or individuals including sub-consultants, joint ventures and contract workers	*Procurement / Transformational requirements as laid down by the public sector clients*	*Black owned enterprises*
A	25,5	12,9	22,6
B	17,6	14,3	2,7
C	20,8	13,7	22,1
D	16,3	5,1	4,6
Average % of industry turnover	**19,9**	**11,8**	**13,1**
Average % of industry turnover Dec 2017 Survey	**16,4**	**14,2**	**16,9**


Outsouring: Large Firms (>100 employment)
45,00
40,00
35,00
30,00
25,00
20,00
15,00
10,00
5,00
0,00
Jun-14 Aug-14 Oct-14 Dec-14 Feb-15 Apr-15 Jun-15 Aug-15 Oct-15 Dec-15 Feb-16 Apr-16 Jun-16 Aug-16 Oct-16 Dec-16 Feb-17 Apr-17 Jun-17 Aug-17 Oct-17 Dec-17
External
Public Sector requirements
Black owned enterprises


Outsouring: Medium Firms (10 - 100 employment)
50,0
45,0
40,0
35,0
30,0
25,0
20,0
15,0
10,0
5,0
0,0
Jun-14 Aug-14 Oct-14 Dec-14 Feb-15 Apr-15 Jun-15 Aug-15 Oct-15 Dec-15 Feb-16 Apr-16 Jun-16 Aug-16 Oct-16 Dec-16 Feb-17 Apr-17 Jun-17 Aug-17 Oct-17 Dec-17
External
Public Sector requirements
Black owned enterprises


% of Turnover outsourced
30,0
25,0
20,0
15,0
10,0
5,0
0,0
External
Public Sector requirements
Black owned enterprises
15-Dec
Jun-16
Dec-16
Jun-17
'Dec-17

3.1.3 Return on Working Capital



	Dec-12	Jun-13	Dec-13	Jun-14	Dec-14	Jun-15	Dec-15	Jun-16	Dec-16	Jun-17	Dec-17
Avg	46,6	40,9	44,8	31,0	27,1	28,5	27,3	20,7	30,9	32,9	55,1
Large Avg	25,5	24,9	27,7	25,0	23,6	24,6	16,4	15,3	17,0	15,3	40,3

Figure 4: Average Return on Working Capital – Trend since December 2012

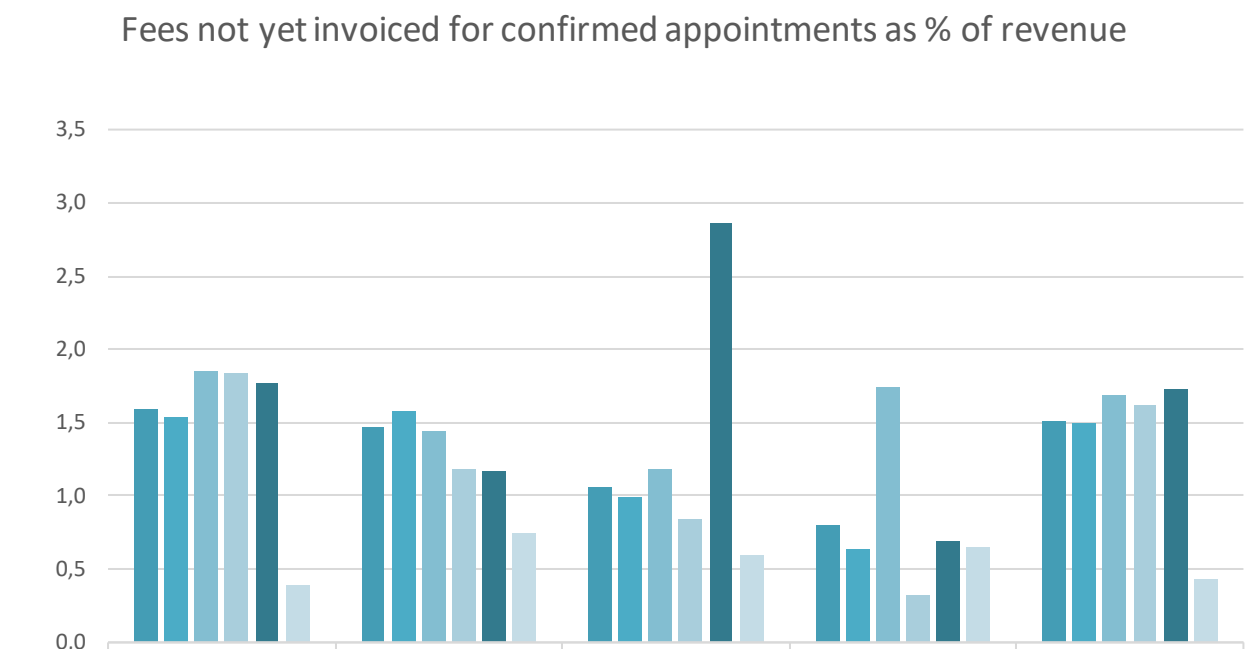
- The industry's **return on working capital**[1] (un-weighted average) recovered to 55.1 percent in the December 2017 survey after having slowed to 30.9 percent and 32.9 in the previous two surveys, which now higher than the average of between 30 and 40 percent in 2012 and 2013. Majority of firms reported a ROI of between 25% and 125%.
- Smaller and micro firms by comparison, however reported a weakening, to an average of 26.1 percent and 5.2 percent respectively.

Table 6: Return on Working Capital by firm size

Group	*Dec-14*	*Jun-15*	*Dec-15*	*Jun-16*	*Dec-16*	*Jun-17*	*Dec-17*
A	23.6	24.6	16.4	15.3	17.0	15.3	40,3
B	31.1	22.4	24.8	18.9	48.2	53.5	127,3
C	22.8	33.9	32.4	28.1	33.4	41.8	26,1
D	28.2	33.1	28.9	19.9	10.0	22.8	5,2
Grand Total	**27.1**	**28.5**	**27.3**	**20.7**	**30.9**	**32.9**	**55,07**

[1] *Return on investment is defined as the company's annual profit after interest and tax, as a percentage of Net Working Capital (current assets – current liabilities) during the last completed financial year. Working capital is considered part of operating capital as it affects the day to day operating liquidity. An increase in working capital indicates the business has either increased current assets (i.e. accounts receivable or inventory), or has decreased its current liabilities (accounts payable).*

3.1.4 Value of outstanding payments

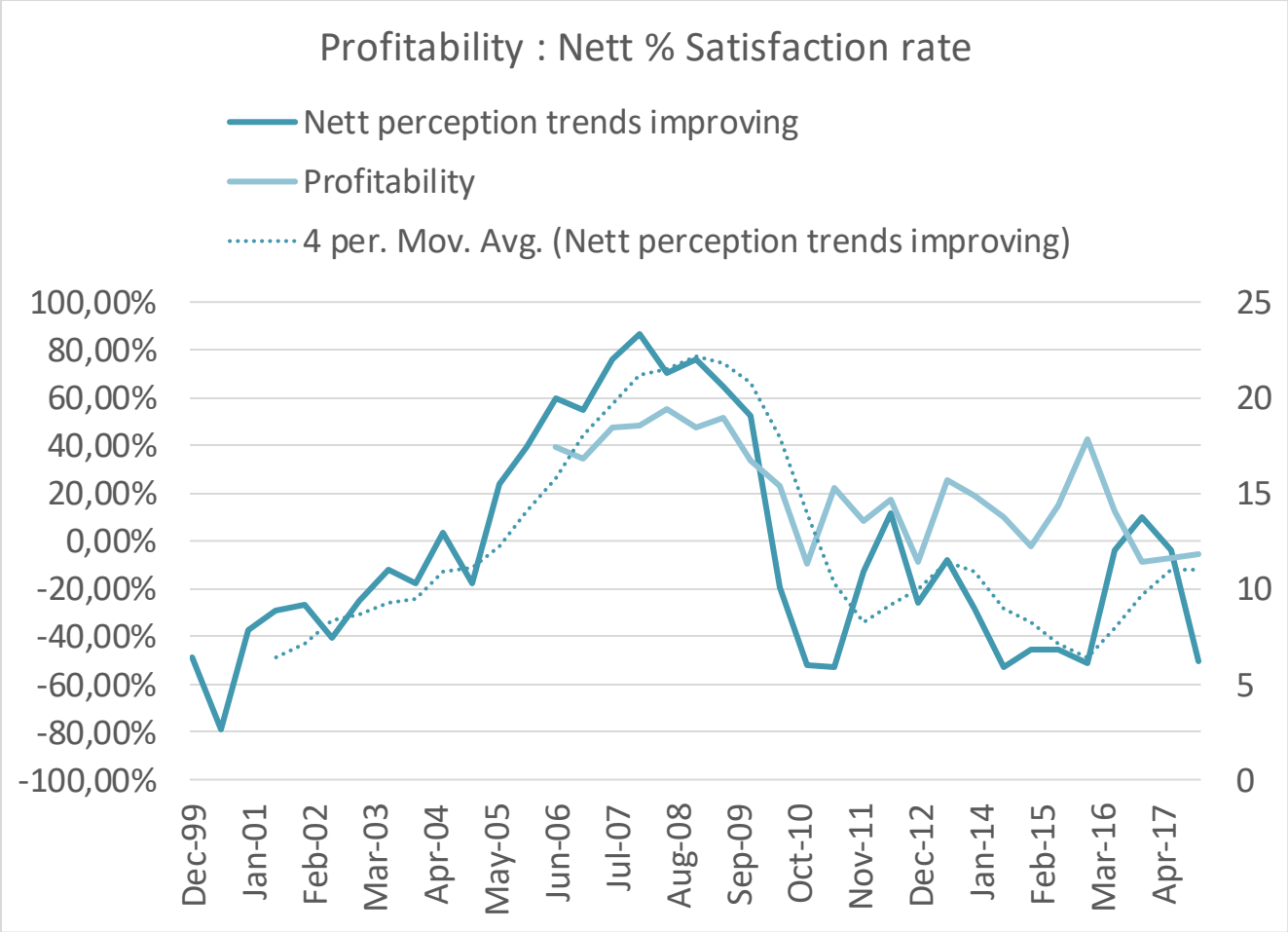


	A	B	C	D	Grand Total
Jun-15	1,6	1,5	1,1	0,8	1,5
Dec-15	1,5	1,6	1,0	0,6	1,5
Jun-16	1,9	1,4	1,2	1,7	1,7
Dec-16	1,8	1,2	0,8	0,3	1,6
Jun-17	1,8	1,2	2,9	0,7	1,7
Dec-17	0,4	0,7	0,6	0,7	0,4

Figure 5: Order book: Income ratio

There was a large deterioration in the ratio of fees not yet invoiced for confirmed appointments to existing earnings to 0.4 from 1.7 in the June 2017 survey, after having stabilized at 1.5 for 2015, from an average of 1.6 in 2014. Larger firms saw the biggest decrease, from 1.8 to 0.4. All firms experienced a decrease,

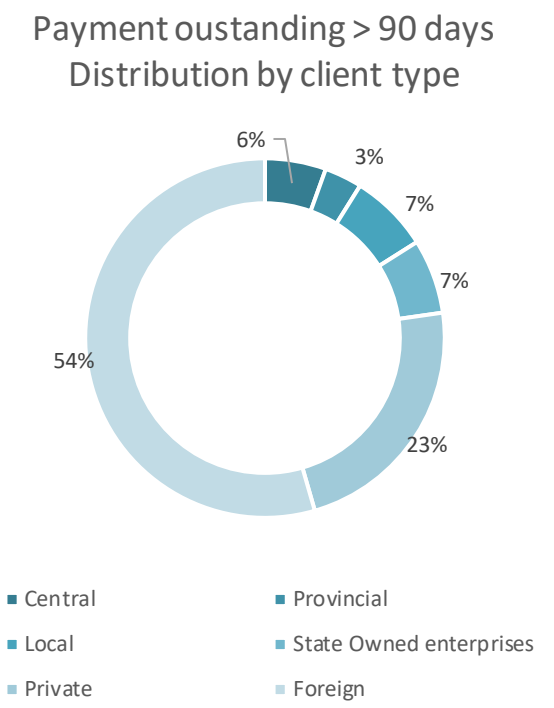
3.1.5 Profitability and late payments



Nett profitability improved ever so slightly to 11.8 percent in the last six months of 2017, from an average of 11.6 percent in the previous survey, but is still lower than the average of 12.7 percent in 2016. Allowing for fluctuations on a survey to survey basis, there has been no significant change in the overall trend (based on a two year average) in profitability since 2011, remaining below 15 percent on average.

In a substantial turnaround, very few firms are now expecting an improvement in profitability, only 4.0 percent in fact. The majority of firms expect a receding trend (65.7 percent), while 30.2 percent of firms expect conditions to remain static (more or less the same).

Also in a big turnaround compared to the previous survey, a majority of firms (61.2 percent) are now unsatisfied with their margins, compared to just 14.0 percent in the previous survey. Only 10.7 percent of firms reported their margins as good, while 28.1 percent are satisfied with their margins. No firms reported their margins as being exceptional.



Payment remains a serious issue, having a broad based effect on firms operating in the industry. After having shown some improvement in the December 2015 survey, the percentage of fees outstanding for longer than 90 days as a percentage of total estimated income (including late payments) deteriorated to an average of 25.0 percent in the last six months of 2017. The impact of foreign clients remain prominent in this survey contributed 54 percent to total fees outstanding for a period longer than 90 days. Excluding foreign clients, private sector contributed 40 percent to delayed payments, followed by local government at 18.4 percent, provincial government at 16.8 percent, central government at 9.7 percent and SOE's at 14.8 percent.

It is estimated that around R6.6bn in earnings is currently outstanding after the 90 day period.

In relation to earnings, the respective foreign clients owed 107.6 percent of earnings, provincial government 5.6 percent, private sector 15.6 percent, central government 15.7 percent, local government 10.8 percent and SOE's 12.5 percent.

