MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HIKINA WHAKATUTUKI

# Residential Construction Sector Market Study

## Options Paper

## 6 November 2013

newzealand.govt.nz

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# Making a Submission

You are invited to make a written submission on the issues raised in this paper. Submissions should be received at MBIE by 5pm on Wednesday 18 December.

Your submission may respond to any or all of the issues outlined, depending on your interest. In addition, you are welcome to provide other information that you think might be relevant to this inquiry. If possible any views outlined in the submission should be supported by evidence, such as references to independent research, facts and figures, or examples. Please also include your name, or the name of your organisation, and contact details.

Submissions may be made electronically (preferred) or by post. Electronic submissions should be in Adobe Acrobat or Microsoft Word or compatible format and sent as an attachment to: constructionstudy@mbie.govt.nz.

Postal submissions should be sent to:

Residential Construction Sector Market Study
c/o Sharon Corbett
Ministry of Business, Innovation and Employment
56 The Terrace
Wellington

## Use of information

The information provided in submissions will be used to inform our analysis and the advice given to Ministers on housing affordability, and more generally to increase MBIE's knowledge of the construction sector. We may contact submitters directly if we require clarification of any matters in the submission.

We intend to post written submissions received on the issues paper on MBIE's website at www.mbie.govt.nz. Therefore, please read the advice below regarding confidential or private information.

*Confidential Information*

If your submission contains any confidential information, please indicate this on the front of the submission. In addition, the confidential information should be clearly marked within the text, for example, by including the confidential information in square brackets or as a separate appendix.

If you wish to provide a submission with confidential information, we prefer that you also provide a separate public version of the submission which excludes the confidential information. If provided, the public version will be posted on MBIE's website.

In any case, if MBIE receives a request under the Official Information Act 1982 for a copy of submissions, MBIE will need to make its own assessment of whether it is in the public interest to release the information received. In this event, MBIE will endeavour to consult with submitters that have provided confidential information prior to making its decision on the request.

*Private Information*

The Privacy Act 1993 establishes certain principles with respect to the collection, use and disclosure of information about individuals by various agencies, including MBIE. Any personal information you supply to MBIE in the course of making a submission will be used by MBIE only in conjunction with providing its advice on housing affordability. Please clearly indicate in your submission if you do not wish your name or contact details to be posted on MBIE's website or included in any summary of submissions that MBIE may publish.

# Overview of issues and options in this paper

This *Options Paper* describes the barriers to competitive and productive outcomes in the residential construction sector as identified through the previous consultation on the *Residential Construction Sector Market Study: Issues Paper*. It presents a suite of potential options to reduce or remove the barriers.

Through this consultation, the Ministry of Business, Innovation and Employment (MBIE) is seeking further evidence of the barriers as well as feedback on the benefits and costs of the options identified. This feedback will inform decisions on which options to implement. An overview of the barriers identified and potential options is as follows:

### Chapter 3: The Regulatory Framework

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| **ISSUE: COMPLEXITY AND INACCESSIBILITY OF ALTERNATIVE SOLUTIONS**<br>The complexity of the product assurance system for demonstrating Building Code compliance may act as a barrier to new products or systems getting to market. There are also concerns that decision making processes and risk aversion in relation to product assurance may reinforce the position of incumbents in the industry. |
| **Option**: Sector education about product assurance |
| **Option:** Greater specificity of what is needed for 'lower level' product assurance |
| **Option**: Promote better transparency by Certification providers |
| **Option**: Reform of BRANZ governance |
| **ISSUE: SPECIFICATION BY BRAND**<br>Specification by designers of particular brands of product in designs acts as a barrier to later substitution of equivalent products that might be cheaper or more effective. This reinforces the use of "tried and true" products. |
| **Option:** Prevent specification of "no substitutes" |
| **Option**: Require specification by performance |
| **ISSUE: RISK AVERSE BEHAVIOUR**<br>Risk averse behaviour underlies decisions about consenting. Moreover, liability risks throughout the industry incentivise conservatism and this may act as a barrier to getting products accepted for use (or selected for use in the first instance). |
| **Existing Work**: Law Commission review of joint and several liability |
| **Option**: Recognise manufacturer warranties in liability and consenting |
| **ISSUE: LIMITED AVAILABILITY OF ACCEPTABLE SOLUTIONS**<br>Acceptable Solutions are 'deemed to comply' with the Building Code. They often rely on citation of complex technical Verification Methods, which are not always available in relation to innovative new materials or processes or new market entrants. This could act as a barrier to entry. |
| **Option**: Further government funding of development of Acceptable Solutions |
| **ISSUE: INEFFICIENT AND INCONSISTENT CONSENTING BEHAVIOUR**<br>Slow and unpredictable consenting procedures across BCAs introduce delays to construction and make it difficult to plan construction projects. This particularly affects larger builders looking to realise economies of scale through improved planning and management. |
| **Existing Work**: National Online Consenting |
| **Option**: Residential risk-based consenting |

### Chapter 4: Competition impact of strategic conduct in construction markets

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| **ISSUE: LACK OF TRANSPARENCY OF STRATEGIC PRACTICES**<br>Strategic practices such as the provision of rebates or targeted discounts have the potential to constrain access to distribution channels for building materials. The lack of transparency around their use also means that benefits that result from them are less likely to be passed to end consumers. |
| **Option**: Require disclosure of financial and other benefits |
| **Option**: Industry self-regulation to achieve disclosure |
| **Option**: Targeted advocacy of the Commerce Act |
| **ISSUE: STRATEGIC PRACTICES INTRODUCING INEFFICIENCY**<br>Practices within the market, such as cover pricing can have negative impacts on competition. Some strategic practices are also inefficient, and result in higher prices than optimal competition would. |
| **Option**: Government procurement as best practice |
| **Option:** Government procurement to influence market behaviour |

### Chapter 5: Import Barriers

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| **ISSUE: ANTI-DUMPING DUTIES**<br>Anti-dumping duties imposed on certain imported building products effectively serve to set a minimum price for imports, impeding import competition on price, thereby allowing domestic manufacturers to maintain higher domestic prices. |
| **Option**: Bounded public interest test |
| **Option**: Allow for consideration of government policy statement |
| **Option**: Limit continuation of anti-dumping duties |
| **ISSUE: TARIFFS**<br>Tariffs remain on some imported building materials. Although Free Trade Agreements mean that in reality most products are imported without any tariff, there is still some restriction on the ability of imported materials to compete. |
| **Option**: Tariff concessions on key construction materials |

### Chapter 6: Industry Fragmentation, Innovation, and Productivity

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| **ISSUE: LIMTIED INTRODUCTION AND DIFFUSION OF INNOVATIVE PRODUCTS**<br>The residential construction sector is characterised by the limited introduction of innovative products to the market, and slow diffusion once introduced. This impedes its ability to realise continuous efficiency gains and input price reductions. |
| **Existing Work**: Productivity Partnership building systems workstream |
| **Existing Work:** Building and Construction Industry Research Strategy |
| **Option**: Social housing as “proof of concept” |
| **Option**: Innovation network |
| **Option:** Criteria to promote innovation through BRANZ use of Building Research Levy |
| **Option**: Targeted education |
| **ISSUE: INEFFICIENT CONSTRUCTION MANAGEMENT PRACTISES**<br>A lack of specific project management and business skills within the industry prevents the realisation of efficiency gains, and consequent price reductions, on building sites. |
| **Existing Work**: Productivity Partnership skills workstream |
| **Option**: Industry education programme |
| **Option:** Licensed Building Practitioner requirements |

# 1. Introduction

The Government has asked the Ministry of Business, Innovation, and Employment (MBIE) to conduct a study into the residential construction sector to identify market level barriers to improved housing affordability, with particular reference to the competitiveness and productivity of the sector. This forms part of the Government's wider response to the New Zealand Productivity Commission's report into housing affordability.

