

The Impact of the Canterbury Earthquakes on Canterbury's Small & Medium Enterprises (SMEs)

Assessing the medium/longer term impact on Canterbury's SME economy



Research & Evaluation Unit

Te Wāhanga ā-motu mo te Rangahau me Aromātai

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Executive summary

This synthesis provides an update on the effect of the earthquakes and rebuild on Canterbury's small and medium businesses (SMEs). In 2015, it is now four tax years since the first major quakes¹ occurred, and the reconstruction phase is well underway. We are beginning to see the longer term impacts of the rebuild and how Canterbury businesses are faring compared to New Zealand as a whole.

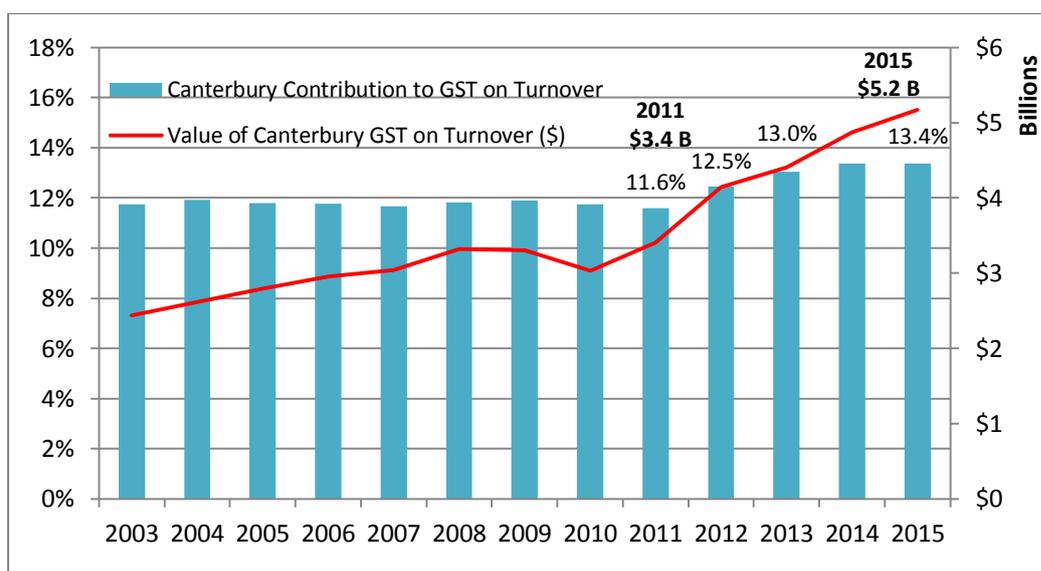
The synthesis brings together the findings from thirteen different measures, based on information extracted from Inland Revenue's (IR) administrative data. It covers the business activity of new SME businesses, businesses existing at the time of the quakes (Existing SMEs), and then all SMEs combined in one group, to capture all SME activity in Canterbury in each tax year. Observations for the all SME group include the 2015 tax year. In contrast New & Existing SMEs information was only available to 2014². Key insights and observations follow.

Note: all year references in this report relate to tax years³.

Economic activity- Overall

Since the quakes Canterbury's SME economy has grown faster than New Zealand overall, with a 52% increase in GST on turnover⁴, compared to 32% in New Zealand overall. Canterbury's GST on turnover grew from \$3.4 billion in 2011 to \$5.2 billion in 2015.

Figure 1: Canterbury's contribution to NZ SMEs' GST on turnover, & \$ value of contribution



¹ Although the Canterbury region continued to experience aftershocks, and some of considerable size, this analysis uses the two significant earthquakes in September 2010 (the first the area had experienced) and February 2011 (the most destructive) as key events to investigate the impact of adverse events on SMEs.

² At the time of the New & Existing SME data extractions and analysis, the 2015 tax year information was not complete.

³ E.g. The 2014 tax year ends at March 31st, 2014 and the 2015 tax year ends at March 31st, 2015.

⁴ Note: GST on turnover is not the net GST amount owed to Inland Revenue, as SMEs claim GST on expenses incurred as part of running their businesses

Growth has extended across the Canterbury economy with thirteen industries having bigger increases in GST on turnover between 2011 and 2015, compared to New Zealand overall. The biggest change has come through Construction, with an increase of \$555 million dollars.

The rebuild has seen a change in Canterbury's SME economy with Construction replacing the Retail industry as the biggest contributor, with an estimated \$752 million in GST on turnover in 2014 compared with Retail's \$679 million. In 2015, this gap widened with Construction's contribution increasing by almost \$170 million to \$867 million, while Retail grew by only \$19 million in comparison.

Canterbury SMEs existing at the time of the quakes (Existing SMEs) have also fared well in terms of growth in GST on turnover, with a 30% increase from \$3.4 billion in 2011 to \$4.4 billion in 2014. This compares favourably to a 12% nationwide increase over the same period.

Employment

In 2014 and 2015, Canterbury's employment contribution was the highest since 2006, and is further evidence of expansion in Canterbury's economy. Overall though, only five Canterbury industries had bigger increases in employment growth than nationwide, and all are associated with the rebuild in some way. They were Construction, Mining, Electricity Gas Water and Waste, Professional Scientific & Technical Services (engineering, construction consulting, surveying) and Financial & Insurance services.

The overall result is in contrast to the situation with SMEs already established at the time of the quakes. Among Existing SMEs, thirteen industries had either more growth or a smaller decline in worker months compared to the same industries nationally, and this suggests a healthier employment environment in Canterbury among Existing SMEs than nationwide.

Business closures

Business closures among Existing SMEs are similar to New Zealand overall. 72% of SMEs in business at the time of the quakes were still active in Canterbury in August 2015, compared with 70% nationally.

New SMEs registered after the quakes also showed little difference in closures between Canterbury and New Zealand. Based on data extracted in November 2014, 18% of new businesses opening after the quakes had closed in Canterbury, compared to 20% of new businesses closing nationwide.

The pattern of closures is also similar in Canterbury Construction. A key difference though is Canterbury Construction has accounted for both more SME openings and closures since the quakes, because it is currently playing a bigger part in the Canterbury economy. Being a high risk industry, this is a cause for some concern.

Overall, the rebuild does not appear to have measurably changed the business failure rate of both new start-ups and Existing SMEs in Canterbury, challenging the concern that new and existing businesses would experience a high failure rate as the result of the earthquakes.