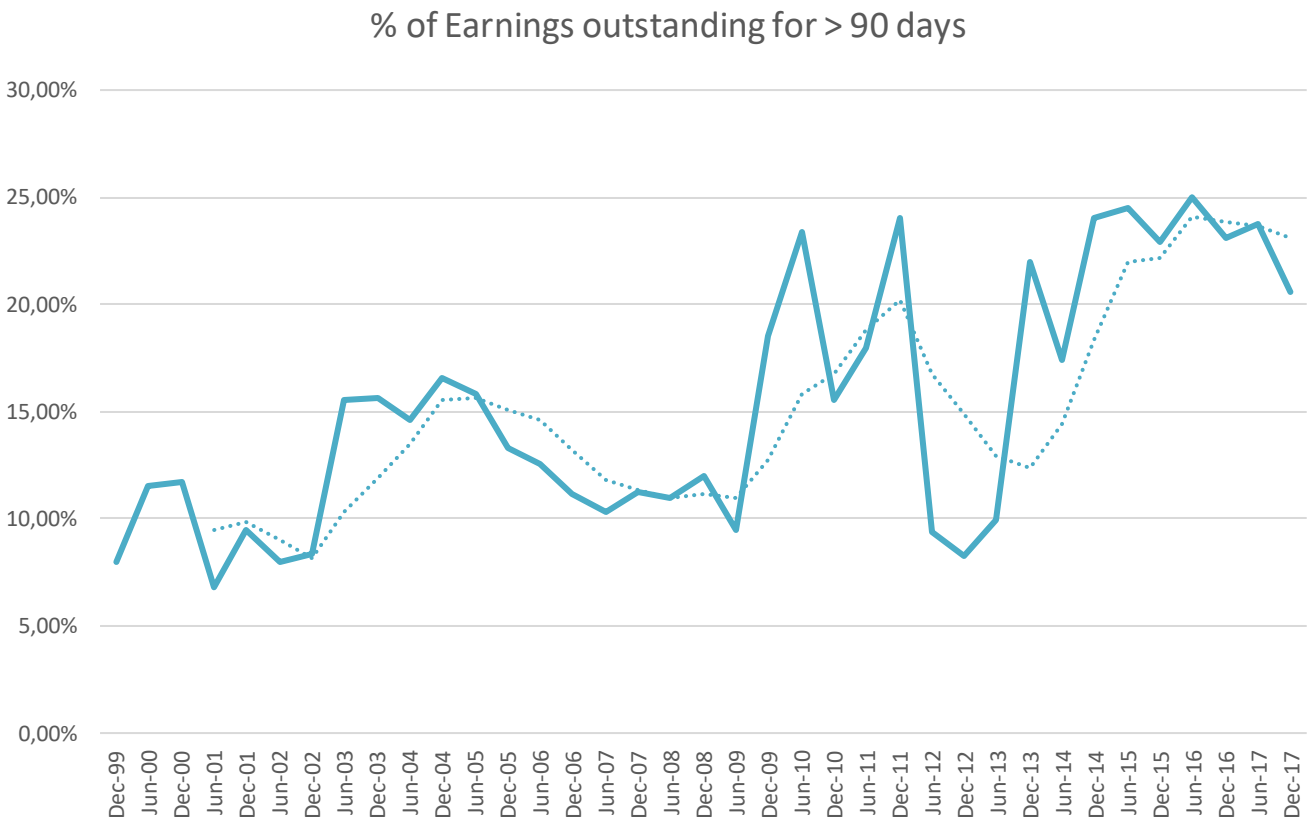


Figure 7: % of earnings outstanding for > 90 days

3.2 Human Resources

3.2.1 Employment

- Employment decreased by an average of 12 percent in the last six months of 2017 to an estimated 21,369, compared to the first six months of 2017, following the 4 percent increase reported in the previous survey. This is one of the biggest declines since the inception of the survey. This represents a decrease of 8.5 percent compared to the same period in 2016. Larger firms reported a 9 percent decrease in employment, mainly due to a decrease in full time employment (down by 13 percent) while part time employment increased by 24 percent. Medium size firms reported a big overall decrease in employment of 43 percent, largely due to a 48 percent decrease in full time employment, while part time employment increased substantially by 143 percent, but was not enough to lift overall employment for the medium sized firms. Smaller and micro firms reported marginal changes in employment.
- The number of firms looking for engineers decreased to 51.7 percent from 67.3 percent in the previous survey, with a notable decrease in demand for technicians to 1.9 percent, from 73.4 percent in the previous survey. Demand for other technical staff also decreased markedly to 3.7 percent from 75.1, while demand for technologists decreased to 45.3 percent, from 71.8 percent.

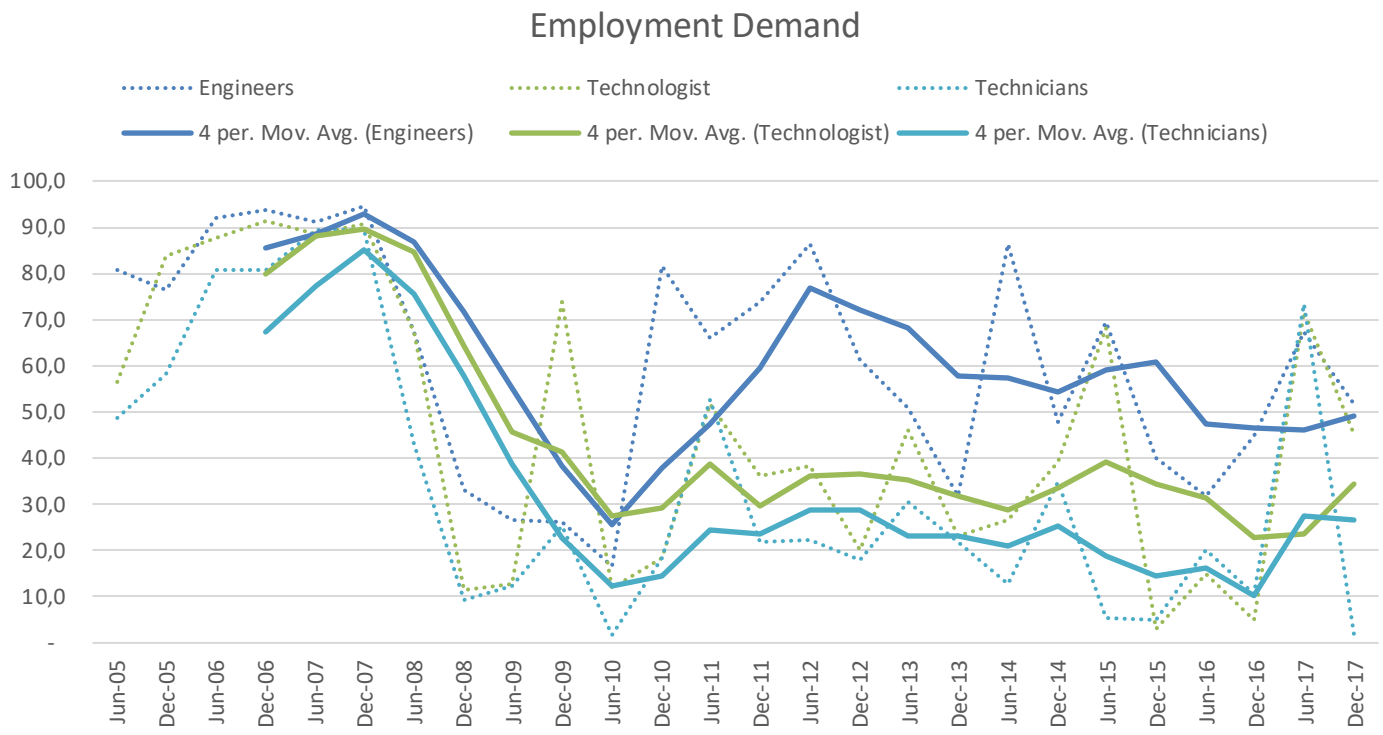


Figure 8: Employment Demand

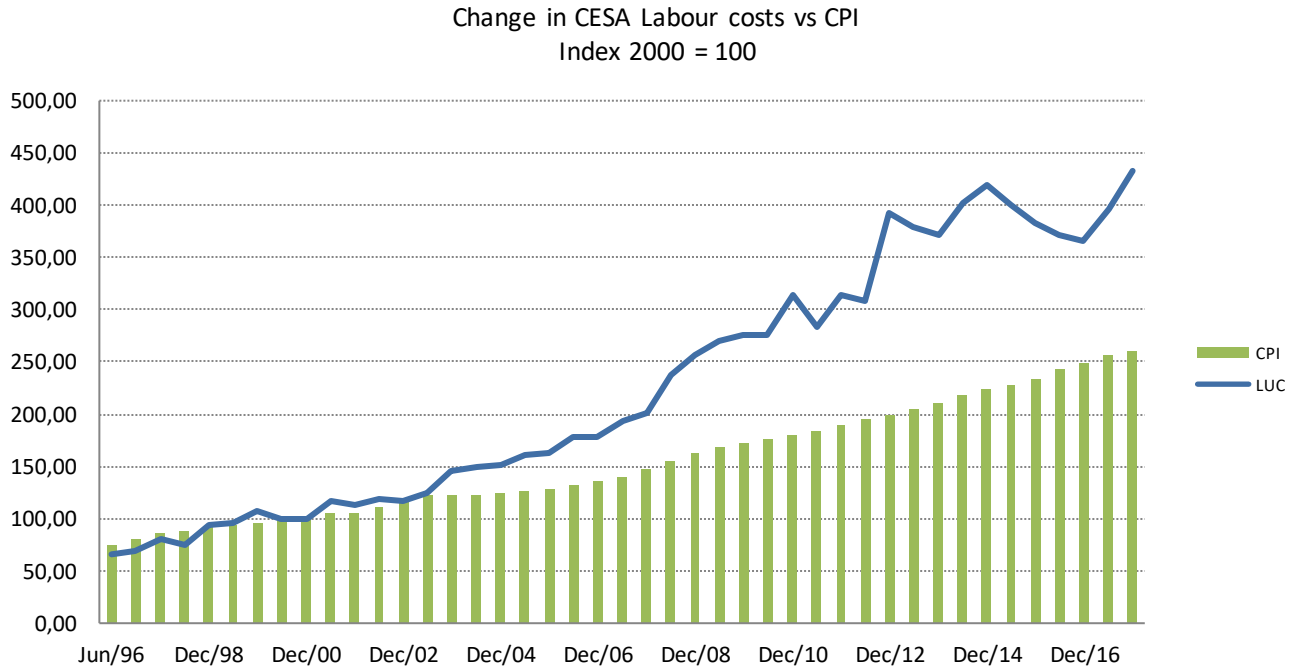
Table 7: % of firms wanting to increase staff, by type of personnel

Type of personnel	% of firms wanting to increase staff December 2014	% of firms wanting to increase staff June 2015	% of firms wanting to increase staff December 2015	% of firms wanting to increase staff June 2016	% of firms wanting to increase staff December 2016	% of firms wanting to increase staff June 2017	% of firms wanting to increase staff December 2017
Engineers	48.0	69.3	40.0	32.0	44.9	67.3	51,70
Technologists	39.0	68.2	3.0	15.0	5.0	71.8	3,70
Technicians	35.0	5.1	5.0	20.0	10.7	73.4	45,30
Other technical staff	13.0	51.1	4.0	38.0	72.0	75.2	1,90
Support staff	3.8	2.9	0.0	18.0	0.0	35.3	2,30

3.2.2 Salary and Wage bill

The salary and wage bill represents a significant contributor to the average cost of production in the consulting engineering profession.

- The contribution of the salary and wage bill to fee earnings generally averages between 63 percent and 66 percent but was lower at 60 percent in the current survey.
- The contribution of the salary and wage bill was highest amongst medium firms, and averaged 63 percent (from 64 percent in June 2017), while large size firms reported an average salary bill of 61 percent. Smaller and micro firms reported a salary and wage bill contribution of between 44 percent and 49 percent.
- Average labour cost per unit (measured by the average salary and wage bill divided by number of full and part time employees and hours worked), accelerated in the December 2017 survey, representing an increase of 18.6 percent compared to the same period in 2016. Inflation averaged 4.8 percent in the last six months of 2017 (from an average of 6.4 percent in 2016), and is expected to increase by around 5.2 percent for 2018, increasing somewhat to 5.5 percent forecasted for 2019, according to the South African Reserve Bank.



3.2.3 Training

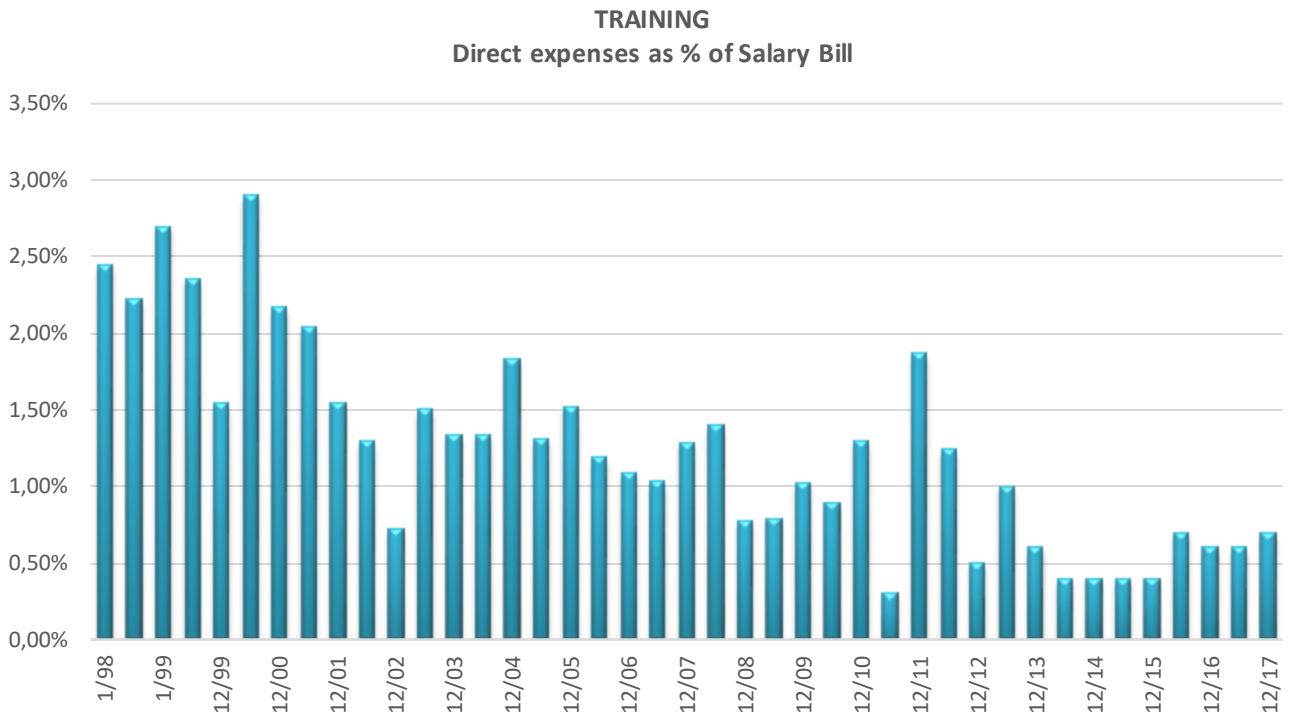
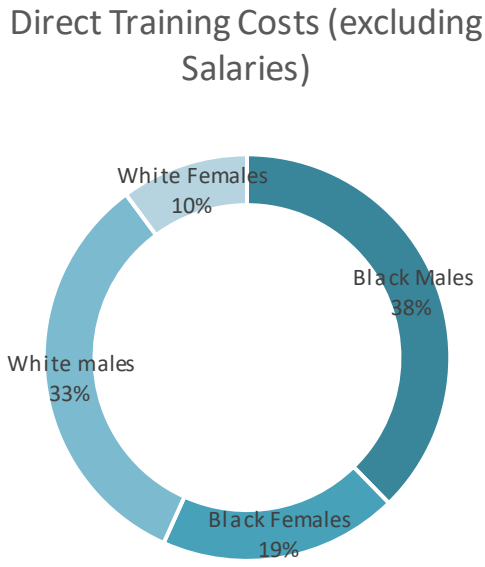


Figure 9: Training direct expenses as % of salary bill



Expenditure on training, in particular bursaries, is of a seasonal nature and responses can therefore be distorted in terms of timing when the bi-annual survey is conducted. Training expenses, which include the costs directly associated with training as well as the cost of salaries but excluding the 1% Construction Education and Training Authority (CETA) skills development levy, averaged 14 percent of the total estimated salary bill, compared to an average of 17 percent in 2016 and 6 percent in 2015. Although higher compared to 2015, this data is not entirely reliable, as many firms generally do not complete this section of the questionnaire. Majority of the firms report only on "direct training costs".

