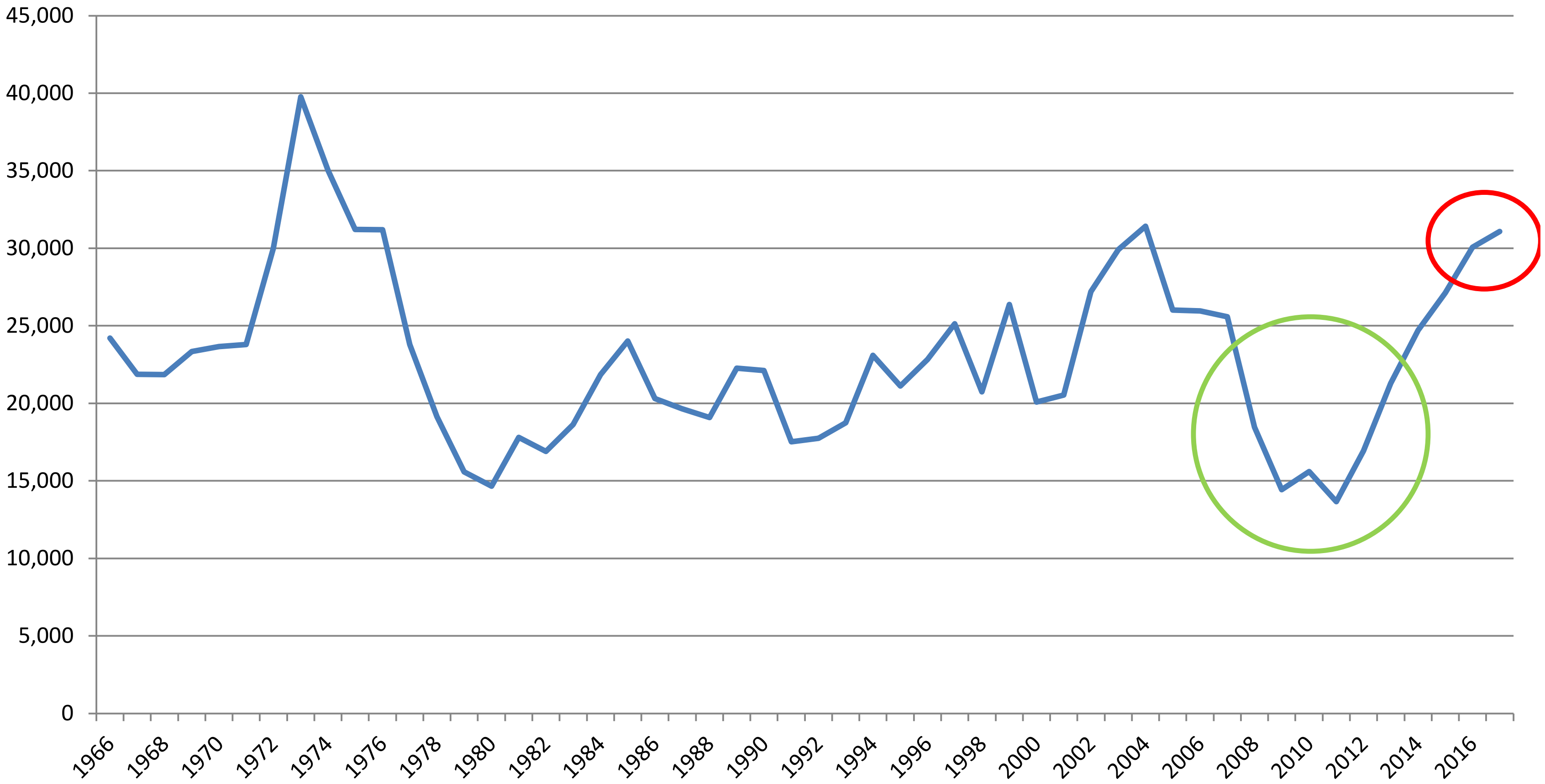
BCITO
building people.