Debt

While Canterbury's overall debt contribution has been slowly trending upward since 2003, another observed change has been the increase in initial⁵ average debt, with Canterbury exceeding New Zealand for the first time in 2014, and again in 2015. A shift in debt in Canterbury may have occurred, especially in Construction, (a higher risk industry) where the change in average debt has been bigger. Retail, Canterbury's second largest GST contributor in 2015 appears less risky with initial debt just 2% of GST on turnover since 2012 compared with 7.4% in Construction.

⁵ Initial debt is based on the first debt balance recorded in IR's data warehouse. Debt is paid off after this date.

Recent⁶ work however suggests the longer term debt view (30 and 90 days after the payment was due) is different and Canterbury is similar to New Zealand overall. Further detailed work may be required to confirm there are no longer term differences by individual industries.

New SMEs in Canterbury are more likely to be in debt since the quakes, but the overall difference between Canterbury and New Zealand is not large. The difference however does suggest a change in risk has occurred as before the quakes, Canterbury performed better than New Zealand overall.

A second issue with New SME debt is the 80% increase in new Canterbury Construction SMEs between 2011 and 2014. Construction is a higher risk industry and in 2014, 42% of new Construction SMEs had some debt compared with the overall Canterbury New SME average of 31%. Consequently, this growth in new Construction SMEs creates an increase in debt risk in the Canterbury economy.

GST compliance

The overall GST compliance position in 2015 looks promising with Canterbury's filing compliance similar to the Rest of New Zealand, and higher than its own performance before the quakes (in 2014, Canterbury still trailed the Rest of New Zealand). It suggests SME filing compliance risk is currently no higher in Canterbury compared to the Rest of New Zealand.

Overall GST payment compliance has recovered since the quakes and has been similar to (but a fraction lower) than the Rest of New Zealand since the 2013 tax year. Unlike filing, Canterbury's payment compliance behaviour has always been much closer to the Rest of New Zealand and recovery has been quicker. The compliance patterns are similar among New SMEs and among SMEs established at the time of quakes.

The overall compliance picture confirms a recovery, but a slightly lower performance compared to pre quake means that Canterbury no longer outperforms New Zealand as it used to.

New registrations

The overall increase in new registrations in Canterbury has been modest, with 17% more New SMEs (1,080) registering in 2014 compared to 2011. It is however four times larger than the 4% nationwide increase over the same period, and confirms more growth occurred in Canterbury.

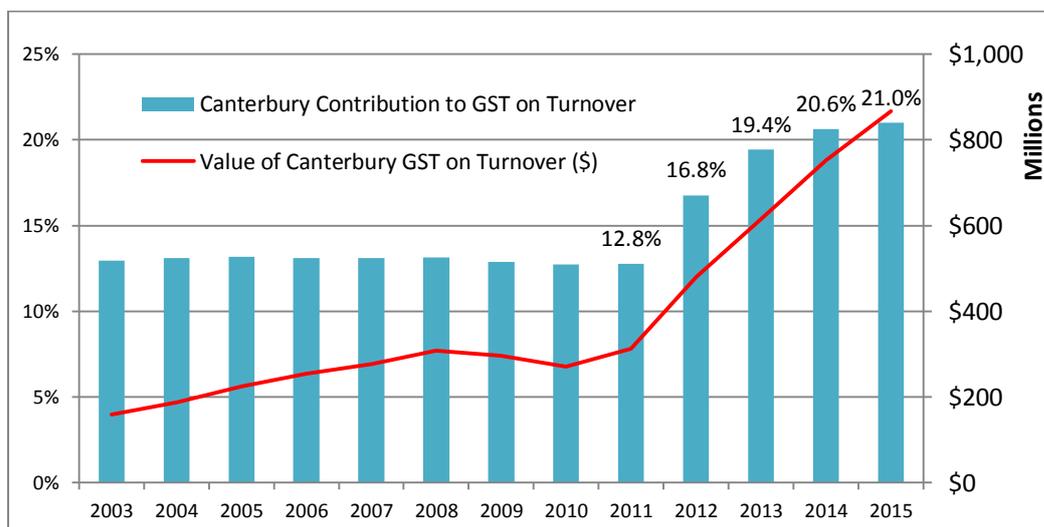
Large increases have not been widespread across all industries. Construction accounted for almost half (47%) of the overall increase in New SME registrations between 2011 and 2014, followed by Rental, Hiring & Real Estate at 19%, and Administrative & Support Services at 9%. Combined, these three industries have accounted for 76% of the increases in New SME numbers.

⁶ Completed after this analysis was prepared.

Construction

Construction has played a major role in the current expansion of Canterbury's SME economy, in terms of both increases in GST on turnover, and increases in employment. A 104% increase in worker months between 2011 and 2015 contrasts with a 32% increase in Construction nationally. Construction by itself accounted for almost half of the increase in SME worker months in Canterbury between 2011 and 2015.

Figure 2: Canterbury Construction's contribution to NZ SME GST on turnover, and \$ value of contribution



The rebuild has also seen Construction accounting for almost half of the increase in New SMEs registrations in Canterbury between 2011 and 2014. New SME registration numbers within Construction also increased by 80% over this period.

Closure rates among New and Existing SME in Construction are similar to nationwide, suggesting the risk is no greater in Canterbury than in New Zealand as a whole.

Debt is of some concern with New SMEs more likely to be in debt in Construction. Construction also accounted for almost half of Canterbury's increase in new SME numbers between 2011 and 2014. This means a significant amount of the new growth in registration in Canterbury is in a higher risk industry.

Conclusions/implications

It is evident Canterbury's SME economy has benefitted from the rebuild in terms of increases in GST on turnover and employment. SMEs established at the time of the quakes have fared well with larger increases in GST on turnover and more growth or less reduction in employee worker months compared to Existing SMEs nationally.

Growth has also been seen in the volume of new registrations, and has outpaced New Zealand over the same period. There does appear to be slightly more risk in Canterbury compared to New Zealand. Construction in particular is a higher risk industry and is playing a much bigger part in New SME growth in Canterbury than it did before the quakes.

Concerns about higher than normal closure rates appear unfounded as the closure rates of New and Existing SMEs in Canterbury are similar to New Zealand overall. It is possible that the increase in economic activity may have helped offset some of the trying and difficult conditions experienced since the quakes.

