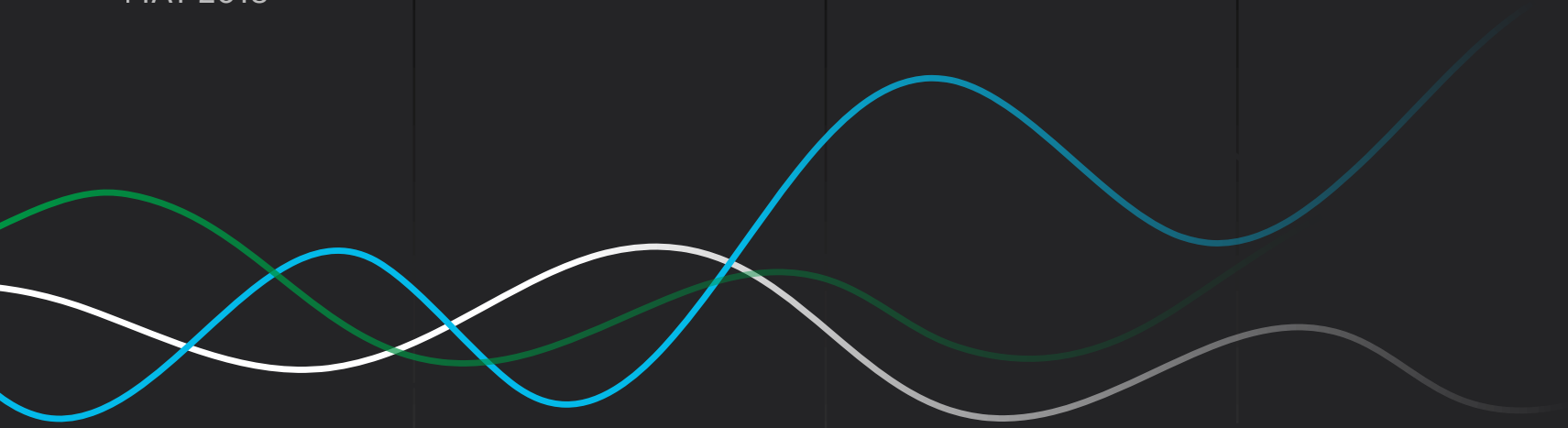
Do company tax cuts boost jobs, wages and investment?

Evidence from the 2015 Australian tax cuts for businesses with turnover below $2 million

MAY 2018



Small Business Insights

This report produced by AlphaBeta for Xero Small Business Insights

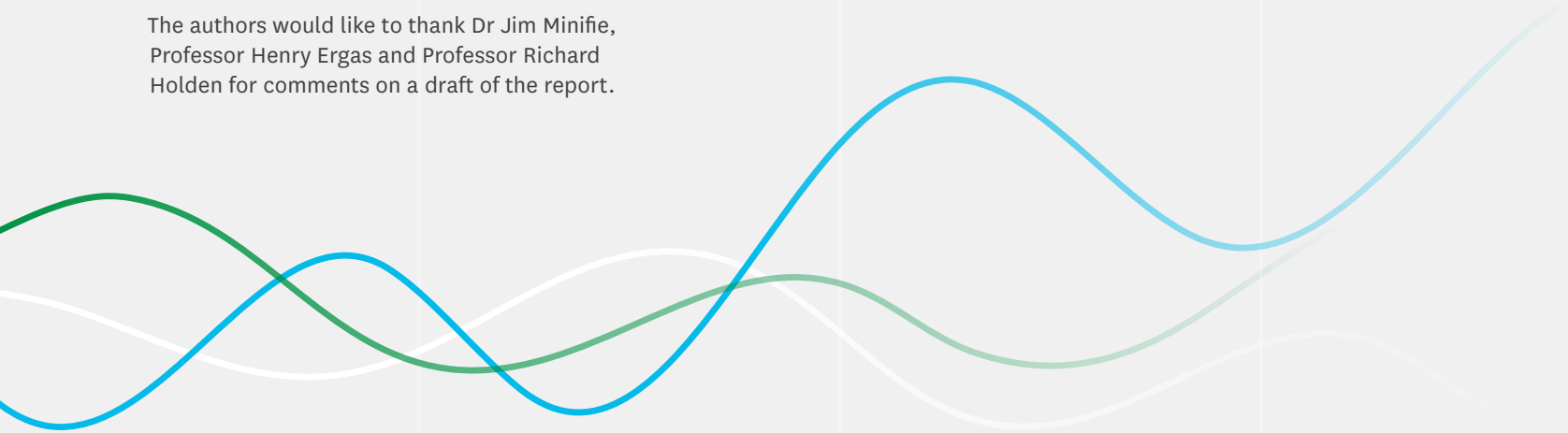
αlphaβeta
strategy x economics

αlphaβeta
strategy x economics

This paper, including the insights and analysis contained within it, was prepared by AlphaBeta with the support of Xero, through Xero Small Business Insights data, for the purpose of informing and developing policies to promote small business in Australia. This report contains general information only and should not be taken as taxation, financial, investment or legal advice. Xero recommends that readers always obtain specific and detailed professional advice about any business decisions.

For further information on this report, contact
Dr Andrew Charlton, AlphaBeta,
Level 7, 4 Martin Place Sydney 2000
P: 02 9221 5612
E: Andrew.Charlton@alphabeta.com.

The authors would like to thank Dr Jim Minifie, Professor Henry Ergas and Professor Richard Holden for comments on a draft of the report.