BCITO
buildingpeople

A quick look at the construction sector

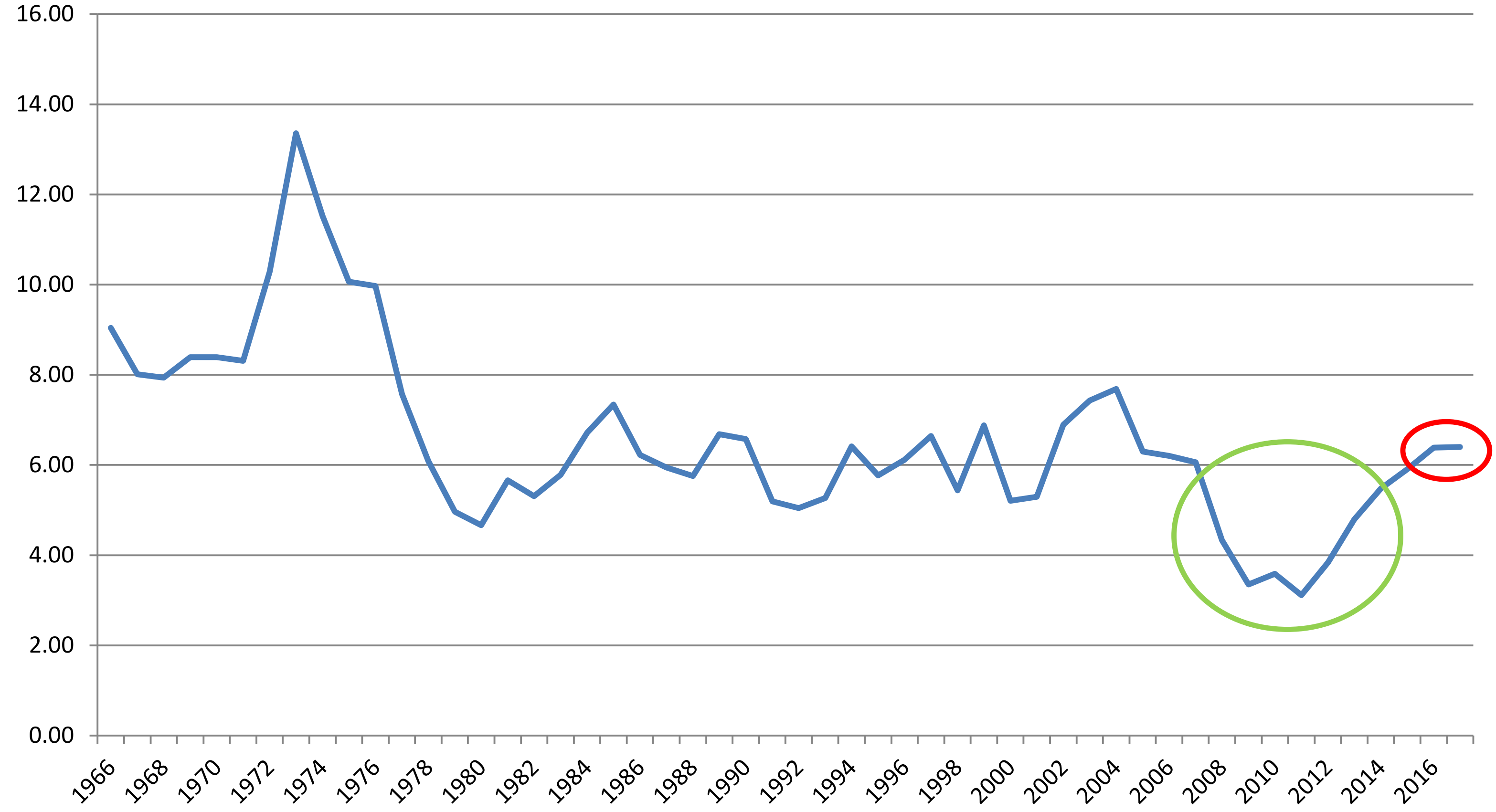
BCITO
buildingpeople

No. new res consents per annum

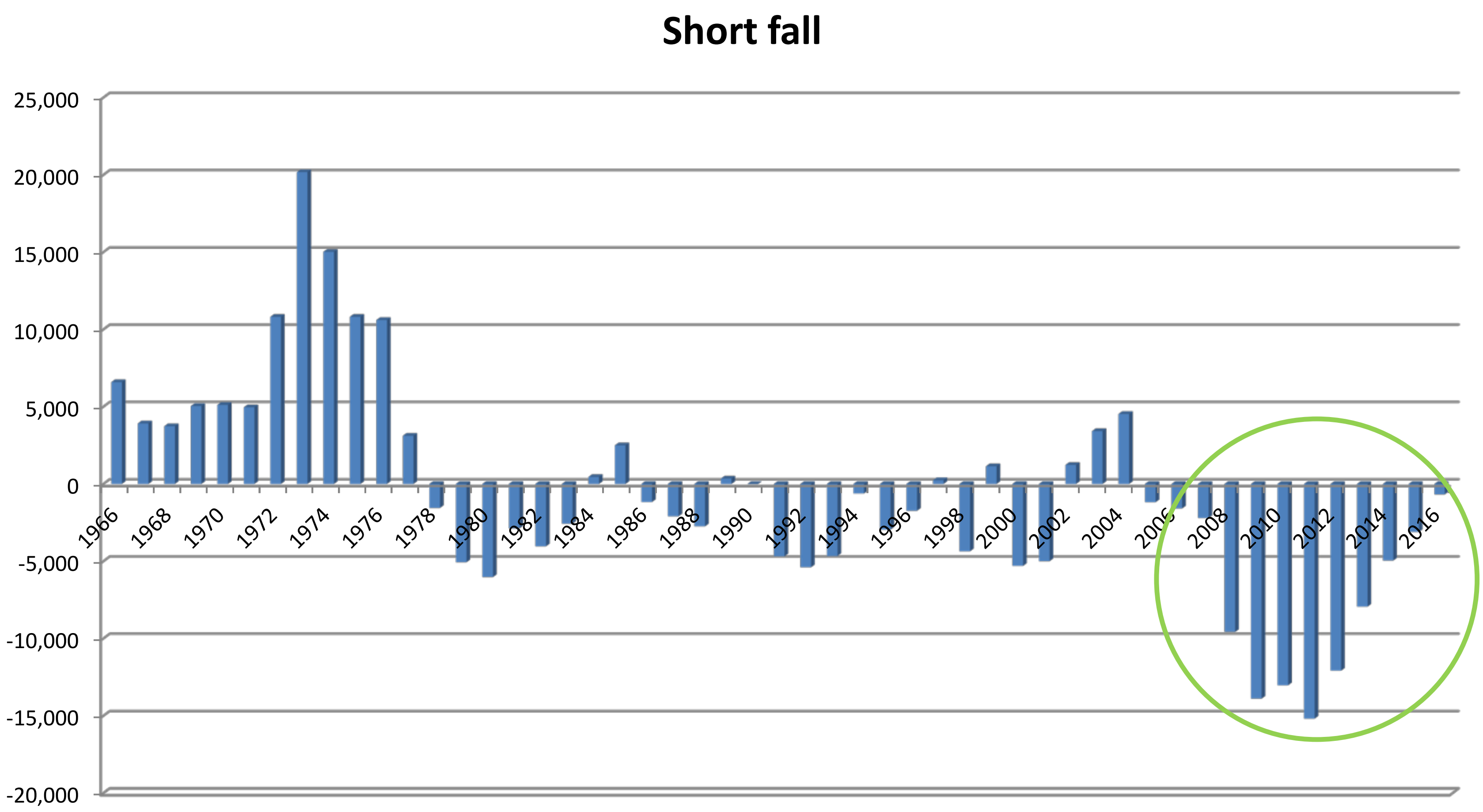


BCITO buildingpeople

Builds per 1,000 people

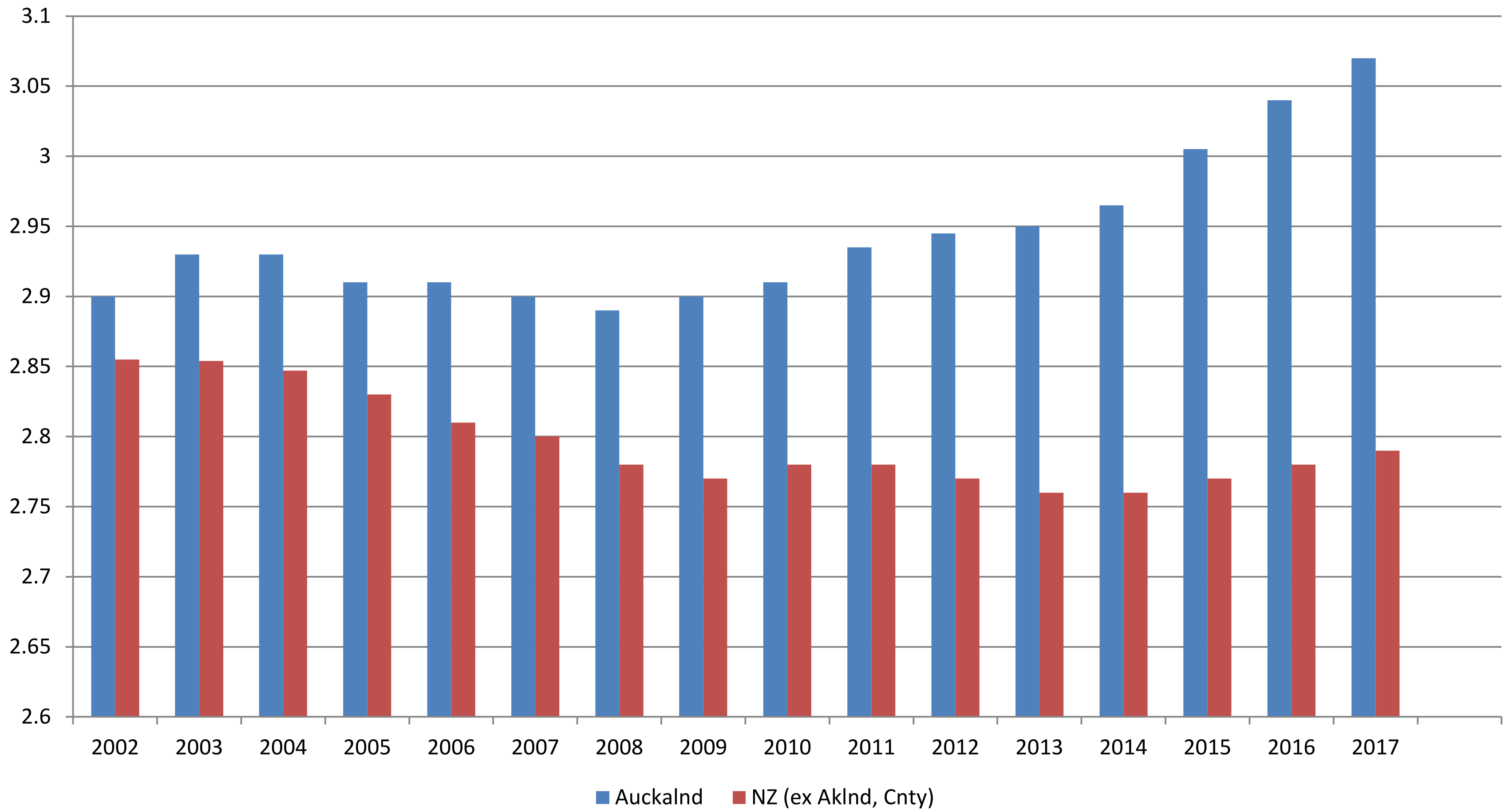


Shortfall based on 6.58 builds per 1,000 population



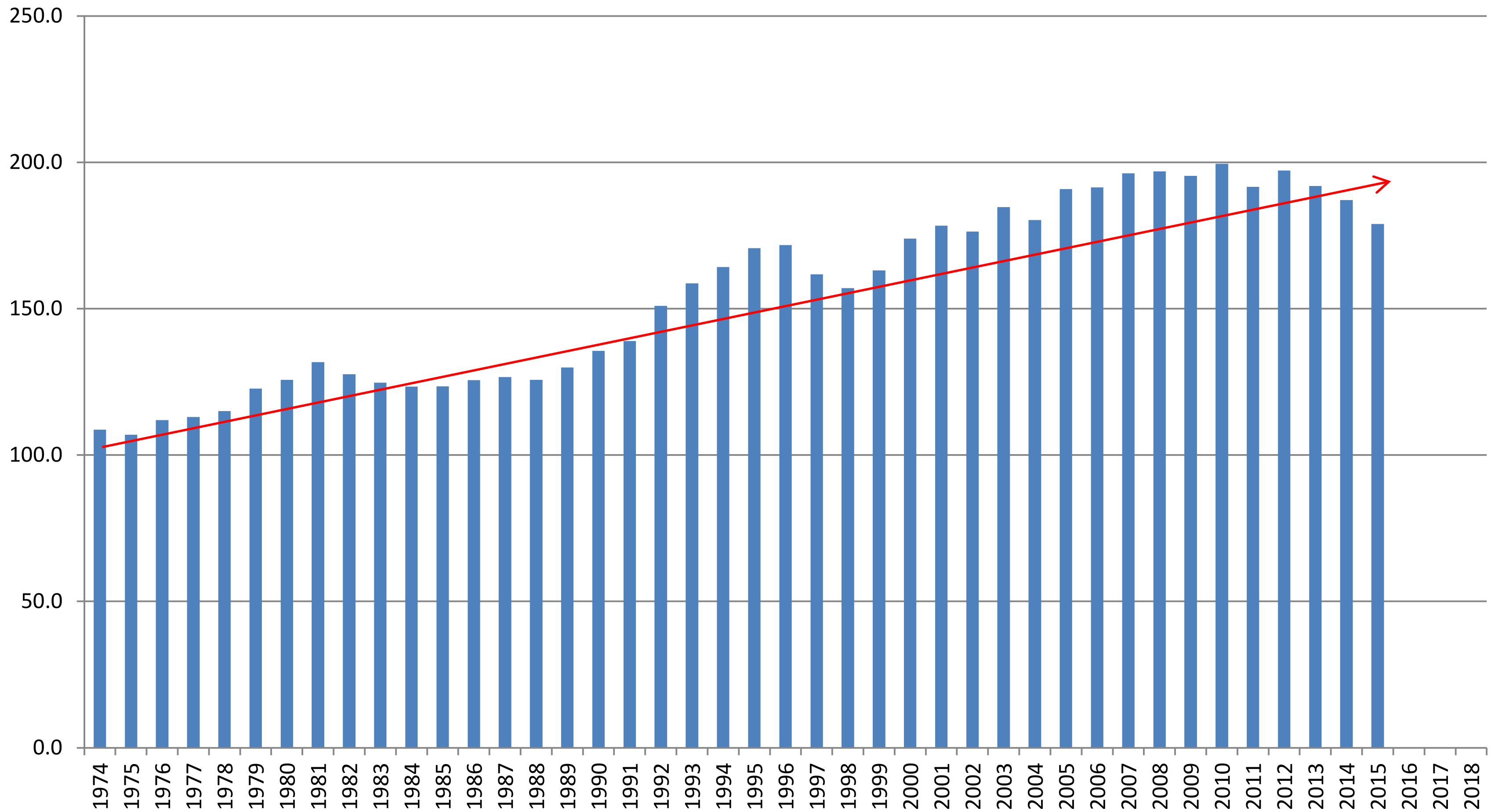
BCITO
buildingpeople

Auckland Household Size Vs NZ



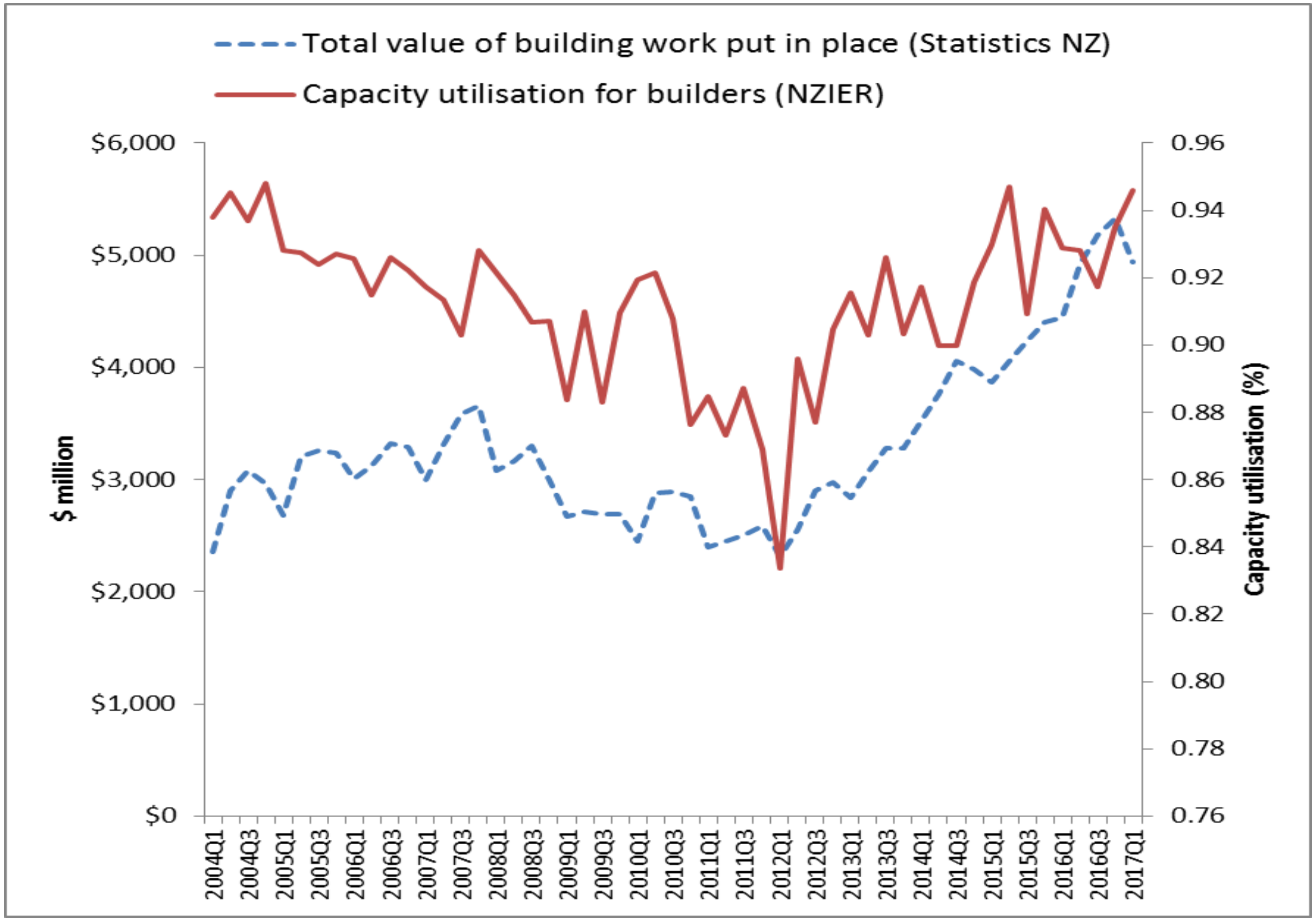
BCITO buildingpeople

Average House Size
Driven by land cost



Construction capacity

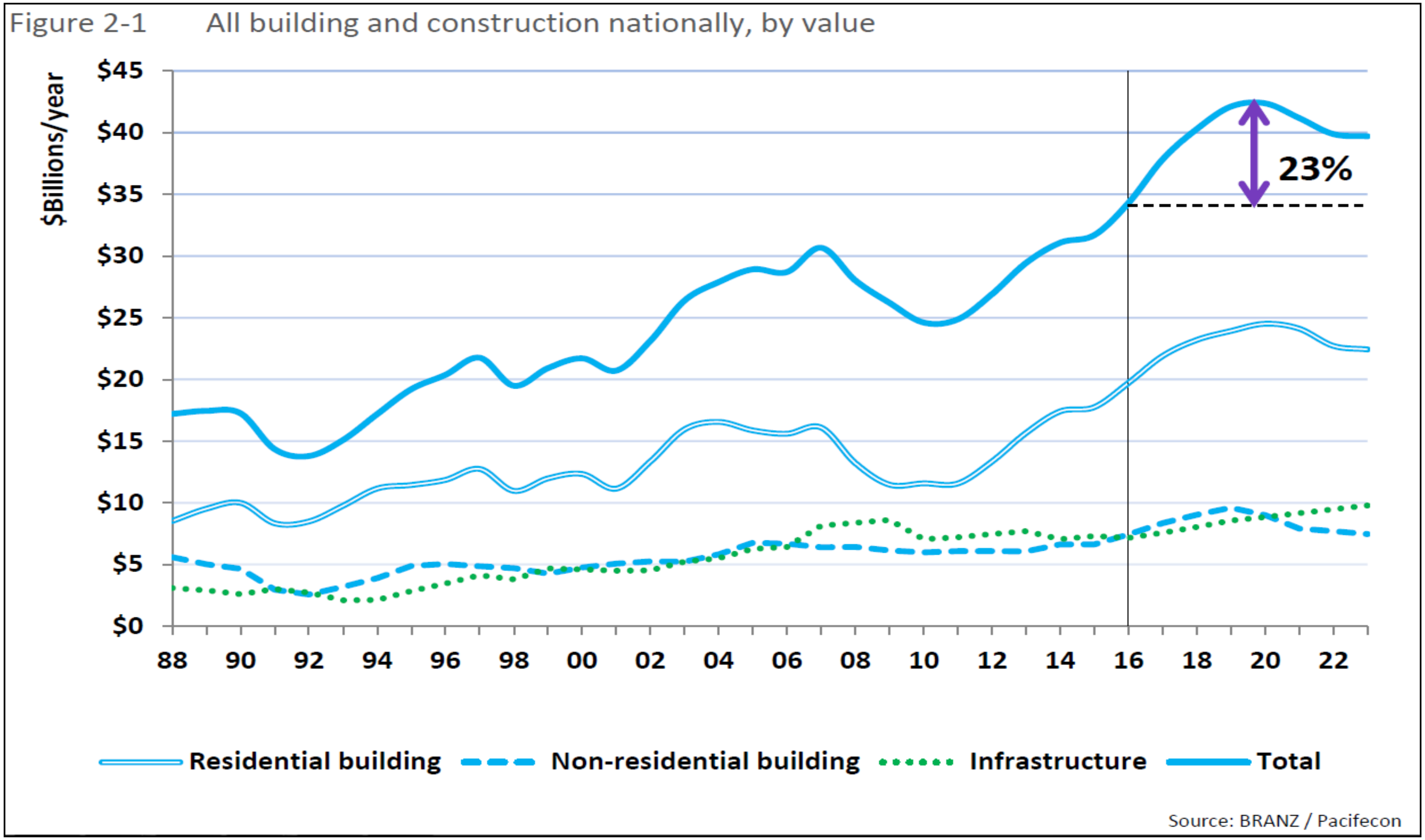
The value of building work is at peak levels, and capacity utilisation is also near peak



BCITO buildingpeople

National Construction Pipeline to 2022

Peak of $42 billion in 2020, 23% growth from 2016



Serious Gaps in the Regulatory Framework and a Lack of Building Systems Constrain Growth of 3 – 6 Storey Multiplex in NZ

NZ 3604 Timber-frame buildings (1-2 Storey)	**"No Code or Standards"** All Structural Materials (3-6 Storey)	Specific Design Engineering Sign-off 6+ Storey