Canterbury's contribution towards New Zealand debt has trended upward slowly over time and continues to do so. There are some concerns around debt with New SMEs more likely to be in debt compared to before the quakes, particularly in Construction. Another change has been the increase in average initial debt value in Canterbury in 2014 and 2015. The longer term debt view however, suggests little difference between Canterbury and New Zealand. More work is needed to confirm there are no longer-term differences by industry.

Compliance has recovered and is close to New Zealand overall. Of some concern is that Canterbury compliance is still trailing or matching New Zealand overall four tax years after the quakes. This raises the question whether a small change in compliance norms is emerging in Canterbury, a region with traditionally better compliance behaviour than New Zealand as a whole.

Looking forward, the Canterbury Earthquake Authority (CERA, 2015) expects the most reconstruction activity to occur in the 2015 and 2016 calendar years, meaning the busiest period is still in progress. This suggests that the level of SME activity is likely to be maintained in the 2016 and 2017 tax years. A question is whether this will result in more demand for new businesses, or whether the work can be catered for by the current New SME growth rate, and Canterbury's existing businesses.

Introduction

The Christchurch earthquakes in September 2010 and February 2011⁷ have had far reaching social and economic consequences. This research is part of Inland Revenue's longitudinal study on the impact of the Christchurch earthquakes on SME business activity and tax compliance behaviour.

A responsive tax regime is recognised as an important building block in re-development after an adverse event. To this end, IR has put in place a programme of assistance and communications targeted at businesses affected by the earthquakes. IR wants to understand the new 'normality' for Christchurch SMEs and the effectiveness of its response following the earthquakes. This will inform IR when responding to any future disasters.

SMEs are of prime importance in the economic redevelopment of the Canterbury region. The SME community is also of particular interest to IR because a large proportion of New Zealand's total tax debt is owed by SMEs and they are a key element in the hidden economy. In relation to the latter, IR is cognisant of the possibility of new norms about the acceptability of non-compliant behaviours.

SMEs are far from a homogenous group. As a population, SMEs are diverse in terms of a range of business and industry characteristics as well as the length of time they have been in business (e.g. New SME registrations or SMEs established when the quakes occurred).

Anecdotal evidence also suggests that the earthquakes have affected the viability of SMEs in different ways. While some businesses have not survived the earthquakes others have experienced improved viability, with new earthquake recovery and rebuild contracts leading to employing additional staff and higher streams of income. However, IR's initial review of the literature suggests that smaller businesses find it more difficult to recover (Webb et al, 1999; Kroll et al, 1991; Powell, 2010). SMEs have fewer resources to prepare for disasters (e.g., they are more likely to be underinsured) (Powell and Harding, 2010). Recovery can also be hampered by a heavy reliance on discretionary spend, sustaining structural damage, and the failure to comply with regulations (Stevenson et al, 2011).

The aim of analysing and monitoring IR's administrative data is to understand the impacts of the Christchurch earthquakes on Canterbury's SMEs' business activities and tax compliance.

This year we have the opportunity to observe the longer term impact of the quakes and reconstruction phase on Canterbury's economy.

Three key SME groups were analysed:

1. 'Existing SMEs' (SMES active on 4 September 2010 when the first earthquake occurred).
2. 'New SMEs' (newly registered SMEs in each tax year).
3. 'All' SMEs (All SMEs who filed at least one GST return within a specific tax year (e.g. 2014).

Other key terms, definitions and analytical methodology are presented in Appendix A.

⁷ Although the Canterbury region continued to experience aftershocks, and some of considerable size, this analysis uses the two significant earthquakes in September 2010 (the first the area had experienced) and February 2011 (the most destructive) as key events to investigate the impact of adverse events on SMEs.

Discussion

This section brings together findings from All SMEs, Existing SMEs and New SMEs and discusses them in relation to the main measurement areas. A summary of three key industries (Construction, Accommodation & Food, and Rental hiring & Real Estate) is also provided.

Economic activity: GST on turnover

Since the quakes, there has been a larger increase in SME GST on turnover in Canterbury than nationwide. Growth has extended across the Canterbury economy with thirteen industries having bigger increases in GST on turnover compared to New Zealand as a whole. The biggest change has come through Construction with an increase of over half a billion dollars between 2011 and 2015.

The rebuild has brought about a change in the Canterbury economy with Construction replacing the Retail industry as the biggest contributor to Canterbury's economy with an estimated \$752 million in GST on turnover compared with Retail's \$679 million contribution in 2014.

Other industries involved in the rebuild have also experienced large increases compared to New Zealand overall. These include Electricity, Gas Water and Waste (sewerage, drainage, industrial waste collection) Professional, Scientific and Technical services (architecture, engineering, town planning, construction consulting), Mining (construction material mining, quarrying) and Other Services (construction & mining machinery maintenance).

Manufacturing's (concrete, glass, flooring, pipes, insulation) GST on turnover contribution has also increased, but not to the same extent. Other industries whose business has been directly affected by the quakes (Real Estate, and Financial & Insurance Services), have also benefitted.

The rebuild phase has also seen a bigger increase in GST on turnover among SMEs established at the time of the quakes than in New Zealand. GST on turnover increased in Canterbury by 30% from \$3.4 billion to \$4.4 billion between 2011 and 2014, while nationwide the increase over the same period was 12%.

Interestingly, Retail remained the biggest contributor among SMEs already established at the time of the quakes with a \$670 million contribution in 2014, followed by Construction (\$580M), Agriculture (\$388M) and Manufacturing (\$387M). Construction however, has closed the gap markedly since 2011 with an increase of over a quarter billion dollars, from \$323 million to \$580 million in 2014.

Existing SMEs in almost all industries experienced larger growth in GST on turnover value in Canterbury compared to New Zealand overall. Only Education and Health Care services had lower growth rates.