Residential construction is a fundamental part of the New Zealand economy with significant ramifications for the wellbeing of New Zealanders. Housing is the single biggest expenditure undertaken by most New Zealand households and the sector contributes approximately four per cent to New Zealand's GDP. This highlights the importance of ensuring that the residential construction sector is operating efficiently.

This Options Paper forms the second stage of MBIE's market level study. It was preceded by an Issues Paper, released in May 2013 that sought views on the issues facing the residential construction sector. The submissions received to that consultation, together with targeted interviews with key stakeholders, have highlighted a range of barriers to competition and productivity in the sector. This Options Paper focuses on potential ways to remove or minimise these barriers, with a view to lowering construction costs and/or improving performance, while maintaining a high standard of building quality.

The residential construction sector is only one element that contributes to the supply cost of housing, with other factors such as the availability of land also being important. These wider factors are outside the scope of this study. They are being addressed by the other work-streams in the housing affordability work programme, such as those relating to reducing land supply restrictions and improving the timely provision of efficient infrastructure.

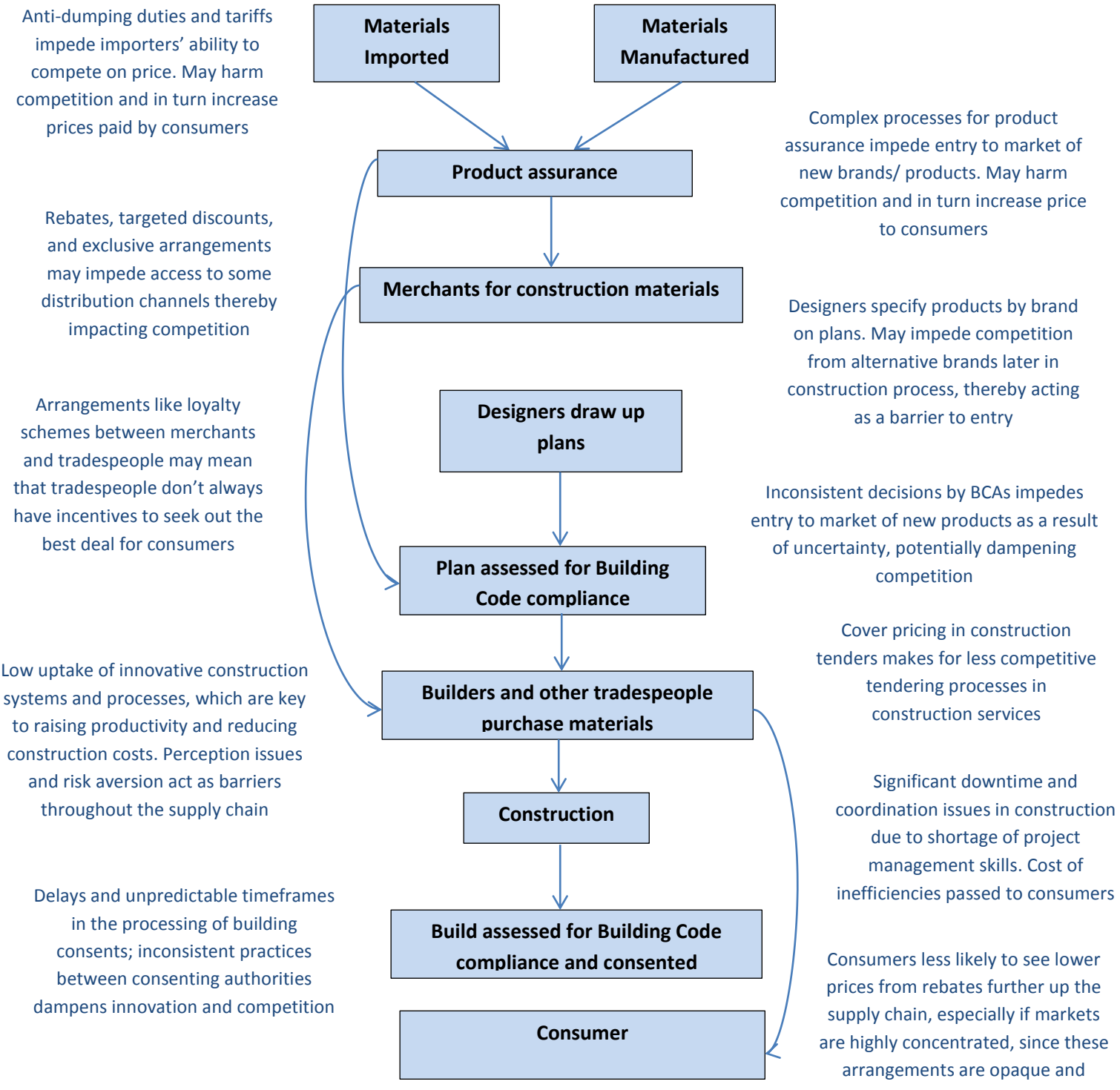
## Overview of barriers to competitive and productive outcomes

As outlined in the Issues Paper, this review aims to examine both structures and behaviours that might impede competition and productivity growth.

Many of the different markets in the residential construction sector display the characteristics of competitive markets, including a range of standard pricing and service practices that benefit consumers and promote efficient market outcomes. A number of submissions indicated that there was a good deal of competition within much of the sector and that firms commonly face pressure from rivals that requires pricing competitively, enhancing product quality and range, and improving services. New Zealand's domestic market size means that for many materials there are only one or two manufacturers; at the same time, import barriers are relatively low and imports play an important role in providing a competitive restraint on prices.

Notwithstanding this, submissions to the Issues Paper pointed to the existence of range of barriers – both structural and behavioural – to competition and productivity. Each barrier, on its own, may not appear to be having a large impact. However, the presence of barriers at multiple levels of the supply chain implies that their cumulative impact could be more significant.

In particular, the barriers appear to lead to a bias towards the continued use of 'tried and true' brands, products, methods, and systems. This impedes the ability for new firms to enter the market and for existing firms to innovate and make productivity enhancing investments. Overall, MBIE considers that the residential construction sector is not as competitive or productive as it could (or should) be. As a result, this paper identifies 11 specific issues, and proposes 24 possible policy options to address them. The barriers are depicted in the (simplified) supply chain diagram below. This illustrates the multitude of barriers that must be overcome for given brand or product seeking to enter the New Zealand market.



## Common features that drive industry outcomes: liability and demand

Many of the barriers described above arise in part because of liability concerns. Understanding risk aversion and liability will therefore be crucial to overcoming the barriers to competition and productivity. Liability in and of itself is not a problem, but a balance needs to be struck between ensuring parties are liable, where appropriate, but not hamstrung by liability fears (whether founded or not). Recent experiences with leaky buildings, including the liability of most parts of the sector, have undermined trust and confidence within the sector. This drives the industry structure and creates coordination and transactional inefficiencies. It leads to risk aversion and, in this way, hinders innovation or change within the sector. Options are therefore included in the various Chapters, as relevant, to consider better managing liability concerns.

