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## FROM THE EDITORS

One common misperception about economics is that it assumes people are interested only in their own wellbeing, and not that of other people. Two articles in this edition show different ways in which economists can challenge this assumption.

The first article provides evidence on New Zealanders' attitudes towards the idea that charity begins at home, teasing out the reasons why some people prefer to donate to a charity working in NZ while others prefer to donate to one working overseas. The second article looks at people's views on what sort of state pension scheme New Zealand should have: this involves questions about the distribution of the tax burden between our generation and future generations, and about payments to poor pensioners versus payments to wealthy ones.

Two other articles in this issue help us to think more deeply about New Zealand's place in the world economy: one looking at China's economic growth and its implications, and the other looking at the importance of education for global competitiveness. We end with our regular commentary on the NZ economy.

Last but not least, we would like to draw your attention to the return – back by popular demand! – of the *EcoNZ@Otago* Essay Competition; see the back page for details. Get your entries in!

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## ALSO IN THIS ISSUE

- What do New Zealanders want from their retirement income scheme?, by Andrew Coleman
- The return of the dragon: China's growth experience, by Murat Üngör
- Global competitiveness and higher education and training, by Hilal Yıldırım Keser
- Commentary on the New Zealand economy, by Alan King
- *EcoNZ@Otago* Essay Competition 2016

## To give at home or abroad? That is the question

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New Zealanders are among the most generous people in the world according to the International Giving Index produced by the Charities Aid Foundation (2015). Do New Zealanders prefer to support charities that help New Zealand families in need or charities that help families in poor countries overseas? This article reports on research into this question.<sup>2</sup>

### MORE CHARITABLE BANG FOR BUCK?

Two recently published books (Singer, 2015; MacAskill, 2015) have suggested that people wanting to do the most good should donate to charities fighting poverty in poor countries overseas instead of to charities helping people in wealthy countries like New Zealand. There is greater need in the developing world, and so it is possible to save lives there relatively cheaply. In other words, much more good can be achieved with a given amount of money in a poor country than a rich country. Peter Singer and Will MacAskill are both key figures in what has become known as the "effective altruism movement".

To investigate whether New Zealanders prefer to support charities helping New Zealand families in need rather than charities supporting families in poor countries overseas, we sent letters to more than 3000 randomly-selected people inviting them to participate in a survey on



versus



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<sup>2</sup> For a more detailed discussion of this research, see Knowles and Sullivan (2015).

charitable giving. The letter told them that if they completed the survey we would donate \$10 on their behalf to either the Salvation Army (supports New Zealand families in need) or World Vision New Zealand (supports families in poor countries overseas). The person completing the survey got to choose which of the two charities – the Salvation Army or World Vision – the money went to. People were also invited to give their reasons for why they chose the charity they did.

## WHY WE ASKED PEOPLE TO CHOOSE

It might be tempting to think that, instead of the method explained above, we could infer people's underlying preferences for supporting needy people overseas relative to domestic causes simply by calculating how much money is given to different charities each year. This would not be a smart approach, however. The fact that there are more charities in New Zealand with a domestic focus than ones with an international focus could have important implications and bias our conclusions.

Imagine that you would prefer to give to charities helping poor people overseas, but you also don't like saying "no" when charities ask you for money. Suppose that every time someone asks you for money, you give them a small amount. Given that there are more charities with a domestic focus, you will end up giving more money to them – even though you prefer to support charities with an overseas focus!<sup>3</sup> We refer to this as the "number-of-charities effect". Our methodology outlined earlier controls for this effect by giving people the choice of only two charities and asking them to choose one.

## KEEPING OTHER FACTORS CONSTANT

When choosing which charities to donate to, people will be concerned about more than just whether the charity has a domestic or local focus. Some people may prefer to give to charities that are concerned with the environment, or animal welfare, or that have a health focus, etc. To hold other factors like this constant we needed to choose two charities that are as similar as possible, except that one has a local focus and the other an overseas focus. World Vision and the Salvation Army meet this requirement: both are faith-based, both are well known and both help families in need.

## SO, DOES CHARITY BEGIN AT HOME?

The survey was completed by 215 people (a response rate of 6.7%). Almost three-quarters (72%) chose to donate the \$10 to the Salvation Army, with the remainder (28%) picking World Vision. Thus the vast majority of participants chose the charity helping people in New Zealand, which suggests that charity begins at home for most participants.

Of the 215 people who completed the survey, 133 gave a reason for their choice of charity. We identified four main categories of reasons for choosing the Salvation Army:

1. Charity begins at home or that there is a lot of need in New Zealand.
2. Being familiar with the work of the Salvation Army (this includes having donated to the charity before or knowing someone who works for them or has been helped by them).
3. Having donated to World Vision before so decided to donate to a different charity this time.
4. Concerns about whether money sent overseas by World Vision will actually get to the people in need.

The percentage of responses fitting each of these categories is shown in Figure 1. The most common reason given for choosing the Salvation Army (just over half of responses) is that charity begins at home. Nearly a third of respondents chose the Salvation Army

because of familiarity with the charity. A relatively small percentage chose the Salvation Army either because they had donated to World Vision before or expressed concerns that if donating to World Vision the money may not get to those in need.

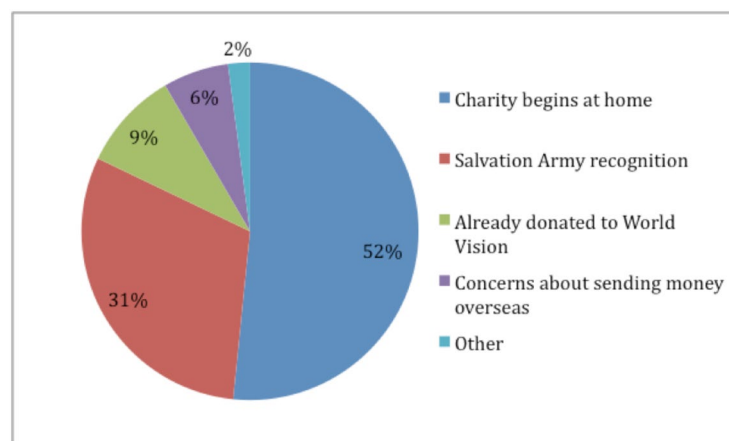


Figure 1. Reasons given for donating to the Salvation Army

We identified three main categories of reasons given for choosing World Vision:

1. There is greater need, or less help available, overseas than in New Zealand.
2. Being familiar with the work of World Vision (including having donated to the charity before).
3. Concerns that the Salvation Army is too religious.