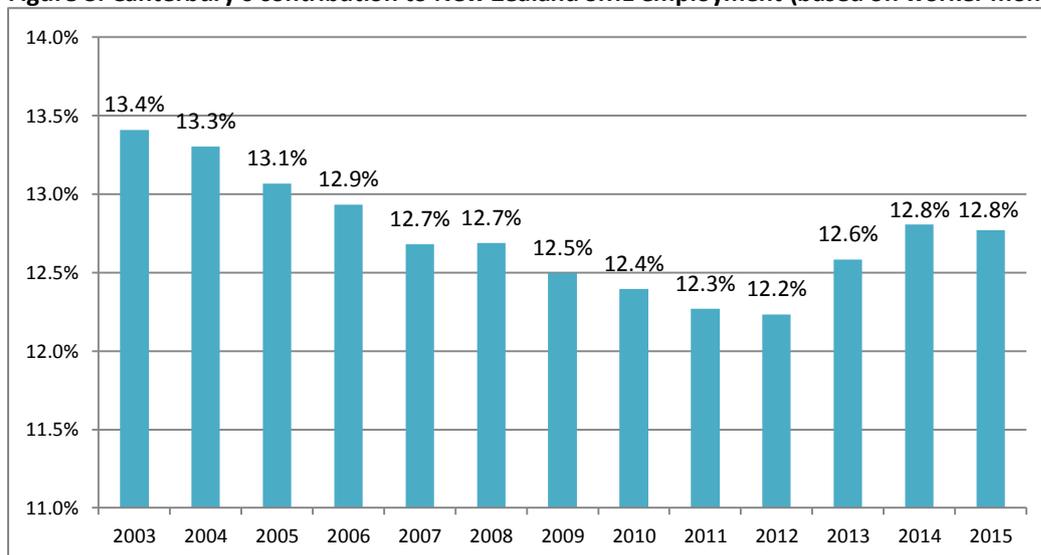
The rebuild has also seen an increase in GST contribution among New SMEs in Canterbury with the contribution peaking at 14.8% in the 2013 tax year. This suggests there has been an increase in demand for new entrants. While GST contribution and GST on turnover peaked in 2013, at \$172 million, 2014 GST on turnover (\$146 million) was still over 50% higher than before the quakes.

The increases among New SMEs, Existing SMEs and all SMEs confirm the positive effect of the reconstruction phase on Canterbury's SME economy. There is some income risk however, as the increased variability in GST contribution among New SMEs in Canterbury, especially in Construction, has an effect on business cashflow and viability.

Employment

The rebuild ended Canterbury's downward trend in employment contribution with the first increase in contribution in 10 years occurring in 2013. Canterbury's 2014 and 2015 contribution is the highest since 2006, and is further evidence of the expansion in Canterbury's economy.

Figure 3: Canterbury's contribution to New Zealand SME employment (based on worker months)



Overall, five Canterbury industries have had larger increases in employment growth than the same industries nationwide, and all are associated with the rebuild in some way. They were Construction, Mining, Electricity Gas Water and Waste, Professional Scientific & Technical Services (engineering, town planning, surveying construction consulting, seismic surveying), and Financial & Insurance services.

Industries with growth in both employment and GST were Construction, Electricity, Gas, Water & Waste, Professional Scientific & Technical Services, and Financial & Insurance Services. Manufacturing and Other Services both had smaller increases in GST contribution compared to the national average, while their employment contribution remained relatively static.

Overall, 10 industries had lower growth in worker months than the national average. This result is in contrast to the situation with SMEs already established at the time of the quakes. Among existing SMEs, thirteen Canterbury industries either grew more or shrunk less than nationally⁸ between 2011 and 2014.

New SME registrations

New SME registrations were trending downward in both Canterbury and New Zealand until the end of the 2011 tax year. The rebuild brought about a reversal in registration trends in Canterbury, from -6% growth in 2011 to +6% growth in both 2012 and 2013. New Zealand in contrast, still experienced negative growth in 2012, and only 1% growth in 2013.

The increase in Canterbury registration numbers overall has been modest, with 17% more New SMEs (1,080 more) registering in 2014 compared to 2011. It is however four times larger than the 4% nationwide increase over the same period.

Large increases have not been widespread across all industries in Canterbury. The biggest driver of change has come from Construction. It accounted for over 47% of the increases in New SME registrations between 2011 and 2014, followed by Rental, Hiring and Real Estate at 19%, and Administrative & Support Services at 9% (this

⁸ Note: Among existing SMEs the total number of worker months declined in both Canterbury and nationwide between 2011 and 2014. Canterbury's decline however, was slightly lower than New Zealand overall (12% vs 14%)

industry includes employment recruiters). Together, these three industries accounted for three quarters (76%) of the change in New SME numbers.

Other industries experiencing growth included Transport, Agriculture, Electricity, Gas, Water & Waste, Education, Financial & Insurance Services, Arts, Public Administration & Safety, and information Media & Telecommunications.

Canterbury SME closures

Closure rates can be seen as an indicator of risk, and a large difference between Canterbury and New Zealand would suggest a difficult business environment in Canterbury.

SME closures in Canterbury have trended upward slowly over time since before the quakes, but the increase has been slow and smaller than the increase in New SME registrations. An assessment of closure rates among Existing and New SMEs has been undertaken to see how Canterbury compares with New Zealand within these two SME groups.

At August 2015, 72% of Existing SMEs were still active in Canterbury, compared with 70% nationally. The survival rate is higher among the three main sectors (primary 86%, secondary, 80% and tertiary 79%). However, the overall average is lower in both Canterbury and New Zealand because the survival rate of SMEs with an unknown⁹ sector is significantly lower (between 43% and 45%). This brings down the overall average.

The survival rate of Existing SMEs in Canterbury Construction is also much the same as nationwide, with 79% of Canterbury's Existing SMEs still active compared to 78% nationwide. The findings indicate that the quakes have not had a different impact on Existing SME business closures in Canterbury compared to New Zealand overall.

There has also been concern within IR about the closure rate of new businesses in Canterbury. An assessment of New SMEs registered after the quakes, again showed little difference in closures between Canterbury and New Zealand overall. Based on data extracted in November 2014, 18% of businesses opening after the quakes have closed in Canterbury at January 2015, which is less than the 20% of new businesses closing nationwide.

The key industry of concern, Canterbury Construction, accounted for more New SME closures (20%) than nationwide, but it also accounted for more SME openings (20%) since the September 2010 quakes. Construction nationwide follows a similar pattern in that it accounted for similar proportions of openings (12%) and closures (11%). The key issue is that Construction in Canterbury is currently making a bigger contribution to the local economy than it is nationally, because of the scale of work. Being a higher risk industry, this could be a cause for concern.