Responses to the Issues Paper also raised the importance of understanding what is driving demand in the residential construction sector. A common theme raised in submissions is that competition and productivity are hindered by the lack of demand for new and innovative materials, and for new and more efficient ways of constructing homes. To the extent that this is the case, supply-side fixes will have a limited impact. This paper therefore includes options to help reduce any underlying demand-side barriers – such as a lack of transparency and information – that are impeding demand for innovative products or more efficient service delivery.

# 2. Background: residential construction costs and productivity

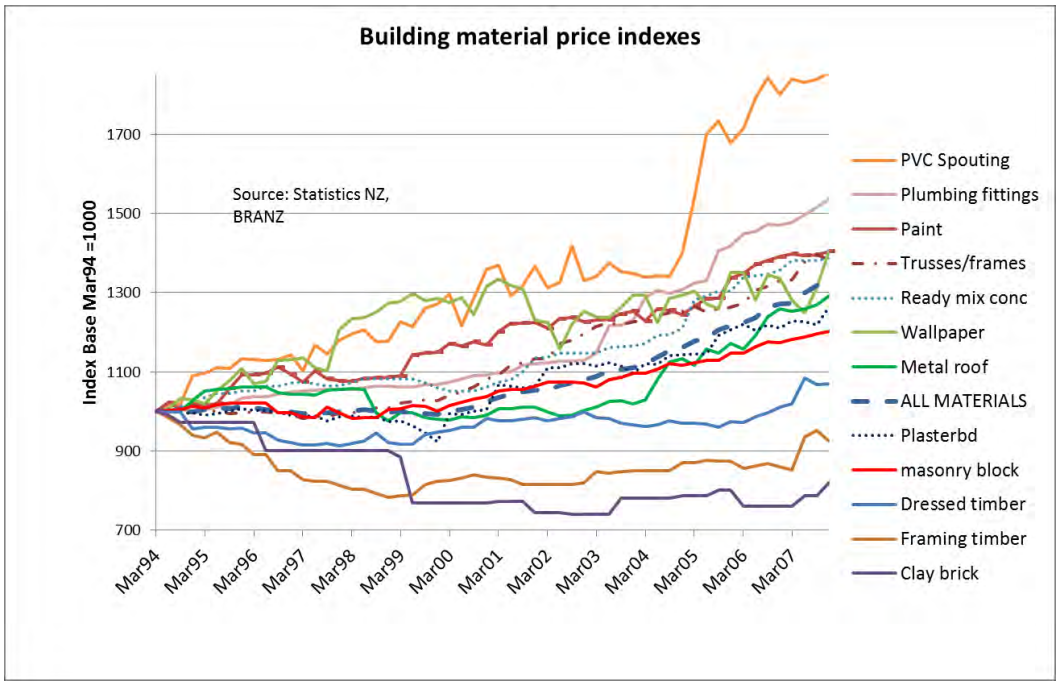
## What do we know about residential construction costs?

Total residential construction costs increased by 30 per cent in real terms between 2002 and 2011. Most of this increase occurred during the recent house price boom (2002-2008). In the period since 2008, new house construction costs have risen modestly.

The main categories of construction cost are: building materials, labour, profits and other costs (including design, legal, council fees and building levies). While the relative proportion of total costs contributed by each category varies from project to project, a typical project's costs might break down as follows: materials (50 per cent), labour (33 per cent), profit (12 per cent), other (5 per cent).

NZIER recently estimated the drivers of house cost change between 2002 and 2011, based on data supplied on a model home produced by Stonewood Homes. Overall, the costs of construction increased by $72,000 over the period, of which $44,000 (62 per cent) represents general inflation, $22,000 (31 per cent) represents specification change, $9,000 (12 per cent) represents compliance-related increases, which together were offset by a small amount of sector-specific deflation of $3,000 (-5 per cent).

The graph below shows price movements in a variety of building materials and products up to 2008.




Materials prices are expected to be influenced by a number of factors, including:

- International supply and demand for materials used in residential construction.
- Changes in the nature of materials used (for example, as a result of a new insulation standard).

- The availability of raw materials domestically and any associated impact on transport costs. For example, for every 30 km of additional distance that aggregates are transported, the price doubles[1]. The closure of quarries can therefore have a significant impact.
- Exchange rate movements. BRANZ notes that close to 20 per cent of residential construction output is made of imported content.

Prices will also be affected by changing fashions and preferences and the ongoing competitive process. To illustrate how these factors can impact material prices, Appendix 1 includes a case-study looking into the factors underlying recent changes in brick prices.

It is important to consider also that the effect of any increase in the price of a particular material on the overall cost of a new house will depend on the quantity of that product used in construction. The table below provides percentage weightings for a range of materials for a model house used in a 2008 BRANZ report on construction costs:

| Component | Percentage Weighting |
|---|---|
| **Wood structural manuf.** | 21.4 |
| **Metal roofing** | 6.4 |
| **Clay brick cladding** | 8.1 |
| **Ready-mix concrete** | 7.4 |
| **Framing timber** | 6.9 |
| **Dressed timber (finishing)** | 2.1 |
| **Paint** | 1.5 |
| **Wallpaper** | 1.5 |
| **Concrete masonry** | 0.4 |
| **Plasterboard** | 4.9 |
| **PVC spouting/joiners** | 1.0 |
| **Electrical items** | 5.4 |
| **Plumbing/drainage items** | 7.2 |
| **Other (including for example, hardfill, windows, insultation, heating appliances, floor coverings, fibre cement sheet, fabricated steel items, sheet polythene)** | 25.9 |

These weightings give some indication of the relative significance of the price trends in the above graph. For example, although PVC spouting has increased in price a great deal more than other products, this is of limited concern in the context of an overall weighting for the product in the model house of only one per cent.

The Issues Paper reproduced data comparing trade prices for various building materials in New Zealand and Australia from the Productivity Commission report. Many submissions in response to the Issues Paper noted that there are legitimate reasons for the differences, implying that it was not a like-for-like comparison. For example, it was noted that stronger wind loads and seismic activity

[1] Aggregate and Quarry Association of New Zealand, Submission to Issues Paper

add significantly to build costs in New Zealand. Moreover population density and smaller scale mean that transport costs are higher in New Zealand.

## What do we know about productivity in the residential construction sector?

Productivity is a measure of the efficiency with which an industry converts inputs (for example, labour, materials, capital goods and technological know-how) into outputs (for example, residential buildings and associated structures).

Productivity levels measure the value of output or value added for a given level of inputs. Productivity growth rates refer to changes in the level of productivity over time. Productivity levels matter most from an overall economic efficiency perspective but growth rates are easier to estimate consistently and analyse for comparative purposes.

Official statistics report industry productivity for the construction sector as a whole, and show that the construction sector has been a moderate to poor performer compared with other parts of the economy.[2] Over the period 1996-2011, labour productivity growth in the construction sector averaged 0.8 per cent per annum compared with 1.5 per cent for the measured sector as a whole.[3] Multifactor productivity growth, which takes account of changes in capital as well as labour inputs and represents technical change or efficiency growth, averaged 0.6 per cent per annum, roughly the same as that for the measured sector.

NZIER estimates that labour productivity growth in New Zealand's construction industry is about half that of Australia, where labour productivity growth averaged 1.6 per cent per annum over the 15 years to 2011.[4] Because of the compounding effect of growth over 15 years, this small differential in annual growth rates is equivalent to a 13 per cent deficit in New Zealand's construction productivity level relative to Australia.[5] The size of this deficit is similar to that for the two economies as a whole.