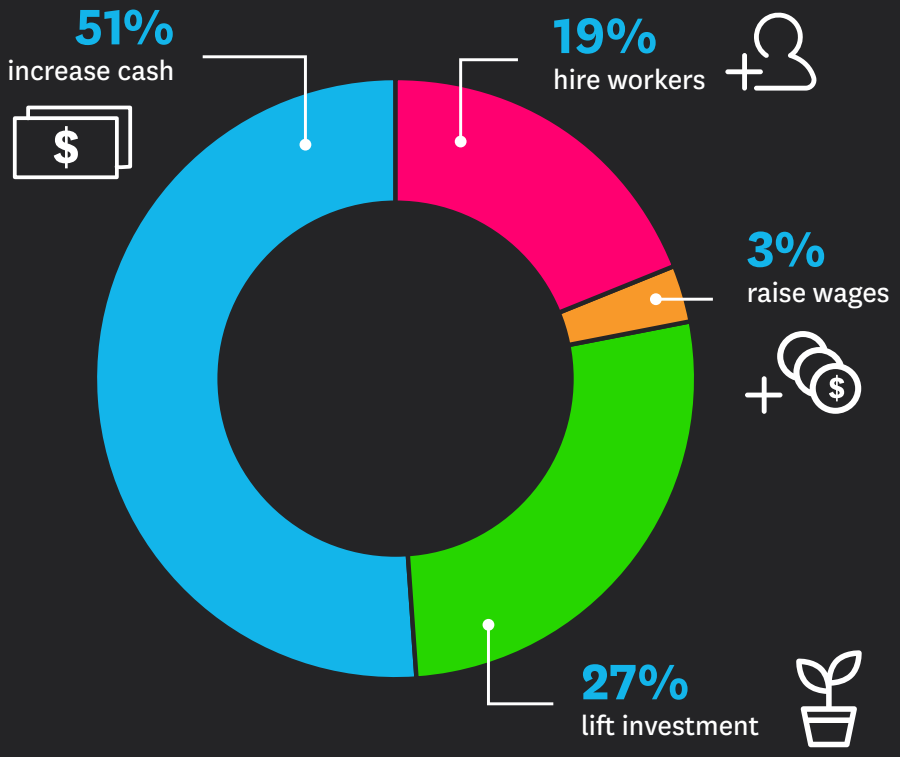
What is the impact of company tax cuts?

in 2015 Australia
cut tax rates from
30% to 28.5%
for companies under
$2 million
turnover

The average company at the
$2 million threshold received a
$2,940 tax cut

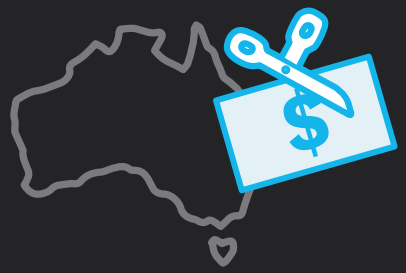
Xero
Small Business Insights
provided data from
tens of thousands of
small businesses

HOW WAS THE TAX USED?



αlphaβeta
strategy x economics

Small Business Insights



Xero is a global small business platform with over **half a million** subscribers in Australia who use it to conduct their bookkeeping, accounting, invoicing, taxes and payroll.

Executive Summary

What's the impact of company tax cuts on Australian businesses? Do companies hire more workers, increase wages and boost investment after tax cuts? Despite the importance of these questions, economists and policy-makers often struggle to answer them precisely, in part because of a lack of quality firm-level data. Using anonymised data from Xero, this report answers these questions by directly observing how Australian businesses responded to recent company tax cuts.

From 1 July 2015, the tax rate for Australian businesses with a turnover of less than $2 million was lowered from 30 percent to 28.5 percent. At the time, over 90 percent of incorporated businesses fell under that turnover threshold. This report investigates whether the businesses that received this tax cut went on to hire additional workers, pay higher wages or increase business investment.

Xero Small Business Insights: a remarkable new lens on the economy

This report uses data from Xero Small Business Insights. Xero is a global small business platform with over half a million subscribers in Australia who use it to conduct their bookkeeping, accounting, invoicing, taxes and payroll. Xero Small Business Insights provides a snapshot of the sector's health based on anonymised, aggregated data drawn from hundreds of thousands of Xero subscribers. The mission of Xero Small Business Insights is to support small businesses, including by delivering analysis that informs small business policy (see section 4 for further detail on the data used in this paper).

Xero's data enables us to analyse whether firms just below the $2 million turnover threshold that received the 2015 tax cut increased employment, wages and investment more than firms in a control group just above the threshold that did not receive a tax cut.

We use a regression discontinuity design that exploits the fact that the turnover threshold creates two quasi-random groups of similar firms. This allows us to estimate the causal effect of the tax cut by asking whether firms just below the turnover threshold that received the tax cut increased employment, wages and investment more than firms in a control group just above the threshold that did not receive a tax cut. As a further test, we also asked whether incorporated firms that received the tax relief increased employment, wages and investment more than similar unincorporated entities, who were ineligible for the tax cut (see section 5 for further detail on the methodology).

Executive Summary

JOBS: Firms that received tax cuts hired more workers

Firms just below the threshold (turnover of $1.5m - $2.0 million) that received the 2015 tax cuts increased their employment by 2.6 percent in the year that the cuts were introduced, while firms that did not receive the tax cut because their turnover was just above the threshold ($2.0 - $2.5 million) increased their employment by 2.1 percent (table 1). While this difference is modest, it is statistically significant (table 2).

Further evidence to support the employment impact of the 2015 tax cut comes from comparing incorporated companies with unincorporated entities (such as partnerships, sole traders and non-profits) that were ineligible for the tax cut. Incorporated firms below the $2 million turnover threshold increased their employment by more than unincorporated firms of a similar size, but incorporated firms above the $2 million threshold did not significantly increase employment more than similar unincorporated firms (see section 5, table 4).

WAGES: Little impact on wages seen at businesses receiving tax cuts

The 2015 tax cuts do not appear to have had a distinct impact on wages. Firms just below the threshold (turnover of $1.5m - $2.0 million) increased their wages per employee by 4.88 percent in the year that the tax cuts were introduced, while firms that did not receive the tax cut because their turnover was just above the threshold ($2.0 – 2.5 million) increased their wages per employee by 4.84 percent (table 1).[1] This difference is very small and not statistically significant across most of our specifications (table 2).[2]

These results are not surprising. Tax cuts only affect wages indirectly through labour market adjustments, which may take more than two years to mature.[3] Further, because these tax cuts only applied to small businesses, the effect on the broader labour market is likely to have been relatively small and to have affected all firms rather than just those that received the tax cut (see discussion in section 6).[4]

INVESTMENT: Businesses receiving tax cuts invested slightly more

There is some evidence that the 2015 tax cuts encouraged firms to increase investment. Firms just below the threshold (turnover of $1.5m - $2.0 million) increased their investment by 2.45 percent in the year that the tax cuts were introduced while firms that did not receive the tax cut because their turnover was just above the threshold ($2.0 – 2.5 million) increased their investment by 1.53 percent (table 1). This difference is statistically significant across our parametric specifications (table 2). There is also some evidence of significant positive effect on investment in the second year after the tax cut was introduced (table 3).