⁹ SMEs were classified as 'Unknown' when they had no industry group code recorded for them in Inland Revenue's administrative data.

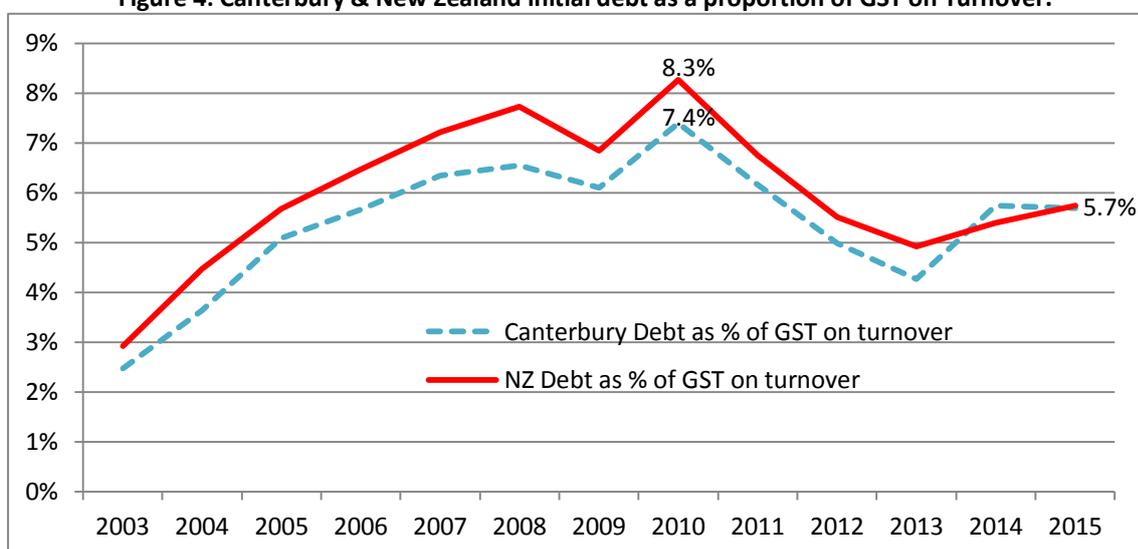
Debt

Debt is a second indicator of risk. The overall debt contribution trend for All SMEs and Existing SMEs in Canterbury is very similar. Both have trended slowly upward over time.

A bigger change recently has been the increase in average initial¹⁰ debt, with Canterbury exceeding New Zealand for the first time in 2014, and again in 2015. A shift in debt in Canterbury could have occurred, and especially in Construction, (a higher risk industry) where the change has been bigger. Retail, Canterbury's second largest GST contributor in 2015 appears to be less risky with initial debt just 2% of GST on turnover since 2012 compared with 7.4% in Construction.

Both Canterbury and New Zealand have displayed a similar relationship in terms of initial debt as a proportion of GST on turnover. Canterbury's proportion has been lower than New Zealand from 2003 to 2013. However, its proportion of debt to GST on turnover was higher than New Zealand's for the first time in 2014, and the same as New Zealand in 2015.

Figure 4: Canterbury & New Zealand initial debt as a proportion of GST on Turnover.



Industries with greater growth also look to be more susceptible to debt (Mining, Construction, Electricity, Gas, Water and Waste, Other Services, and Manufacturing). A possible common link between these industries could be the use of semi-skilled staff who are employed to cope with additional and sometimes fluctuating demand. By comparison, an industry like Professional, Scientific and Technical Services (requiring employees with a higher degree of skill, with less availability to recruit extra staff) has also experienced a significant increase in GST growth, but with a lower increase in debt compared to the same industry nationwide. In addition Professional Scientific, & Technical Services was the industry with the highest number of business closures in New Zealand in 2014, while in Canterbury it ranked third behind Construction and Rental, Hiring & Real Estate.

The overall debt position in Canterbury in 2015 shows a similar number of industries with higher and lower average debt compared to the national average. In total eight industries had higher debt and nine had lower debt. The situation was similar among SME established at the time of the quakes, but based on a different measure. A similar number of industries had increases and decreases in debt contribution in 2015 compared to New Zealand as a whole.

¹⁰ Initial debt is based on the first debt balance recorded in IR's data warehouse. Debt is paid off after this date. The longer term view (debt after 30 and 90 days) is different, and shows Canterbury is performing similar to New Zealand overall.

The debt situation among Existing SMEs appears to be different to the overall debt situation. For existing SMEs, some industries supporting the rebuild appear less likely to have incurred debt in 2015, with reductions in debt contribution in Construction, Electricity Gas, Water and Waste, Administrative & Support Services (includes employment recruitment), Mining (includes quarrying and construction related quarrying), and Manufacturing. It is possible then, that some of the increased risk overall is from the new entrants in these industries.

New SMEs in Canterbury are more likely to be in debt since the quakes, but the overall difference between Canterbury and New Zealand is not large. The change is another indicator of an increase in debt risk in Canterbury.

A second issue among New SMEs is the 80% growth in new Canterbury Construction SMEs between 2011 and 2014. Construction is a higher risk industry and in 2014, 42% of new Construction SMEs had some debt compared with the overall Canterbury average of 31%. In addition Construction has accounted for 20% of New SME openings in Canterbury since the quakes (compared to 12% nationally). This means a significant amount of the new growth in registration in Canterbury is in a higher risk industry.

The increase in average initial debt, the increased likelihood of New SMEs to have some form of debt, and the growth of New SMEs in Construction, (a higher risk industry) suggest there could be a higher level of debt risk in Canterbury.

Compliance

Compliance is a third indicator of risk, and adds to the picture of the health of SMEs in Canterbury.

GST Filing compliance

Canterbury filing compliance has recovered from the large decrease just after the quakes and is currently performing similar to New Zealand overall. However both Canterbury's new and Existing SMEs no longer consistently outperform New Zealand (or the rest of New Zealand) as they did before the quakes.

Compliance patterns within the three main sectors have been consistent over time among both new and Existing SMEs, with the primary industry being the most compliant, followed by the tertiary and then the secondary industry. Interestingly, among established SMEs and overall, the primary sector has been the slowest to recover since the quakes.

It is encouraging to see compliance improving in the secondary sector especially as this sector is currently dominated by Construction. Among New SMEs, filing compliance within Construction has recovered since immediately after the quakes and is now consistent with new Construction SMEs in New Zealand. Like Canterbury overall however, it has not returned to pre-quake levels.