Although the recent evidence suggests New Zealand and Australia have similar total labour costs, average hourly wages are lower in New Zealand. This suggests New Zealand uses more labour hours for the same work and that labour productivity is lower in New Zealand.

[2] Statistics New Zealand, Industry Productivity Statistics: 1978-2011.

[3] The economy is proxied by the measured sector, which excludes certain non-market industries (e.g., government-provided health and education services).

[4] NZIER (2013) Construction productivity: An evidence base for research and policy issues, NZIER report to the Building & Construction Sector Productivity Partnership.

[5] This difference is based on comparisons using the Purchasing Power Parity method and assumes an exchange rate of close to 1. Using spot exchange rates increases the difference markedly.

# 3. The Regulatory Framework

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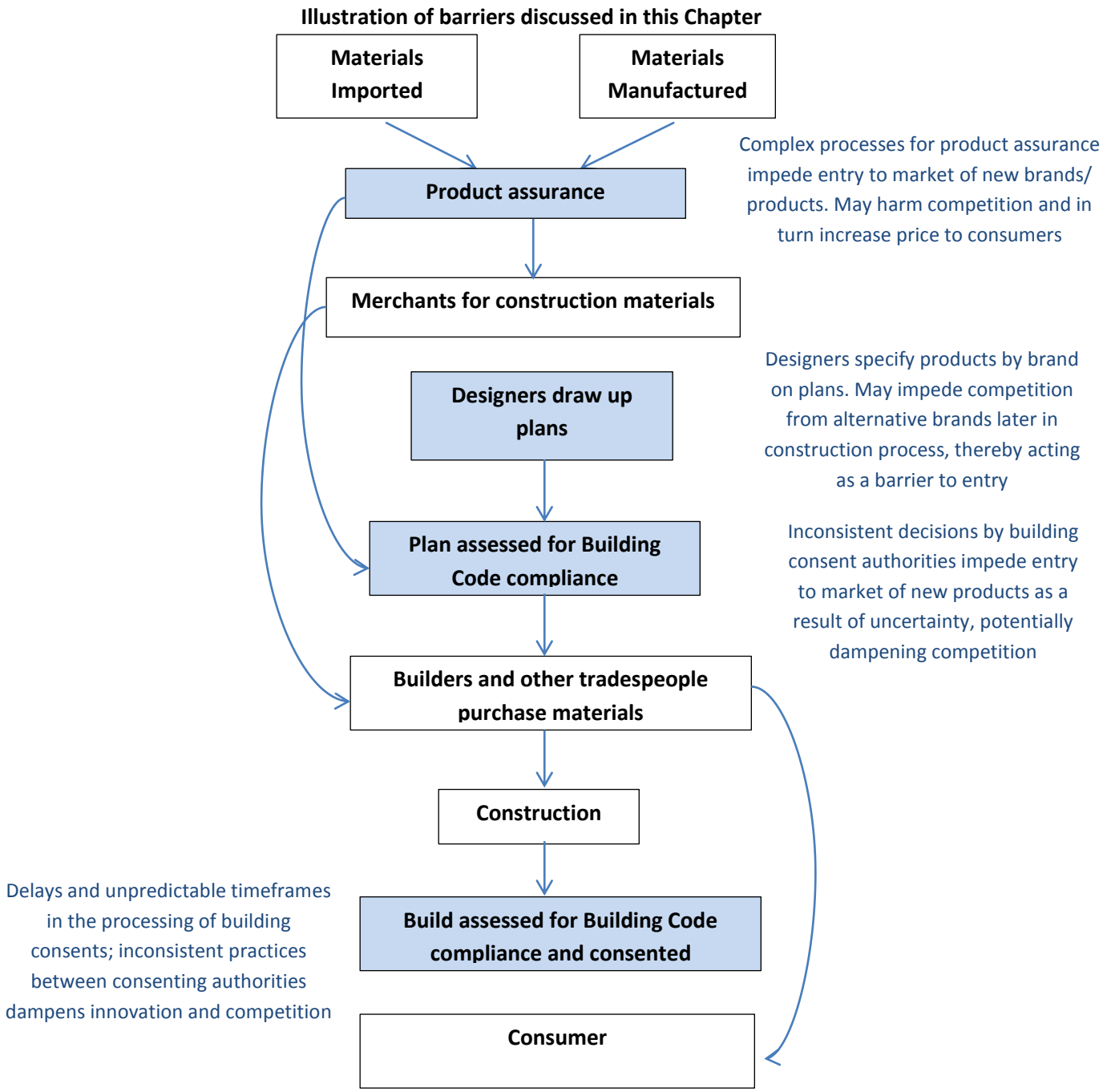



This Chapter considers the way that the regulatory framework for residential construction could act as a barrier to more effective competition among suppliers, and more productive outcomes for the sector overall. The focus is on aspects of the regulatory process that impede the entry of new products to the market or introduce unwarranted inefficiencies to the construction process. It is important to note that as a general proposition such checks and balances are justified regulatory standards to ensure quality. To an extent, it is inevitable that compliance costs of this type act as barriers to entry. However, it seems that specific aspects of the way the current regime is operating are inhibiting entry, and therefore competition, more than is strictly necessary to achieve their regulatory objective.

**The Building Act**

The Building Act 2004 (the Act) provides for a national Building Code, national guidance on how to comply with Building Code requirements, a national system of builder licensing and a national system of accrediting and registering building consent authorities. It requires all territorial authorities to perform the functions of a Building Consent Authority (BCA), administering the building consent process and performing enforcement and other building control functions.

The consent itself is granted based on assessment of the design, which must demonstrate Code compliance through the use of products and processes that meet the performance requirements of the Building Code. Once building consent is obtained, construction can commence. The construction itself is then inspected to ensure that it conforms to the design upon which consent was originally granted. The inspection process can vary based on the nature of the design and construction process, but typically involves approximately nine separate site visits from Council Inspectors.

In order for a material or process to be approved for use as part of a building consent, it must be shown to comply with all relevant clauses of the Building Code. In order to do this a designer can use either be an "Acceptable Solution" approved by the Ministry under the Building Act or an "Alternative Solution" that requires code compliance be demonstrated to the BCA. A more detailed description of the regulatory process is included in the following section.

## Difficulties demonstrating code compliance

In order for a material or process to be approved for use as part of a building consent, it must be shown to comply with all relevant clauses of the Building Code.

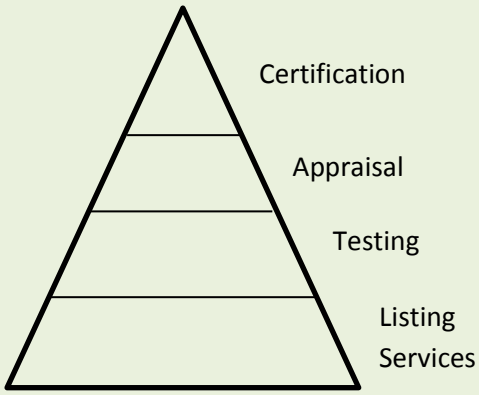
**Different routes to Code Compliance: Acceptable and Alternative Solutions**

The most certain way that a product can be approved by BCAs is by being an "**Acceptable Solution**" under the Building Code. Acceptable Solutions and Verification Methods are set out in compliance documents produced by MBIE. Compliance documents describe methods for building that are deemed to be compliant with the Building Code (i.e. the Acceptable Solution) and/or methods of testing a solution to verify compliance (i.e. the Verification Method). Alternatively compliance documents cite other publications that set out the technical detail, such as New Zealand Standards or industry standards.