These results are broadly in line with our expectations. Firms that receive a tax cut may experience an increase in their post-tax capital returns, which could cause them to increase their investment. It is not surprising that, although we observe an effect of this nature, the magnitude of the increase in investment is modest because small businesses tend to be domestically owned. The impact of the tax cut on investment returns is larger for foreign businesses which do not benefit from dividend imputation.

AWARENESS: Many firms are unaware their taxes were cut

The effect of company tax cuts on employment, wages and investment may be reduced by low awareness of the tax cuts among small businesses. A survey to accompany this analysis received responses from 502 small businesses of which 337 (67 percent) were eligible for a small business tax cut. However only 115 firms (23 percent) said they received a tax cut in the last two years and 169 firms (34 percent) said that they do not know whether they received a tax cut. Low awareness of the tax cuts could have reduced their impact on employment, wages and investment.

1 For both these groups, the reported wage increase was higher than the national average. Firms across the Xero sample tend to pay higher wage increases than the broader economy. This may be a selection feature of the sample, i.e. firms that use cloud based accounting software tend to be faster-growing and more successful firms.
2 There is also no significant positive effect on wages in the second year after the tax cut is introduced (table 3) and no significant difference between the wages growth incorporated companies that received the tax cut and unincorporated entities that did not (table 4).
3 See, for example, Freebairn 2015.
4 For example, the extra demand for employees from small businesses is not likely to have substantially reduced the supply of workers, and thereby driven up the wages all businesses are prepared to pay to hire new employees. Also because the general equilibrium effect of the tax cuts should affect all firms, we are unlikely to be able to observe a differential between firms that received the tax cut and those that did not.

Executive Summary

CONCLUSIONS

The 2015 tax cut appears to have had a small effect on employment and investment and an insignificant effect on wages in the companies that received tax relief. The average tax cut for the businesses in our sample just below the turnover threshold was $2,940. Compared with businesses just above the turnover threshold, in the 2016 income year, businesses just below the threshold hired more people equivalent to $560 additional wages for new workers (19 percent of the tax cut), marginally increased their wages per worker by $75 (3 percent) and reported $800 greater investment (27 percent). The remaining $1,500 (51 percent) on average went to other purposes including increased post-tax profits in that year.

The results of this study should be interpreted carefully. First, the statistical significance of the results varies. We present a range of statistical tests in this paper and observe consistently positive effects of the tax cut on employment, but the effects on wages and investment are only statistically significant in some specifications.

Second, this analysis relates only to the short-term effects of company tax cuts. We are studying how the companies used the additional benefit in the two years after the tax cut was introduced. It is possible that many of the hypothesised effects of tax cuts, especially those that require market adjustments, may take time to develop.

Third, we are only analysing small businesses and our results may not be generalisable to larger businesses. One obvious difference is that the share of foreign ownership is higher among larger businesses. The ultimate impact of company tax cuts on domestic shareholders is mitigated by dividend imputation, so the effect of tax cuts may be more significant for larger businesses if their share of foreign ownership is higher. In 2016, the Australian government introduced a further reduction in the corporate tax rate to 27.5 percent for businesses with turnover below $10 million. As further time passes, it will be possible to examine the impact of this tax cut using similar approaches.

The 2015 tax cut appears to have had a **small effect** on **employment** and investment and an **insignificant effect** on **wages** in the companies that received tax relief.

αlphaβeta strategy x economics
xero Small Business Insights

1. Introduction

Proposals to cut the corporate tax rate in Australia have generated considerable debate about the effect of corporate taxes on investment, employment and wages.

In this paper, we directly observe how Australian businesses responded to recent company tax cuts. From 1 July 2015, the tax rate for Australian businesses with a turnover of less than $2 million was lowered from 30 percent to 28.5 percent. This paper investigates whether the businesses that received this tax cut responded by hiring additional workers, paying workers higher wages or increasing their investment.

To ensure we are robustly capturing the effect of the tax cut, we use a quasi-experimental research design which takes advantage of the $2 million turnover threshold in the 2015 tax cut. We ask whether firms just below the turnover threshold that received the tax cut increased employment, wages and investment more than firms in a control group just above the threshold who did not receive a tax cut. In a second specification, we ask whether incorporated firms that received the tax relief increased employment, wages and investment more than similar unincorporated entities that did not receive the tax cut.

We are privileged to use a remarkable new source of data to analyse this question. Xero is one of Australia's largest cloud-based platforms for small business. Small businesses use Xero to manage all aspects of their finances. Xero Small Business Insights has anonymised, aggregated data on the cash flow, payments, employment, wages and tax payments of hundreds of thousands of Australian subscribers.

2. Company taxes and firm behavior

The question of who benefits from company tax cuts is complicated by significant uncertainty about whether it is shareholders or workers who ultimately bear the impact of corporate taxes. The fact that corporate tax payments fall in the first instance on corporations does not mean that corporations (or their owners) bear their full burden. In a competitive market, the forces of demand and supply for labour and capital will determine the extent to which workers also carry some of the weight of corporate taxes in the form of lower employment and lower wages. There is a large literature examining these questions (see for example, Auerbach 2006; Clausing 2013; Cronin et al. 2013; Gravelle 2013).

Some early theoretical studies of corporate taxes concluded that business owners, rather than workers, capture most of the benefits of company tax cuts (e.g. Harberger 1962). These models often assumed that businesses are immobile and have few options to respond to higher taxation. Under these assumptions, business owners bear the brunt of corporate tax and are the principal beneficiaries of lower rates (Freebairn 2015).

More sophisticated models allow for the possibility that the impact of company tax cuts could fall on workers as well as business owners. These models assume that companies can respond to changing tax rates by moving across borders and shifting between asset classes.[5] If the effect of higher corporate taxes is to make companies invest less, then the demand for workers may be reduced with consequent impacts for workers and their wages. These models concluded that, in the long run, workers capture a large share of the benefits of company tax cuts (Henry et al. 2009; Mirrlees et al. 2011).