We'd love to build 5 story apartments but don't have the systems we need in NZ. We need more choice in cladding systems but the façade engineers are limited by the existing range. – *Fletcher Living Design Team*

Historically, NZ Building Systems Were Designed for Either End of the Spectrum

Lack of Regulatory Requirements, Standards, Design and Tech Guides, and Building Systems for Multiplex

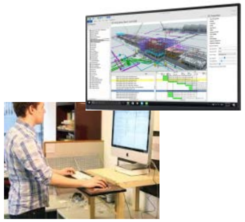
Major Regulatory Concerns in Weather Tightness Risks – a large source of multiplex building failures 1995 - 2010

*Lack of Choice for Specifiers in NZ With **Cladding Systems** to Address Weather Tightness*

BCITO buildingpeople

And Emerging Construction Technologies Will Become More Commonplace (2027 Smart Building Site)

Site Logistics Controller becomes "flight control" for all materials flowing on to and through the site



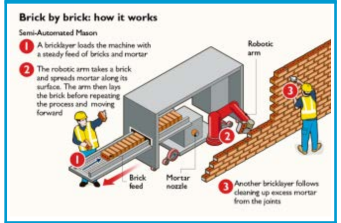
BIM becomes the "one source of the truth" for every major project and project team with **Virtual Reality** supporting access

Augmented Reality will support on-site quality installs such as a new type of steel frame

A 3D Concrete printer starts on formwork for the park restroom

Panels and pods arrive at the site for assembly of a new apartment. Pre-fab is now over 50% of major projects.