The percentage of respondents in each of these categories is summarised in Figure 2. Over half of those choosing World Vision did so because there is greater need overseas, with just under a quarter choosing World Vision because of familiarity with the charity. A relatively small number chose World Vision because they considered the Salvation Army to be too religious. This is an interesting result, as World Vision is faith-based too. A little surprisingly, no one specifically mentioned the potential for money to do more good in a developing country, although several hinted at this when referring to there being greater need overseas.

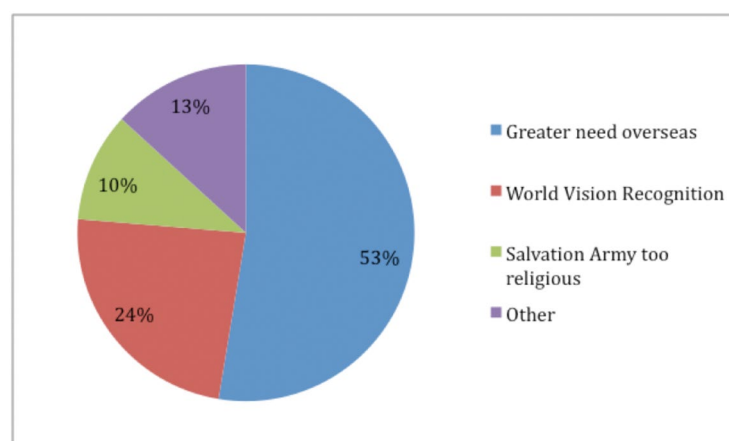


Figure 2. Reasons given for donating to World Vision

## CONCLUSION

Our research method was designed to reveal people's preference for donating to charities that help families in need overseas relative to charities that help people in need in New Zealand, while controlling for the number-of-charities effect. It would seem that most people prefer to help New Zealand families in need, with many stating that charity begins at home.

3 A similar problem would arise if some charities ask for money more often than others.

## QUESTIONS TO CONSIDER

1. Do you tend to give money to most charities that ask you for money? Does this depend on how you are asked? For example, are you more likely to donate if asked by a street collector than if you receive a letter, email or text?
2. Do you agree that in order to do the most good possible would require giving money to international charities rather than New Zealand ones?

## USEFUL WEBSITES

For more information on the effective altruism movement: [thelifeyoucansave.org](http://thelifeyoucansave.org) and [effectivealtruism.com](http://effectivealtruism.com).

For information on the two charities discussed in the article: [worldvision.org.nz](http://worldvision.org.nz) and [salvationarmy.org.nz](http://salvationarmy.org.nz).

For research on charitable giving, the Science of Philanthropy Initiative site: [spihub.org](http://spihub.org).

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# What do New Zealanders want from their retirement income scheme?

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*"Send me a postcard, drop me a line. Stating point of view. Indicate precisely what you mean to say. Yours sincerely, wasting away. Give me your answer, fill in a form. Mine for evermore. Will you still need me, will you still feed me. When I'm sixty-four? Ho!"*

(Lennon and McCartney, 1967)

It is not just the Beatles who have been wondering what people want to do when they are 64.<sup>4</sup> Last year the New Zealand Treasury, in conjunction with the Commission for Financial Literacy and researchers from the University of Otago, published the results of a survey about what New Zealanders want from the government's retirement income scheme.<sup>5</sup>



## IMPROVING ON THE HUMBLE POSTCARD

Traditionally, it has been difficult to get accurate answers from surveys about what people want from retirement income schemes, because such schemes have many different features and it's tricky for people to figure out what they really want. How much should the pension be? At what age should people get it? Should everyone get the same amount? Should poor people get more because they don't have any other income? Who should pay the taxes to fund it all?

Thanks to an online survey tool called *1000Minds*,<sup>6</sup> developed by University of Otago researchers Paul Hansen and Franz Ombler, it is possible to help people work out which features they want from a retirement package, and then to tell the Government. But first, some background.

## SUPER-DUPER!

New Zealand's primary government retirement income scheme is New Zealand Superannuation, which is paid to all New Zealanders when they reach 65 provided they meet residency requirements. Everyone is entitled to the same amount, which in 2014 was \$367 per week for a single person (after standard tax deductions) or \$282 each for a married couple. The pension is paid from general tax revenues, and is increased each year in line with average wages.

In the year to June 2015 a total of \$11.6 billion was paid in pensions, or 5.7% of New Zealand's taxable income.<sup>7</sup> This proportion is relatively small by OECD standards, but it is set to increase as the number of people receiving a pension increases due to population ageing. If New Zealand Superannuation is not changed, payments and taxes will need to increase by 4.6% of taxable income (i.e. almost doubling) by 2050. This large increase will mean that the next generation of taxpayers has to pay much more than the current generation.

<sup>4</sup> In fact, as explained below, New Zealand Superannuation kicks in at 65.

<sup>5</sup> See Au et al. (2015).

<sup>6</sup> [1000minds.com](http://1000minds.com)

<sup>7</sup> The government also offers a small subsidy to people who put money into KiwiSaver, which is a voluntary saving fund that can be accessed when a person turns 65.

## WHAT SHOULD WE HAVE?

There is no doubt that we could keep New Zealand Superannuation in its current form until 2050 and beyond – so long as we don't mind future generations paying a larger proportion of their income in taxes. But if we don't want to place this burden on future generations there are some other options available.