In Australia, macro-economic models incorporating these effects have been used to estimate the potential impact of company tax cuts. For example, modelling by the Australian Treasury (Kouparitsas et al. (2016)) found that a corporate tax cut would increase investment and labour productivity, with benefits ultimately flowing through to workers. The study concluded that employment would increase by between 0.1 and 0.4 percent if the company tax rate were to be reduced to 25 percent. Another Treasury study using a similar macro-economic model (Rimmer, Smith and Wende (2014)) estimated that about one-third of the benefit of a cut in the corporate tax rate would accrue to business owners and around two-thirds would accrue to workers through higher wages. Dixon and Nassios (2016) found that company tax cuts would stimulate foreign investment in Australia by increasing returns to capital for foreign investors who do not benefit from dividend imputation, and thereby drive up wages over time. However, they point out that the benefits to Australian workers may be outweighed by the government revenue lost to foreigners.

These macro-economic modelling exercises usefully illuminate some of the theoretical channels through which tax cuts may affect the economy, but our practical understanding of those channels can be complemented by observing how real firms responded to actual tax changes. In practice there have been few empirical studies because of the absence of quality firm-level data, the small number of relevant tax reforms to study, and the daunting challenge to establish what wages and investment would have been in the absence of tax reform.[6]

This study contributes to the evidence on corporate taxes by analysing the effect of the 2015 Australian small business tax cut. We are able to use a rich new source of firm-level data and apply it to a quasi-experimental design.

5 As we discuss in Section 6 some of these effects may have different impacts on small and large businesses.
6 Leigh (2018) analysed a sample of around 1000 large firms and found that firms that paid less tax tend to create fewer jobs.

3. 2015 Australian corporate tax cut

The Australian government announced in the 2015-16 Budget that it would reduce the company tax rate for companies that are small business entities from 30 percent to 28.5 percent. A small business was defined as one with an aggregated turnover of less than $2 million in the income year commencing on or after 1 July 2015.

At the time, over 90 percent of incorporated businesses (over 780,000 out of a total of 850,000 incorporated businesses) fell under the $2 million turnover threshold and could potentially have benefited from this measure.[7]

The tax cut received support from all major parties and aimed to increase investment, employment and wages. The legislation stated that providing "small businesses with a reduced rate of company tax will permit them to retain more earnings for investment. Investment is important as it leads to existing output being produced at a lower cost (capital deepening) and new and improved ways of doing business (innovation), which improves the amount of output produced for each unit of input, including labour (productivity). As a result, higher investment can lead to higher employment and wages over time."[8]

Several features of the tax cuts and related policy changes are relevant to this study. First, the reduced tax rates apply only to businesses below a turnover threshold of $2 million. This threshold is key to our identification strategy as subsequently outlined and described more formally in section 5. Second, the tax cuts only apply to incorporated small businesses and do not apply to unincorporated entities such as partnerships, sole proprietorships and non-profit organisations. We use this distinction as a robustness check by comparing incorporated and unincorporated businesses during the introduction of the tax cut.[9] Third, the scope of the tax cut was subsequently limited on 18 October 2017 such that only corporate entities who meet the aggregated turnover threshold and have no more than 80 percent passive income will be eligible for the lower corporate tax rate. This limitation only came into effect from the 2017–18 income year, so it is not directly relevant to the period we are analysing. [10]

In 2016, the Australian government introduced a further reduction in the corporate tax rate to 27.5 percent for businesses with turnover below $10 million. As further time passes, it will be possible to examine the impact of this tax cut using similar approaches to the one in this study.

7 Tax Laws Amendment (Small Business Measures No. 1) Bill 2015, Explanatory memorandum
8 Tax Laws Amendment (Small Business Measures No. 1) Bill 2015
9 This difference between incorporated and unincorporated small businesses was mitigated in part by the introduction of a tax discount for unincorporated small businesses, although the effect of this measure was capped at $1,000 per small business owner.
10 Treasury Laws Amendment (Enterprise Tax Plan Base Rate Entities) Bill 2017.

4. Xero Small Business Insights

The main source of data for this study comes from Xero Small Business Insights. Xero Small Business Insights publishes anonymised, aggregated data with the goal of helping businesses owners and policy makers make informed decisions.

Businesses use Xero software to manage all aspects of their financial and accounting needs. Xero therefore has up-to-date and accurate information on firm turnover (including revenue from active and passive sources), employees, wages paid to each employee, dividends, cash on hand, taxation paid, industry (ANZSIC code) and incorporation status.

An important variable is the number of employees in each firm, which we use to infer the impact of the tax cut on firm's propensity to hire new workers. Xero records the number of workers paid by each firm in each month and the status of those workers (full time, part time and casual employees). In this study we analyse the change in the number of full time and part time employees, although the results are robust to considering only full time employees, paid over the financial years 2015/16 and 2016/17.

Xero also records employee wage information, including both their stated salary and their actual monthly payments, which may vary based on overtime, bonuses and other factors. We analyse change in the actual payments made to workers over the financial years 2015/16 and 2016/17. To analyse investment, we use information from the firms' fixed assets register. We observe the change in the value of the register over the financial years 2015/16 and 2016/17.

To create the most reliable sample for this analysis, we put a number of restrictions on it. The final sample for this report is 69,076 entities.

We complemented this data from the Xero platform with a PureProfile survey. The survey was conducted by email in March 2018 with a response rate of 33 per cent (502 responses). The survey asked small businesses about their awareness of the small business tax cut and whether the tax cut would affect their employment, investment or dividend policies.

5. Results

Summary statistics

Table 1 presents summary statistics for the firms in the Xero sample which meet the eligibility criteria. Column A presents information for all firms in the sample with turnover of less than $10 million. Column B presents information for firms just under the threshold which received the tax cut ($1.5-$2.0 million turnover). Column C presents information for firms that are just above the threshold and did not receive the tax cut ($2.0-2.5 million turnover).

The cohort just below the threshold increased employment by 2.6 percent while those that did not receive the tax cut increased employment by 2.1 percent. Firms that received the tax cut increased wages by 4.88 percent while those that did not receive the tax cut increased wages by 4.84 percent. Firms that received the tax cut increased investment by 2.45 percent while those that did not receive the tax cut increased employment by 1.53 percent.