Semi-Automated Mason – brick robotics support construction of a fence

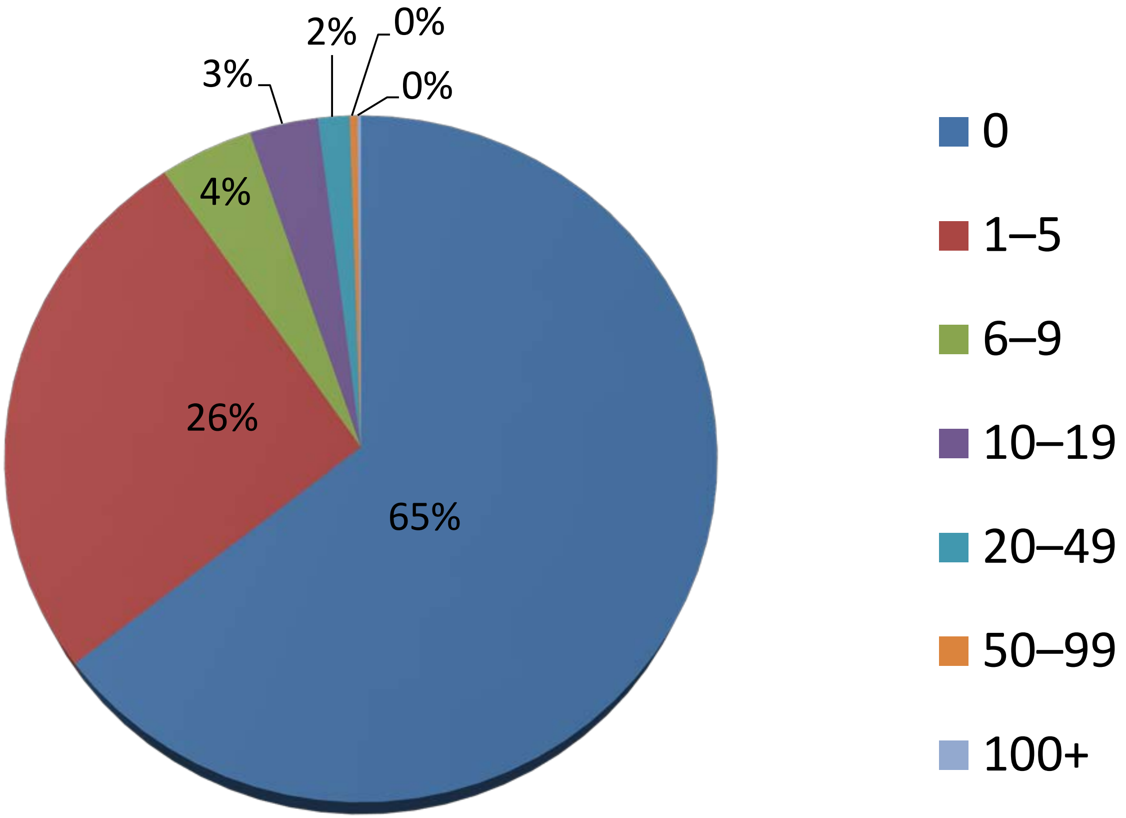


Body Cams and Drones are commonplace keeping a real time watch over progress and site issues

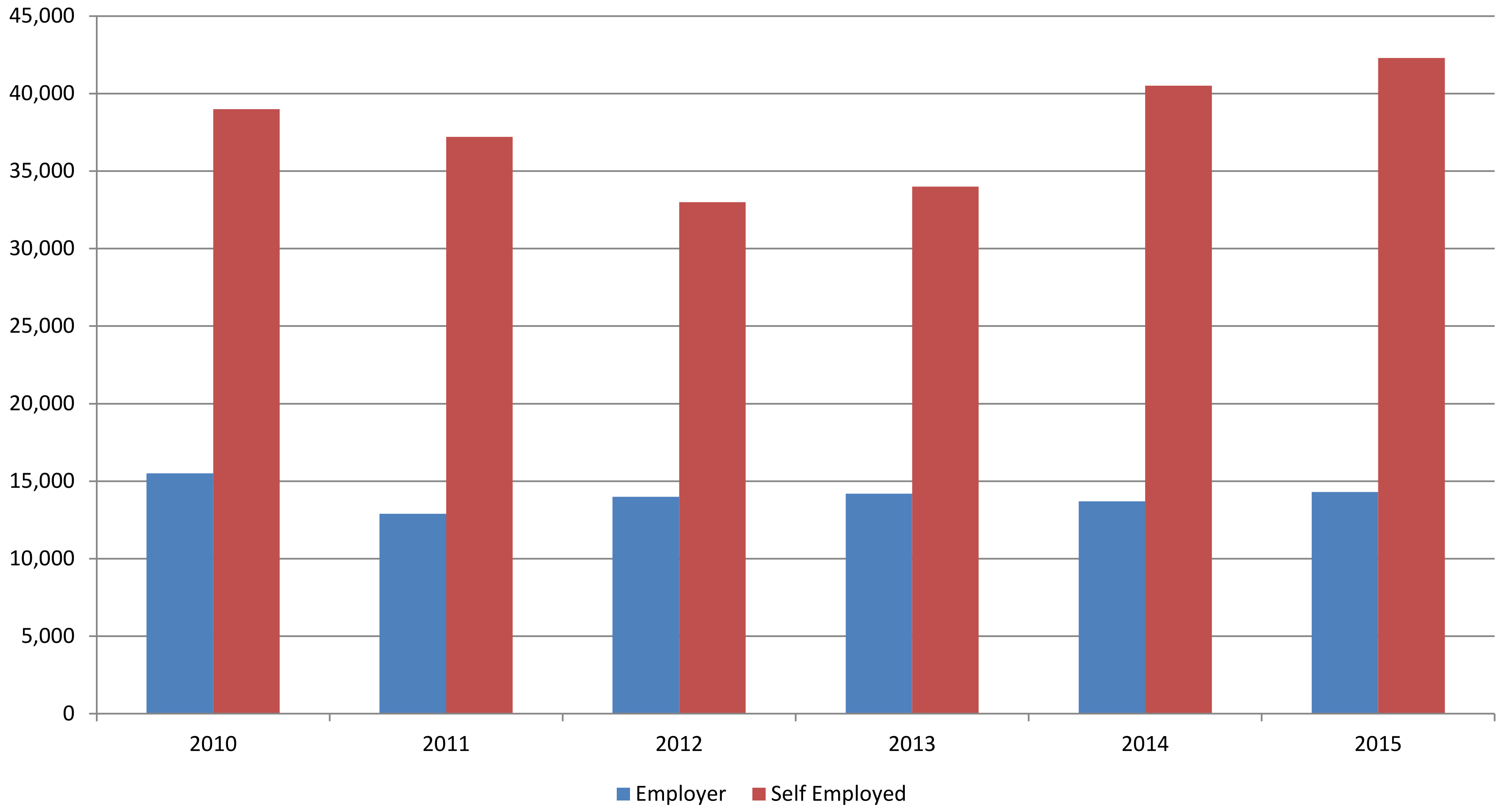
Exo-skeletons aid in trade productivity, lifting capacity and reductions in long term injuries