In the absence of compliance with an Acceptable Solution, a product must instead be demonstrated to be an "**Alternative Solution**" under the Building Code. This means that by means other than inclusion in an MBIE compliance document, it must be shown to meet the performance requirements of relevant portions of the Code. There is a range of ways this can be done, as shown in the "product assurance pyramid" below:

- The product certification scheme is designed to be used for a relatively small number of products. It is also distinguished from the other methods in that BCAs must accept products that are certified.
- Below certification sit product appraisals. Submitters report that appraisals are widely accepted by BCAs as evidence of Code compliance, though this is on the basis of their discretion.

- Below this level sit the variety of other potential options available to suppliers. These can include the provision of independent or in-house testing data, and manufacturers' statements or tests. This level is where there majority of building products sit, and where there is the greatest degree of inconsistency in the way BCAs apply the Code provisions.




This product assurance pyramid shows the level at which each of these solutions should operate. In general, options further up the pyramid carry increased costs. Although costs vary based on required testing, submitters estimated that most BRANZ appraisals would cost multiple hundreds of thousands of dollars, as well as significant fees to maintain the status of the appraisal. Independent testing is likely to carry a smaller, though still significant cost. At the lowest end of the scale, information may already be available from the manufacturers of some imported products, or easily attainable based on technical manufacturing data.

*Concerns with low uptake of product certification*

The product certification regime is aimed at providing a certain and accessible alternative to relying on product assurance mechanisms and BCA discretion. Although the costs associated with certification are high, it represents the most certain way for a product to become a usable alternative solution. It was expected that particularly innovative or risky products would follow the certification process. However, uptake has not been large, though there is some indication that the rate might be increasing.

At present, there are three providers of product certification services for the New Zealand market, all based overseas (two in Australia and one in the United States). There has been some indication from submitters that these entities lack the required expertise to make evaluations against New Zealand's particular regulatory requirements. Another entity, this one New Zealand based, is likely to apply for authorisation to conduct certifications soon. Although they operate on a commercial basis, the level of promotion undertaken by entities offering product certification appears to be low. This is perhaps unsurprising given the low uptake and small size that characterises the New Zealand market for these suppliers. It is possible that product certification is locked in a cycle of static low uptake levels.

*Difficulties in accessing 'higher-level' product assurance options*

Some suppliers also appear to have encountered difficulties in accessing the product assurance options at the top of the product assurance pyramid, particularly appraisals and certification.

**Knauf concerns regarding product approval processes**

MBIE has heard concerns from Knauf in relation to the time and expense of getting products approved to the satisfaction of BCAs. Knauf is the second largest manufacturer of plasterboard globally, and has recently entered the New Zealand market. In an effort to build credibility with local builders and consenting authorities it has sought BRANZ appraisals in relation to four plasterboard uses; wet area protection, fire protection, bracing and generic plasterboard. Knauf reports that, although its products are widely used internationally, BCAs have been reluctant to approve plans specifying Knauf plasterboard in the absence of an appraisal.

Knauf says that it originally applied for appraisals across the four product areas in October of 2012. It has very recently received appraisals for bracing and generic plasterboard but is still waiting on a conclusion in relation to the remaining two product areas. Knauf says it has incurred substantial costs as a result of the uncertainty incurred during this delay and notes BRANZ has previously assessed some of these products for the Australian market.

BRANZ notes that the product appraisal process can be lengthy, depending upon the complexity of the system being appraised, the degree to which data is already available, the number of Building Code sections requiring compliance and the types of testing required. In addition, the process relies on the applicant responding to requests for information, product for testing or documentation.

Knauf reports that product certification is not useful in this instance. This is because a certification relates to a particular product and use, while an appraisal can relate to a defined range of related products and a range of uses. The costs and inconvenience of having every single product and potential use related to product lines individually certified is prohibitive.

The above example highlights the difficulties sometimes faced by construction product manufacturers in attempting to enter the New Zealand market. Product certification and appraisals are paths to providing sufficient product assurance to enable a product to be used in plans, in a relatively quick, albeit costly, manner. However in some cases, the costs and delays associated with accessing these methods, together with demand from BCAs that a product has an appraisal or certification (discussed further below), is rendering entry to the New Zealand market extremely difficult and costly.

*Lack of clarity of how to achieve 'lower-level' product assurance and associated inconsistencies in consenting decisions*

As described in the box text on the previous page, the product assurance options at the bottom of the product assurance pyramid – testing and listing services – are intended to be sufficient for the majority of materials and should represent a lower-cost option for manufacturers to demonstrate compliance with the Building Code. It is largely at manufacturers' discretion as to how they demonstrate compliance at these levels. This was intended to support low-cost compliance since manufacturers can themselves determine the best way to comply given their own circumstances.

However, submitters have raised concerns that there is a lack of clarity about what information needs to be provided at these levels in order to demonstrate Code compliance. It appears that this

lack of clarity is having a number of unintended consequences and may, in fact, be making compliance harder.

Firstly, the lack of clarity around what exactly needs to be provided in order to demonstrate Code compliance may make the product assurance system more daunting and complex for manufacturers or importers looking to introduce new products into the market. The lack of clarity may therefore be having a harmful effect on competition, whereas the flexibility was intended to promote competition.

Secondly, it makes it more difficult for BCAs to determine whether products utilising the 'lower-level' product assurance options are compliant with the Building Code. This, in turn, raises two distinct concerns. In some instances it may mean that some products will be getting to market without adequate evidence of compliance. In other instances, it increases the likelihood that BCAs will demand 'higher-level' product assurance, such as appraisals or certification.

The inconsistency of decisions is itself problematic for materials suppliers to bring their products to market. Submitters have reported that consenting authorities require different levels of product assurance in order to approve a particular product or process for use within a design. This is most commonly cited as an issue in relation to lower level forms of assurance such as technical information or testing provided by manufacturers.

*Concerns about designers specifying products by brand*

Most elements of residential construction are determined at the design-stage, from the individual materials and construction methods to the overall design concept. A particular concern raised in submissions to the Issues Paper was that designers often specify brand-names in the design and that this may act as a barrier to innovation or competition from alternative brands since substitution is then difficult later in the process.

The design, right down to the individual materials that are specified, is assessed for Building Code compliance by the relevant BCA. The BCA assesses the plan for performance against certain criteria, such as structural soundness and fire safety. Specification by performance allows a design to be approved in a way that is not reliant on the use of particular brands. Later in the process, the builder is then free to choose among competing products, providing they possess the characteristics specified in the plans.

However, submitters have indicated that in most cases, designers do not specify by performance, and instead include particular brand names in plans. These brand names can be accompanied by an explicit "no substitution" statement, preventing the future use of an alternative product later in the process without a change to the plans. Even where the design does not specify "no substitution" it appears that some BCAs are unwilling to accept other brands, even where the relevant characteristics are the same.

Specification of a particular brand acts as a disincentive to later switch to an alternative product, even if that product proves to be cheaper or of better quality. At a minimum, a change from a specified brand to an alternative requires a note be added to the plan. This introduces costs as a result of the designer's fees for their involvement, and delays to the commencement of construction in the absence of a building consent. These costs are not substantial, and are certainly not

insurmountable. However, they have the potential to act as a disincentive to change products or methods and diminish any cost efficiencies that might be realised by doing so. In more serious circumstances, such as when the change relates to the structural integrity of the building, the consent must be re-submitted to the BCA, incurring a fee and further delay.