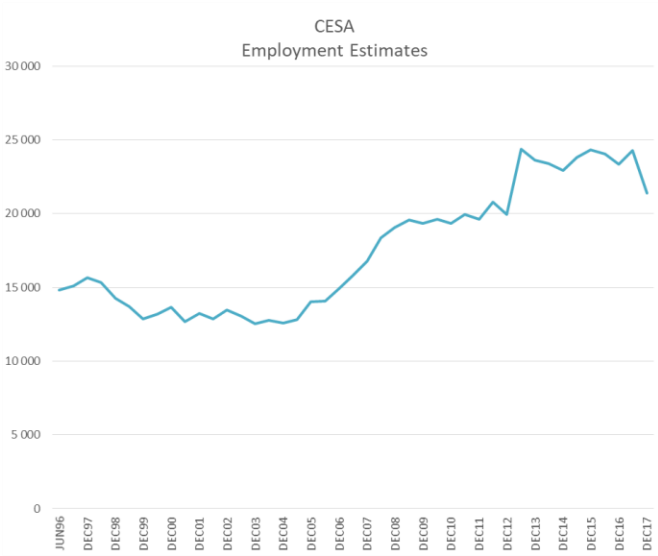
Direct training costs, a more reliable measurement of firms' contribution to training, averaged 0.7 percent of the salary and wage bill, and slightly up from the 0.6 percent reported in the June 2017 survey, and an improvement on the average of 0.4 percent reported in 2015.

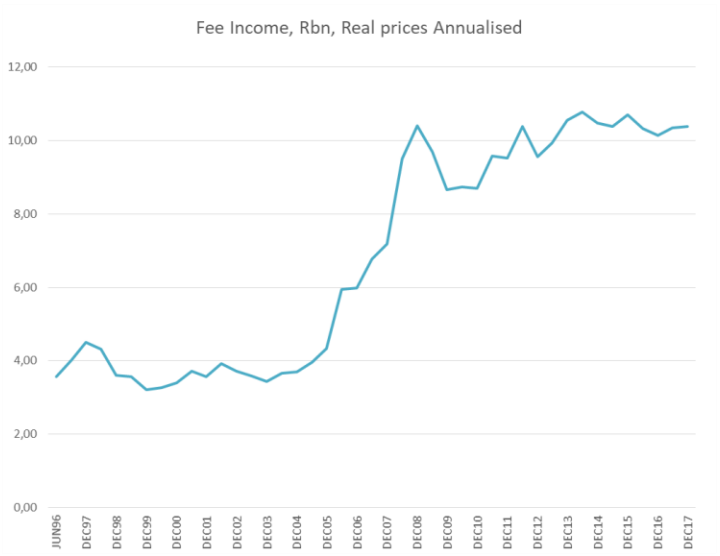
Larger firms spent on average 0.7 percent of their salary and wage bill on direct training, up from 0.3 percent (December 2016) while medium spent on average 0.3 percent, lower than the 0.8 percent reported in the last survey.

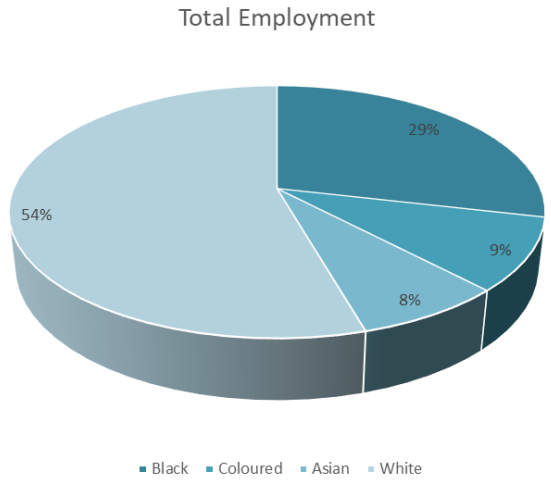
Training, is largely in favour of black males (compared to white males being the majority in the previous survey), contributing 38 percent of total direct training expenditure, followed by white males at 33 percent, black females at 19 percent and white females at 10 percent.

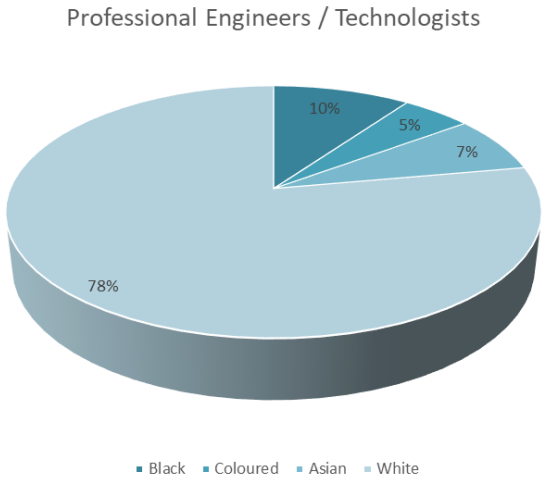
3.2.4 Employment profile

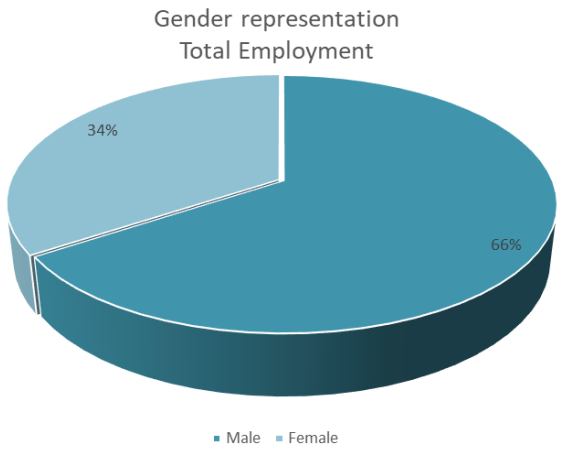
An estimated 21,369 people are employed in the private consulting engineering industry, of which 66 percent are male and 34 percent female. Professional Engineers (pr.Eng) contributed 14 percent to total employment, strongly dominated by males (91%) with women representing 9.0 percent of professional engineers in the industry. Employment growth was down quite significantly in the most recent survey, following a few years of relatively flat growth. Overall in the December 2017 survey, employment was down by 8.5 percent on a year on year basis. Employment trends are more or less in line with the more muted performance in earnings over the last four to five years, but has become worse over the last 6 months.

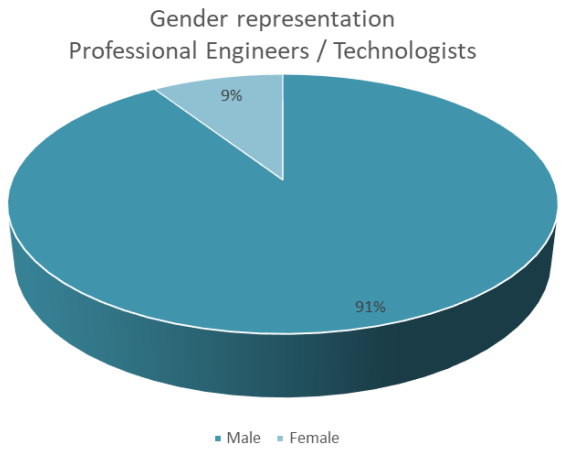












3.3 Industry profile of Executive Staff

The appointment of Black executive staff (including Black, Asian and Coloured staff), measured by the contribution of Black executive directors, non-executive directors, members and partners as a percentage of total executive staff, increased slightly to 41.5 percent from 37.4 percent and 45.7 percent in the previous two surveys. A detailed breakdown is provided in Statistical Tables.

The appointment of women at an executive level, (including all races) deteriorated to 11.9 percent from 12.8 percent but is still below the 13.6 percent in the June 2016 survey. Of the total women employed in the consulting engineering industry (across all skill levels), 2.5 percent were reported at an executive level (up from 1.6 percent in the June 2017 survey, but on par with 2015 surveys. down from 1.2 percent and 1.5 percent in the previous two surveys.

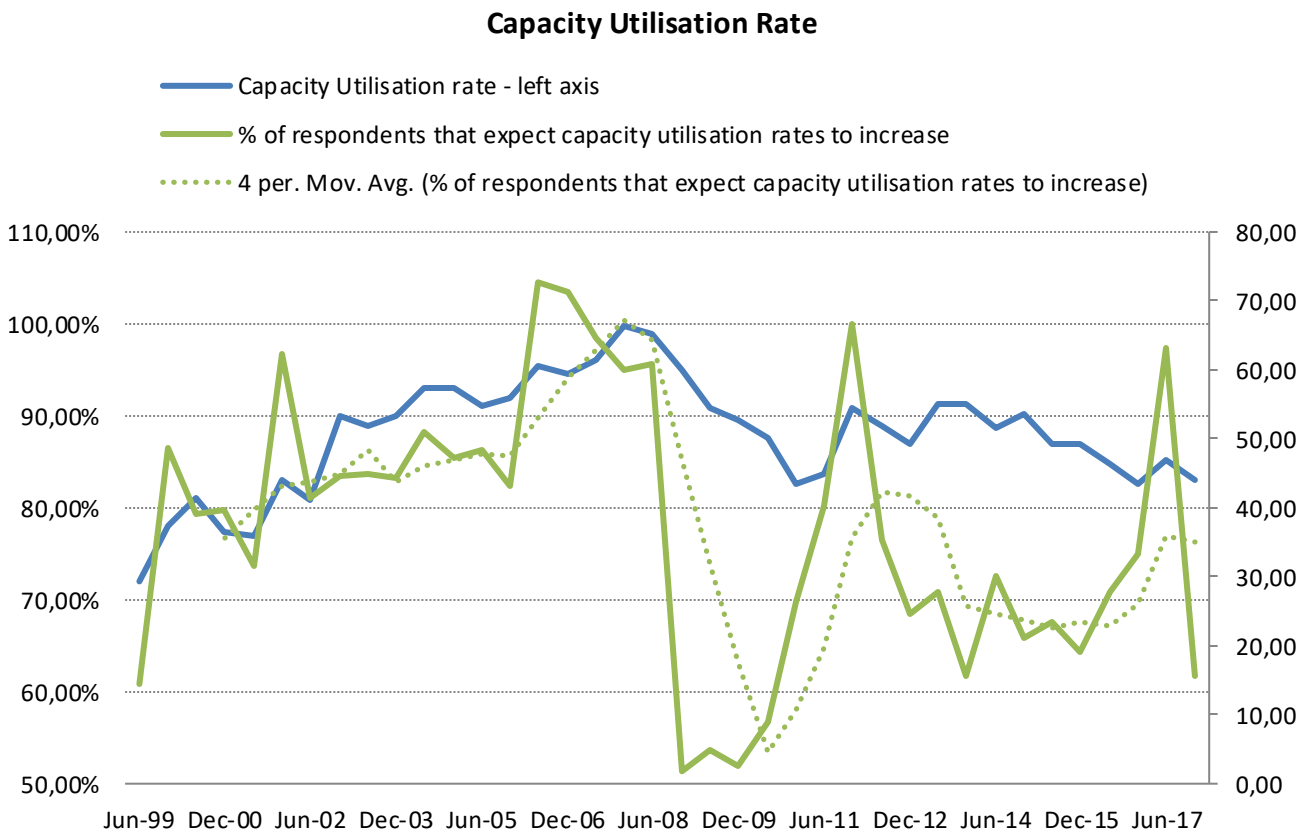


Figure 10: Capacity Utilisation Rate

3.4 Capacity Utilisation

Capacity utilization of technical staff fell to an average of 83.0 percent, more or less unchanged compared to the same survey last year, but a marginal decline compared to the June 2017 survey, falling from 85.0 percent. The vast majority of firms now expect their capacity utilization to be static over the next period, with 80.2 percent of firms being of this opinion. Only 15.6 percent of firms expect an increase, while a minimal 4.2 percent of firms expect a decrease. In this case, expectations were not in line with reality, with over 60 percent of firms expecting an improvement in the last survey which did not materialize.

Medium sized firms reported the highest capacity utilisation at 88 percent, while large size firms averaged a rate of 81.8 percent. Micro firms reported the lowest rates of 74.5 percent. The small firms were the most optimistic going forward with just over 30 percent of smaller firms expecting an increase. Most firms do however expect static conditions to materialise in the future.

3.5 Competition in tendering

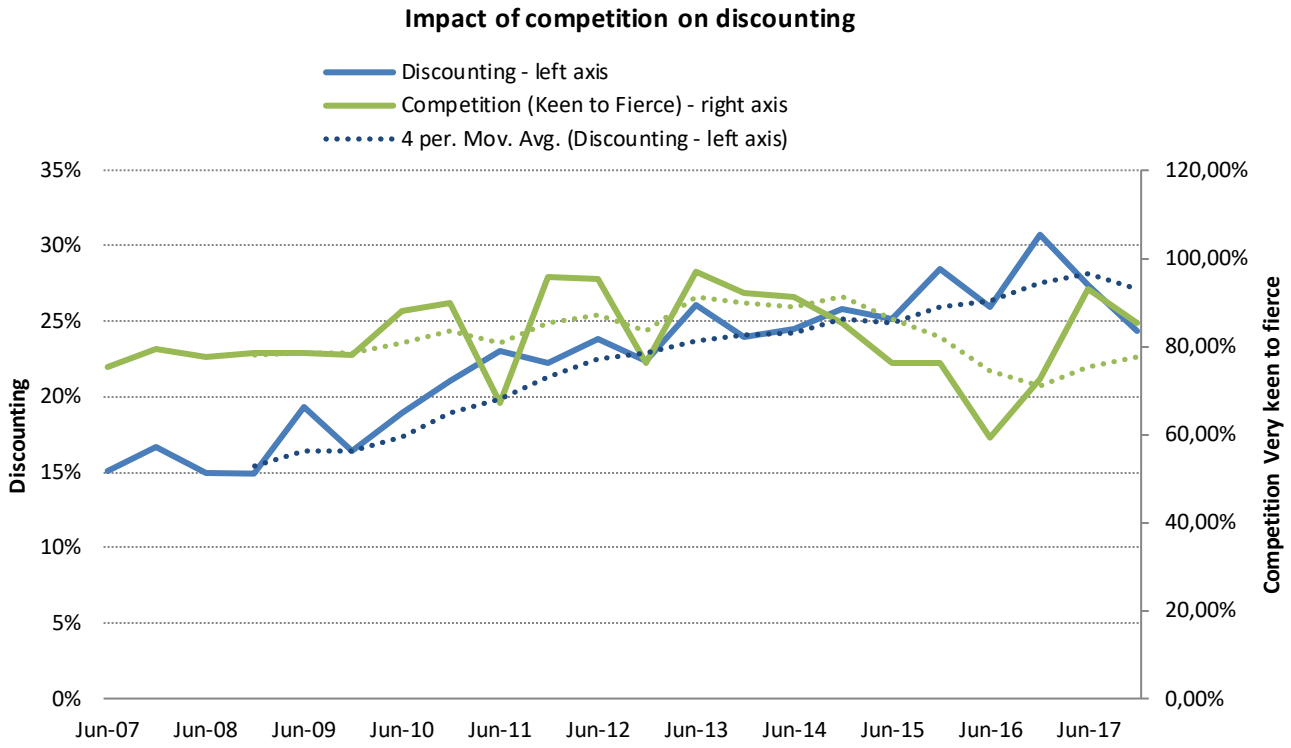


Figure 11: Competition and Discounting

Competition in tendering generally eases during a time when the availability of work increases and intensifies during periods of work shortages. An easing of competition will generally lead to an increase in prices, while price inflation is capped during periods of work shortages due to the fact that an increasing number of firms tender on the same project. The tendering process is costly and time consuming, and higher levels of competition significantly increase the risk for the engineering firm.