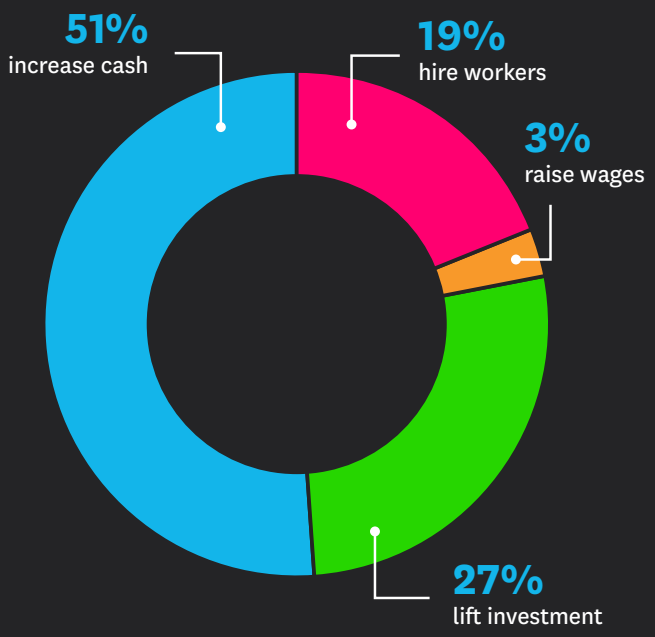
The magnitude of these differences is small. At the average wage of employees in firms near the threshold, the differential increase in employment equates to an additional $562 through the year in additional expenditure on new employees. The average differential increase in wages per employee equates to $75 through the year in additional wages. The average differential increase in investment equates to $804 additional investment through the year. The average tax payable reduction for firms that received the tax cut at the threshold is $2,940 which implies that, on average, around $1,500 per firm was not used for employment, wage increases or investment.

FIGURE 1: How did small businesses use the tax cut?

In 2015 corporate taxes were cut from **30%** to **28.5%** for Australian companies with turnover below **$2 million.**

The tax cut delivered an average benefit of around **$2,940** for firms close to the threshold.

By comparing the firms just below the threshold to those just above, we observe how the tax cut affected the firms that received it.



Results

Statistical estimates

However, comparing firms above and below the threshold may not be a valid test of the impact of the tax cut because the allocation of firms into these two groups is not random. To identify the causal effects of these tax cuts we use a regression discontinuity design which exploits the quasi-random variation in employment, wages and investment around the thresholds.

$$t_i = \begin{cases} t_i(0) \ \ if \ \ X_i > c \\ t_i(1) \ \ if \ \ X_i \leq c \end{cases}$$

Where X_i is firm turnover, c is the turnover threshold, $t_i(0)$ denotes the normal tax rate and $t_i(1)$ the reduced tax rate. Hence, the tax reduction creates a sharp discontinuity in the tax rate as a function of the firm's turnover. This feature of the policy allows us to identify and estimate the effect of the tax cuts by employing a sharp regression discontinuity design.

Our approach can be formalised using the potential outcomes framework introduced by Rubin (1974). The firms in the Xero sample are assigned to two different groups. The binary variable $Di \in \{0,1\}$ describes the treatment status of firm i. Let $Di = 0$ if the firm's turnover is higher than the threshold $X_i > c$. In this case the firm is assigned to the control group and is subject to the normal tax rate $t_i(0)$. Let $Di = 1$ if the firm's turnover is lower than the threshold $X_i \leq c$ in which case the firm is considered as treated to the reduced tax rate $t_i(1)$.

Our estimation strategy uses both non-parametric and parametric methods. The parametric approach is conventional and involves estimating the equation

$$y_i = \alpha + \beta D_i + \gamma_1 X_i + \gamma_2 (X_i * D_i) + \varepsilon_i$$

where y_{it} is an outcome variable for firm i. We also implement a nonparametric regression discontinuity design (Lee and Lemieux, 2010). The nonparametric approach fits local polynomial regression functions either side of the threshold and estimates the treatment effect as the jump that occurs at the threshold (see figure 2). Given that the regression discontinuity design tends to rely on a small sample size, there is a trade-off between the efficiency and precision of the estimates. We use two sample windows with a range of $50,000 and $100,000.

Estimates of the treatment effect are provided in table 2. The upper panel presents results from the parametric approach. We find evidence that employment growth, wages growth and investment growth in the first year of the tax cut (financial year 2016) are significantly higher in the treatment group (which received the tax cut) relative to the control group (which did not receive a tax cut). The lower panel presents results from the non-parametric approach. The coefficients on employment suggest a statistically significant impact of the tax cut on employment. The coefficients on wages and investment are not statistically significant at established levels.

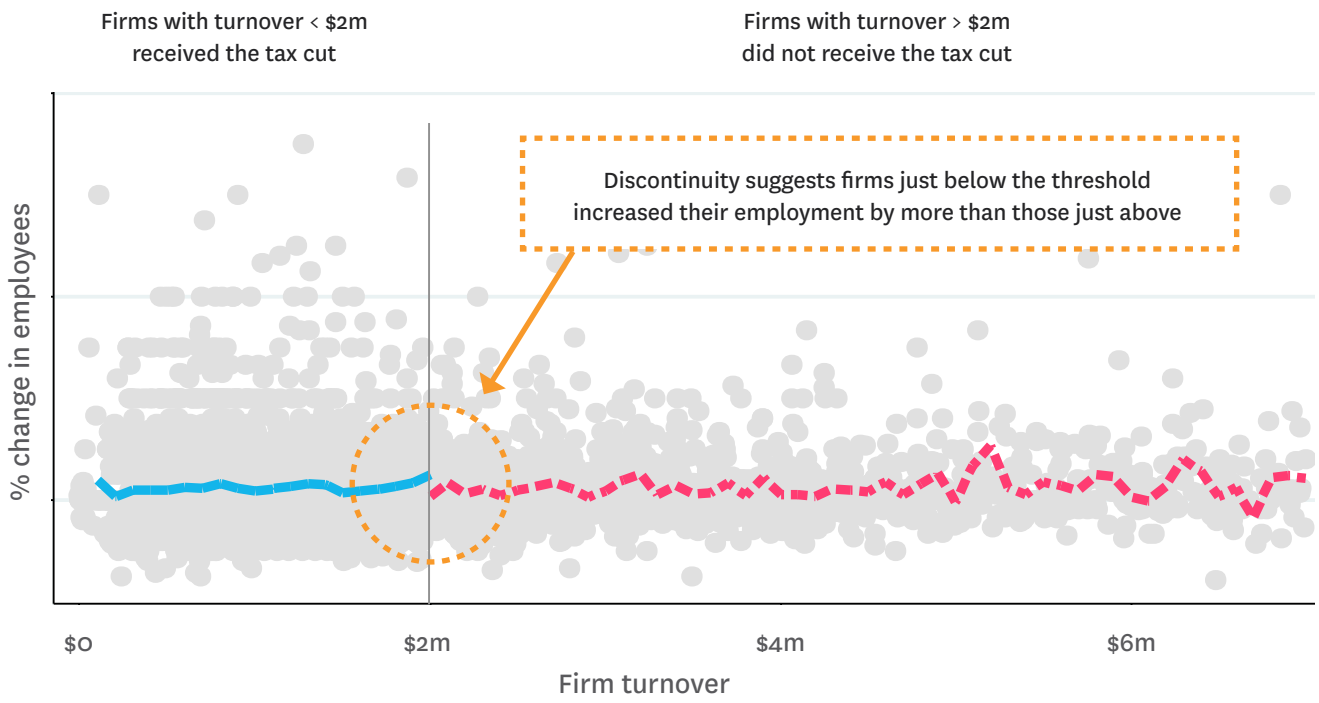
Perhaps the effect of the tax cut on employment, wages and investment grows over time as suggested in much of the theoretical literature. To begin to investigate this question, table 3 presents parametric and non-parametric estimates of the treatment effect of receiving a tax cut in financial year 2016 on employment, wages and investment growth in financial year 2017. The parametric results show a positive and statistically significant effect on employment and investment, but no significant effect on wages. The non-parametric results are not significant.