BCITO buildingpeople

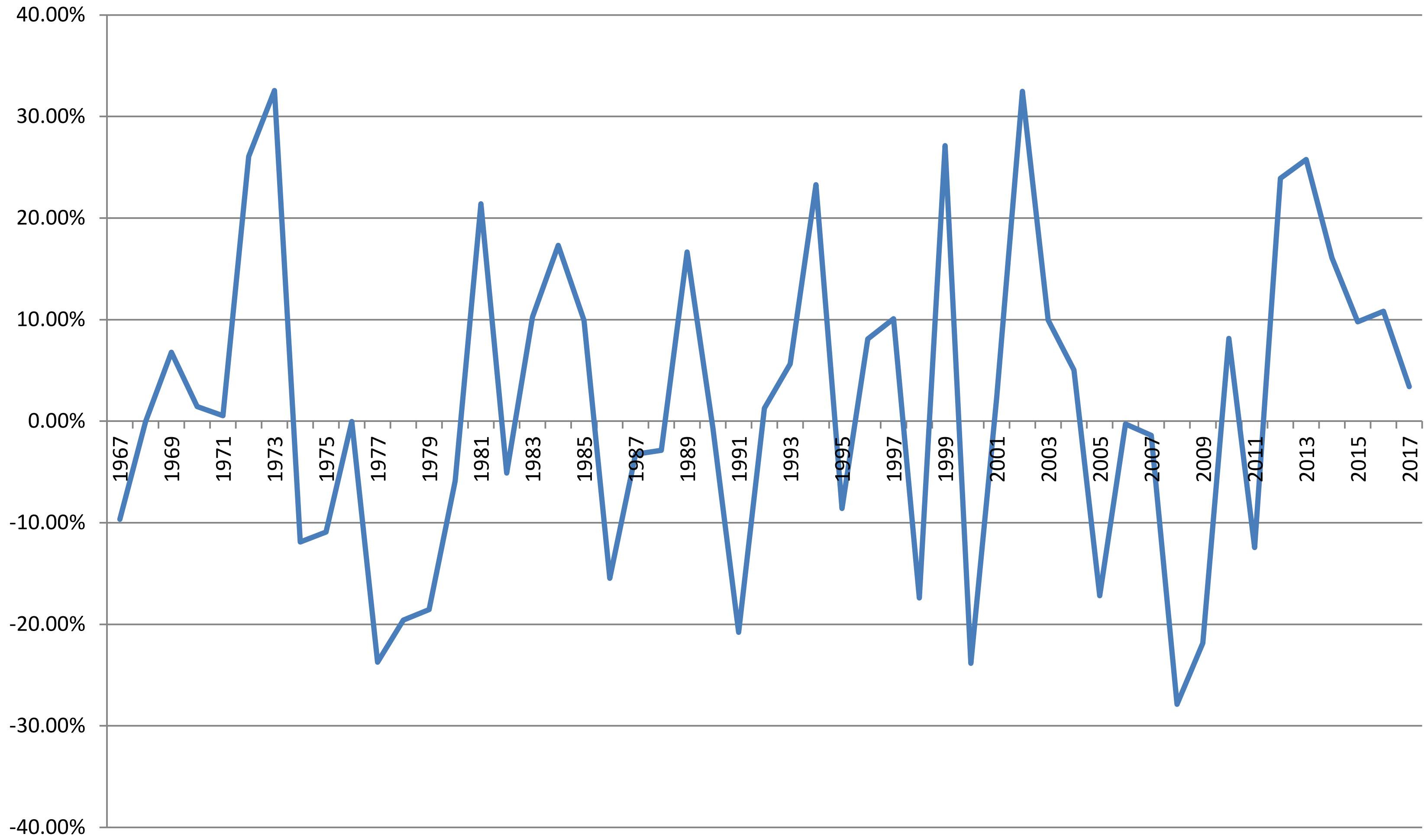
No of employees in construction firms



Growth in SMEs -specialisation

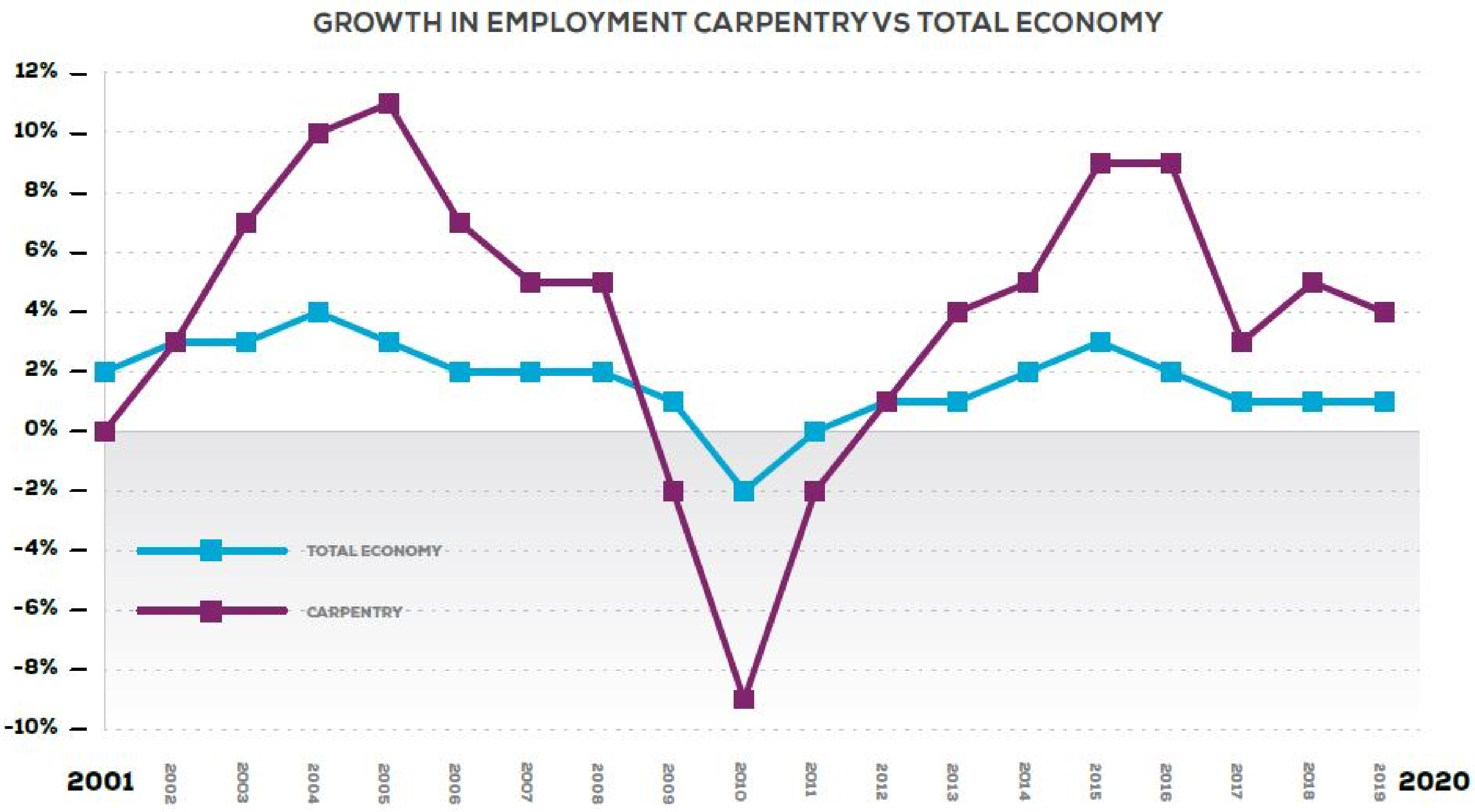


Very volatile: % change in NZ Res consents

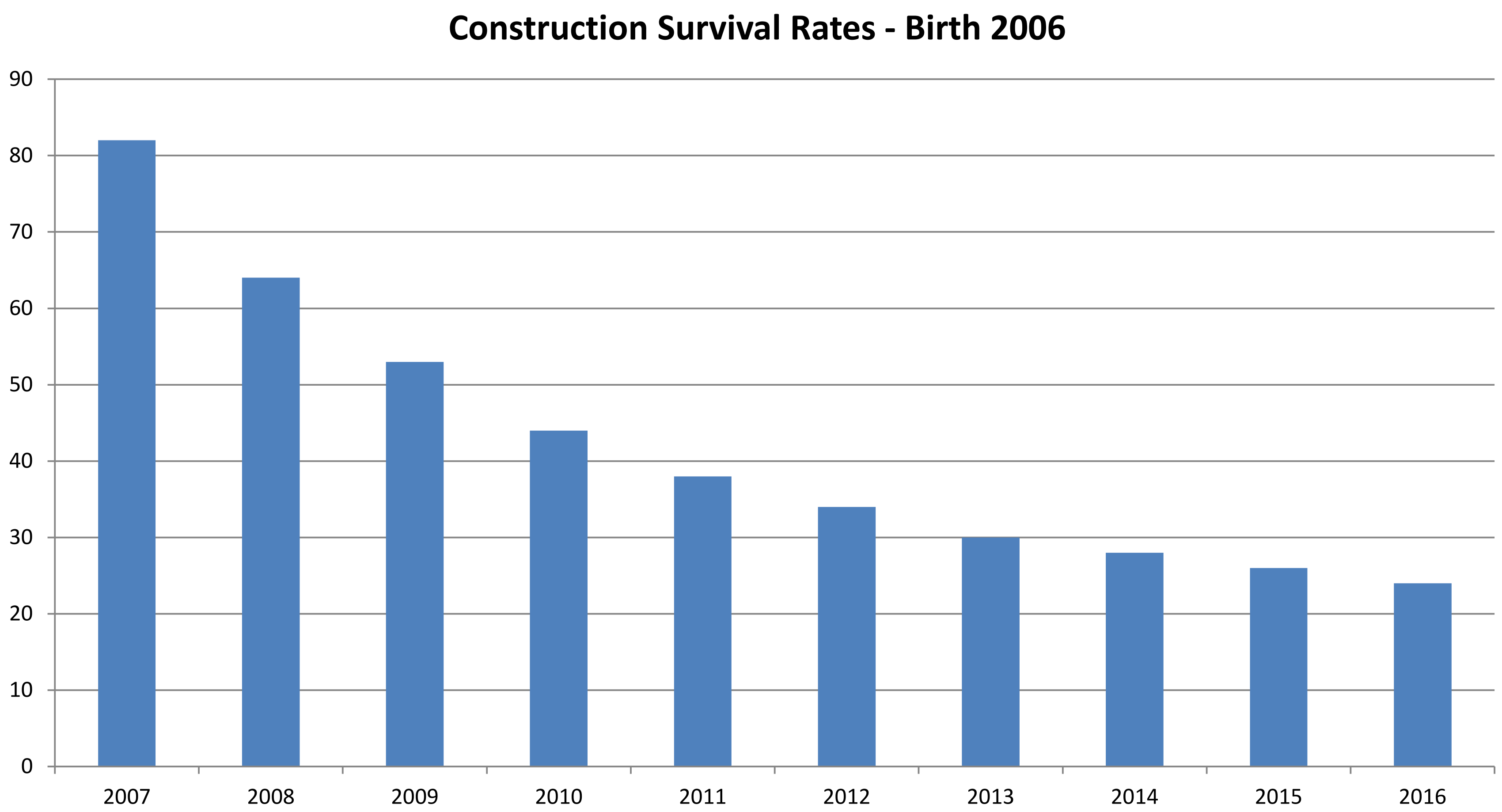


BCITO buildingpeople

Employment Cycle



Construction firms' survival rates

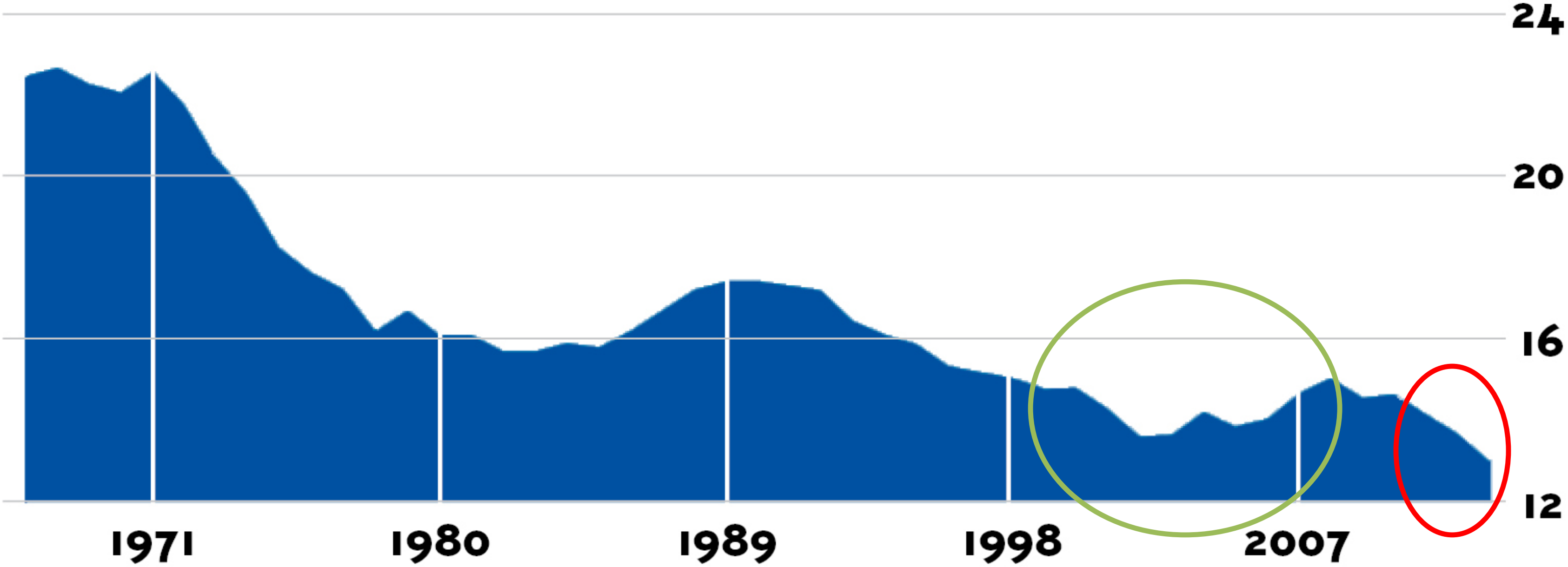


BCITO buildingpeople

What about apprenticeships and the training issues we face?

BCITO
buildingpeople

NZ Births per 1,000:
An ever shrinking pool of young prospects



SCHOOL STUDENTS' PROFILE

BCITO buildingpeople

Auckland, Male and Chinese students are more open to a B&C career.