Although there has been some improvement the level of very keen to fierce competition since 2011/2012, an increasing number of firms continue to report on very keen fierce competition. In this survey 85.4 percent reported on very keen to fierce competition, down from a very high 93 percent in the June survey but significantly up from an average of 65.8 percent in 2016. Higher levels of competition are however more experienced by larger firms, with 90 percent reporting on very keen to fierce completion, while 66.7 percent of medium size firms experienced similar levels of competition. Micro firms reported the lowest level of strong competition, averaging 42.6 percent (very keen to fierce).

Higher levels of competition is supported by higher tendencies to discount hence the clear correlation between the level of discounting and competition. As competition started to intensify after 2009, the propensity to discount als o started to accelerate. The average discounting rate did however moderate slightly in the December survey for the second consecutive survey (from a record high of 30.7 percent in the December 2016 survey) to an average of 24.4 percent in the current survey. Large size firms reported the highest level of discounting at 27.3 percent, followed by medium firms (26.3 percent, down from 28.6 percent in the June 2017 survey), and an average of 22.3 percent for smaller to micro firms. Discounted rates are benchmarked against the ECSA Guideline fee scales.

Firm Size Category	*Capacity Utilisation of existing technical staff during the past 6 months*	*% of Respondents that expect capacity utilisation of technical staff to increase over the next 6 months*	*Average discount being offered by respondents in tendering situation to clients, benchmarked against the ECSA guideline fee scales*	*% of Respondents that reported Very Keen to FIERCE Competition for work during the last six months*
Large	81,82	12,9%	11,00	89,9%
Medium	88,21	26,5%	15,00	66,7%
Small	85,75	30,6%	20,00	59,9%
Micro	74,55	20,0%	12,00	42,7%
Industry Average	**83.0 (Weighted)**	**15.6 (Weighted)**	**24.4 (Weighted)**	**85.4 (Weighted)**

3.6 Pricing

*No specific escalation index is available for the consulting engineering industry. After exploring many different avenues it was proposed to calculate a CESA Cost index that is based on a **"labour unit cost"** and extracted directly from the CESA BECS Survey. This should accommodate at least between 60% and 65% of the firms' costs and should therefore, in theory, be a reliable indicator of escalation. The CPI is currently used to deflate all financial information, until such time CESA officially applies the CESA Labour cost index as an industry price deflator.*

The index is based on the sample of total number of employees versus the salaries and wages paid during the period under review.

According to CESA's labour cost indicator, the average unit cost of labour (smoothed over a two survey period to remove short term volatility) for the industry, accelerated by 12.5 percent since the first six months of 2017, and is the second consecutive increase since the December 2015 survey.

While changes in the general cost of living (as measured by the Statistics South Africa's Consumer Price Index) are clearly not indicative of labour cost changes in the consulting engineering industry, the CPI may have a strong influence in the determination of ECSA Guideline Fees, which has shown an average increase of 4.8 percent in the second half of 2017, from 5.9 percent in the first half of 2017. Inflation is expected to increase by around 5.2 percent for 2018, increasing somewhat to 5.5 percent forecasted for 2019, according to the South African Reserve Bank.

Figure 12: CESA Labour Cost Indicator (LCI)

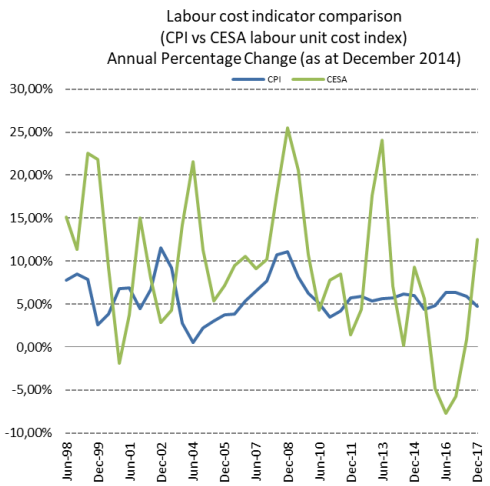
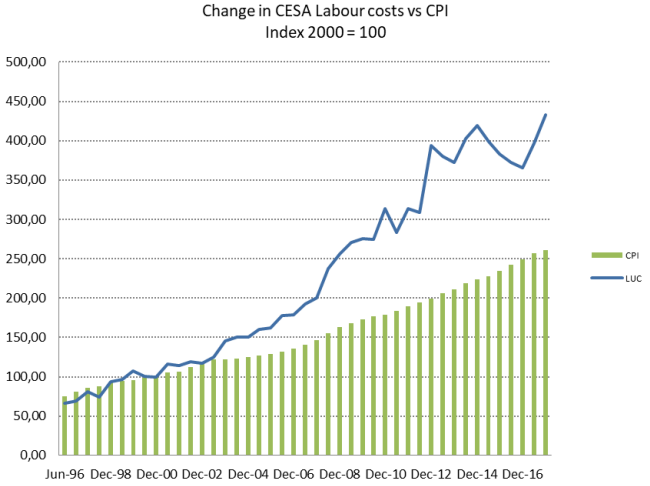


Figure 13: Change in CESA LCI vs CPI



4. Industry Outlook

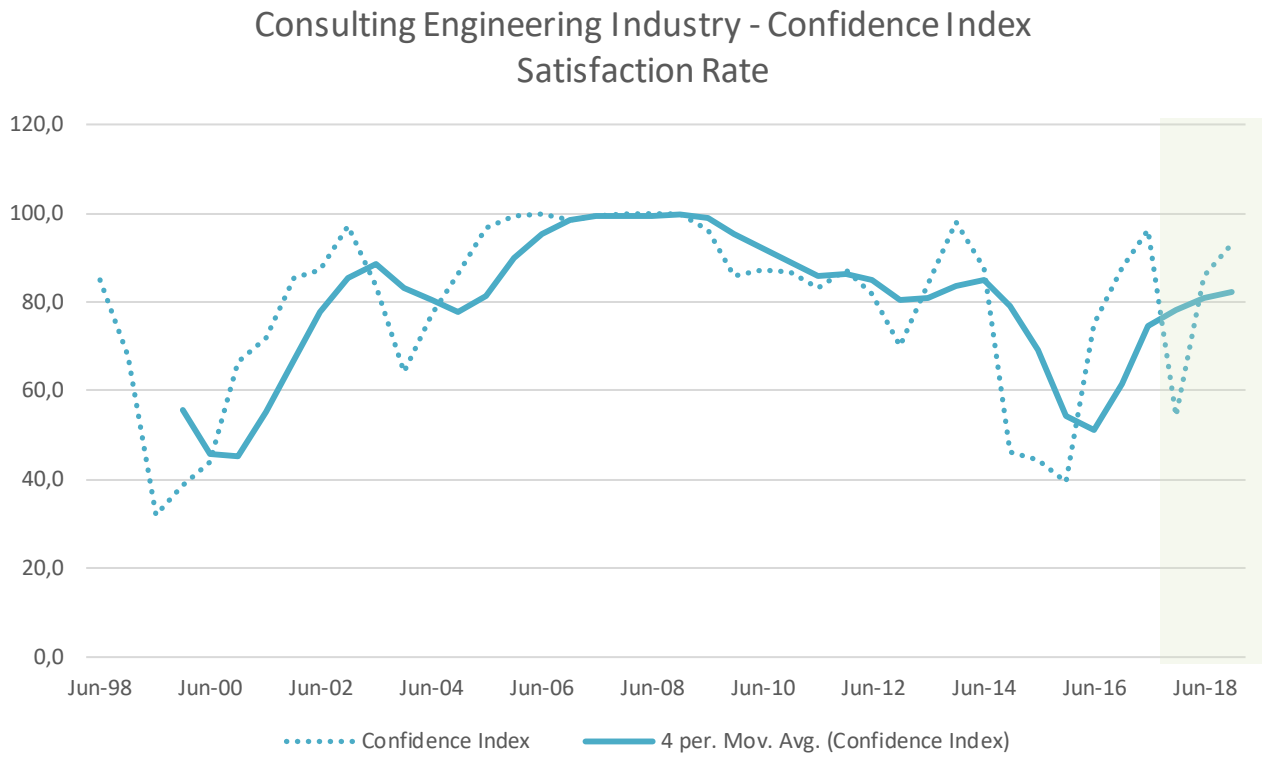


Figure 14: Confidence Index

Explanatory note: The confidence index, as an indicator of members' assessments regarding current and future prospects with regard to market developments, is a "weighted" index. The response of each company is weighted according to its total employment, including full and part time staff, and the index represents the net percentage of members satisfied with business conditions.[2] The confidence index is used as a leading indicator to determine a short to medium term outlook for the consulting engineering industry.

In the December 2015 survey, confidence levels fell to its lowest level in 16 years. Since then there has been good improvement with the net satisfaction rate improving to 96.3 percent in the first six months of 2017 and falling significantly to 54.4 percent in the December 2017 survey. Expectations for the first six months of 2018 are still very positive, and increase to 92.6 for the last six months of this year (2018).

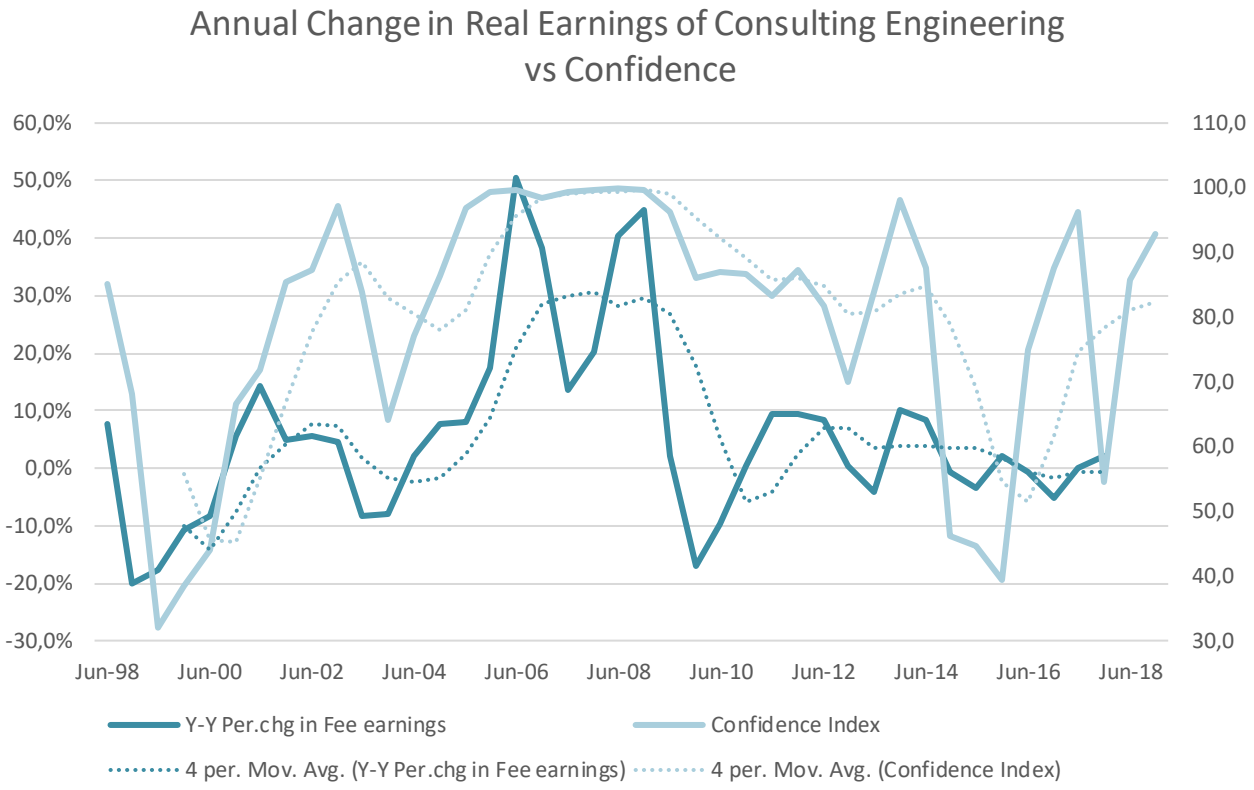
Confidence levels amongst larger firms deteriorated to a nett satisfaction rate of 49.9 percent in the last six months of 2017 but improved significantly to 97.5 percent for the same time next year. Medium size firms reported much higher confidence for the last 6 months of 2017 (86.6) also expect much better conditions next year. Smaller to micro firms currently reported confidence levels of 62.4, with no real change expected in the next 12 months.

A breakdown by firm size category is provided in the table below.

[2] The net percentage reflects only those members that expect conditions to be satisfactory, quite busy or very busy.

Table 8: Confidence as at December 2016, by firm size category (% of respondents that experienced satisfactory business conditions)

Firm size category	First six months of 2017	Next 6 months	Next 12 months
Large	49,9%	86,4%	97,5%
Medium	86,6%	96,5%	100,0%
Small	74,1%	66,7%	61,3%
Micro	50,7%	58,8%	52,1%



Confidence levels amongst firms have deteriorated over the last few years, and are also showing signs of increased volatility, evidence of higher levels of uncertainty brought about by domestic and political turmoil's. Firms do now however believe that these events could largely be behind us, with renewed levels of confidence within the industry going forward.

It therefore remains to be seen whether the recovery in confidence levels during 2017 will filter through to stronger growth in earnings, considering the more positive outlook on profitability and a stabilization in the order book to income ratios in the current survey.

Table 9: CESA Confidence index: % respondents satisfied with working conditions

Survey Period	CESA Confidence Index	% Change on previous survey	% Change on survey same time last year
Jun-05	96.8	12.2%	25.4%
Dec-05	99.3	2.5%	14.9%
Jun-06	99.7	0.5%	3.0%
Dec-06	98.4	-1.30	-0.8
Jun-07	99.4	1.0%	-0.3%
Dec-07	99.8	0.4%	1.4%
Jun-08	99.9	0.1%	0.5%
Dec-08	99.8	-0.1%	0.0%
Jun-09	96.2	-3.6%	-3.7%
Dec-09	86.0	-10.6%	-13.8%
Jun-10	87.1	1.3%	-9.4%
Dec-10	86.7	-0.5%	0.8%
Jun-11	83.2	-4.0%	-4.5%
Dec-11	87.4	5.0%	0.8%
Jun-12	81.8	-6.4%	-1.7%
Dec-12	70.0	-14.4%	-19.9%
Jun-13	84.0	20.0%	2.7%
Dec-13	98.1	16.8%	40.1%
Jun-14	87.7	-10.6%	4.4%
Dec-14	46.3	-47.2%	-52.8%
Jun-15	44.5	-3.9%	-49.3%
Dec-15	39.4	-11.5%	-14.9%
Jun-16	75.0	90.4%	68.5%
Dec-16	87.5	16.7%	122,1%
Jun-17	96.3	10.1%	28,4%
Dec-17	55.4	-43,5%	-37,8%
Jun-18 (forecast)	85.7	57,5%	-11,0%
Dec-18 (forecast)	92.6	8,4%	70,8%

So how does the business environment perceptions in the consulting engineering industry compare with the contracting industry and business in general?