We could change the amount of the pension, or we could raise the age of eligibility. We could make New Zealand Superannuation means-tested, so that wealthy New Zealanders get less than everyone else. We could increase taxes now and save the additional amount in a government fund and use the interest and dividends generated to prevent taxes increasing by so much in the future. As a practical matter, all of these options would be easy to implement. But discovering which of these options New Zealanders would prefer is a more challenging task.

This is where the *1000Minds* software proves useful. Most people find it difficult to make decisions that involve a lot of complicated options that involve thinking about multiple criteria, such as the age of eligibility or the amount of the pension, etc. So rather than asking people to make choices between policy options that differ in all sorts of ways, *1000Minds* reveals people's preferences by getting them to make comparisons that only involve two policy criteria at a time.

## LIFE'S FULL OF TRADE-OFFS

The survey examined respondents' preferences over seven retirement income criteria by asking them a series of questions that each contain a trade-off in which an improvement in one criterion came at the expense of a worsening of another criterion. For example, a respondent might have been asked whether they would prefer a pension that paid \$360 per week from age 65, or a pension that paid \$390 per week from age 67. Figure 1 shows a screenshot from *1000Minds* for this question.

Each respondent was asked about a dozen such pairwise-ranking questions. The software used the responses to calculate each respondent's preferences over the seven criteria included in the survey. These criteria are: the amount of New Zealand Superannuation, the age of eligibility, the size of current and future taxes needed to pay for the scheme, whether or not the scheme should be universal or means-tested, and whether there should be a compulsory saving scheme or people should be allowed to save when and how they like.

## UNIVERSALITY RULES!

Based on a representative sample of slightly more than 1000 people, the survey was undertaken in 2014.<sup>8</sup> The results suggest that the aspect of retirement income policy that is most important to the largest number of people is that everyone receives the same amount of money from the scheme when they retire – commonly referred to as "universality".

More precisely, most people disliked the idea of means-testing, which in this survey was an option to reduce the retirement income payment of people who have more than \$200,000 in financial assets by \$60 per week. Figure 2 shows how respondents' opinions about the importance of universality were distributed: 43% of the respondents indicated that universality was the most important aspect of any retirement income package, and only 15% indicated that it was the least important.

After universality, the second most important criterion concerned future tax rates, with most respondents thinking that it was important not to impose large tax increases on future generations. Sixty-five percent of respondents indicated they would be willing to increase current tax rates by two percentage points if that meant tax rates on future generations would increase by three rather than five percentage points.

Figure 1: Example of a pairwise-ranking question from the survey

Figure 2. The distribution of respondents by their ranking of universality as a criterion

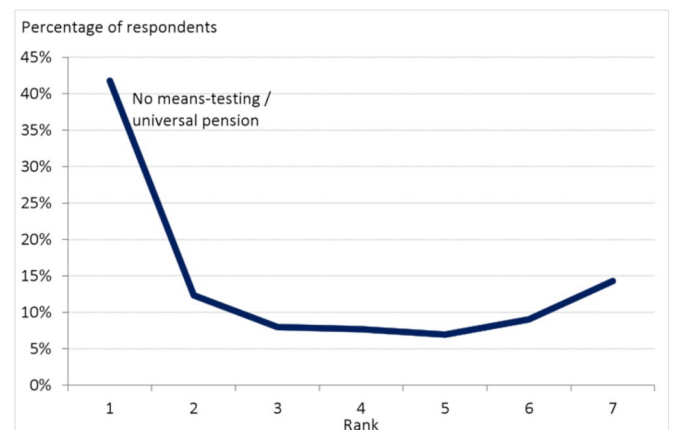


Figure 3. The distribution of respondents by their ranking of savings flexibility as a criterion

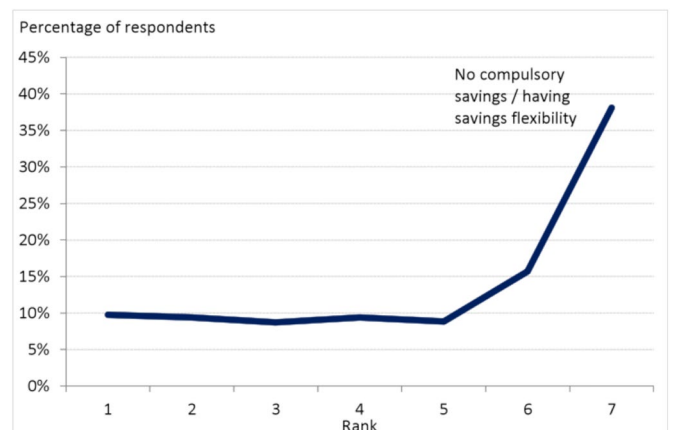
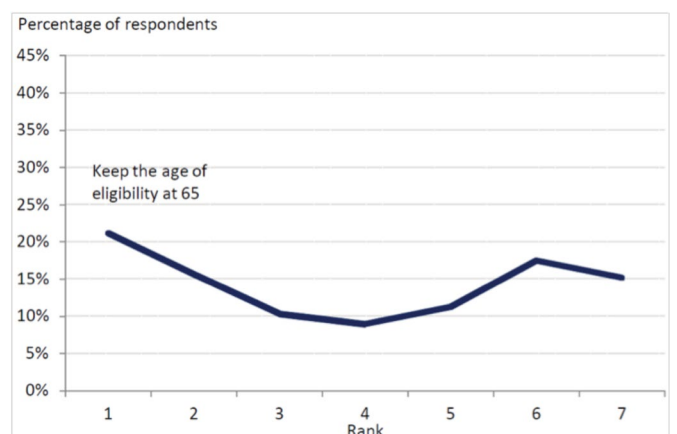


Figure 4. The distribution of respondents by their ranking of retirement age as a criterion



<sup>8</sup> The survey included a simple test to make sure people understood the process and were answering consistently. As more than 80% passed the test, we have confidence in the results.