Results

Regression discontinuity analysis seeks to identify a causal effect by exploiting the fact that firms just below the threshold are likely to be very similar to firms just above the threshold, other than that the ones below received a tax cut.

In this example we find that firms just below the threshold increased employment more than firms just above the threshold and the difference is significant.

FIGURE 2: Regression discontinuity analysis compares the behaviour of firms on either side of the threshold



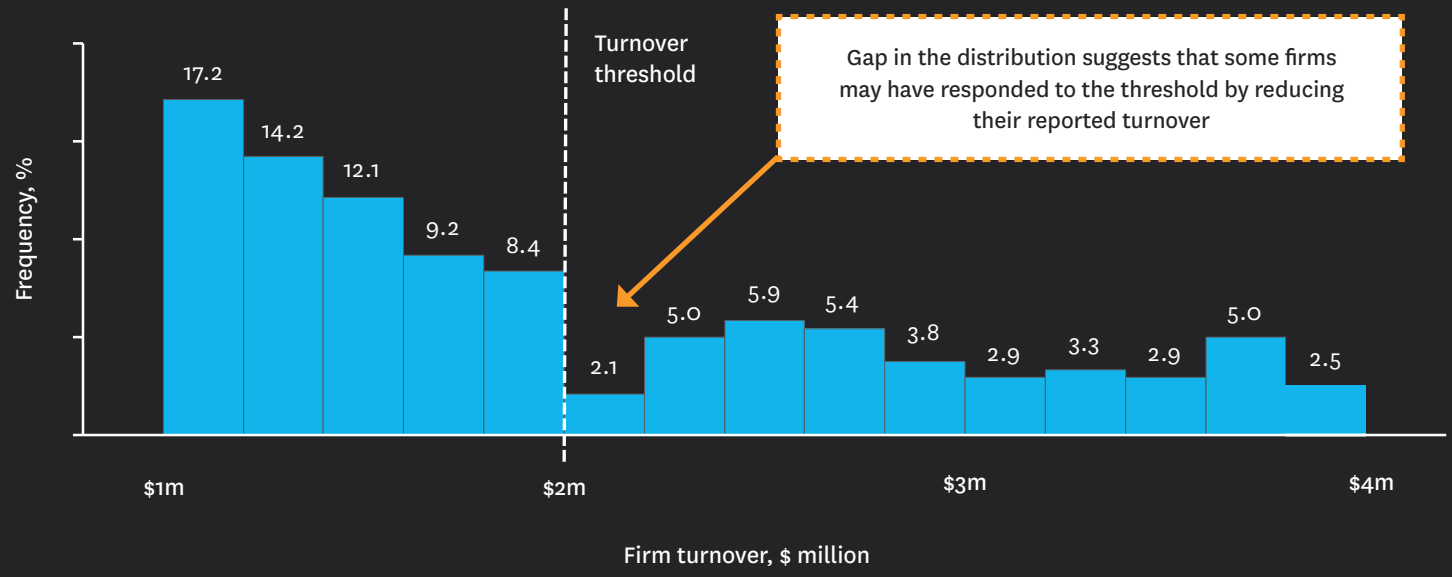
Results

Endogeneity concerns

Our estimation strategy assumes that individuals cannot influence their assignment into the control or treatment group. However, if firms are aware of the threshold, they may seek to manipulate their turnover to become eligible for the lower rate. We investigate this possibility by grouping the tax data into $200,000 bins and plotting a histogram of turnover. We find a gap in the proportion of firms with turnover between $2.0 million and $2.2 million, i.e. just above the eligibility threshold for the tax cut (figure 3).

FIGURE 3: Some firms may have sought to take advantage of the tax cut by ensuring their turnover was below the threshold

Histogram of firm turnover in the range $1m-$4m



Results

Whether this sorting around the threshold affects the validity of our results depends on whether the sorting is related to the outcome variables, i.e., are firms that manipulate their turnover under the threshold likely to have higher growth in employment, wages and investment than other firms above the threshold?

We address this question in part by exploiting an alternative feature of the policy that cannot be manipulated so easily. Only incorporated firms in the sample received tax cuts, while other small businesses with turnover under $2 million – including partnerships, not-for-profit entities and sole proprietorships – did not receive a tax cut.[11]

If the tax cut had an impact, then we would expect to see a larger difference between the increase in employment, wages and investment in incorporated and unincorporated entities below the $2 million turnover threshold than above the threshold. Table 4 presents estimates of the treatment effect for "incorporation" for entities above the threshold and below the threshold. Incorporated entities below the $2 million turnover experienced significantly faster growth in employment than non-incorporated entities. However incorporated entities above $2 million (which did not receive a tax cut) experienced no significant increase in employment relative to non-incorporated entities. The magnitude of the effect is consistent with evidence from the regression discontinuity analysis. The results for wages show little effect. The results for investment show that the growth in investment for incorporated entities above $2 million was significantly lower than non-incorporated entities. The effect is not significant for entities below the $2 million threshold. These results are a useful robustness check because entities cannot easily change their incorporation status in response to a tax cut, mitigating the sorting concerns associated with the turnover threshold analysis.