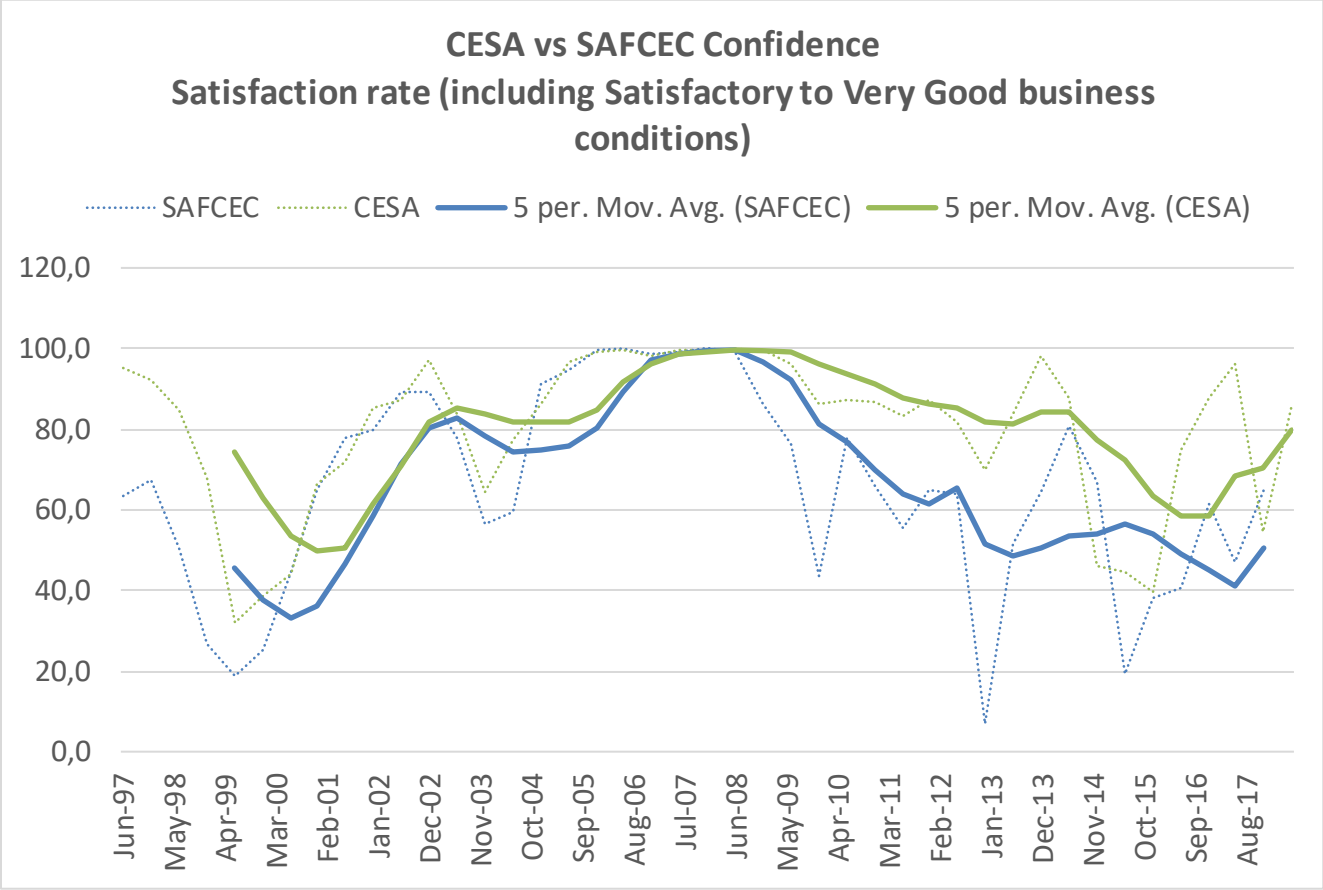


Figure 15: CESA vs SAFCEC

The relationship between confidence levels of engineers and civil contractors deteriorated from 2009 onwards as the business environment, in terms of consulting engineering, did not seem to deteriorate at the same pace as that experienced by the civil construction industry. Contractors have for some time reported on the slow pace by which contracts are awarded, as well as the slow roll out of government projects. This creates disconnect between opinions expressed by engineers and contractors, where projects are in planning stages, supporting earnings in the consulting engineering industry, but implementation is slow, negatively affecting turnover in the construction sector. Both consulting engineers and contractors experienced improved conditions during 2014, although this was short lived and confidence levels took another dip in 2015. The trend does seem to have turned for both professions, with confidence picking up in the consulting environment, which should be positive for civil contractors going forward.

Confidence in the consulting engineering sector generally lags business sentiment. Business confidence picked up to a level of 45 in the 1st quarter of 2018, a big improvement from a figure of 29 in the 2nd quarter of 2017. Business confidence has been below or close to the 50 level for the past 7 years, (which means business is mostly pessimistic regarding business conditions), at first due to uncertain outlook on interest rates and inflation, slowing economic growth and now further constrained by political instability, policy uncertainty and credit rating downgrades. Market sentiment amongst the private sector is important to the engineering industry, since the private sector contributes on average, nearly 40 percent to total earnings, which is why it is important for confidence levels to be restored to a level of between 60 and 70 in order to stimulate higher levels of investment. Although the figures are looking much better than past year. at the

current rate investment levels are still expected to remain poor, contributing to additional constraints in South Africa's economic growth as well as investment in construction.

6. Market Profile

6.1 Sub-disciplines of fee income earned

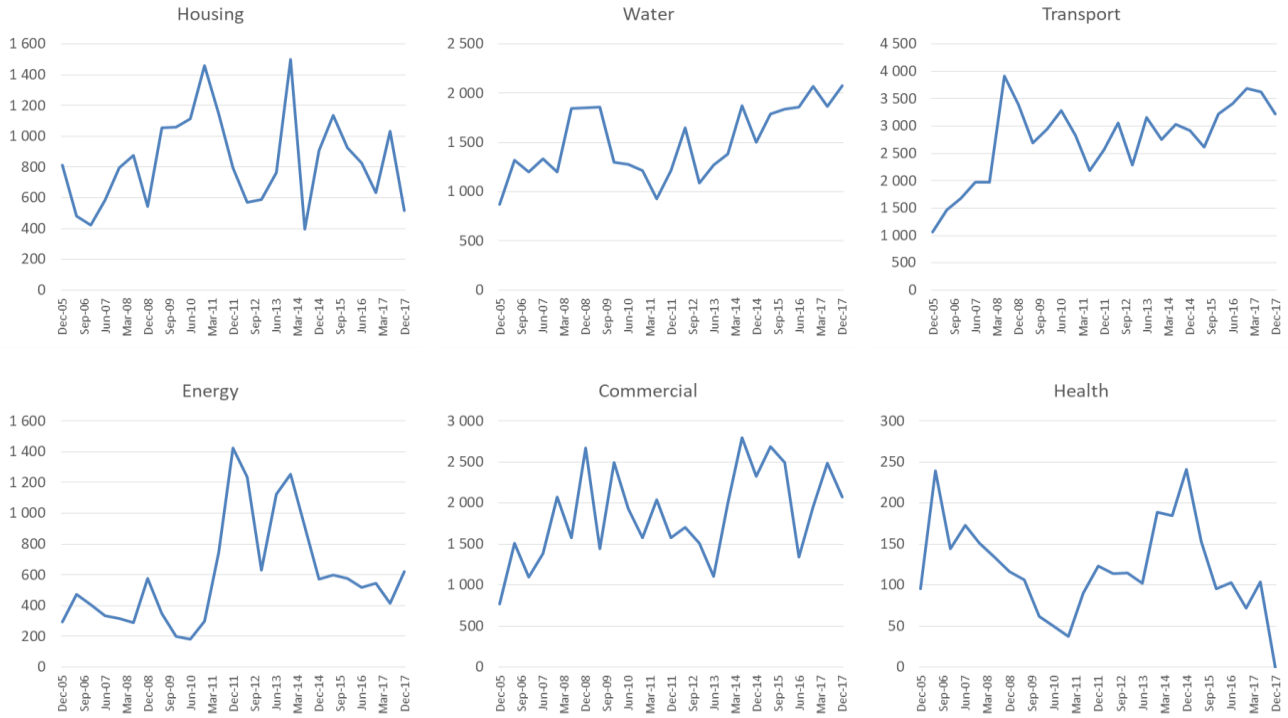
The South African consulting engineering industry is represented by many different sub-disciplines. The most common disciplines within larger firms include civil and structural services, contributing 54.8 percent and 14.0 percent in earnings during the last six months of 2017. The contribution of project management increased to more than 9 percent (from an average of 6.8 percent in 2016). The growing contribution of the civil sector as a percentage of earnings is encouraging for the civil engineering contracting industry as this will have a direct impact on pipeline work in the civil industry, although it did decline somewhat in the current survey.

Details of the various sub-disciplines are provided for under Statistical Tables.

6.2 Economic Sectors

The economic sectors include all infrastructure associated within that sector including expenditure related to soft issues such as feasibility studies or environmental assessments. From this, three key sectors evolved namely transportation, commercial and water services. The contribution by the transport and water services as well as commercial was relatively unchanged. The mining sector increased from 4 percent in the June survey to 8 percent in the current survey, closer to the 5 year average of 7.5 percent, with some renewed confidence around the mining industry. Housing halved, from a contribution of 10 percent to just 5 percent in the current survey.

The charts below depict trends in rand terms.



The table below provides a snapshot of earnings by sector categorized between large, medium, small and micro firms.

Table 10: Distribution of fee earnings by economic sector, by firm size

	Water	Transportation	Energy	Mining	Education	Health	Tourism	Housing	Commercial	Agriculture	Other	Total
A	21%	36%	7%	0%	0%	0%	4%	23%	0%	8%	0%	100%
B	29%	21%	2%	2%	0%	1%	4%	24%	0%	18%	0%	100%
C	18%	29%	8%	3%	3%	0%	14%	8%	5%	11%	0%	100%
D	14%	13%	0%	7%	3%	3%	12%	16%	9%	23%	0%	100%
Grand Total	21%	34%	6%	1%	1%	0%	5%	22%	0%	9%	0%	100%

Table 11: Distribution of fee earnings by province, by firm size

	GAU	KZN	WC	EC	NC	MPU	FS	LIM	NW	AFRICA	INT	Total
A	31%	19%	17%	7%	1%	2%	4%	2%	2%	14%	2%	100%
B	28%	16%	13%	10%	4%	6%	17%	3%	0%	3%	0%	100%
C	15%	11%	17%	15%	2%	12%	5%	16%	3%	3%	1%	100%
D	2%	12%	38%	12%	11%	6%	6%	2%	3%	8%	1%	100%
Grand Total	30%	18%	17%	8%	1%	3%	5%	3%	2%	12%	2%	100%

6.3 Geographic Location

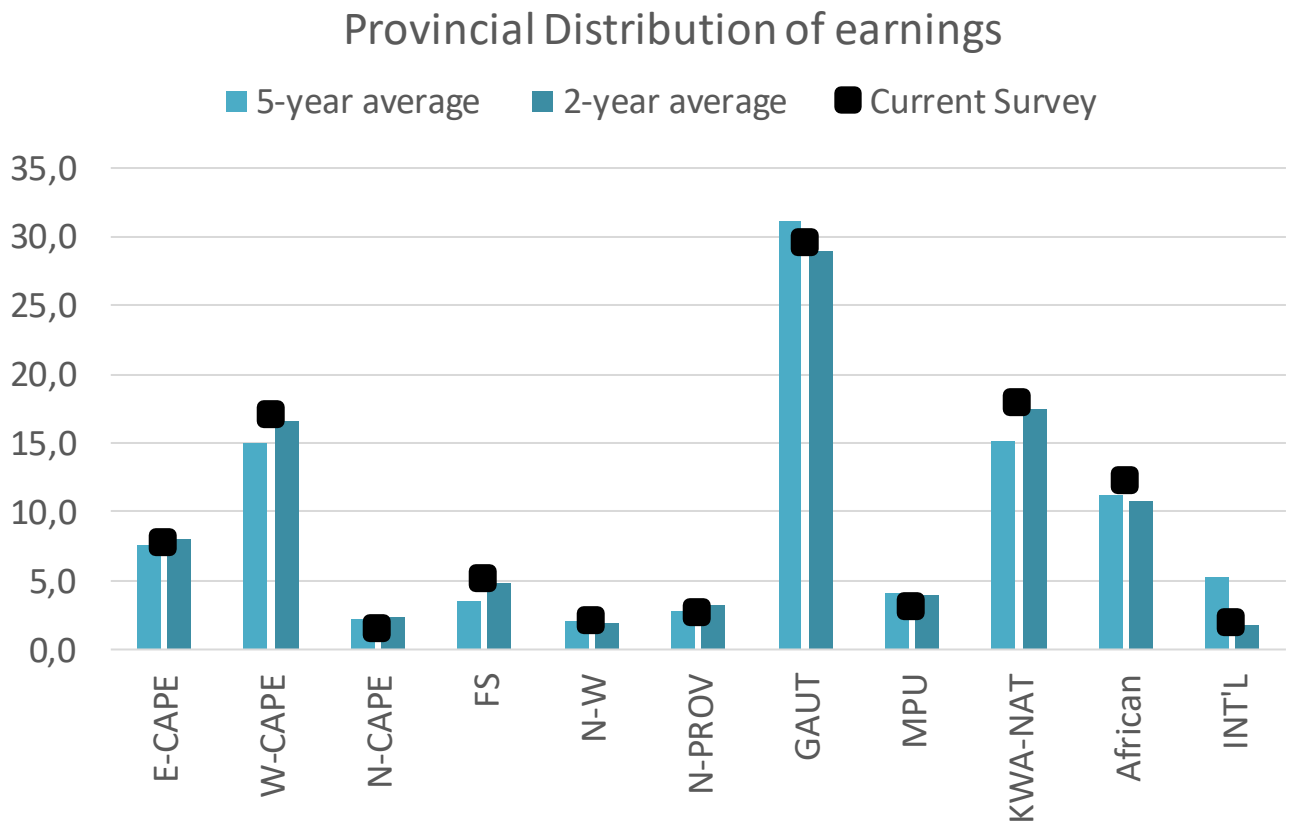


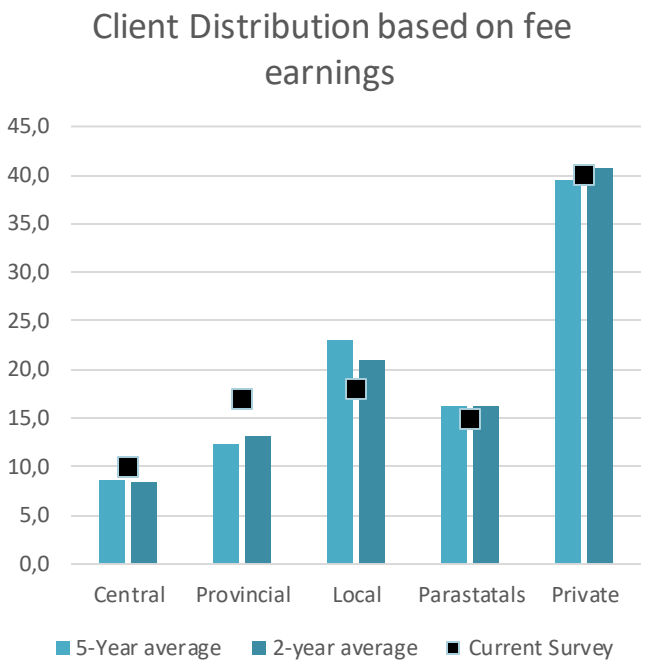
Figure 16: Provincial Distribution of earnings

The contribution of Gauteng to total earnings decreased somewhat survey to 29.5 percent in the current survey (still above the average of 25.7 percent in 2016. The contribution by the Western Cape also slowed somewhat in this current survey to16.9 percent from 18.2 percent in the previous survey, from an average of 15.7 percent in 2016. Kwazulu Natal's contribution improved to 17.8 percent in the current survey from 13.4 percent in the June 2017 survey, but this is still below the average of 19.4 percent for 2016.