The least important criterion concerned saving flexibility, with more than 50% of respondents indicating that they were not opposed to a small compulsory saving scheme (see Figure 3). The criterion about which there was the most disagreement was the age of eligibility: 35% of respondents indicated it was very important to keep the age of eligibility at 65 rather than raise it to 67, while a similar proportion indicated it was not important and that they would be willing to raise the age to achieve other objectives (see Figure 4).

## CELEBRATING DIVERSITY

Notwithstanding these overall findings, individual responses were rather diverse – which may explain why retirement income policy has been debated in New Zealand for nearly four decades! The software allows this diversity to be measured on a 0-1 scale: 0 means that people are equally likely to hold any of the seven criteria to be the most or the least important, and 1 means that everyone thinks in exactly the same way. In the survey the diversity measure is 0.08, which indicates substantial disagreement about priorities.

Perhaps surprisingly, respondents' preferences did not vary very much with their characteristics such as age, gender, education, ethnicity and household income. However, people can be sorted into five quite distinct preference groups reflecting different priorities. These groups, in essence, reflect different attitudes, and can be labelled accordingly; for example, there is a group that favours as little government intervention in retirement income policy as possible, and another group that favours interventions that promote income redistribution.

## WHAT POLICY DO MOST OF US WANT?

Given the wide diversity of preferences, can we identify particular policies that would be preferred by a large number of New Zealanders? We used each respondent's answers to the survey questions to infer how they would rank three possible future versions of New Zealand Superannuation: (1) the current policy, (2) a variant in which the age of eligibility is raised by two years and taxes on future generations are reduced, and (3) a variant in which the age of eligibility is unchanged but current taxes are increased by 2% of taxable income to reduce the tax increases facing future generations.

The results of this exercise are very clear: the most preferred policy for more than half of the population is policy (3) whereby current taxes are increased to prevent larger tax increases on future generations; and this also is the least preferred policy for only a sixth of the population. In contrast, policy (2) that raises the age of eligibility is the least preferred policy for more than half of the population, and the most preferred policy for only a sixth. In other words, a policy to more aggressively prefund New Zealand Superannuation would be viewed favourably by most New Zealanders, whereas a policy to increase the age of eligibility by two years would not.

## CONCLUSION

Decisions about retirement policy will ultimately be made by politicians. Nonetheless, the research discussed in this article shows that modern surveying techniques can substantially enhance the information available to politicians when they face these decisions. It is possible to reveal in a rigorous manner the diversity of opinion New Zealanders have about the relative importance of different aspects of retirement income policy. It is also possible to show that, notwithstanding this diversity, there are particular policies that are liked or disliked by large numbers of people.

Overall, it appears that current generations strongly prefer retirement policies that will not require their children or grandchildren to pay too much in taxes – perhaps redolent of Paul McCartney when he also sang: *"Every summer when we can rent a cottage in the Isle of Wight, if it's not too dear. We shall scrimp and save. Grandchildren on your knee. Vera, Chuck and Dave."* (Lennon and McCartney, 1967)

## QUESTIONS TO CONSIDER

1. Would it be feasible to have a referendum on what the New Zealand Superannuation Scheme should look like? What questions should the referendum ask?
2. The survey described in this article was based on seven criteria. Are there any other criteria that should have been included?


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# The return of the dragon: China's growth experience<sup>9</sup>

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Australia, China and the US are New Zealand's top three export destinations. New Zealanders know a lot about Australia and the US, but what about China? China's economic development experience since 1978 has been one of the great economic success stories of the twentieth century. The aim of this article is to present some aspects of China's growth experience over the last few decades.



## BACKGROUND

The Chinese imperial system collapsed in the Revolution of 1911, and the Republic of China was declared in 1912. The original Republic was replaced by the Communist People's Republic in 1949,<sup>10</sup> and in the 1950s Chinese politics and culture were heavily influenced by the Soviet Union. Until the reforms of Deng Xiaoping, which began in 1978, China had a centrally planned economy, characterised by low levels of income and widespread poverty. But since 1978 China has seen high economic growth rates.<sup>11</sup>

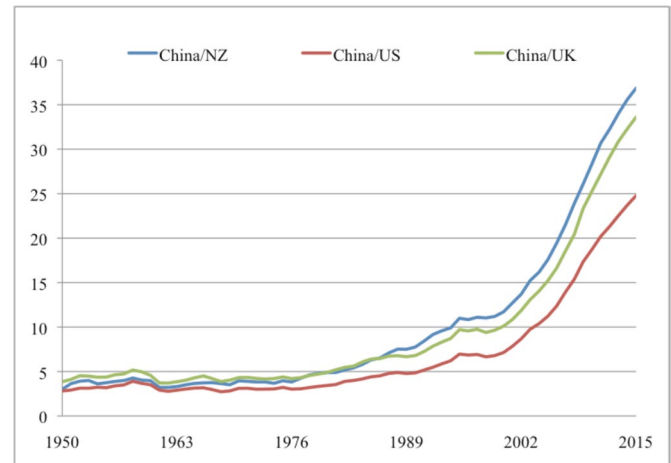
With more than 1.3 billion inhabitants, China is the world's most populous country, and is currently the second-largest economy in terms of GDP (after the US). Adjusting GDP for international price differences, China is now the world's largest economy.

## THE CHINESE MIRACLE

The Chinese economy grew at an annual average rate of 2.6% during 1950-1977, but then at a rate of 7.4% during 1978-2015, the highest of any country in the world and five percentage points higher than the US economy.

Figure 1 illustrates the speed at which China is catching up with the western world. The figure shows per capita GDP in China (adjusted for international price differences) as a percentage of per capita GDP in the US, the UK and New Zealand. In 1950, per capita GDP in China was less than 3% of the US level. This ratio stayed the same until 1978, when the gap started to close, and the figure now stands at 25%.

Figure 1. Price-adjusted GDP per capita in China as a percentage of GDP per capita in selected OECD countries



Source: The Conference Board Total Economy Database, May 2015, [conference-board.org/data/economydatabase](http://conference-board.org/data/economydatabase).