GST Payment compliance

Canterbury's payment compliance has returned to pre-quake levels (i.e. similar to 2009 & 2010), and was performing similarly to New Zealand in 2013 and 2014. The recovery among Existing SMEs has been slightly better than New SMEs.

Pre-quake, Canterbury's payment compliance was only slightly better than New Zealand, whereas in 2013 and 2014, Canterbury's payment compliance was slightly lower than New Zealand's.

The secondary and tertiary sectors have improved the most since after the quakes in terms of their performance compared to New Zealand. While the primary sector has been the slowest to recover to pre-quake levels it still remains the most timely sector in terms of both filing and paying.

Selected Canterbury industries summary

Construction

Construction has played a major role in the current expansion of Canterbury's SME economy, in terms of both increases in GST on turnover and employment. Construction's annual GST on turnover increased by approximately \$555 million between 2011 and 2015.

Among SMEs existing at the time of the quakes, Construction has had the biggest increase in GST on turnover (80%) of all industries with GST on turnover increasing by over a quarter of a billion dollars from \$323 million in 2011 to \$580 million in 2014. Among Existing SMEs, Construction still trailed the Retail industry in terms of GST on turnover in 2014, suggesting the additional Construction growth has come from new businesses.

Among all SMEs, worker months increased by 104% from approximately 153,000 worker months in 2011 to 313,000 in 2015. This contrasts with a 32% increase in Construction nationwide over the same period. Construction by itself accounted for almost half (47%) of the increase in worker months in Canterbury across all industries.

The situation among SMEs existing at the time of the quakes was slightly different, but still shows a big increase in Construction. Between 2011 and 2014, the number of worker months increased by 25%, by far the biggest change of all industries in Canterbury. Only four industries had increases over this period. The significance of the Construction increase is emphasised by the fact that Existing SMEs in Construction nationwide had a 4% decrease in worker months over the same period.

The rebuild has also seen a large increase in new business registrations with Construction accounting for 47% of the overall change in New SMEs in Canterbury between 2011 and 2014.

There has been concern about the impact of the quakes on closures. Construction accounted for the most SME closures of all industries in Canterbury in 2014, whereas nationwide it ranked third. In addition, Canterbury's contribution to national closures in Construction have increased over time since the quakes from 10.7% to 16.1%. However its contribution to New SME registrations has also increased markedly from 14.1% to 20.5% over the same period, and it is possible there is a link between the two.

The closure rate of SMEs established at the quakes in Canterbury Construction is similar to nationwide, with 79% of Canterbury's Existing SMEs still active at August 2015, compared to 78% nationwide. The findings indicate that the quakes have not had a significantly different impact on Existing SME business closures in Canterbury.

When assessing the closure rate of Construction SMEs opening after the quakes, New SMEs accounted for 20% of New SME openings and 20% of New SME closures in Canterbury. In comparison, New Zealand wide, Construction accounted for 12% of New SME openings and 11% of New SME closures.

These findings confirm Canterbury is following a similar pattern to New Zealand Construction, in regard to New SME opening and closures. The difference is the scale of activity, with new Construction SMEs currently playing a significantly bigger part in the Canterbury economy.

With the increase in business activity there also appears to be an increase in debt. Canterbury's contribution to the number of SMEs incurring debt has increased from 12.7% in 2011 to 16.7% in 2015. However, It is worth taking into account that Canterbury's contribution to the number of active SMEs in Construction also increased over the same period from approximately 12% to 15%. It is likely that there is some relationship between the number of SMEs in debt and the number of active SMEs operating.

Average initial¹¹ debt in Construction also appears to have increased markedly in Canterbury compared to New Zealand Construction in 2014 and 2015. Before 2014, Canterbury's average debt was similar to New Zealand's.

Canterbury's contribution to the number of Existing SMEs in debt decreased a little in 2015, even though its contribution had trended upwards slowly over time. This suggests that risk is not currently escalating among SMEs existing at the time of the quakes.

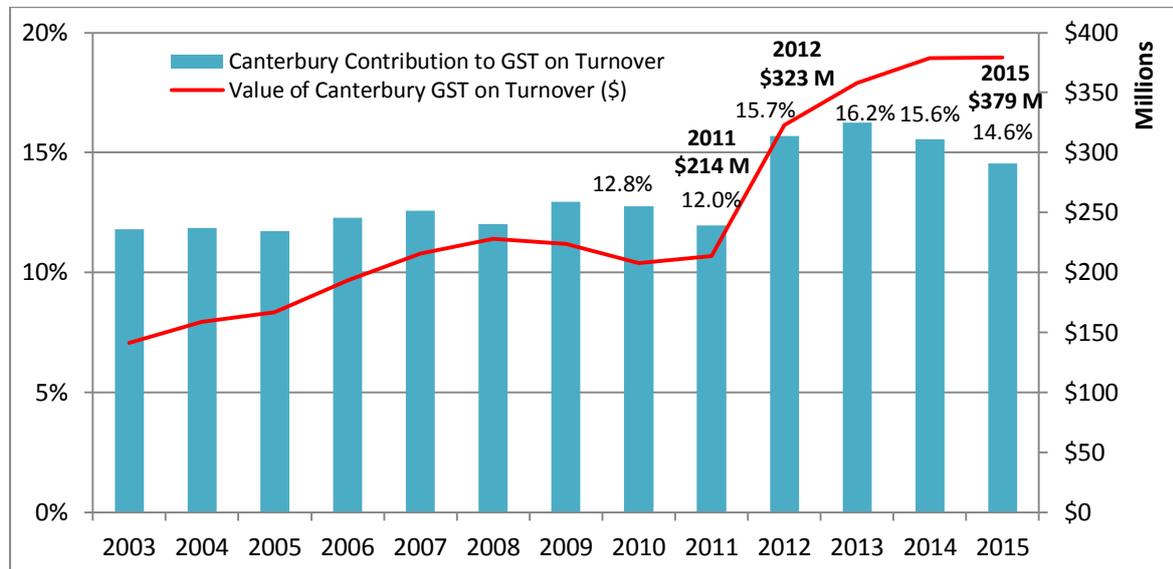
Overall the Construction industry has benefited from the rebuild, with big increases in GST on turnover, employment and in new registrations. Business closure rates appear to be no different to closure rates in Construction nationwide. There are some concerns, however around debt especially in relation New SMEs, and an increase in average initial debt value in 2014 and 2015.