Earnings outside of South Africa (Africa in particular) contributed 12.2 percent, up from 10.9 percent (June 2017) and an average of 10.2 percent in 2016. Whether or not this is a shift in strategy as far as local engineers are concerned can only be determined by the results of future surveys, and may be affected by sampling in this particular survey. International earnings contributed 1.8 percent to earnings, up from 1.1 percent in the previous survey, and down from an average of 2.1 percent in 2016. Overall earnings in African and the international market are lower compared to the 2 and 5 year averages.

6.4 Clients

The contribution to fee earnings by the private sector decreased quite substantially to 40 percent, now more in line with the two and five year average. This is a notable shift in this survey, from higher than normal levels. The strong decrease in the private sector means the contribution by provincial and local government increased to 17 percent and 18 percent respectively (from 7 percent and 18 percent in the June 2017 survey).



The contribution by SOE's also moderated slightly to 15 percent (from 16 percent), relatively on par with the 5 year average. Notable in the previous survey was the higher contribution by the central government which rose to 10 percent (from 4.0 and 5.9 percent in the previous two surveys), and this contribution was maintained in the current survey again. Medium size firms earned 44 percent of their earnings from local government compared to only 15 percent by larger firms.

The public sector is generally regarded as the most important client to the industry, but due to the decreased contribution by the private sector in the December 2017 survey, the combined representation of the public sector (including central, provincial, local government and SOE's) increased to 60 percent from 51 percent in the previous survey, while the contribution by the private sector decreased to 40 percent. The role of the public sector however remains critical to the engineering profession and particular for medium and smaller firms. A breakdown of earnings by client type and firm size is provided in the table below.

Table 12: Fee earnings distribution by client by firm size

	Central	Provincial	Local	Parastatals	Private	Total
Large	10%	18%	15%	16%	41%	100.0%
Medium	1%	10%	44%	11%	33%	100.0%
Small	14%	14%	29%	7%	35%	100.0%
Micro	20%	9%	23%	5%	43%	100.0%
Total	10%	17%	18%	15%	40%	100.0%
Average 2-Year	6.2	15.5	23.6	15.2	39.4	100.0%
Average 5-year	8.7	12.3	23.0	16.4	39.6	100.0%

5. Industry challenges as noted by respondents

Many of the challenges were noted before but as they are still applicable are included again in this report. No additional challenges were raised by respondents in the December 2017 survey.

- Regulation issues, including the procurement of consulting engineering services, remain one of the biggest challenges faced by the industry. Procurement is currently based on price and broad-based black economic empowerment (BBBEE) points, with functionality or quality having a minimum threshold, thus being largely price driven. This is affecting tender prices, as firms sometimes tender below cost in view of the diminished availability of projects.
- Unrealistic tendering fees remain a concern for members, while the extended time it takes in which to finalise a proposal is affecting profitability in the industry.
- The quality of technical personnel is argued by some firms to have deteriorated, putting greater risk on the built environment sector. Skills shortage is regarded as one the most significant institutional challenges faced by the private and the public sector. CESA has offered their services to government to procure and implement projects.
- Fraud and corruption is affecting the ethos of our society, with a lot of talk and little action accompanying the growing evidence of corruption. CESA is aware that members are under pressure from contractors and corrupt officials, to certify payment for work not completed. This is regarded as an extremely serious matter for CESA and as such will be relentless in holding those in power accountable.
- Unlocking greater private sector participation is seen as a critical element to fast track delivery which will support engineering fees and as such engineering development in the industry. Transnet for example has recently called for private sector investment to support their capital investment programme. Private sector participation in this context refers to involvement on a more technical level (and not as a client), to improve municipal capacity and efficiency. Government must create an environment for the private sector so that it can play a much bigger role in infrastructure delivery. Many of the projects highlighted in the NDP can be carried out by the private sector through public-private partnerships.
- Service delivery, especially at municipal level remains a critical burning issue. The consulting engineering industry is threatened by incapacitated local and provincial governments. As major clients to the industry, it is important that these institutions become more effective, more proactive in identifying needs and priorities and more efficient in project implementation and – management.
- The involvement of non-CESA members in government tenders and procurement continues to threaten the standard and performance of the industry. Non-CESA members do not seem to comply with the same standards and principles as those firms that are members of CESA. Whether this is linked to complaints of "below cost" tendering during 2009, is not certain, but CESA members should be better informed about engaging in below cost tendering.
- Firms from across South African borders are tendering at rates that are not competitive for local firms. Complaints have been received of some of these firms not producing proper drawings and not attending site visits. Clients, unfortunately, are not always properly experienced or educated to conduct proper procurement assessments and unknowingly award contracts to these "unscrupulous" firms. While these occurrences may be limited to smaller rural areas, it remains an unacceptable practice.
- Lack of attention to maintain infrastructure poses a serious problem for the industry. Not only is it much more costly to build new infrastructure, but dilapidated infrastructure hampers economic growth potential. The cost of resurfacing a road after seven years at current prices, is estimated at R175 000 per kilometer, compared to R3 million per kilometer to rebuild, less than 6% of the construction price. In many cases, infrastructure is left to deteriorate to such a state, that maintenance becomes almost impossible.
- A further challenge to the industry is to find a way to standardize the procurement procedures applied by the different government departments. Procurement procedures should be standard for the country, or at least for the specific tier of government.
- Adapting to a low growth environment as outlook for infrastructure spending is hampered by poor economic growth, lower than expected revenue by government, international economic instability and price volatility, and low private sector confidence.
- Requirement as set out in the Construction Sector Charter inhibit small firms to competitively tender on government projects, requiring them as such to be more reliant on private sector work. In this survey small and micro enterprises earned between 44 percent and 62 percent from the private sector.

7. Professional Indemnity Insurance

The industry reported to have spent more on premiums for professional indemnity insurance, which increased to an average of 2.6 percent in the December 2017 survey from between 1.2 percent and 1.6 percent in the previous two surveys. Majority of firms (60 percent) spent less than 1% of their income on insurance, but a few did report between 3 percent and 5 percent. Most of the larger firms reported a level of between 0.3 percent and 3.0 percent.

Table 13: Average annual premium and limit of indemnity as percentage of gross fee income, by firm size category

Firm size category	Average annual premium as percentage of gross fee income	Average Limit of Indemnity as % of gross fee income	Average deductible on PI as % of limit of indemnity
A	1,5	15,4	8,5
B	0,7	82,6	1,2
C	5,0	178,9	6,8
D	1,7	224,0	1,3
Average	2,6	133,2	4,3

Majority of firms (68%) reported a low risk exposure, while only 2 percent of the firms reported to have high risk exposure. 70 percent of the larger firms reported on medium risk, higher than the average for the industry. Please note that only a few firms reported on the value of claims paid by insurers as a percentage of premiums paid, so the results from this section of the survey is deemed unreliable and not suitable for analytical purposes.

The industry's average limit of indemnity (LOI) as a percentage of gross fee income over the 12 month period increased from an average of 88.5 percent (June 2016) 90.6 percent (December 2016) to 149 percent (June 2017) to 133.2 percent in the current survey. The limit of indemnity averaged 15.4 for larger firms (from 32.0percent in June 2017) and 82.6 percent for medium size firms. Smaller to micro firms reported a much higher average of 201.5 percent.

In terms of deductibles as a percentage of the indemnity limit the industry averaged 4.3 percent in the December 2017 survey, higher than the 1.4 in the June 2017 survey. Larger firms averaged 8.5 percent, compared to an average of 1.2 percent for medium size firms.

8. Quality Management System

A quality management system (QMS) is a control that is implemented at various stages of production process or service delivery stages. All firms are required to have a QMS as a condition of CESA membership. Majority of firms reported to have a QMS system in place (98 percent). While all the larger, medium and smaller size firms reported to have the QMS in place, only 92% of the micro enterprises that responded to the survey currently comply, on par with the previous survey.

Having a QMS in place is now compulsory for all CESA members, who recognize the importance of good efficient quality control. CESA recommends the ISO:9001:2008 frame work, recognizing this framework as being comprehensive and internationally recognized. Members can, provided the correct procedures are followed, claim a portion of the skills development levy for quality management training. For more information on statutory requirements for members, please refer to the practice note released by CESA.

Members are obliged to use accredited agents should they wish to obtain an ISO 9001:2008 certificate. Details of certification bodies used by Members consenting to make this information available, is published on the CESA website. On average 42 percent of the firms certified in this survey, a moderate deterioration from the 47 percent in the first six months of 2017 but well above the 34 percent in the last six months of 2015 for example. Majority of the small to micro firms are still not ISO 9001:2008 certified, compared to more than 84 percent of the larger and medium size firms. An ISO certification is not a condition of membership at this stage.

Statistical Tables

Table 14: General financial indicators

Survey period	Employment[3]	Salaries / Wages 2000 prices (Annualised)	Fee Income, R mill (Annualised)			Cost Deflator	
			Current prices	Constant 2000 prices	Y/Y real % change	CPI Index 2000 = 100	CPI y/y % Change
Dec-08	19,081	5,516	16,965	10,407	44.9%	163.0	11.1%
Jun-09	19,596	5,141	16,287	9,700	2.1%	167.9	8.1%
Dec-09	19,342	5,019	14,984	8,653	-16.9%	173.2	6.2%
Jun-10	19,632	4,723	15,433	8,746	-9.8%	176.5	5.1%
Dec-10	19,357	5,220	15,588	8,699	0.5%	179.2	3.5%
Jun-11	19,937	5,650	17,614	9,576	9.5%	183.9	4.2%
Dec-11	19,618	6,002	18,054	9,527	9.5%	189.5	5.8%
Jun-12	20,796	6,124	20,221	10,380	8,4%	194.8	5.9%
Dec-12	19,964	6,316	19,109	9,569	0.4%	199.7	5.4%
Jun-13	24,356	6,557	20,446	9,935	-4.3%	205.8	5.6%
Dec-13	23,625	6,226	22,286	10,552	10.3%	211.2	5.8%
Jun-14	23,389	7,006	23,557	10,799	8.5%	218.2	6.2%
Dec-14	22,921	6,808	23,439	10,474	-0.7%	223.8	5.9%
Jun-15	23,838	6,857	23,697	10,389	-3.6%	228.10	4.4%
Dec-15	24,315	6,748	25,119	10,712	2.3%	234.50	4.8%
Jun-16	24,072	6,511	25,068	10,335	-0.5%	242.6	6.3%
Dec-16	23,349	6,699	25,319	10,150	-5.2%	249.4	6.4%
Jun-17	24,283	6,522	26,585	10,352	0.2%	256.82	5.9%
Dec-17	21,369	6,226	27,117	10,377	1.8%	261,31	4,8%

Table 15: Consulting Engineering Profession: Financial indicators: Annual Percentage Change (Real)

Survey period	Employment	Salary and Wage bill	Fee income	Cost escalation based on CPI index (Stats Sa)
Dec-08	13.9%	55.7%	44.9%	11.10%
Jun-09	6.8%	4.1%	2.1%	8.10%
Dec-09	1.4%	-9.0%	-16.9%	6.20%
Jun-10	0.2%	-8.1%	-9.8%	5.10%
Dec-10	0.1%	4.0%	0.5%	3.50%
Jun-11	1.6%	19.6%	9.5%	4.20%
Dec-11	1.4%	15.0%	9.5%	5.80%
Jun-12	4.3%	8.4%	8.4%	5.90%
Dec-12	1.8%	5.2%	0.4%	5.40%
Jun-13	17.1%	7.1%	-4.3%	5.60%
Dec-13	18.3%	-1.4%	10.3%	5.80%
Jun-14	-4.0%	7.0%	8.7%	6.20%
Dec-14	-2.9%	9.4%	-0.7%	5.90%
Jun-15	1.9%	-2.1%	-3.6%	4.4%
Dec-15	6.1%	-0.9%	2.3%	4.8%
Jun-16	1.0%	-5.0%	-0.5%	6.3%
Dec-16	-3.9%	-0.7%	-5.2%	6.4%
Jun-17	0.9%	0.2%	0.2%	5.9%
Dec-17	-8.5%	-7.1%	1.8%	4.8%

[3] Revised June 2007

Table 16: Sub-disciplines: Percentage share of earnings

Sub-discipline	Dec-16	Jun-17	Dec-17	5-year average	2-year average	Deviation 5-year	Deviation 2-year	Deviation last six months
Agricultural	0,7%	0,2%	**0,9%**	**0,9%**	**0,7%**	**-0,5%**	**-0,5%**	**0,7%**
Architecture	0,3%	0,5%	**0,0%**	**0,7%**	**0,4%**	**0,1%**	**0,1%**	**-0,5%**
Mechanical building Services	2,8%	5,3%	**5,1%**	**3,6%**	**3,9%**	**1,4%**	**1,4%**	**-0,2%**
Civil	48,5%	60,0%	**54,8%**	**48,3%**	**53,9%**	**6,1%**	**6,1%**	**-5,2%**
Electrical / Electronic	4,1%	5,3%	**4,6%**	**6,8%**	**4,6%**	**0,7%**	**0,7%**	**-0,7%**
Environmental	4,0%	1,3%	**3,7%**	**3,2%**	**3,3%**	**-2,0%**	**-2,0%**	**2,4%**
Facilities Management (New)	0,0%	1,5%	**0,0%**	**0,4%**	**0,4%**	**1,1%**	**1,1%**	**-1,5%**
Geotechnical	1,5%	0,9%	**1,6%**	**1,3%**	**1,4%**	**-0,5%**	**-0,5%**	**0,7%**
Industrial Process / Chemical	3,7%	0,0%	**0,6%**	**1,9%**	**1,8%**	**-1,8%**	**-1,8%**	**0,6%**
GIS	1,9%	0,9%	**0,4%**	**0,6%**	**0,8%**	**0,1%**	**0,1%**	**-0,5%**
Hydraulics (New)	0,5%	0,0%	**1,3%**	**0,7%**	**0,5%**	**-0,5%**	**-0,5%**	**1,3%**
Information Systems / Technology	5,6%	3,1%	**0,0%**	**1,5%**	**2,7%**	**0,4%**	**0,4%**	**-3,1%**
Marine	0,0%	0,0%	**0,0%**	**1,0%**	**0,7%**	**-0,7%**	**-0,7%**	**0,0%**
Mechanical	3,4%	0,9%	**2,8%**	**4,4%**	**3,5%**	**-2,6%**	**-2,6%**	**1,9%**
Mining	0,6%	1,3%	**1%**	**1,3%**	**0,8%**	**0,5%**	**0,5%**	**-0,4%**
Project Management	7,9%	3,9%	**9%**	**9,4%**	**6,5%**	**-2,6%**	**-2,6%**	**4,6%**
Quantity Surveying	0,3%	0,3%	**0%**	**0,3%**	**0,2%**	**0,1%**	**0,1%**	**-0,3%**
Structural	13,9%	13,7%	**14%**	**12,5%**	**13,6%**	**0,1%**	**0,1%**	**0,5%**
Town planning	0,4%	0,9%	**0%**	**1,4%**	**0,5%**	**0,4%**	**0,4%**	**-0,5%**
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**			