Open School Students

n=66 / 17%

74% 26%

Closed School Students

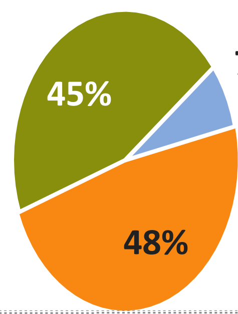
n=125 / 69%

30% 70%

Open School Students

Career path

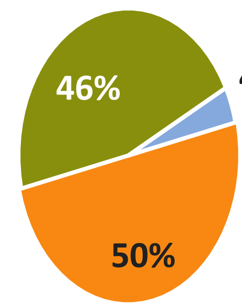
- Already decided on a career choice
- Not decided on a career choice
- Others



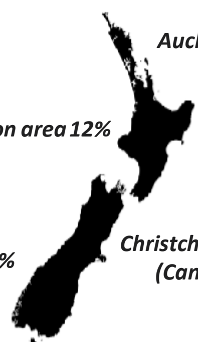
Closed School Students

Career path

- Already decided on a career choice
- Not decided on a career choice
- Others

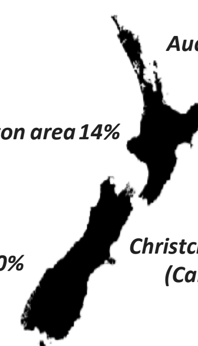


Open School Students



NZ European / Pakeha	*62%*
Total Pasifika	*27%*
Chinese	*17%*
Indian	*6%*
Others	*9%*

Closed School Students



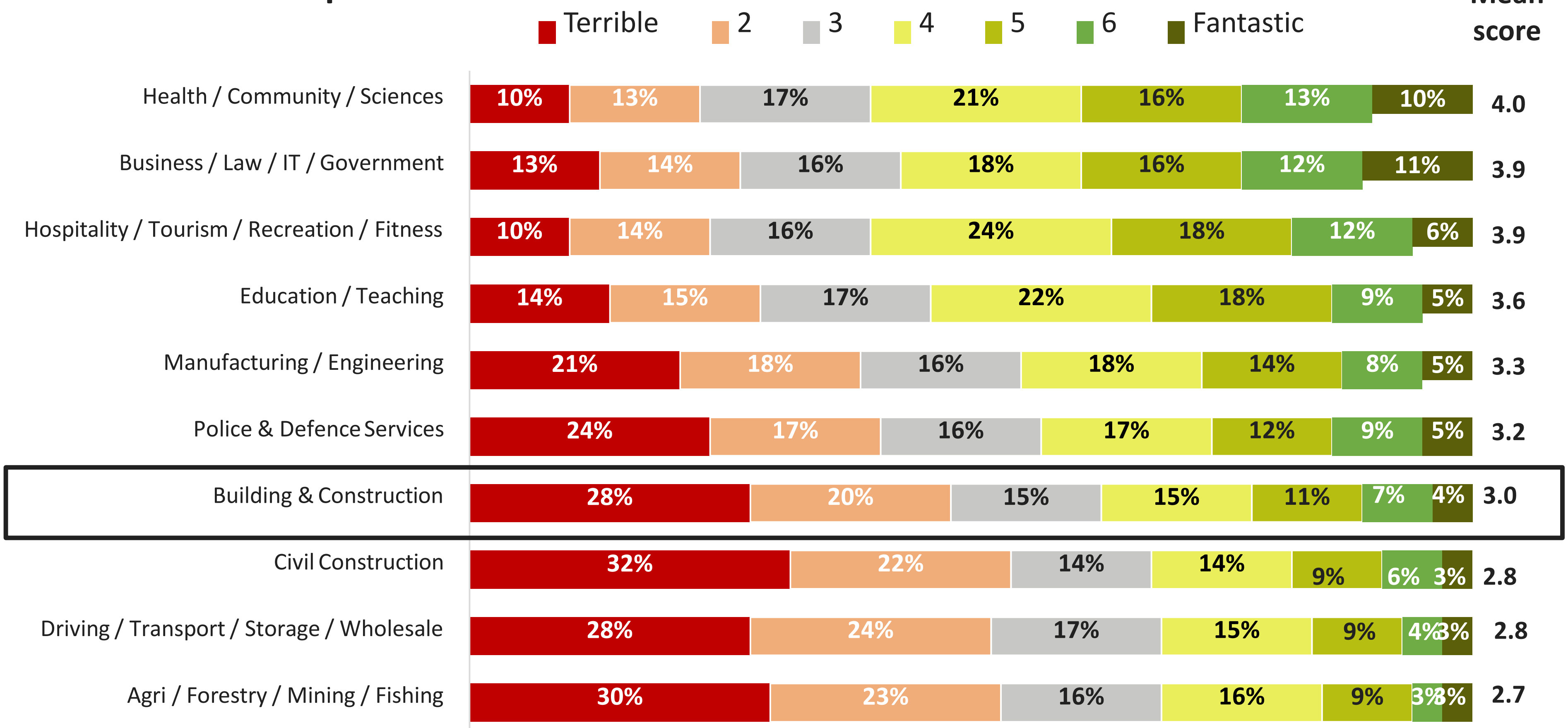
NZ European / Pakeha	*69%*
Total Pasifika	*27%*
Chinese	*5%*
Indian	*5%*
Others	*10%*

Total School Students
n=292

BCITO buildingpeople

PERCEIVED ATTRACTIVENESS OF DIFFERENT INDUSTRIES

***Manufacturing / engineering* & *police / defence services* are perceived as more attractive career options than B&C**



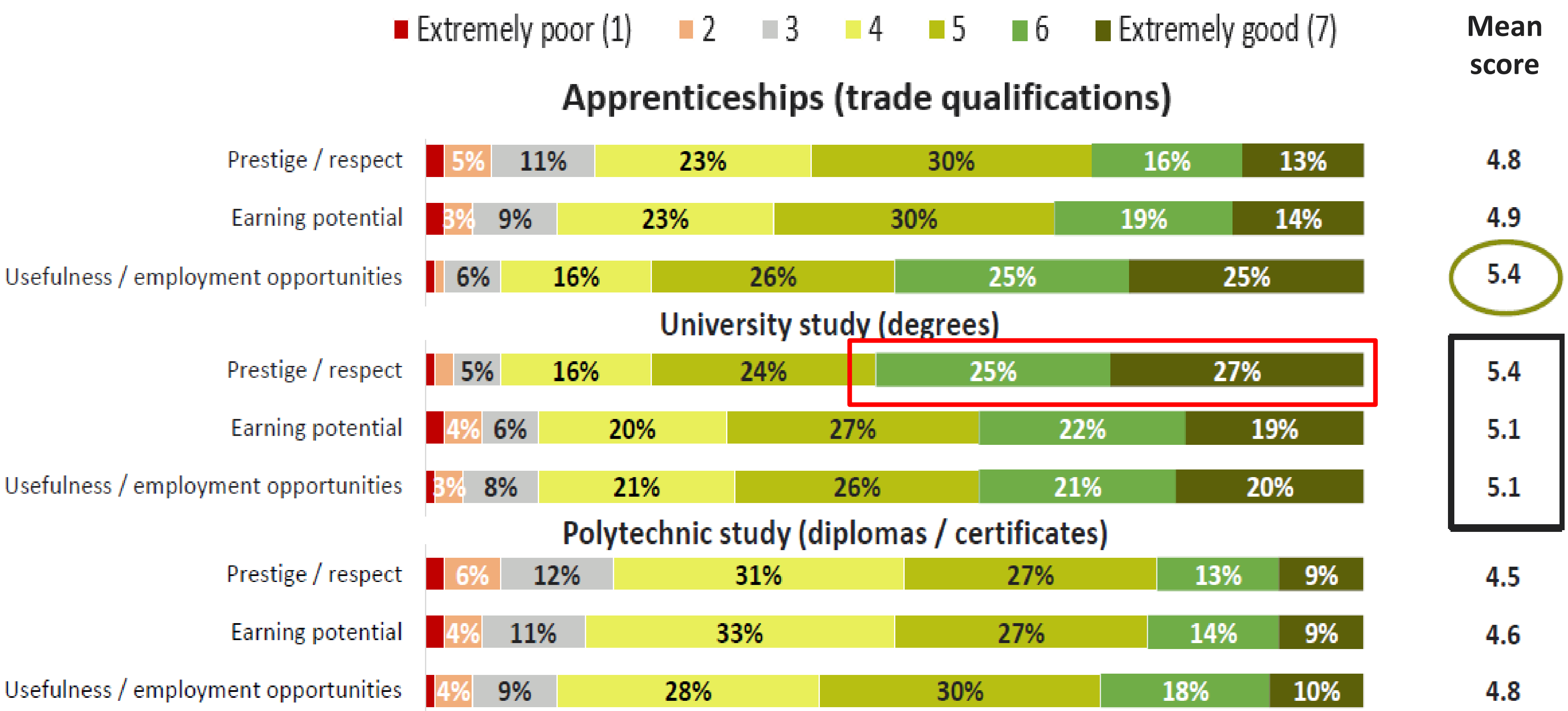
***QP1:** Considering your personal interests and skills, how attractive do you think each industry shown below would be for you to have a career in?*

***Base:** Total sample (n=993)*

PERCEPTIONS OF QUALIFICATIONS

Unsurprisingly, University degrees are perceived most favourably, but Apprenticeships are only slightly behind, and lead on employment