## WHAT ARE THE SOURCES OF GROWTH IN CHINA?

Growth accounting, a technique for explaining the factors that determine growth, is one way to answer such a question. It assumes that the total level of output in a country ( $Y$ ), depends on the total amount of capital ( $K$ ), the total amount of labour ( $L$ ), and overall economic productivity; this productivity level is commonly known as "total factor productivity" ( $TFP$ ).  $Y$  is related to  $K$ ,  $L$  and  $TFP$  in this way:

$$Y = TFP \times K^{\alpha} \times (L \times h)^{1-\alpha}$$

In this equation,  $h$  is a measure of worker quality ("human capital") and  $\alpha$  is a measure of the relative importance of capital and labour in production.  $TFP$  reflects the level of technology and other factors which influence output for a given level of  $K$  and  $L$ . From this equation we can derive another equation for the rate of growth of  $Y$  (output):<sup>12</sup>

$$\begin{aligned} \text{growth rate of } Y &= \text{growth rate of } L \\ &+ \frac{\alpha}{1-\alpha} \times \text{growth rate of } \frac{K}{Y} \\ &+ \text{growth rate of } h \\ &+ \frac{1}{1-\alpha} \times \text{growth rate of } TFP \end{aligned}$$

Measuring  $Y$  as inflation-adjusted GDP and assuming  $\alpha = 0.5$ , Zhu (2012) presents such a decomposition of China's growth. Table 1 shows some of Zhu's results where  $N$  is the population. One of the main messages in the table is that China's rapid growth over the last three decades has been driven by productivity growth.

<sup>9</sup> Some parts of this article are based on Üngör (2014). For readers who wish to follow this topic in more detail, see the Fall 2012 issue of the *Journal of Economic Perspectives* and the edited volume by Brandt and Rawski (2008).

<sup>10</sup> "China" today generally refers to the People's Republic of China.

<sup>11</sup> Cheremukhin et al. (2015) provide a systematic analysis of both the pre-1978 reform and post-1978 reform periods. There are also some recent studies that discuss whether the pace of the Chinese expansion is bound to slow down; see for example Jiang and Yi (2015).

<sup>12</sup> See for example [flash.jakeheadu.ca/~mshannon/Crafts\\_Solow\\_growth\\_accounting\\_2008.pdf](http://flash.jakeheadu.ca/~mshannon/Crafts_Solow_growth_accounting_2008.pdf) for more details on how to derive an equation for the growth rate of  $Y$  from an equation for its level.

Table 1: Decomposing China's growth: 1952-2007 (annual averages in %)

	Growth rate of Y/N	Growth rate of L/N	Growth rate of K/Y	Growth rate of h	Growth rate of TFP
1952-1978	2.97	0.11	3.45	1.55	-1.07
1978-2007	8.12	0.57	0.04	1.18	3.16

Source: Zhu (2012)

## PRE-1978 VERSUS POST-1978

When the People's Republic of China was founded in 1949, more than 80% of the population were employed in agriculture. China chose a growth strategy based on the expansion of heavy industry. Rosenberg (1994) argues that the preoccupation of the Chinese government with heavy industry was hostile to technological innovation, resulting in poor TFP. Brandt and Rawski (2008) suggest that non-economic policy objectives, weak institutions and poor incentives were the underlying causes of productivity stagnation.

In contrast, the reforms after 1978 were partly aimed at rural economic development. These reforms included a move away from collective agriculture, promoting decision-making at the level of the individual farm by transferring land-use rights from collectives to individual households. Combined with price reforms designed to improve incentives for agricultural workers, this was successful in raising agricultural productivity (Naughton 1995, Chapter 4).

Market reforms were extended to urban areas and state-owned enterprises in 1984. These reforms included a gradual reduction of centralised control over price and production decisions, and the freedom of townships and villages to establish industrial enterprises outside of the central plan (Jian et al., 1996).

The transformation of the Chinese economy has been accompanied by a huge increase in international trade. China has become an increasingly important part of the global trading system, especially over the last two decades. China accounted for 12.3% of world merchandise exports in 2014, compared with less than 1% in 1980. China is now the largest merchandise exporter in the world.<sup>13</sup>

## UNFINISHED BUSINESS

Despite more than three decades of economic reforms, China still faces the challenge of reducing input market distortions. China is still far from a highly functioning, well-regulated market economy. Issues surrounding democracy, governance, transparency, internet censorship, environmental degradation and income distribution are challenges for Chinese policy-makers. These issues are all current topics of research on China.

One reflection of these challenges is the fact that China still performs relatively poorly in terms of corruption, as shown in Table 2. The table shows the world ranking of 175 countries according to reports on the perceived levels of public sector corruption by the organisation *Transparency International*. Denmark comes out on top in 2014, whereas North Korea and Somalia share last place. China ranks 100th.

Table 2: Corruption perception index rankings

Country	2014 Rank	Country	2014 Rank
Denmark	1	India	85
New Zealand	2	China	100
Finland	3	Russia	136
Sweden	4	Sudan	173
Norway, Switzerland	5	North Korea, Somalia	174

Source: [transparency.org/cpi2014/results](http://transparency.org/cpi2014/results)

## OPPORTUNITIES

The Chinese experience provides important lessons for other countries. Moreover, China's new role as an economic power poses opportunities for New Zealand. A very recent example of such an experience is the Chinese-led Asian Infrastructure Investment Bank (AIIB), established in October 2014 with the aim of providing finance to infrastructure investments in the Asia-Pacific region. Several European and Asian countries have declared their intention to become members of the Bank, and the AIIB is expected to begin operations in 2016. According to NZ finance minister Bill English, "New Zealand was the first developed western nation to join negotiations to set up the AIIB, and our membership will enhance our already strong economic, trade and investment links with the Asian region."<sup>14</sup>

## GROPING FOR STONES TO CROSS THE RIVER

What have we learned from the Chinese experience? The reforms in China have been gradual. The Chinese expression for this process is "groping for stones to cross the river," a metaphor that implies that each step depends on the previous step (Naughton, 1995; 2007).