Table 17: Sub-disciplines, Fee income R mill, Real 2000 prices

Sub-discipline	DEC16	JUN17	DEC17	Change last six months	Change last 12 months
Agricultural	68	21	89	**329%**	**30%**
Architecture	30	52	3	**-94,8%**	**-91%**
Mechanical building Services	282	549	530	**-3,4%**	**88%**
Civil	4 922	6 211	5 687	**-8,4%**	**16%**
Electrical / Electronic	416	549	481	**-12,4%**	**15%**
Environmental	410	135	385	**186,4%**	**-6%**
Facilities Management (New)	2	155	2	**-98,7%**	**33%**
Geotechnical	154	93	168	**80,6%**	**9%**
Industrial Process / Chemical	372	0	66		**-82%**
GIS	188	93	45	**-52,1%**	**-76%**
Hydraulics (New)	54	0	132		**144%**
Information Systems / Technology	564	321	0	**-100,0%**	**-100%**
Marine	0	0	4		
Mechanical	347	93	289	**210,7%**	**-17%**
Mining	59	135	96	**-29,0%**	**62%**
Project Management	807	404	883	**118,6%**	**9%**
Quantity Surveying	27	31	4	**-86,8%**	**-85%**
Structural	1 407	1 418	1 476	**4,1%**	**5%**
Town planning	41	93	37	**-59,9%**	**-9%**
Total	**10 150**	**10 352**	**10 377**	**0,2%**	**2%**

Table 18: Provincial Distribution, R mill, Real 2000 prices (Annualized, two survey average)

Province	Survey period							
	Jun-14	Dec-14	Jun-15	Dec-15	Jun-16	Dec-16	Jun-17	Dec-17
EC	702	880	675	643	1,085	721	704	751
WC	1,847	1,299	1,486	1,393	1,530	1,685	1,884	1,819
NC	248	325	187	171	331	284	197	171
FS	270	283	571	386	331	548	590	560
NW	259	283	280	182	320	142	145	176
LIM	248	367	218	407	227	497	321	295
GAU	3,434	2,577	2,950	2,485	1,943	3,309	3,602	3,332
MPU	346	388	322	428	630	416	279	295
KZN	**1,015**	**1,267**	**1,538**	**1,928**	**2,914**	**1,066**	**1,387**	**1,617**
AFRICAN	1,425	1,655	1,382	1,767	847	1,228	1,128	1,197
INT'L	1,004	1,152	779	932	176	254	114	150
Total	10,799	10,474	10,389	10,722	10,335	10,150	10,352	10,364

Table 19: Provincial Distribution Y-Y percentage Change
(Trend – SMOOTHED over two consecutive surveys, to remove short term volatility)

Province	Survey period							
	Jun-14	Dec-14	Jun-15	Dec-15	Jun-16	Dec-16	Jun-17	Jun-17
EC	21.6%	-15.8%	-8.1%	-16.6%	11.1%	37.0%	-17.6%	-16,8%
WC	41.3%	0.7%	-28.0%	-8.4%	4.9%	11.7%	22.1%	13,2%
NC	38.3%	46.9%	11.5%	-37.4%	-1.9%	71.6%	-4.2%	-44,4%
FS	-4.5%	17.4%	70.3%	73.3%	-16.1%	-8.2%	58.9%	27,4%
NW	72.5%	25.1%	7.8%	-14.6%	-10.8%	0.0%	-42.9%	-23,8%
LIM	7.2%	76.4%	36.8%	1.7%	8.5%	15.9%	29.0%	-18,5%
GAU	-7.4%	-21.8%	-22.4%	-9.5%	-19.9%	-3.4%	56.1%	26,9%
MPU	-45.0%	6.0%	16.6%	2.5%	49.2%	39.5%	-34.3%	-43,5%
KZN	-34.2%	-29.5%	30.9%	52.0%	72.6%	14.8%	-49.3%	-18,7%
AFRICAN	90.1%	93.1%	21.0%	2.3%	-13.9%	-34.1%	-9.9%	15,4%
INT'L	230.7%	229.6%	30.7%	-20.6%	-42.7%	-74.9%	-66.8%	-30,0%
Total	9.4%	3.7%	-2.2%	-0.7%	0.9%	-3.0%	-2.6%	1,2%

Table 20: Provincial Distribution percentage share of earnings

Province	Survey period									
	Jun-14	Dec-14	Jun-15	Dec-15	Jun-16	Dec-16	Jun-17	Dec-17	5-year average	2-year average
EC	6.5	8.4	6.5	6.0	10.5	7.1	6.8	7,7	7,8	8,0
WC	17.1	12.4	14.3	13.0	14.8	16.6	18.2	16,9	15,4	16,6
NC	2.3	3.1	1.8	1.6	3.2	2.8	1.9	1,4	2,2	2,3
FS	2.5	2.7	5.5	3.6	3.2	5.4	5.7	5,1	3,8	4,9
NW	2.4	2.7	2.7	1.7	3.1	1.4	1.4	2,0	2,2	2,0
LIM	2.3	3.5	2.1	3.8	2.2	4.9	3.1	2,6	2,8	3,2
GAU	31.8	24.6	28.4	23.2	18.8	32.6	34.8	29,5	29,9	28,9
MPU	3.2	3.7	3.1	4.0	6.1	4.1	2.7	3,0	3,7	4,0
KZN	**9.4**	**12.1**	**14.8**	**18.0**	28.2	10.5	13.4	17,8	15,6	17,5
AFRICAN	13.2	15.8	13.3	16.5	8.2	12.1	10.9	12,2	11,8	10,9
INT'L	9.3	11.0	7.5	8.7	1.7	2.5	1.1	1,8	5,0	1,8
Total	100%	100%	100%	100%	100%	100%	100%	100%		

Table 21: Client Distribution Fee income earned, R mill, Real 2000 prices (Annualized)

Client	Survey period						
	Dec-14	Jun-15	Dec-15	Jun-16	Dec-16	Jun-17	Dec-17
Central	1,194	488	632	413	1,015	1,035	1 038
Provincial	1,320	1,351	2,132	1,550	1,421	725	1 764
Local	2,189	2,639	2,228	2,377	2,538	1,863	1 868
State Owned	1,676	1,434	1,403	1,654	1,827	1,656	1 557
Private	4,095	4,478	4,317	4,237	3,350	5,072	4 151
Total	10,474	10,389	10,712	10,232	10,150	10,352	10 377

Table 22: Client distribution Percentage share of earnings

Client	Survey period								
	Dec-14	Jun-15	Dec-15	Jun-16	Dec-16	Jun-17	Dec-17	5-year average	2-year average
Central	11.4	4.7	5.9	4.0	10.0	10.0	10,0	8,7	8,5
Provincial	12.6	13.0	19.9	15.0	14.0	7.0	17,0	12,3	13,3
Local	20.9	25.4	20.8	23.0	25.0	18.0	18,0	23,0	21,0
State Owned	16.0	13.8	13.1	16.0	18.0	16.0	15,0	16,4	16,3
Private	39.1	43.1	40.3	41.0	33.0	49.0	40,0	39,6	40,8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0		

Table 23: Economic sector Percentage share of earnings

Economic sector	Dec-16	Jun-17	Dec-17	5-year average	2-year average	Deviation 5-year	Deviation 2-year	Deviation last six months
Water (Full water cycle)	**20%**	18%	20%	15,8%	19,0%	2,2%	-1,0%	2,0%
Transportation (land, air, road, rail, ports)	36%	35%	31%	29,2%	33,0%	5,8%	2,0%	-4,0%
Energy (electricity, gas, hydro)	5%	4%	6%	7,7%	5,0%	-3,7%	-1,0%	2,0%
Mining / Quarrying	5%	4%	8%	7,5%	6,0%	-3,5%	-2,0%	4,0%
Education	1%	1%	1%	1,5%	1,0%	-0,5%	0,0%	0,0%
Health	1%	1%	0%	1,3%	0,5%	-0,3%	0,5%	-1,0%
Tourism/Leisure	0%	0%	0%	0,6%	0,0%	-0,6%	0,0%	0,0%
Housing (residential inc. land)	6%	10%	5%	8,0%	7,5%	2,0%	2,5%	-5,0%
Commercial[4]	19%	24%	20%	19,2%	22,0%	4,8%	2,0%	-4,0%
Agriculture / Forestry / Fishing	1%	0%	0%	1,2%	0,0%	-1,2%	0,0%	0,0%
Other	5%	3%	9%	8,1%	6,0%	-5,1%	-3,0%	6,0%
Total	**100%**	**100%**	**100%**					

[4] Commercial includes: Manufacturing, industrial buildings, communication, financial, facilities management

Table 24: Economic Sector Rm, Real 2000 prices, Annualized

Economic sector	Dec-15	Jun-16	Dec-16	Jun-17	Jun-17	Per. Change last 6 months	Per. Change Last 12 months
Water (Full water cycle)	1,838	1,860	2,070	1,863	2 075	11,4%	0,2%
Transportation (land, air, road, rail, ports)	3,221	3,411	3,693	3,623	3 217	-11,2%	-12,9%
Energy (electricity, gas, hydro)	576	517	545	414	623	50,4%	14,3%
Mining / Quarrying	545	723	505	414	830	100,5%	64,3%
Education	166	207	124	104	104	0,2%	-16,5%
Health	95	103	72	104	0	-100,0%	-100,0%
Tourism/Leisure	43	0	32	0	0	-	-100,0%
Housing (residential inc. land)	926	827	634	1,035	519	-49,9%	-18,2%
Commercial	2,492	1,344	1,955	2,484	2 075	-16,5%	6,2%
Agriculture / Forestry / Fishing	85	103	60	0	0	-	-100,0%
Other	724	1,240	459	311	934	200,7%	103,4%
Total	**10,712**	**10,335**	**10,150**	**10,352**	10 377	0,2%	2,2%

Table 25: Proposed CESA Labour unit cost index

Survey period	Labour Unit cost (LUC) per hour	Index (2000 = 100) Smoothed	Year on Year percentage change in Index	Annual Average Annual Increase
Jun-03	R79.51	121.42	4.3%	
Dec-03	R92.14	135.18	14.3%	9.3%
Jun-04 * Revised	R95.22	147.56	21.5%	
Dec-04	R95.75	150.40	11.3%	16.4%
Jun-05	R101.62	155.44	5.3%	
Dec-05	R 103.07	161.20	7.2%	6.3%
Jun-06	R 112.97	170.14	9.5%	
Dec-06	R113.40	178.28	10.6%	10.0%
Jun-07	R122.3	185.61	9.1%	
Dec-07	R127,21	196.49	10.2%	9.7%
Jun-08	R150.43	218.65	17.8%	
Dec-08	R162.80	246.68	25.5%	21.7%
Jun-09	R171.98 r	263.65 r	20.6% r	
Dec-09	R174.77	273.07	10.7%	15.6%
Jun-10	R174.50	275.06	4.3%	
Dec-10	R199.3	294.37	7.8%	6.1%
Jun-11	R179.8	298.5	8.5%	
Dec-11	R199.5	298.7	1.5%	5.0%
Jun-12	R196.2	311.6	4.4%	
Dec-12	R249.8	351.2	17.6%	10.9%
Jun-13	R241.3	386.7	24.1%	
Dec-13	R236.1	375.9	7.0%	15.6%
Jun-14	R255.8	387.4	0.2%	
Dec-14	R266.1	411.0	9.3%	4.8%
Jun-15	R253.5	409.2	5.6%	
Dec-15	R243.08	391.06	-4.9%	0.4%
Jun-16	R236.34	377.56	-7.7%	
Dec-16	R231.78	368.66	-5.7%	-6.7%
Jun-17	R251.81	380.84	0.9%	
Dec-17	R 274,81	432,84	12,5%	6,68%

Table 26: Fee income outstanding for more than 90 days (including foreign fee income earnings)

Income distribution	Fee income outstanding for more than 90 days as % of total annualized fee income by client (total fee income = gross fee income + fee income outstanding)				
	July-Dec 2015 %	Jan- Jun 2016 %	Jul-Dec 2016 %	Jan-Jun 2017 %	Jun-Dec 2017 %
Central government	6.3%	3.7%	3.3%	7.6%	15,7%
Provincial government	5.9%	17.3%	3.3%	83.7%	5,6%
Local government	16.3%	16.1%	5.9%	10.9%	10,8%
State owned enterprises	6.4%	7.47%	3.9%	3.4%	12,5%
Private Sector	35.6%	11.2%	29.8%	19.3%	15,6%
Foreign (all EX-RSA)	81.4%	28.4%	132.0%	155.1%	107,6%
Total	22.9%	25.0%	23.1%	23.8%	27.6%

** Note:*
In the July – December 2001 survey the questionnaire was changed to exclude non-payment for periods less than 60 days, which leads to distortions when comparing previous survey's results.
In the July – December 2002 survey the questionnaire was changed to include non-payments by foreign clients (irrespective of client classification). The total percentage of fee income outstanding therefore includes non-payments by foreign clients, previously excluded.