*The Role of Liability*

The behaviour described above by BCAs and designers has been described by many submitters as symptomatic of a wider risk aversion within the construction sector as a result of liability rules. Leaky homes issues have resulted in a wide range of industry players, from small builders through to professionals and local bodies, facing substantial costs as a result of substandard buildings. These liability risks have since caused all of these players to adopt a strongly risk-averse approach to construction generally. In some cases, this approach may have gone beyond what is economically rational, or may have negative effects on the industry overall.

**Joint and several liability**

The Law Commission is currently undertaking a review of the rule of "joint and several liability", under which multiple parties can be held liable for the same loss or damage. The rule has come under scrutiny following the leaky homes issues.

There were numerous causes of the weathertightness issues, including certification issues, design faults, construction deficiencies, and material specification or use deficiencies. Therefore there can be many parties that contributed to or caused a defect that led to a weathertightness failure. If a defendant is held liable for causing overall indivisible weathertightness damage, joint and several liability exposes them to meeting the full cost of damages awarded if other defendants are unable to meet their share of the damages, for example due to insolvency.

Many, typically small, construction firms have been exposed to multiple claims, meaning that a significant number of defendants have become insolvent. This raises the likelihood of the total cost falling on the solvent defendants that do remain – in particular local authorities responsible for building inspection and certification.

The alternative rule (as being considered by the Law Commission) is proportionate liability, under which each defendant is liable only for the proportion of the loss or damage that a court determines is just, taking into account the relative level of fault or responsibility. It could therefore overcome risk aversion in the sector that results from being liable for the total costs of a failure. However, it shifts the risk of non-recovery – e.g. if defendants become insolvent – from the solvent defendants to (in this case) home-owners. In any case some risk aversion may not necessarily be stimulated by fear of joint and several liability, but rather by industry participants' fear of any liability. The perceived risk of substantial liability evoked by a major event such as leaky homes may be enough to cause risk aversion, even under a proportionate liability rule.

*Concerns about development of Acceptable Solutions*

Some submitters have raised concerns about the way Acceptable Solutions under the Building Code are developed. The use of an Acceptable Solution for consenting purposes relies on the Solution being included in an MBIE Compliance Document. These require that a sufficient degree of technical

information relating to testing and compliance is available. Sometimes, this involves the citation of a New Zealand Standard. Alternatively, other means of verification can be cited, such as standards developed by industry, or there may be no specific verification method present.

**Ecoglo Photoluminescent Products**

Ecoglo is a Christchurch-based company that produces a range of photoluminescent products for uses such as building exit and emergency signs and step edging or handrail markers. Until recently, however, the product was not widely sold in New Zealand, with domestic sales amounting to only ten per cent of total revenue. This is because photoluminescent products were not included in the Acceptable Solutions for Building Code clauses F6 (visibility in escape routes) or F8 (signs). The likely reason for this is that photoluminescent technology was not contemplated as an alternative means of providing illumination when the relevant Compliance Documents were drafted.

Fortunately for Ecoglo, the then Department of Building and Housing proposed a review of the Acceptable Solution for signage that Ecoglo was able to contribute to. The experience gained overseas meant that photoluminescent signs were included as part of the Acceptable Solution for exit signs, which cites a Standard relating to verification of luminescence. This means that Ecoglo products must be consented when used for this purpose and in a manner that is specified in the Acceptable Solution.

This has reduced the regulatory burden for Ecoglo in relation to part of its range. However, it must still provide engineering reports to enable consenting for its other products, like stair edging and guidance strips.

*Verification Methods and Acceptable Solutions*

The reliance on Verification Methods to provide the technical detail behind many Acceptable Solutions could limit their applicability across the market. Where there is an emergent technology there is unlikely to be a document sufficient for use as a Verification Method, and the need to commission or develop one can represent a barrier to new technologies entering the market. Even where a particular material or process only requires modification to an existing document to be viable, there can be delays associated with the timing between updates.

For example, the average Standard takes 13 months to develop. This figure includes Standards that are merely adopted from ISO/IEC Standards, which are generally much quicker.

**Steel Framed Housing**

The vast majority of New Zealand houses are built using timber framing. However, steel framing made from cold-form galvanised steel represents an emergent alternative. Steel framing is currently estimated to hold a 6 per cent market share within the framing industry. The successful entry of steel framing as an alternative product for New Zealand housing is in large part due to the combined efforts of a range of industry participants through the National Association of Steel Framed Houses (NASH).

In an effort to overcome problems with establishing code compliance to the satisfaction of local BCAs, NASH developed a design standard for steel framing. The standard was published in late 2010,

and cited in verification method B1/VM1 from August 2011. As a result, steel framing is now an Acceptable Solution under the Building Code and BCAs are required to accept it.

The development of the NASH industry standard represented a significant outlay of effort. Exact costs are hard to establish, as much of the work was undertaken by member companies or academics on an "in kind" basis.

The case study above about steel framed housing highlights the difficulties associated with achieving widespread acceptance of a new product. Although NASH was ultimately successful in its efforts to develop a standard for steel framing, significant costs and inconvenience were incurred by industry members. A number of factors meant that those costs could viably be met:

- Strong co-ordination of a range of industry participants
- Well established existing industry participants already operating in other markets and able to provide the required capital
- An existing base of knowledge and expertise available to assist the development of a standard
- Unity among the majority of potential beneficiaries of the industry standard, enabling costs to be shared and free-riding avoided.

It seems likely that in many cases, these factors will not be present. In particular, where a new solution is developed by a small company, perhaps in an industry where competitors are unwilling to co-operate on an industry-wide basis, it seems unlikely that this model could be followed. In addition, NASH relied on strong local knowledge and a wide network of academics and industry experts. A potential new import entrant would likely lack equivalent knowledge and connections and so find following the same path difficult.

Conformance to the requirements of a relevant Acceptable Solution is the most straightforward and certain way to demonstrate Building Code compliance. The suppliers of these products and processes, and the industry as a whole, have an interest in ensuring that they are kept up to date to reflect current practices. Where there is a significant delay in the updating of an existing Acceptable Solution or the development of a new one, costs are incurred. This can be due to the need to establish Code Compliance in other, more costly ways, or because a more traditional Acceptable Solution is substituted for a more innovative and superior product or process.

MBIE is currently undertaking a review of the wider standards and conformance infrastructure (ie wider than the construction sector). This will address issues around the Standards Council's funding model and the timeliness of Standards development and update. Standards represent one of a range of possible Verification Methods, and have been used extensively in the past in relation to Acceptable Solutions.

*Industry Capture*

Submitters have also indicated that there is a possibility of "capture" of both the Standards making process and the BRANZ product appraisal process. This may occur where dominant industry players are able to utilise the presence of their employees or associated persons, or ability to influence non-associated individuals, to obtain some form of unfair advantage. The sorts of advantages that could result from capture of a regulatory or quasi-regulatory process relate either to making it easier for

the dominant player's products to be used in the market, or making it more difficult for competitors or potential competitors to have their products accepted.

There is currently a range of measures in place to protect against the possibility of industry capture in relation to Acceptable Solutions. These include:

- Requirements that the Standards development process provides balanced representation of interest categories, such as producers, buyers and consumers, and independent experts.
- WTO requirements that regulatory measures do not impose unnecessary obstacles to international trade.
- The need for decision-making relating to Acceptable Solutions to undergo ordinary departmental cost-benefit analysis.

Despite this, there are still anecdotal claims of industry capture. MBIE is not aware of any specific alleged examples of industry capture. However, even the perception of industry capture could prove harmful as it risks reducing the credibility of the Standards process and disincentivising engagement.