The past four decades have witnessed rapid economic growth and a fascinating transformation of China's economy. However, China is not perfect, and there is still much to do to reinforce the efficiency and transparency of its public institutions, to improve its democracy and enhance personal freedoms.

## QUESTIONS TO CONSIDER

1. How can New Zealand benefit from the economic development in China?
2. What are the policies that may have led to the changes in aggregate growth and productivity in the post-1978 period? Can they be replicated by other developing countries?
3. What challenges does China face in terms of sustainable economic development?

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<sup>13</sup> Data are from the WTO Statistics at [stat.wto.org](http://stat.wto.org).

<sup>14</sup> See [beehive.govt.nz/release/new-zealand-formally-joins-asian-infrastructure-investment-bank](http://beehive.govt.nz/release/new-zealand-formally-joins-asian-infrastructure-investment-bank).

# Global competitiveness and higher education and training

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In an increasingly integrated world, it is very important for countries to be globally competitive. A country's global competitiveness reflects its overall efficiency relative to other countries, as determined by its technological sophistication, productivity and the skills of its labour force. Global competitiveness matters because it determines a country's standard of living, and affects how attractive a country is to overseas investors and migrants. This article considers the role played by higher education and training in determining global competitiveness.

## ALL HET UP

So-called *higher education* – synonymous with tertiary education – refers to the optional (i.e. non-compulsory) final stage of learning that occurs after high school, such as is available at universities, polytechnics and wānanga in New Zealand. As well as higher education, which is mostly delivered by tertiary education institutions, training that takes place in people's workplaces – known as *on-the-job* training – is an important source of skills too.

Obviously, higher education and training (HET) plays an important direct role in raising the skill levels of workers in an economy. HET is also likely to affect other determinants of a country's competitiveness too, such as by improving production and management systems and developing and implementing new technologies. A skilled workforce that is able to adapt to the increasingly rapidly changing needs of production systems is important for increasing competitiveness (Sala-i-Martin et al., 2014).

## TAKE ME HIGHER!

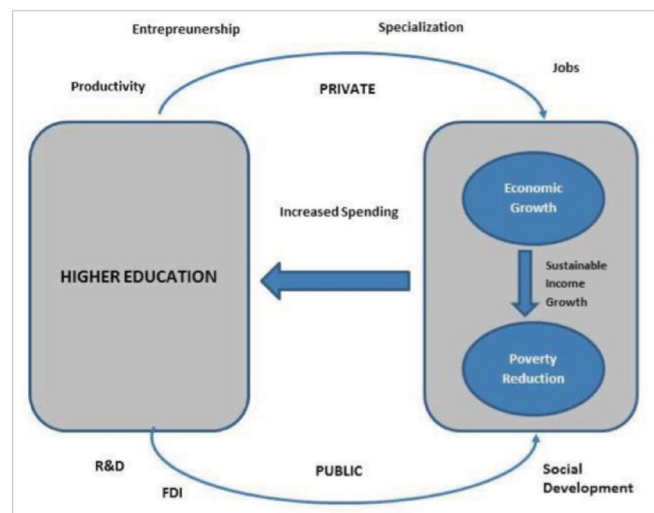
Bauk and Jusufuranc (2014) and Bloom et al. (2006) illustrate the effects of higher education on competitiveness using the conceptual structure in Figure 1. According to this framework, higher education increases economic growth and reduces poverty, and vice versa. These effects are transmitted through both the private and public sectors of the economy.

With respect to the private sector, higher education affects the productivity of individuals and companies, which stimulates entrepreneurship and specialisation, thereby creating jobs. These effects contribute to economic growth and poverty reduction (Altuntepe and Güner, 2013; Saygılı et al., 2002).

With respect to the public sector, higher education leads to more R&D (research and development). An educated workforce and the benefits from R&D are attractive for foreign direct investment (FDI). Higher education in particular also supports social development, which manifests as improvements to health, infrastructure and the environment (Tolunay and Akyol, 2006). These effects contribute to economic growth and poverty reduction.

As individuals and companies become richer and as the government collects more tax and spends less on unemployment benefits more resources become available for higher education. A virtuous cycle! All of these effects and outcomes combine to raise the country's global competitiveness.

Figure 1. Conceptual framework showing the effects of higher education on competitiveness



Source: Bauk and Jusufuranc (2014) and Bloom et al. (2006)

## 12 PILLARS OF COMPETITIVENESS

As its name implies, the Global Competitiveness Index (GCI), created by the World Economic Forum (WEF), measures the competitiveness of countries – 144 of them – on a range of indicators. These indicators are referred to as “pillars”, of which HET (higher education and training) is one – see #5 below.

The 12 pillars of the CGI are (Sala-i-Martin et al., 2014):

1. Institutions
2. Infrastructure
3. Macroeconomic stability
4. Health and primary education
5. Higher education and training
6. Goods market efficiency
7. Labour market efficiency
8. Financial market sophistication
9. Technological readiness
10. Market size
11. Business sophistication
12. Innovation



Pillar 5 Higher education and training is broken down in the GCI into various sub-components relating to both the *quantity* and *quality* of education and also on-the-job training, as detailed in Figure 2.

<sup>15</sup> Uludağ University. Hilal was a visitor to the Department of Economics in 2015.



Figure 2. Sub-components of Pillar 5 Higher education and training

**A. Quantity of education**

- 5.01 Secondary education enrolment rate
- 5.02 Tertiary education enrolment rate

**B. Quality of education**

- 5.03 Quality of the education system
- 5.04 Quality of math and science education
- 5.05 Quality of management schools
- 5.06 Internet access in schools

**C. On-the-job training**

- 5.07 Local availability of specialized research and training services
- 5.08 Extent of staff training

Source: Sala-i-Martin et al. (2014)

Naturally, the relative importance of each of the 12 pillars is likely to be different with respect to their effect on each country's competitiveness. For example, the way to raise Turkey's GCI in terms of tweaking its performance on the 12 pillars will be different from the way to raise New Zealand's CGI. Particular pillars matter more for some countries than others because countries are at different stages of economic development (Sala-i-Martin et al., 2014).