Table 27: Contribution to education and training (excluding 1% CETA Levy)

Survey	Bursaries % of salary bill	Bursaries R mill current prices	Training % of Salary bill[5]	Training R mill current prices
Dec-03	0,5%	R11	1,3%	R 28.0
Jun-04	0,6%	R13	1,3%	R30.0
Dec-04	0,5%	R12	1,8%	R44.6
Jun-05	0,6%	R15	1,3%	R33.7
Dec-05	0,7%	R19	1,5%	R44.2
Jun-06	0,9%	R35	1,2%	R48.5
Dec-06	0,6%	R29	1,1%	R49.7
Jun-07	0,9%	R44	1,0%	R52.2
Dec-07	0,6%	R32	1,3%	R67.0
Jun-08	1.1%	R82	1.4%	R107.4
Dec-08	0.5%	R40	0.8%	R70.1
Jun-09	0.6%	R52	0.8%	R68.2
Dec-09	0.4%	R37	1.0%	R88.9
Jun-10	0.9%	R72	0.9%	R74.2
Dec-10	0.4%	R37	1.3%	R121.6
Jun-11	0.5%	R 53	0.3%	R31.2
Dec-11	0.3%	R34	1.9%	R212
Jun-12	0.8%	R95	1.2%	R148
Dec-12	0.4%	R50	0.5%	R63
Jun-13	0.6%	R81	1.0%	R134
Dec-13	1.6%	R210	0.6%	R78
Jun-14	0.5%	R76	0.4%	R61
Dec-14	0.3%	R46	0.4%	R61
Jun-15	0.5%	R78	0.4%	R63
Dec-15	0.3%	R47	0.4%	R63
Jun-16	0.7%	R111	0.7%	R111
Dec-16	0.5%	R84	0.6%	R100
Jun-17	0.7%	R117	0.6%	R100
Dec-17	0.4%	R65	0.7%	R114

[5] Training now includes all training, in-house and external. Comparisons with previous surveys not compatible. – excludes costs related to salaries

Table 28: Employment profile of the consulting engineering industry: Percentage contribution: Jul – Dec 2017

Job Category	Black	Coloured	Asian	White	Total	% Share by type
Professional Engineer Pr.Eng	6,7%	2,9%	5,5%	84,9%	100.00%	13,7%
Professional Architects	0,0%	20,0%	0,0%	80,0%	100.00%	0,1%
Professional Quantity Surveyors	14,3%	2,4%	7,1%	76,2%	100.00%	0,8%
Professional Other	8,9%	2,8%	5,7%	82,6%	100.00%	5,1%
Technologists Pr TEchENg	15,7%	8,8%	10,5%	65,1%	100.00%	7,6%
Technicians PrTechni	25,2%	10,7%	3,0%	61,1%	100.00%	4,9%
Unregistered technical staff: Engineer	21,4%	6,8%	10,1%	61,7%	100.00%	12,9%
Unregistered technical staff: Technologist	38,6%	11,4%	21,9%	28,1%	100.00%	3,8%
Unregistered technical staff: Technician	58,4%	11,6%	7,9%	22,1%	100.00%	8,4%
Unregistered technical staff: Other	26,8%	11,3%	5,1%	56,8%	100.00%	6,4%
Technical Assistants	42,9%	10,4%	10,4%	36,3%	100.00%	3,3%
Draughts Persons	14,2%	12,6%	5,1%	68,1%	100.00%	7,7%
Laboratory / Survey Assistants	91,2%	2,0%	1,4%	5,4%	100.00%	2,6%
Administration / Support staff	39,4%	13,7%	7,5%	39,4%	100.00%	22,9%
Total	28,6%	9,3%	7,6%	54,5%	100.00%	100.00%

Table 29: Employment profile of the consulting engineering industry: Change in contribution Jul-Dec 2017 vs Jan-Jun 2017

Job Category	Black	Coloured	Asian	White
Professional Engineer Pr.Eng	1,5%	0,5%	1,2%	-3,1%
Professional Architects	-50,0%	-30,0%	0,0%	80,0%
Professional Quantity Surveyors	0,8%	0,5%	-2,5%	1,2%
Professional Other	-3,0%	0,5%	1,0%	1,4%
Technologists Pr TEchENg	2,8%	4,4%	0,7%	-7,9%
Technicians PrTechni	-13,8%	-1,7%	-2,3%	17,7%
Unregistered technical staff: Engineer	-1,7%	1,0%	0,0%	0,7%
Unregistered technical staff: Technologist	4,3%	-1,3%	7,4%	-10,4%
Unregistered technical staff: Technician	-7,9%	0,4%	2,7%	4,8%
Unregistered technical staff: Other	-18,9%	3,0%	0,5%	15,4%
Technical Assistants	2,6%	1,5%	3,7%	-7,9%
Draughts Persons	2,2%	-0,8%	1,3%	-2,7%
Laboratory / Survey Assistants	-1,5%	2,0%	-1,6%	1,1%
Administration / Support staff	-0,8%	0,9%	-0,3%	0,2%
Total	-4,9%	1,0%	0,8%	3,1%

Table 30: Executive Staff profile - contribution by BLACK people, as percentage of TOTAL Executive Staff, by company type (Black include Black, Asian and Coloured)

Company Type	Owner category	Professional Category	Dec-14	Jun-15	Dec-15	Jun-16	Dec-16	Jun-17	Jun-17
(PTY) LTD	Executive Directors	Pr.Eng	14.0%	14.8%	14.5%	21.5%	18.4%	13.7%	17,8%
		PrTechEng	33.3%	36.5%	33.3%	31.8%	33.3%	44.8%	50,0%
		Other	61.8%	60.9%	60.3%	60.0%	50.0%	56.1%	105,9%
		TOTAL	**27.3%**	**28.4%**	**29.5%**	**32.0%**	**29.7%**	**29.7%**	**15,3%**
	Non-Executive Directors	Pr.Eng	33.3%	53.8%	62.5%	71.4%	100.0%	40.0%	64,2%
		PrTechEng	66.7%	50.0%	100.0%	57.1%	100.0%	0.0%	79,4%
		Other	86.7%	68.5%	76.9%	70.0%	100.0%	76.2%	21,4%
		TOTAL	**55.0%**	**64.0**	**73.0%**	**67.6%**	**100.0%**	**64.3%**	**78,5%**
CC	Members	Pr.Eng	81.8%	88.2%	85.7%	81.8%	60.0%	23.1%	51,2%
		PrTechEng	50.0%	42.3%	40.0%	0%	100.0%	75.0%	41,5%
		Other	87.5%	93.8%	92.3%	85.7%	66.7%	77.8%	17,8%
		TOTAL	**78.2%**	**69.5%**	**71.4%**	**75.0%**	**66.7%**	**50.0%**	**50,0%**
Partnership	Partners	Pr.Eng	20.0%	14.3%	75.0%	0.0%	33.3%	50.0%	105,9%
		PrTechEng	100.0%	0.0%	60.0%	0.0%	100.0%	100.0%	15,3%
		Other	75.0%	75.0%	50.0%	50.0%	50.0%	50.0%	64,2%
		TOTAL	**54.5%**	**46.7%**	**63.6%**	**20.0%**	**57.1%**	**62.5%**	**79,4%**
Total			**38.4%**	**40.4%**	**39.5%**	**40.8%**	**45.7%**	**37.4%**	21,4%

Table 31: CESA Confidence index: % respondents satisfied with working conditions

Survey Period	CESA Confidence Index	% Change on previous survey	% Change on survey same time last year
Dec-03	64.2	-23.38%	-33.9%
Jun-04	77.2	20.25%	-7.9%
Dec-04	86.3	11.77%	34.4%
Jun-05	96.8	12.2%	25.4%
Dec-05	99.3	2.5%	14.9%
Jun-06	99.7	0.5%	3.0%
Dec-06	98.4	-1.30	-0.8
Jun-07	99.4	1.0%	-0.3%
Dec-07	99.8	0.4%	1.4%
Jun-08	99.9	0.1%	0.5%
Dec-08	99.8	-0.1%	0.0%
Jun-09	96.2	-3.61%	-3.7%
Dec-09	86.0	-10.6%	-13.8%
Jun-10	87.1	1.3%	-9.4%
Dec-10	86.7	-0.5%	0.8%
Jun-11	83.2	-4.0%	-4.5%
Dec-11	87.4	5.0%	0.8%
Jun-12	81.8	-6.4%	-1.7%
Dec-12	70.0	-14.4%	-19.9%
Jun-13	84.0	20.0%	2.7%
Dec-13	98.1	16.8%	40.1%
Jun-14	87.7	-10.6%	4.4%
Dec-14	46.3	-47.2%	-52.8%
Jun-15	44.5	-3.9%	-49.3%
Dec-15	39.4	-11.5%	-14.9%
Jun-16	75.0	90.4%	68.5%
Dec-16	87.5	16.7%	122.1%
Jun-17	96.3	10.1%	28.4%
Dec-17	55.4	-43.5%	-37.8%
Jun-18 (forecast)	85.7	57.5%	-11.0%
Dec-18 (forecast)	97.9	8.4%	70.8%

Table 32: Employment Breakdown, by race, gender and job category July – December 2017

Job category	Black			Coloured			Asian			White			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Professional Engineer Pr.Eng	158	38	196	77	8	85	119	42	161	2 322	161	2 483	2 675	250	2 925
Professional Architects	0	0	0	4	0	4	0	0	0	12	4	15	15	4	19
Professional Quantity Surveyors	12	12	23	4	0	4	12	0	12	96	27	123	123	38	161
Professional Other	62	35	96	12	19	31	27	35	62	642	254	896	742	342	1 084
Technologists Pr TEchENg	196	58	254	111	31	142	142	27	169	999	54	1 053	1 449	169	1 618
Technicians PrTechni	211	50	261	81	31	111	27	4	31	604	31	634	923	115	1 038
Unregistered technical staff: Engineer	427	161	588	123	65	188	181	96	277	1 322	377	1 699	2 053	700	2 752
Unregistered technical staff: Technologist	204	108	311	65	27	92	115	62	177	196	31	227	580	227	807
Unregistered technical staff: Technician	757	288	1 046	158	50	208	96	46	142	361	35	396	1 372	419	1 791
Unregistered technical staff: Other	177	188	365	54	100	154	31	38	69	407	365	773	669	692	1 361
Technical Assistants	200	100	300	58	15	73	31	42	73	192	62	254	481	219	700
Draughts Persons	161	73	234	135	73	208	73	12	85	673	454	1 126	1 042	611	1 653
Laboratory / Survey Assistants	465	50	515	12	0	12	0	8	8	27	4	31	504	62	565
Administration / Support staff	646	1 280	1 926	173	500	673	85	284	369	515	1 411	1 926	1 418	3 475	4 894
Total	3 675	2 441	6 116	1 065	919	1 984	938	696	1 634	8 369	3 267	11 636	14 046	7 323	**21 369**

Table 33: Employment Breakdown, by race, gender and job category July – December 2017: Percentage share

Job category	Black			Coloured			Asian			White			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Professional Engineer Pr.Eng	0,7%	0,2%	0,9%	0,4%	0,0%	0,4%	0,6%	0,2%	0,8%	10,9%	0,8%	11,6%	12,5%	1,2%	13,7%
Professional Architects	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,1%	0,0%	0,1%	0,1%	0,0%	0,1%
Professional Quantity Surveyors	0,1%	0,1%	0,1%	0,0%	0,0%	0,0%	0,1%	0,0%	0,1%	0,4%	0,1%	0,6%	0,6%	0,2%	0,8%
Professional Other	0,3%	0,2%	0,4%	0,1%	0,1%	0,1%	0,1%	0,2%	0,3%	3,0%	1,2%	4,2%	3,5%	1,6%	5,1%
Technologists Pr TEchENg	0,9%	0,3%	1,2%	0,5%	0,1%	0,7%	0,7%	0,1%	0,8%	4,7%	0,3%	4,9%	6,8%	0,8%	7,6%
Technicians PrTechni	1,0%	0,2%	1,2%	0,4%	0,1%	0,5%	0,1%	0,0%	0,1%	2,8%	0,1%	3,0%	4,3%	0,5%	4,9%
Unregistered technical staff: Engineer	2,0%	0,8%	2,8%	0,6%	0,3%	0,9%	0,8%	0,4%	1,3%	6,2%	1,8%	8,0%	9,6%	3,3%	12,9%
Unregistered technical staff: Technologist	1,0%	0,5%	1,5%	0,3%	0,1%	0,4%	0,5%	0,3%	0,8%	0,9%	0,1%	1,1%	2,7%	1,1%	3,8%
Unregistered technical staff: Technician	3,5%	1,3%	4,9%	0,7%	0,2%	1,0%	0,4%	0,2%	0,7%	1,7%	0,2%	1,9%	6,4%	2,0%	8,4%
Unregistered technical staff: Other	0,8%	0,9%	1,7%	0,3%	0,5%	0,7%	0,1%	0,2%	0,3%	1,9%	1,7%	3,6%	3,1%	3,2%	6,4%
Technical Assistants	0,9%	0,5%	1,4%	0,3%	0,1%	0,3%	0,1%	0,2%	0,3%	0,9%	0,3%	1,2%	2,2%	1,0%	3,3%
Draughts Persons	0,8%	0,3%	1,1%	0,6%	0,3%	1,0%	0,3%	0,1%	0,4%	3,1%	2,1%	5,3%	4,9%	2,9%	7,7%
Laboratory / Survey Assistants	2,2%	0,2%	2,4%	0,1%	0,0%	0,1%	0,0%	0,0%	0,0%	0,1%	0,0%	0,1%	2,4%	0,3%	2,6%
Administration / Support staff	3,0%	6,0%	9,0%	0,8%	2,3%	3,1%	0,4%	1,3%	1,7%	2,4%	6,6%	9,0%	6,6%	16,3%	22,9%
Total	17,2%	11,4%	28,6%	5,0%	4,3%	9,3%	4,4%	3,3%	7,6%	39,2%	15,3%	54,5%	65,7%	34,3%	100,0%

Table 34: Executive Staff profile: Employment, company type, race & gender: July – December 2017

Company Type	Owner category	Professional	Black			Coloured			Asian			White			Total		
		Category	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
(PTY) LTD	Executive Director	PrEng	28	0	28	9	0	26	26	9	35	345	4	349	419	26	446
		PrTechEng	28	0	28	14	0	22	13	0	13	92	0	92	144	0	144
		Other	51	14	65	14	9	26	0	17	17	57	9	66	118	48	166
	Non-Executive Director	PrEng	0	5	5	5	0	0	0	0	0	22	0	22	26	0	26
		PrTechEng	0	0	0	0	0	0	4	4	9	9	0	9	13	4	17
		Other	42	28	70	0	4	4	4	4	9	22	0	22	52	26	79
CC	Member	PrEng	9	0	9	5	0	0	0	0	0	52	0	52	61	0	61
		PrTechEng	14	0	14	0	0	0	0	0	0	4	0	4	22	0	22
		Other	9	14	23	0	0	0	0	4	4	4	9	13	17	17	35
Partnership	Partner	PrEng	5	0	5	0	0	0	0	0	0	17	0	17	22	0	22
		PrTechEng	9	0	9	0	0	0	4	0	4	4	0	4	17	0	17
		Other	5	0	5	5	0	9	0	0	0	9	4	13	22	4	26
GRAND TOTAL			201	61	262	51	13	87	52	39	92	638	26	664	935	127	1061
% distribution of executive staff			18,9%	5,7%	24,7%	4,8%	1,2%	8,2%	4,9%	3,7%	8,6%	60,1%	2,5%	62,6%	88,1%	11,9%	100,0%
% directorship only			14,2%	1,9%	16,1%	5,0%	1,2%	9,8%	5,2%	3,5%	8,7%	65,3%	1,7%	67,1%	90,2%	9,8%	100,0%
Total employment			**5 344**	**2 805**	**8 149**	**1 086**	**919**	**1 984**	**938**	**696**	**1 634**	**8 369**	**3 267**	**11 636**	**14 046**	**7 323**	**21 369**
Executive Staff as % of total employment			**3,8%**	**2,2%**	**3,2%**	**4,7%**	**1,4%**	**4,4%**	**5,6%**	**5,7%**	**5,6%**	**7,6%**	**0,8%**	**5,7%**	**6,7%**	**1,7%**	**5,0%**

End of report

For further information please contact

Consulting Engineers South Africa

Email CESA at general@cesa.co.za

CESA Head Office contact information is available below. The CESA also has branches throughout South Africa.

Telephonic Contacts

Tel: +27 (011) 463 2022
Fax: +27 (011) 463 7383

Physical Address

Fullham House, Hampton Park North,
20 Georgian Crescent
Bryanston
Johannesburg, South Africa

Postal Address

PO Box 68482
Bryanston
Johannesburg, South Africa
2021