11 This difference between incorporated and unincorporated small businesses was mitigated in part by the introduction of a tax discount for unincorporated small businesses, although the effect of this measure was capped at $1,000 per small business owner.

6. Conclusions and discussion

These results provide some evidence that company tax cuts provided to Australian small businesses in 2015 increased job creation in the short term, some weaker evidence that they contributed to investment and little evidence that they contributed to higher wages.

The proportion of benefits flowing through to workers in the form of higher employment and/or wages is significantly smaller than suggested by other recent Australian studies (Freebairn, (2015), Kouparitsas et al. (2016), Rimmer, Smith and Wende (2014). However, in the discussion below we identify several potential factors that may explain this discrepancy including differences in the sample, timing and magnitude of the 2015 tax cut.

Firms that received the 2015 tax cuts hired more workers than similar firms that did not. This difference is statistically significant across a number of parametric and non-parametric specifications and persists in the second year after the tax cut is introduced. Employment growth was higher in incorporated companies (which were eligible for the tax cut) than in similarly-sized unincorporated entities (such as partnerships, sole traders and non-profits which were not eligible for the tax cut), suggesting further evidence of a positive impact of tax cuts on employment.

Firms that received the 2015 tax cut did not increase wages more than those that did not. This result is not surprising because tax cuts only affect wages indirectly.[12] Firms that receive a tax cut may experience an increase in their post-tax capital returns. This may cause them to invest more, and this investment in turn may increase labour productivity and cause firms to hire more workers. As many firms seek to attract additional workers, the competition for workers may increase and firms may have to pay higher wages. This, in broad terms, is the hypothesised channel through which tax cuts affect wages.[13] It is no surprise that we do not see wage increases in our data. First, these labour market adjustments take time to have an impact, and we are only analysing the first two years after the tax cut. Second, because most smaller firms are domestically owned, the impact of the tax cut on investment returns is muted by dividend imputation. Third, the impacts on wages requires many firms to be simultaneously looking for new workers that wages rise; but these tax cuts only applied to the small business part of the economy, so the effect on the broader labour market is likely to have been relatively small. Fourth, because wage increases caused by tax cuts are general equilibrium effects, they should apply to firms that received the tax cut as much as those that did not.

Firms that received the 2015 tax cut increased investment by slightly more than those that did not. This result is broadly in line with our expectations. A significant part of the investment effect of tax cuts in most macroeconomic models occurs through foreign-owned companies, whose shareholders experience a significant increase in their post-tax return on capital. It is not surprising that the magnitude of the increase in investment is lower among small businesses which tend to be domestically owned because the impact of the tax cut on investment returns is partially muted by dividend imputation.

These results should be interpreted with caution. First, this study considers the impact of tax cuts on small businesses and the results are not necessarily generalisable to larger businesses. Second, we are only considering the short-term impacts of the 2015 tax cut. Some of the effects of the tax reduction (particularly those that involve adjustment in labour markets) may take time to develop. Freebairn (2015) for example finds that at least 40 percent, and as much as 60 percent, of a reduction in the corporate tax rate in Australia would flow through to higher wages, but explicitly notes that these effects will take time and in the short run a larger share of the benefits may accrue to capital owners.

12 See, for example, Freebairn 2015.
13 Tax Laws Amendment (Small Business Measures No. 1) Bill 2015

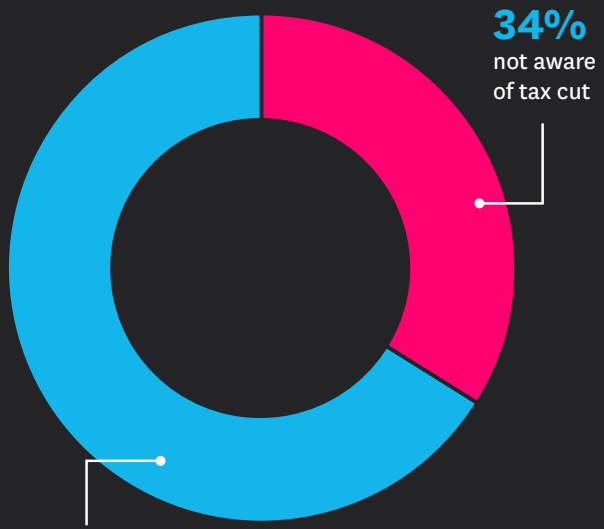
Conclusions and discussion

FIGURE 4: Low awareness of the tax cut may have reduced some of its impacts

Xero commissioned a survey of **502** Australian small businesses.

34 per cent said they were unaware whether they had received the tax cut.

Low awareness may reduce the impact of the tax cut on employment, wages and investment.



Third, the effect of company tax cuts on employment, wages and investment may be reduced by low awareness of the tax cuts among small businesses. The survey results contain some evidence relevant to support this conclusion. The survey received responses from 502 small businesses of which 337 (67 percent) were eligible for a small business tax cut. However only 115 firms (22.9 percent) said they received a tax cut in the last two years. The survey did not include questions about the firm's profitability, so it is possible that some of the firms with turnover below $2 million were eligible for a lower rate of tax but did not have any income. However, 169 firms (34 percent) said that they do not know whether they received a tax cut. Low awareness of the tax cuts could have reduced their impact on employment, wages and investment. If firms are not aware of the tax cuts, they are unlikely to hire more people, raise wages or boost investment in response to them.

Tables

Table 1: Summary statistics

This table presents summary statistics for the Xero sample. Columns A is all firms in the sample which meet the eligibility criteria and are between turnover of $0-10m. Columns B is firms just under the threshold which received the tax cut. Column C is firms that are just above the threshold and did not receive the tax cut.