### THREE STAGES OF DEVELOPMENT

Countries pass through three main stages of economic development: (1) factor-driven stage, (2) efficiency-driven stage, and (3) innovation-driven stage. Each stage has implications for global competitiveness.

Countries in the factor-driven stage of development mainly compete on the basis of their factor resources – typically, low-skilled workers and natural resources. Companies produce unsophisticated products and compete on a price basis because of the low levels of technology and labour productivity (reflected in low wages) available to them.

As a country's productivity rises, it moves to the efficiency-driven stage of development. Competitiveness rises as a result of higher education and training and more efficient goods, labour and capital markets as well as access to foreign markets.

Finally, countries reach the innovation-driven stage. Companies now compete by being innovative and using the most advanced production processes and developing new products (Turpanci and Duman, 2014; Sala-i-Martin et al., 2014).

As an illustration, the stages and transitional phases of countries of the Middle East, North Africa and the advanced European (EU28) economies are shown in Table 1. Clearly, European countries are more developed.

Table 1: Development stages of countries of the Middle East, North Africa and Europe

	Stage 1: Factor-driven	Transitioning from stage 1 to 2	Stage 2: Efficiency-driven	Transitioning from stage 2 to 3	Stage 3: Innovation-driven
Middle East	Yemen	Algeria, Iran	Egypt	Bahrain	Qatar, Israel
North Africa		Kuwait, Libya, Saudi Arabia	Jordan, Morocco, Tunisia	Lebanon, Oman, United Arab Emirates	
European Countries (EU28)			Bulgaria, Romania	Croatia, Hungary, Latvia, Lithuania, Poland	Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Luxemburg, Malta, Netherlands, Portugal, Slovak Republic, Slovenia, Spain, Sweden, UK

Source: World Economic Forum (2014)

Figure 3 reveals which of the 12 pillars are most important for improving global competitiveness, depending on which stage of development a country is at. As can be seen, HET (pillar 5) is most important for efficiency-driven economies.

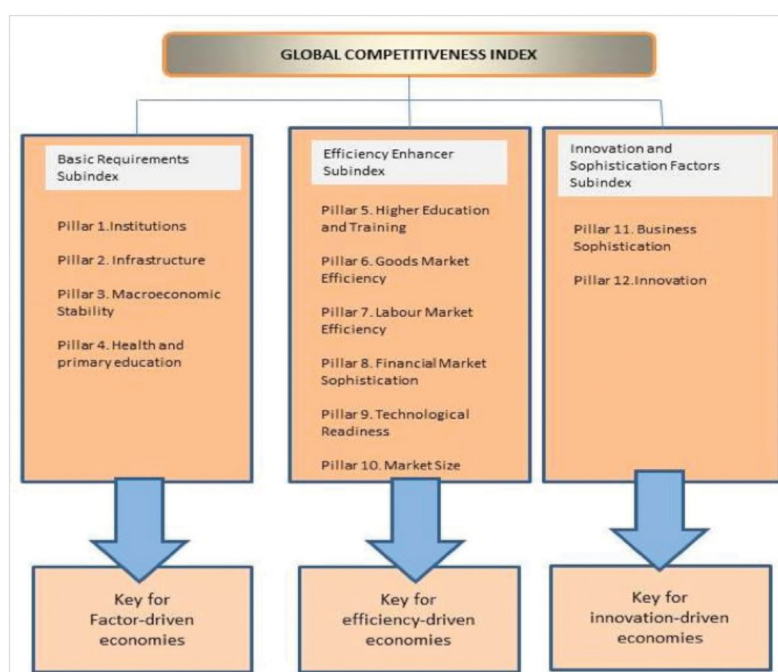


Figure 3. The Global Competitiveness Index Framework

Source: Sala-i-Martin et al. (2014)

## THE LEAGUE OF EXTRAORDINARY GLOBAL COMPETITORS

Created from the latest Global Competitiveness Report, Table 2 shows the ranking of the top 10 countries – out of the 144 countries evaluated – in terms of HET and Global Competitiveness respectively. As can be seen, the two rankings are reasonably closely correlated.<sup>16</sup>

Table 2: Higher Education and Training (HET) and Global Competitiveness rankings (out of 144 countries)

	HET ranking	Global Competitiveness ranking
Finland	1	4
Singapore	2	2
Netherlands	3	8
Switzerland	4	1
Belgium	5	18
United Arab Emirates	6	12
United States	7	3
Norway	8	11
New Zealand	9	17
Denmark	10	13

Source: World Economic Forum (2014)

## CONCLUSION

Not surprisingly, countries that are at the highest stage of development tend to be the most competitive in terms of both HET and global competitiveness overall. For countries seeking to raise their global competitiveness – and also their stage of development – increases in both the quantity and quality of education, as well as on-the-job training, are important.

## QUESTIONS TO CONSIDER

1. How can you contribute to the competitiveness of the country you live in (e.g. New Zealand)?
2. In addition to increases in higher education and training (HET), what else could be done to raise a country's global competitiveness?

<sup>16</sup> More formally, Spearman's rho = 0.59.

## USEFUL WEBSITES

World Economic Forum, [weforum.org](http://weforum.org).

*The Global Competitiveness Report 2014-2015*, [3.weforum.org/docs/WEF\\_GlobalCompetitivenessReport\\_2014-15.pdf](http://3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2014-15.pdf).