¹¹ Initial debt is based on the first debt balance recorded in the data warehouse. Debt is paid off after this date. The longer term view (debt between 30 and 90 days) shows little difference between Canterbury and New Zealand.

Rental, Hiring & Real Estate

The aftermath of the quakes and the need for housing and accommodation has resulted in a large increase in GST on turnover from \$214 million in 2011 to \$379 million in 2015. The 77% increase in Canterbury has been much bigger than the national average of 46%.

Figure 6: Canterbury's contribution to NZ SME GST on turnover in Rental, Hiring & Real Estate & \$ value of contribution



Overall, the industry has registered an increase in worker months between 2011 and 2015. The increase however, is smaller than the national average (7.4% vs 15.1%). There has been negative worker month growth among Existing SMEs. This suggests that the increase in worker months in Rental Hiring & Real Estate has come through new businesses.

New registrations in Rental, Hiring & Real Estate were the second highest behind Construction in 2014, and registrations have increased every year since 2011. Overall there has been a 37% increase in new business registrations since 2011, more than double the national increase of 18%.

Overall average debt per SME in Rental Hiring & Real Estate was lower in Canterbury in 2015 compared to New Zealand overall, and traditionally this has been the case since 2003. The current result suggests that the industry is behaving in a similar manner as it did before the quakes.

Canterbury New SMEs in Rental, Hiring & Real Estate were slightly more likely to be in debt in 2014 compared to the national average in 2014 (21% vs 19%).

In terms of closures, 83% of Existing SMEs in Rental, Hiring & Real Estate were still active at August 2015, the same as nationwide.

Most changes in Rental, Hiring & Real Estate in Canterbury have been positive with growth in GST on turnover, new registrations and employment. Closure rates are the same as nationally, with debt behaving in a similar manner as New Zealand overall.

Canterbury Accommodation & Food

Accommodation & Food's GST on turnover increased by 60% between 2011 and 2015. This is a little higher than Canterbury's overall increase of 52%, and a little higher than the 51% increase in Accommodation & Food nationwide.

GST on turnover among SMEs existing at the time of the quakes increased by 9% in Canterbury between 2011 and 2014. This contrasts with a 6% decline among Existing SMEs nationally, and suggests a better economic environment in the Canterbury region.

Canterbury and New Zealand both experienced a similar drop in employee worker months between 2011 and 2014 (about 25%), so in this regard Canterbury is behaving in a similar manner as nationally.

New registrations growth in Canterbury between 2011 and 2014 has been modest (9%), and slightly higher than Accommodation & Food's increase nationwide (7%).

Average debt in 2015 was similar in Canterbury compared to New Zealand overall.

Among SMEs established at the time of the quakes, 74% of SMEs in Accommodation & Food in Canterbury were still active at August 2015, the same as the survival rate nationally.

In summary, Accommodation & Food in Canterbury appears to be behaving in a similar manner to nationwide in regard to new registrations, employment, debt, and business closures. Overall however, Canterbury has had a slightly higher increase in GST on turnover since 2011.

References

CERA, 2015. IRD - Summary of Whole of Government Programme: Presentation at Canterbury Compliance Initiative workshop February 2015.

November 2014. Technical Report 1: Earthquake impacts on the number of new Registered SMEs. National Research & Evaluation Unit. Inland Revenue.

February 2015. Technical Report 2: Impact of Canterbury earthquakes on new Registered SME turnover (2003 to 2014). National Research & Evaluation Unit. Inland Revenue.

February 2015. Technical Report 3: Impact of Canterbury earthquakes on the number of SME closures. National Research & Evaluation Unit. Inland Revenue.

March 2015. Technical Report 5: Impact of Canterbury earthquakes on new registered SMEs debt. National Research & Evaluation Unit. Inland Revenue. National Research & Evaluation Unit. Inland Revenue.

April 2015. Technical Report 6&7: Impact of Canterbury earthquakes on existing SMEs GST turnover and Employment Year 3. National Research & Evaluation Unit. Inland Revenue

June 2015. Technical Report 4: Impact of Canterbury earthquakes on new registered SMEs filing and payment compliance. National Research & Evaluation Unit. Inland Revenue.

June 2015. Technical Report 8&9: Impact of Canterbury earthquakes on existing SMEs filing and payment compliance and debt. National Research & Evaluation Unit. Inland Revenue.

July 2015. Technical Report 10&11: Impact of Canterbury earthquakes on all SME's GST turnover and employment. National Research & Evaluation Unit. Inland Revenue.

August 2015. Technical Report 12&13: Impact of Canterbury earthquakes on all SME's filing and payment compliance and debt. National Research & Evaluation Unit. Inland Revenue.

Appendix A (including methodology)

Methodological overview

This analysis of IR's administrative data aims to understand the impacts of the September 2010 and February 2011 Christchurch earthquakes on the business activities and tax compliance of SMEs in the Canterbury area.

Research questions

There were three research questions:

- A. What did 'normality' look like for Canterbury's SMEs prior to the earthquakes, and how can we recognise this normality?
- B. What changed for SMEs after the Christchurch earthquakes, and how can we identify those changes?
- C. How long has it taken for SMEs to restore some normality, how does this 'new normality' compare with their 'pre-quakes normality'?

These three questions are about measuring the 'normality' of Canterbury's SMEs' business activities and compliance behaviour before and after the earthquakes. We can, therefore, understand what impacts the earthquakes had on SMEs, and the length of these impacts. This year's analysis was undertaken between three and four years after the quakes, and we are now beginning to see the medium term impact of the rebuild on Canterbury's SME economy.

Measures

Thirteen specific measures have been used this year to answer the three research questions:

- Number of SME closures
- Number of New SME registrations
- Existing SMEs' GST filing and payment compliance
- New SMEs' GST filing and payment compliance
- Existing SMEs' GST turnover
- New SMEs' GST turnover
- Existing SMEs' employment
- Existing SMEs' debt
- New SMEs' debt
- All SME GST Turnover (it includes both new and Existing SMEs as one complete group)
- All SME Employment (based on the number of worker months)
- All SME filing and payment compliance
- ALL SME Debt

In these measures, four different SME groups are analysed:

1. 'Existing SMEs' (active on 4 September 2010 when the first earthquake occurred).
2. 'Closed SMEs' (ended their GST registration in each return period).
3. 'New SMEs' (newly registered in each return period).
4. All SMEs (ALL SMEs who filed at least one GST return within a specific tax year (e.g. 2014)).