Some submitters have alleged a degree of influence by major industry players over BRANZ, including in relation to BRANZ's role of conducting product appraisals and other testing on a commercial basis. As is the case in relation to Standards, the Ministry is not aware of any specific instances of capture, but notes that perception is important.

Moreover, BRANZ – as an industry organisation – may have a general tendency to favour the status quo (e.g. existing materials and brands) simply because that is what the industry knows best. For example, the training and experience that individuals within the industry have received is likely to relate to existing methods of construction and materials. Consequently, BRANZ may lack the expertise to engage with new construction technologies (as was, for example, the case in relation to steel framed housing). Given BRANZ's central role in product assurance, any potential bias of this type could result in negative outcomes for competition from new products or materials.

## Inefficiencies in the overall consenting process

The 2010 Building Act Review estimated the direct costs of operating the consenting system to be at least $250 million per annum. The direct cost for each consent varies widely based on the nature of the design. However, total consenting fees for a typical house can range from around $3,500 to around $4,500.

In addition, developers, builders and other users of the building regulatory system experience significant indirect costs associated with:

- Delays and unpredictable timeframes in the processing of building consents, scheduling of inspections and issuing of Code Compliance Certificates
- Inconsistencies in the interpretation of regulatory requirements by those administering building consents.

The Building Act Review concluded that moving to a more nationally consistent regulatory system, with more centralisation of decision making rules and supporting functions (such as back office functions and training), more uniform consent application requirements and better management

and use of information would contribute to improvements in productivity and efficiency, and would significantly reduce the overall costs of administering building regulatory requirements. It has also concluded that there is significant potential to improve the overall administrative efficiency of the system through greater consolidation of the management and provision of local consent and enforcement functions. BRANZ estimates that the duration of the consenting process could be reduced by up to 20 days from the current maximum of 40 days.[6]

Submissions have reiterated many of the same issues identified in the Building Act Review including:

- Applicant experience is not consistent among BCAs.
- Delays in processing consents and conducting inspections, which result in builders incurring carrying costs and which act as a drag on productivity.
- Difficulties in handling hard-copy information.
- Fragmented approach by BCAs in using information technology. Applicants want electronic lodgement.

**National Online Consenting**

MBIE is currently working on possibilities for the development of a national online consenting system. Two of the primary benefits of such a system are direct efficiency gains and improvements in the consistency of behaviour between BCAs. Additional gains are likely due to reductions in the delay associated with a consent application and more consistent, and therefore predictable, consenting decision-making.

Inconsistent approaches and processes by BCAs impose significant costs on the building industry as a whole. Currently, the impact of this inconsistency and variation falls particularly on those firms that design and build across local authority boundaries. These are typically large building companies and group or volume home builders, who are estimated to account for around a third of the residential building market (35 per cent in 2009). It also falls on those wanting to use innovative and novel designs and construction techniques, who must repeatedly satisfy different BCAs of the Building Code compliance of these systems and products.

Outright inefficiencies in the consenting and inspection process also introduce delays and uncertainty to the construction process. BRANZ research indicates that delays to construction cost between $1,000 and $1,600 per week, depending on overheads and scale. In many cases construction must be halted until certain inspections are carried out. Uncertainty around when inspections will be scheduled makes it more difficult to plan the resumption of work.

**Negotiated Service Standards**

To address some of the above issues, a small number of building companies have negotiated service standards with BCAs that aim to achieve greater consistency and certainty of services. These agreements typically involve a commitment to certain turnaround times for building consents approvals, provided designs are reasonably ‘standard’ and all the necessary documentation is in place, and limited inspections recognising the track record and good practices of the building

[6] BRANZ submission page 3.

company. There is also agreement around the timeframes for inspections, and tight scheduling of these. Such agreements offer significant benefits for building companies, by allowing tighter scheduling of the building process and reducing the elapsed time involved in the building process. However, such practices are not in widespread use.

## Potential Options

**ISSUE: COMPLEXITY AND INACCESSIBILITY OF ALTERNATIVE SOLUTIONS**

**OPTION: SECTOR EDUCATION ABOUT PRODUCT ASSURANCE**

Many submitters have raised the complexity of the product assurance system as a potential barrier to new construction systems making their way to the market. The variety of options for demonstrating Code Compliance, as well as potentially variable reactions to these methods by BCAs, likely means that putting together sufficient information for product assurance is a daunting task for manufacturers, designers and builders. This may be exacerbated by a relatively limited range of support services, such as consulting and technical assessment, being available.

MBIE currently undertakes efforts to educate industry about the product assurance system, and a wide range of information is available on the former Department of Building and Housing website. However, many submissions have remarked that a more active approach is required, for example through attending industry conferences or breakfasts or a programme to grow the market for support services. This option would require concerted effort, and likely outlay of funds, by government to improve sector knowledge of the processes for, and benefits of, product assurance.

**OPTION: GREATER SPECIFICITY OF WHAT IS NEEDED FOR LOWER LEVEL PRODUCT ASSURANCE**

The lack of clarity of how to demonstrate Code compliance at the lower-level of the product assurance pyramid is having a number of unintended consequences and may, in fact, be making compliance harder.

Increasing the specificity of what is required to demonstrate Code compliance may reduce complexity for manufacturers and importers. It will also make it easier for BCAs to determine whether products are compliant, thereby increasing consistency of decision-making and making it less likely that BCAs will regularly demand higher levels of assurance such as appraisals and certification.

An option is for MBIE to produce a template form which sets out the data that must be provided in relation to a product's performance. The form could be mandatory and all forms could be held in a central repository accessible by industry participants. This option would be most effective in combination with the options above to improve sector education around how to navigate the product assurance options.

BCAs would still need to determine whether or not a manufacturer had sufficiently demonstrated Code compliance. For more innovative or high-risk products, it is still likely (and indeed beneficial) that BCAs would require an appraisal or certification. However, this option should increase consistency of decision making in relation to low-risk products.

**OPTION: ENCOURAGE GREATER TRANSPARENCY FROM PRODUCT CERTIFICATION PROVIDERS**

The product certification scheme presents a strong option for improving the consistency with which BCAs deal with building products and processes. The fact that it is centrally controlled, and requires acceptance by BCAs, makes it a single route to a product being an alternative solution. However, uptake of product certification by manufacturers has not been as high as had been hoped for.

Some submitters have indicated that a lack of transparency and accessibility in relation to product certification providers may be impeding uptake of their services. Advertising of their services is limited, which is perhaps unsurprising given that all three current providers are based offshore. The imminent emergence of at least one domestic provider of product certification services could help to reinvigorate the market. However, there may also be a coordinating role for the MBIE in making sure that all participants in the residential construction sector are aware of the process and implications of product certification.

**OPTION: REFORM OF BRANZ GOVERNANCE**

BRANZ, through the Building Research Levy, currently represents the major source of investment in construction related research. As such, BRANZ decision-making on research funding has the potential to have a significant impact on the future direction of the industry, including through opening possibilities for new and innovative products and systems to enter the market.

The existing product assurance structure also turns in large part on product appraisals, currently provided almost exclusively by BRANZ. Appraisals usually form the basis of an application for certification, and in the absence of certification, an appraisal is still likely to be the most certain way of demonstrating Code compliance. BRANZ can therefore be seen as playing a pivotal role in the process for materials to obtain sufficient assurance to be approved as part of a consent.