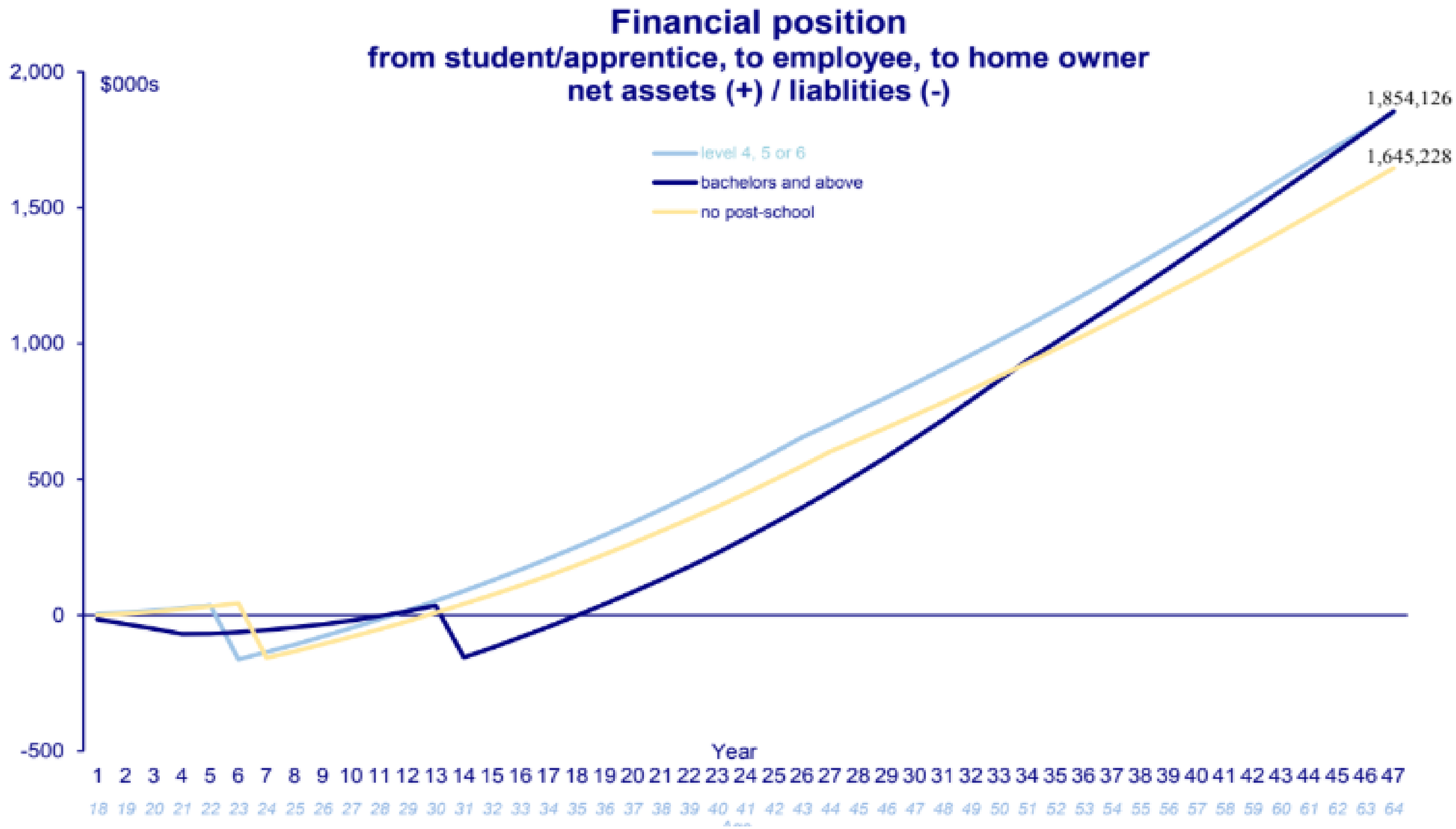
Those closed to B&C careersregard University qualifications more favourably than Apprenticeships, despite rating them equally on employability.



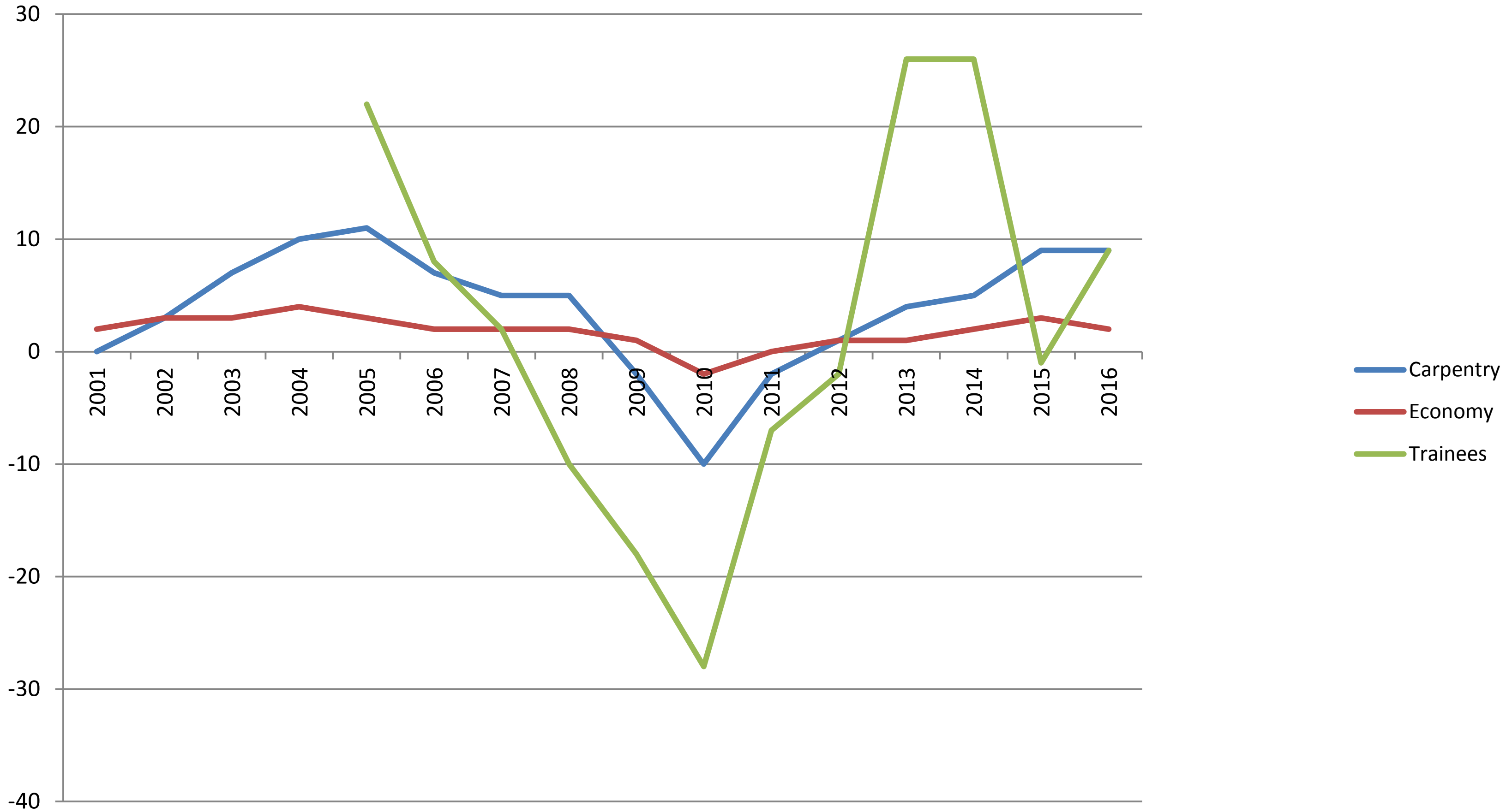
__QCS6:__ There are many different ways to get the skills needed for a career. How well do you think each of the ways shown below performs in terms of prestige, earning potential, and usefulness?

__Base:__ Total sample (n=993)

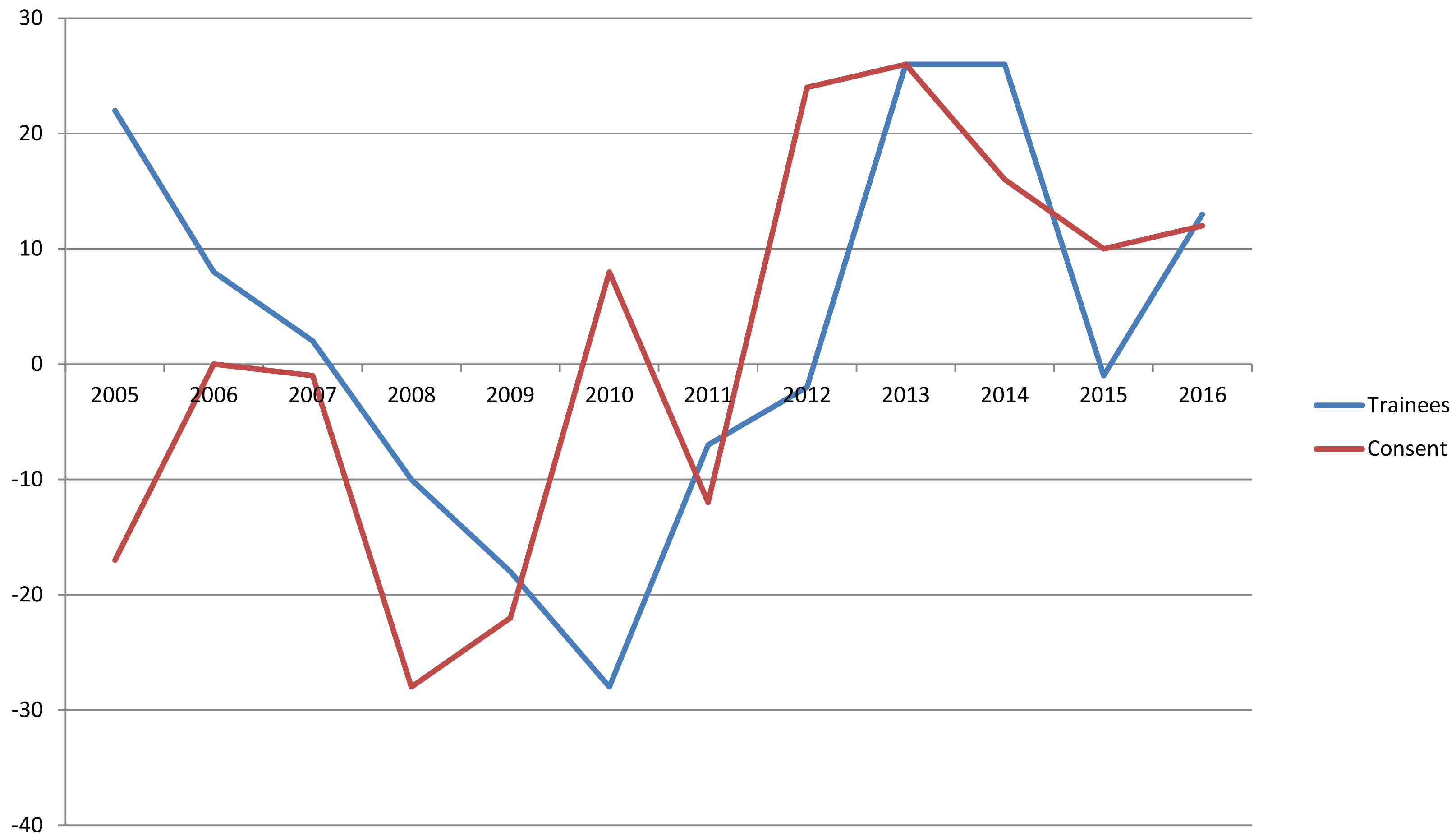
ITF – Berl


Financial position
from student/apprentice, to employee, to home owner
net assets (+) / liablities (-)
$000s
2,000
1,500
1,000
500
0
-500
level 4, 5 or 6
bachelors and above
no post-school
1,854,126
1,645,228
Year
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47
18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64