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# Commentary on the New Zealand economy

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	Sep 2015	Jun 2015	Mar 2015	Dec 2014	Sep 2014
GDP (real, annual growth rate, %)	2.9	3.3	3.6	3.7	3.2
Consumption (real, annual growth rate, %)	2.3	2.6	2.6	2.7	2.8
Investment (real, annual growth rate, %)	4.1	6.2	9.4	10.9	9.4
Employment: full-time (000s)	1835	1831	1823	1812	1796
Employment: part-time (000s)	509	531	528	527	515
Unemployment (% of labour force)	6.0	5.9	5.8	5.7	5.6
Consumer Price Inflation (annual rate, %)	0.4	0.4	0.3	0.8	1.0
Food Price Inflation (annual rate, %)	0.8	0.2	1.2	0.5	-0.2
Producer Price Inflation (outputs, annual rate, %)	0.2	-2.2	-2.5	-0.8	-1.0
Producer Price Inflation (inputs, annual rate, %)	-0.2	-3.3	-4.0	-1.9	-2.2
Salary and Wage Rates (annual growth rate, %)	1.6	1.6	1.7	1.7	1.7
Narrow Money Supply (M1, annual growth rate, %)	11.9	6.9	7.1	6.2	5.9
Broad Money Supply (M3, annual growth rate, %)	8.5	9.5	8.3	6.3	5.3
Interest rates (90-day bank bills, %)	2.85	3.33	3.63	3.67	3.71
Exchange rate (TWI, June 1979 = 100)	68.8	73.0	78.3	78.2	78.5
Exports (fob, \$m, year to date)	49,134	48,396	48,915	50,075	51,053
Imports (cif, \$m, year to date)	52,369	51,371	51,287	51,258	50,386
Exports (volume, seas. adj.)	1376	1326	1325	1310	1287
Imports (volume, seas. adj.)	2143	2127	2118	2108	2077
Terms of Trade (June 2002 = 1000)	1305	1355	1335	1319	1351
Current Account Balance (% of GDP, year to date)	-3.3	-3.4	-3.4	-3.1	-2.5

Sources: Statistics New Zealand (stats.govt.nz), Reserve Bank of New Zealand (rbnz.govt.nz)

New Zealand's rate of economic growth slowed throughout 2015, but GDP is still on track to grow by around 2.5% for the calendar year. Despite this growth, inflation has remained very low and unemployment has risen significantly. An important reason for this is the high rate of net immigration over the last year or so that, when combined with natural increase, has resulted in population growth of at least 2% per annum. In other words, in per capita terms the economy has done little more than mark time and employment has struggled to keep up with growth in the labour supply.

Sluggish per capita growth and rising unemployment have helped restrain wage and salary increases, which has in turn – and assisted by the fall in petrol prices in early 2015 – contributed to the lowest rate of inflation in the prices of non-tradables (i.e., the goods and services we buy that are not exposed to foreign competition) since 1999. The current (September 2015 quarter) rate of non-tradables inflation is 1.5%, or 1% if the increase in excise duty on cigarettes and tobacco is excluded. This is well below the long-term average rate of just over 3% and has helped to keep the overall CPI inflation rate for 2015 low in the face of the significant depreciation of the dollar through the middle part of the year.

Headline inflation will pick up again in early 2016, as the impact of the large fall in petrol prices in early 2015 drops out of the calculation. However, the recent easing of global oil prices and rebound in the dollar's value, along with the likelihood that net immigration will continue at a relatively high rate for the time being, should continue to keep a lid on the prices of both tradable and non-tradable goods. Therefore, CPI inflation should remain below the mid-point of the RBNZ's 1-3% inflation target range throughout 2016 and so, even though the RBNZ indicated in its December Monetary Policy Statement (when it reduced the Official Cash Rate to 2.5%) that monetary policy had been eased sufficiently, further interest rate reductions cannot be completely ruled out.

The future direction of monetary policy also depends on the performance of the economy as a whole, and the outlook in this respect is a little mixed. Continued net immigration should underpin growth in total GDP through 2016. Recent increases in tourist arrivals and the high level of investment in new plant and machinery are also encouraging.

On the other hand, although activity in the construction sector should remain strong, there are signs that it may have peaked (or is about to do so). In addition, the effects of low dairy prices are still working their way through the economy and the possible effects on the agricultural sector of the current El Niño weather pattern is a further source of downside risk. Overall, the unemployment rate seems set to hover around 6% for some time yet.

# EcoNZ@Otago

## Essay Competition 2016

EcoNZ@Otago is inviting years 12 and 13 secondary school students to write an essay that addresses this topic:

### DIRTY DAIRYING AND RISING WATER SCARCITY IN NEW ZEALAND

The dairy sector accounts for nearly 3% of GDP, which is more than fishing, forestry and mining combined. Dairy provides more than one-quarter of NZ's total good exports, worth over \$10 billion. The sector supports rural communities.

However, intensive dairy farming practices has led to water pollution from cattle effluent in many streams and rivers. Many rivers are surrounded by farmland and cows, and so they have become, in effect, cow toilets.

The pollution of streams and rivers amplifies water scarcity that is already occurring due to droughts and climate change. People who value clean rivers for swimming or fishing typically lose out. Clean rivers also provide a host of important ecosystem benefits.

How would an economist describe this problem? What should be done about it?

Some keywords and concepts that you might like to consider include:

- ~ Externality (pollution of rivers is an external cost of dairy farming)
- ~ Missing markets
- ~ A river's capacity to assimilate effluents (an ecosystem service) is an open-access resource. Open access can lead to the tragedy of the commons.

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### COMPETITION RULES AND PRIZES, ETC

Essays should be 1500 words maximum and written in a clear, concise and insightful tone. Naturally, essays that are original, intriguing and uncommon so as to inspire and entertain are preferred. They should be enjoyable to read!

Any student in years 12 or 13 currently enrolled in a New Zealand secondary school is eligible; only one submission per student.

The best entries will be determined by a panel of economists at the University of Otago.

The winning essay will be published in a future issue of *EcoNZ@Otago*. The winner will also receive a \$300 gift certificate (book voucher, iTunes card, or mix of the two) for themselves and \$200 in book vouchers for their school.

The first and second runners up will each receive a \$150 gift certificate (book voucher, iTunes card, or mix of the two) for themselves and \$100 in book vouchers for their school.

All entries must contain the student's name, the name and phone number of their school, and be received no later than 1 June 2016.

Please send entries to: David Fielding, Paul Hansen  
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