At the national level, data on these groups of SMEs were available by District Office (DO) and industry categories.

These measures are impacted by many other factors other than the earthquakes (the global economic recession, New Zealand's international trading agreements, and the increase in GST from 12.5% to 15% in Oct 2010). In addition, the population base of existing SMEs is based on those still existing in September 2010. Therefore, pre- and post-earthquake measures of values cannot simply be compared to identify the earthquakes' impacts.

Based on the assumption that these New Zealand-wide factors affect Canterbury's SMEs and national SMEs similarly, the analyses use mainly Canterbury's contribution to New Zealand's figures, (including Canterbury). In a few cases we compare Canterbury to the rest of New Zealand (excluding Canterbury). This has helped establish pre-normality and identifies the earthquakes' impacts.

In this year's analysis, we have also included dollar value figures to gain more understanding about the changes in business activity in Canterbury with regard to GST on turnover, debt and employee worker months.

All SMEs in the Canterbury area were identified by using District Office 10 (Canterbury DO). The majority (88%) of Canterbury DO registered companies and 86% of individuals were physically located in the area covered by the Canterbury DO. Since we are comparing SMEs in different periods, before and after the earthquakes, the small number of SMEs and individuals not physically located in the Canterbury DO area had only a minor impact on our analysis.

'Existing SMEs' only included SMEs that existed prior to 2010 and were still active on 4 September 2010 (the date of the first earthquake). If they had existed but closed prior to this date, they were not included.

By excluding SMEs that closed prior to 4 September 2010, our total number of SMEs in each year prior to the earthquakes will be lower than the true number of SMEs actually present. This also means that, in comparison to the true yearly SME totals, our total number of SMEs for earlier years is lower than for later years, with our 2011 total being the closest to the true total of SMEs existing that year. This is the main reason for using Canterbury's SMEs' *contribution* to New Zealand's SMEs' figures for some analyses rather than simply measuring Canterbury's SMEs' figures alone. The other reasons include the global economic recession, New Zealand tax policy changes, and other factors that can affect both the national number of SMEs and their business activity (business turnover and employment).

Please note, while the changes in Canterbury's contribution to the national measures appear small, a change of 1% in Canterbury's contribution to New Zealand's total signals a change of approximately 10% for Canterbury.

'Normality' is what SMEs' business activity and compliance looked like prior to earthquakes, and indicates what to expect in subsequent years if the earthquakes had not occurred. Subsequent comparisons with normality show the earthquakes' impacts. In this analysis, two aspects of normality were analysed; business activity (specifically: closures, registrations, GST turnover, and employment), and tax compliance (GST filing and payment compliance, tax debt).

Industry sectors and business divisions: including limitations

SMEs have been categorised by three industry sectors (Primary, Secondary, Tertiary) and by 17 business divisions.

Approximately fourteen percent of SMEs were classified as the 'Unknown' division as they had no industry group code recorded for them in Inland Revenue's administrative data. Consequently industry estimates of GST on turnover, debt and compliance are "best estimates", using available data. The 'Unknown' industry group is included in the data but their analysis is generally not included in this report.

Tax year

The data was extracted between October 2014 and July 2015.

- New and Existing SME data covers the 2003 to 2014 tax years.
- The All SME data was extracted at a later date, and also includes the 2015 tax year

Key definitions

Small- to Medium-sized Enterprises (SMEs)

- All non-individual customers registered for the GST and/or PAYE tax types, excluding non-profit organisations and those registered in a corporate service centre; and
- Individual customers registered for the GST and/or PAYE tax types, with annual turnover less than \$100 million.

SME closure

A SME that ended its GST registration in any tax year from 2004 to 2014 (to collect consistent data, we have only counted GST registration cancellations occurring within 12 months of the SME ceasing activity).

Existing SME- SMEs in business at the time of the quakes

A SME that had an 'active' tax registration status on 4 September 2010 (the date of the first earthquake).

Newly-registered SME

A new SME that registered for PAYE or GST in any tax year from 2004 to 2014. For SMEs registering more than once, only the first registration after April 2003 is counted. In this analysis, newly-registered SMEs are presented in annual, quarterly, and monthly cohorts, by their registration date.

All SME

ALL SMEs are individuals and non-individuals who filed at least one GST return within a specific tax year (e.g. 2003). Large Enterprises and Non-profits are excluded. An ALL SME population was created for each tax year from 2003 and 2015, so comparisons can be made between Canterbury and New Zealand.

GST

GST is a tax collected by SMEs, on behalf of the government, on their sales and income. The rate of GST was increased from 12.5% to 15% on 1 October 2010. The GST amount for each period was calculated from the GST on sales and income.

GST on turnover (New SMEs, Existing SMEs, and All SMEs).

This is the sum of GST assessments in each return period. All years in this analysis are tax years (1 April to 31 March). Note: GST on turnover is not the final GST amount owed by SMEs to Inland Revenue, as claims for GST related business expenses are not included in the GST on turnover figure.

Filing compliance (New SMEs, Existing SMEs, and All SMEs)

The percentage of GST returns filed on time by existing SMEs; a ratio of the number of GST returns filed on time to the total number of returns required for a return period. A return is considered to be on time if it is filed on or before the due date (no grace period).

Payment compliance (New SMEs, Existing SMEs, and All SMEs)

The percentage of GST payments made on time; a ratio of the number of GST payments made on time to the total number of payments required for a return period. A payment is considered to be on time if it is paid in full on or before the due date (no grace period).

SME incurring debt

A SME is counted as incurring debt if it had a debt element starting in a return period regardless of how long the debt lasted. This analysis only included debts in the main tax types: GST, PAYE, and Income Tax.

Newly-registered SME debt

The percentage of newly registered SMEs incurring debt in the first 12 month after registration.

Yearly employment activity

Based on the total number of employee worker months recorded in a year.

Locations

Our definition of the Canterbury Region is IR’s Christchurch District Office area, which includes the Kaikoura, Hurunui, Waimakariri, Selwyn, and Christchurch City Councils.