	All firms (A)	Just below threshold (B)	Just above threshold (C)
FY16			
Turnover range	$0 - $10m	$1.5 - $2.0m	$2.0- $2.5m
Number of firms	55,023	2,671	1,667
Turnover (average)	906,517	1,734,235	2,235,420
Tax rate		28.50%	30%
	Change FY16/FY15	*Change FY16/FY15*	*Change FY16/FY15*
Employment	2.50%	2.60%	2.10%
Wages	5.10%	4.88%	4.84%
Investment	2.70%	2.45%	1.53%

Tables

Table 2: Parametric & Non-parametric estimates of the treatment effect of 'being under the turnover threshold' (Year 1)

This table compares the behaviour of firms under the turnover threshold (who received a tax cut) with those above the threshold (who did not). It presents parametric and non-parametric regression discontinuity estimates of the treatment effect. The upper panel presents parametric estimates for the range $0 to $4 million. The dependent variable in all regressions is the change in the outcome variable over 2015/16, i.e. a coefficient of 0.01 implies that treatment (tax cut) is associated with a 1% change in the outcome variable. P values are reported below coefficients. The lower panel presents non-parametric estiamtes of the treatment effect for two bandwidths ($50,000 and $100,000).

Parametric	Employment	Wages	Investment
Treatment effect	0.023	0.017	0.041
	0.000	0.067	0.002
N	28,770	26,894	22,449

Non-parametric	Employment		Wages		Investment	
Bandwidth	50,000	100,000	50,000	100,000	50,000	100,000
Treatment effect	0.089	0.048	0.060	0.025	-0.010	0.020
	0.072	0.172	0.445	0.176	0.955	0.731
N	30,473		28,507		23,951	

Tables

Table 3: Parametric & Non-parametric estimates of the treatment effect of 'being under the turnover threshold' (Year 2)

This table compares the behaviour of firms under the turnover threshold (who received a tax cut) with those above the threshold (who did not). It presents parametric and non-parametric regression discontinuity estimates of the treatment effect. The upper panel presents parametric estimates for the range $0 to $4 million. The dependent variable in all regressions is the change in the outcome variable over 2016/17. P values are reported below coefficients. The lower panel presents non-parametric estiamtes of the treatment effect for two bandwidths ($50,000 and $100,000).

Parametric	Employment	Wages	Investment
Treatment effect	0.025	0.000	0.027
	0.000	0.544	0.015
N	34,583	32,848	24,955

Non-parametric	Employment		Wages		Investment	
Bandwidth	50,000	100,000	50,000	100,000	50,000	100,000
Treatment effect	0.053	0.047	0.008	0.009	-0.05	-0.018
	0.334	0.203	0.901	0.843	0.538	0.752
N	36,641		34,870		26,557	

Tables

Table 4: Estimates of the treatment effect of 'incorporation'

This table presents estimates of the difference in the behaviour of incorporated and non-incorporated entities above and below the turnover threshold for eligibility for the tax cut. Only incorporated firms below the $2m threshold received the tax cut. The dependent variable in all regressions is the change in the outcome variable over 2015/16. P values are reported below coefficients.

	Employment		Wages		Investment	
Turnover	<$2m	>$2m	<$2m	>$2m	<$2m	>$2m
Incorporation	0.023	0.025	0.002	0.001	-0.033	-0.016
	0.058	0.188	0.894	0.957	0.562	0.044
N	4,662	2,202	4,464	2,186	6,694	4,031

References

Auerbach, A. (2006), 'Who bears the corporate tax? A review of what we know', in Tax Policy and the Economy, ed. J. Poterba, MIT Press, Cambridge, Massachusetts.

Cao, L., Hosking, A., Kouparitsas, M., Mullaly, M., Rimmer, X., Shi, Q., Stark, W., and Wende, S. (2015) Understanding the Economy-wide Efficiency and Incidence of Major Australian Taxes, Treasury Working Paper 2015-01, Canberra.

Clausing, K. (2013), 'Who pays the corporate income tax in a global economy?', National Tax Journal, vol. 66, pp. 151–84.

Cronin, J., Lin, E., Power, L. and Cooper, M. (2013), 'Distributing the corporate income tax: Revised US Treasury methodology', National Tax Journal, vol. 66, pp. 239–62.

Dixon, Janine, Nassios, Jason, (2016). Modelling the impacts of a cut to company tax in Australia, CoPS/IMPACT Working Paper Number G-260, Victoria University, Melbourne.

Freebairn, J. (2015) Who pays the Australian Corporate Income Tax?, The Australian Economic Review, Vol. 48, No. 4, pp. 357-68.

Gravelle, J. (2010) Corporate tax incidence: Review of general equilibrium estimates and analysis, Congressional Budget Office, Washington, D.C. http://www.law.upenn.edu/academics/institutes/tax/201112papers/Gravelle.pdf

Harberger, A. (1962), 'The incidence of the corporate income tax', Journal of Political Economy, vol. 70, pp. 215–40.

Henry, K., Harmer, J., Piggott, J., Ridout, H. and Smith, G. (2009), Australia's Future Tax System: Report to the Treasurer, Commonwealth of Australia, Canberra.

Kouparitsas, Michael, Prihardini, Dinar, Beames, Alexander, (2016). Analysis of the long term effects of a company tax cut, Treasury Working Paper, Australian Treasury, Canberra.

Lee, David S and Thomas Lemieux, (2010) "Regression Discontinuity Designs in Economics," Journal of Economic Literature, June 2010, 48 (2), 281–355.

Leigh, Andrew (2018) Do firms that pay less company tax create more jobs?, Economic Analysis and Policy 59 (2018) 25–28.

Mirrlees, J., Adam, S., Besley, T., Blundell, R., Bond, S., Chote, R., Gammie, M., Johnson, P., Myles, G. and Poterba, J. (2011), Tax by Design: The Mirrlees Review, Institute of Fiscal Studies, Oxford University Press, Oxford.

Rimmer, X., Smith, J. and Wende, S. (2014), 'The incidence of company tax in Australia', Economic Roundup, iss. 1, pp. 33–47.

Rubin, D. B. (1974). Estimating causal effects of treatments in randomized and nonrandomized studies. Journal of Educational Psychology, 66(5), 688-701.

This report produced by
AlphaBeta for
Xero Small Business Insights

αlphaβeta
strategy x economics