Training cycle

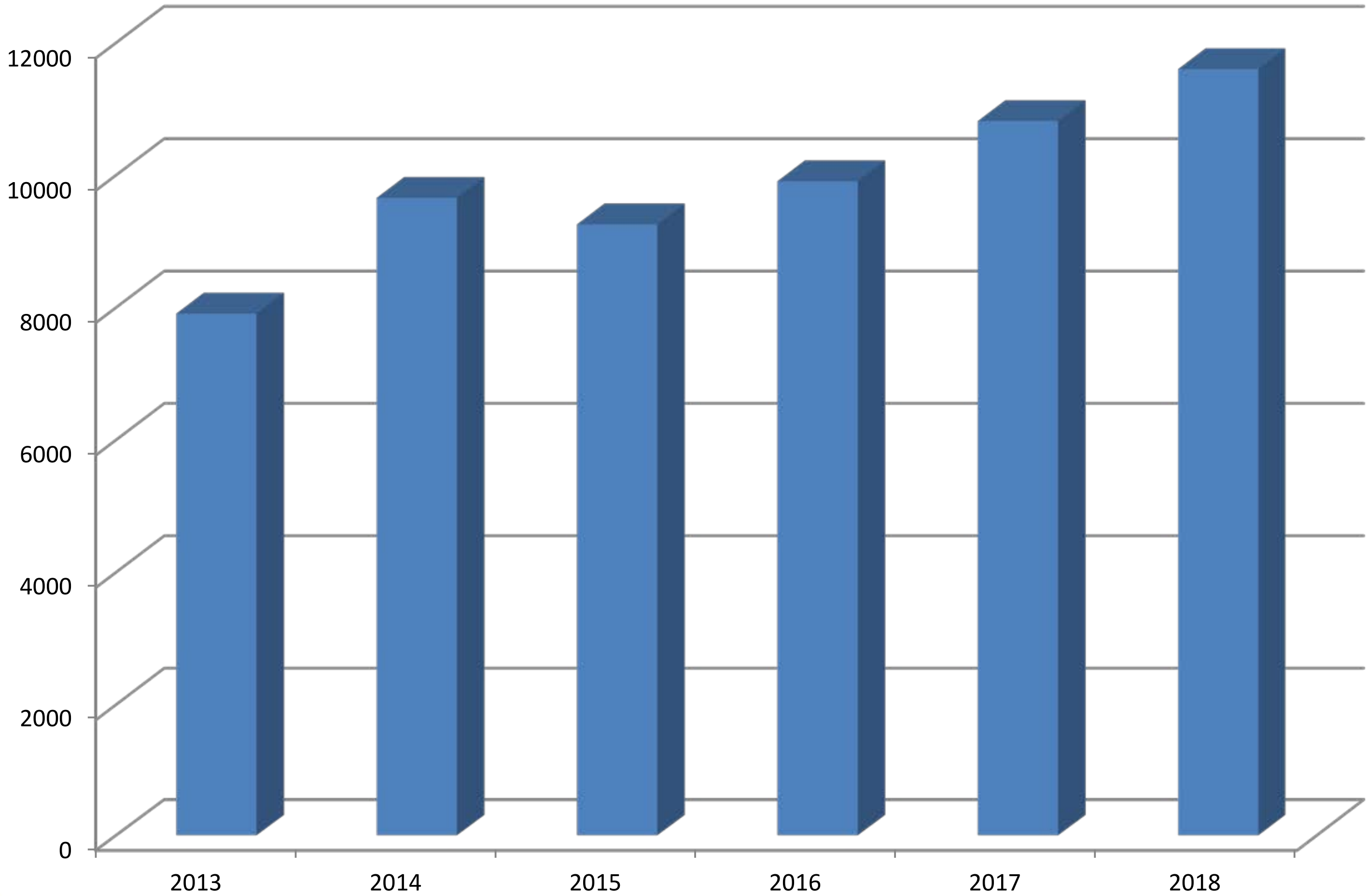


Consent/Trainee % change – the 'lag effect': 18 – 24months

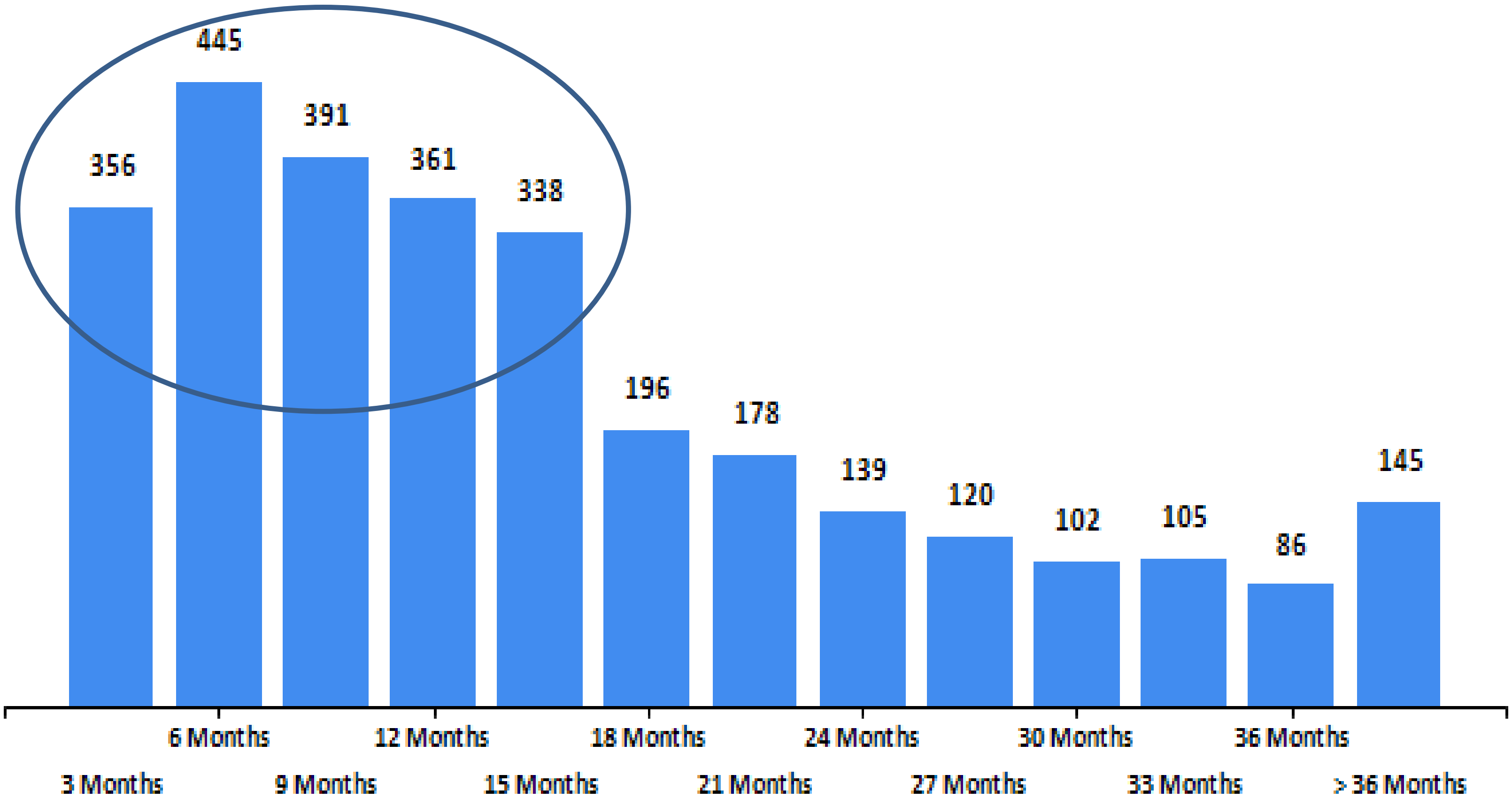


BCITO
buildingpeople

Number of apprentices in training



Withdrawal/churn rates – all trades 2017



BCITO buildingpeople

Women in trades (as at May 2018)

BCITO has 322 women in training or 2.77% of trainees

Require greater diversity

BCITO
buildingpeople

No. firms that train

Only 10% of firms train at any one time

Require greater alignment and flexibility within the training system

We think…

Review the industry training framework

- Flexible and responsive ✓
  - Greater specialisation (micro-credentials, flexible funding etc)
  - Greater business alignment
    (opportunity with ITP / VET review?)

Raise the profile of vocational learning

- Three free years tertiary ✓
- Trades level 4 - entry level Bachelor degree 7?
- Better alignment – Scotland/UK
  (Opportunity with NZQF review?)

We think...

Cut constraints on ITO training

- Lift prohibition on training (digital technology, employer partnering)
- Lift cap on levels 5/6
- Allow graduate level apprenticeships (Scotland)
- (opportunity with ITP/VET review?)

Introduce employer funding streams

- Industry levy (trial using building levy or JAVP)
- Preserves industry contribution

We think…

Utilise Government policy incentives

- LBP scheme (qualification based licences only – opportunity with LBP review)
- Procurement policies (central and local Govt) ✓

Better workforce planning

- Dedicated labour force unit for construction
- Labour Party’s manifesto commitments ✓
- National Construction Pipeline and Future Demand for Construction Workers

We think…

Build a more diverse workforce

- Maori and Pasifika trades training
- Asian ethnic groups
- Women – 2.8% of trainees

Ensure training/immigration alignment

- Safety valve – not primary skills pathway
- Complementary and not competitive

BCITO
buildingpeople