A greater role for government in relation to the governance of BRANZ would be in line with comparable industry bodies in other sectors. This option would require amendment of the Building Research Levy Act 1969, or changes to BRANZ's rules of association.

At present, BRANZ's Board is elected by the Building Research Advisory Council. Housing New Zealand and the Ministry of Business, Innovation, and Employment are represented in that group, alongside a range of industry stakeholders. However, a stronger role for government (for example, one or more board members being Ministerial appointees) could be provided through the Act. This would be in line with comparable industry groups that have access to money collected through compulsory levies or similar mechanisms.

Greater government involvement in relation to the governance of BRANZ could allay fears of "capture" by industry, discussed above, including in relation to BRANZ's product appraisal role. This could include countering any innate industry bias towards "tried and true" construction methods.

BRANZ undertakes its product appraisal role on a commercial basis[7] and there is nothing to prevent other parties from providing a competing appraisal service. Notwithstanding this, it is likely – and indeed desirable – that BRANZ leverage the expertise it develops through its levy-funded research

[7] Appraisals are undertaken by BRANZ Ltd, a wholly owned subsidiary of BRANZ Inc.

and development. Consequently, BRANZ is likely to have a comparative advantage in the appraisal market, thereby increasing the importance of insuring that capture is prevented and that any perception of capture is minimised.

**ISSUE: SPECIFICATION BY BRAND**

As discussed above specification of products to be used in a design by brand, rather than performance can act as a barrier to later substitution of alternative products, which might be cheaper or technically superior. Submitters report that this barrier is not insurmountable, but the cost involved in changing plans acts as a subtle disincentive for builders or other participants in the supply chain to seek out cheaper or more effective materials.

**OPTION: PREVENT SPECIFICATION OF "NO SUBSTITUTES"**

Some submitters report that the root of the specification issue described above is that designers will often specify that a particular product is to be used, and will write "no substitutions" in an effort to preclude the use of alternative products later in the construction process. Therefore, preventing the specification of "no substitutes", and in effect implying that any specification by brand also allows for any equivalent product, should allow for later substitutions without need for recourse to plan changes. However, reports of BCA behaviour in relation to specification vary, and it is possible that even in the absence of an explicit "no substitutes" some Councils would prevent the substitution of equivalent products.

**OPTION: REQUIRE SPECIFICATION BY PERFORMANCE**

An option could be to require designers to specify products on the basis of their performance alone. Alternatively, BCAs could be required to accept products that achieve the same performance as any product that is specified in the plan. This would allow builders to substitute products as they please on the basis of price or other characteristics subject to those products meeting or exceeding the performance requirement. However, specifying products in this way introduces its own difficulties. It adds very little in the way of concrete performance indication to the (already performance-based) requirements of the Building Code and could serve to shift difficulties further down the process to the inspection stage, as it must still be determined that the product eventually used actually meets the performance requirement specified in the plan.

**ISSUE: RISK AVERSE BEHAVIOUR**

As per the boxed text earlier in this Chapter, the Law Commission is separately reviewing the current rule of joint and several liability.

**OPTION: RECOGNISE MANUFACTURER WARRANTIES IN LIABILITY AND CONSENTING**

In many industries, the onus to prove a product is up to scratch falls on the manufacturer, for example through holding them accountable for a range of express or implied warranties.[8] The major benefit of such a system is that it imposes the costs of both harm minimisation and liability risk on

[8] See, for example, the Consumer Guarantees Act 1993 or the implied warranties included in the Building Amendment Bill (No 4).

the party most able to minimise and account for them. In most industries, manufacturers are presumed to know the most about their products, and therefore their suitability for particular uses. Imposing this liability explicitly on manufacturers removes the risk of liability from other participants in the supply chain, provided they comply with the manufacturer's instructions for use.

In the case of the building industry, this would not represent a major change in law, as manufacturers are currently liable for the performance of their products. However, further emphasising the manufacturer's responsibility to demonstrate the performance of their product would represent a significant change of practice. It would also be necessary to ensure that warranties covered all of the costs associated with remedying a failure, such as installation costs, rather than simply replacement of materials as can be the case at present. In addition, some legal change would be required to protect BCAs and builders from liability where a warranty covers a product, so that the product can be included in designs without concern for later liability.

The risk to manufacturers associated with these warranties would be quantifiable, and therefore able to be mitigated, although in some instances there may be difficulty determining where liability lies among the many participants in the construction process.

This option is, in some respects, akin to the risk-based approach to consenting that is already present to some extent through multi-proof consenting and in the Building Act Review 2010, and which is discussed further below in relation to the consenting process for larger builders. In this instance, instead of BCAs having to satisfy themselves in every instance that a product is appropriate for a particular use, they can rely on the credibility of the product manufacturer and the warranty they provide.

**ISSUE: SCOPE OF ACCEPTABLE SOLUTIONS**

Once an Acceptable Solution has been developed for a given construction material or process, building in accordance with an Acceptable Solution represents the easiest path to achieving building consent. As a result, it is possible that they are serving as a disincentive to develop and use competitive new products. If this is the case, then harms are likely accruing to consumers both directly due to a lack of choice, and indirectly through the competitive pressure that might otherwise be exerted by these alternatives.

**OPTION: GREATER GOVERNMENT FUNDING OF ACCEPTABLE SOLUTION DEVELOPMENT**

At present, acceptable solutions are maintained and developed through funding drawn from the building levy. Targeting expenditure (although likely from a different source) explicitly towards enabling the use of innovative construction systems could help to overcome the difficulties that manufacturers of these products have bringing them to market, further incentivising their development. In many cases, it is likely that only part government funding will be necessary, as there is an incentive for existing or prospective manufacturers of these products to also contribute. In some cases, a degree of expertise or information that could contribute to the technical aspects of an acceptable solution may already be available through industry.

However, funding of this sort represents a substantial investment, especially on top of expenditure on maintaining the currency of existing acceptable solutions. There may also be difficulties

identifying appropriate construction systems that warrant funding of this type, and identifying individuals with sufficient knowledge of the product or process to participate in the process itself.

There is a broader question around the role of acceptable solutions relative to product assurance. It is not clear, even with additional funding, that acceptable solution development will ever be sufficiently agile to act as a feasible path to market for construction sector innovations. Rather, alternative solutions may be better placed to support the introduction of innovative products. To this extent, the focus should be on overcoming the issues around the uptake and accessibility of alternative solutions, as discussed earlier in this Chapter.

**ISSUE: INEFFICIENT CONSENTING PROCESSES**

As per the box text earlier in this Chapter, MBIE is currently working on possibilities for the development of a national online consenting system.

**OPTION: GREATER USE OF RISK-BASED CONSENTING**

During the course of this study, some builders have indicated they would be willing to pay higher consent fees for a more responsive and timely service. They consider that there is scope to offset a level of additional costs through the resulting decrease in delays and downtime in the construction process. Allowing (and even encouraging) building consent authorities to take a differentiated approach to charging and provision of building consent and inspection services would provide greater choice.

At present, National Multi-use Approvals go some way towards achieving this goal. They allow MBIE to assess a particular design at a national level as being Code compliant. This does not eliminate the need for the relevant BCA to issue a building consent, but makes the process faster and less costly.

**Building Amendment Act 2012**

In August 2010, Cabinet agreed to regulatory reforms to support improvements to the productivity and efficiency of the building and construction sector. This included changes to provide for a risk-based approach to building consent and inspection requirements so that the requirements are proportionate to the risks and consequences of any potentially resulting building defects and also the skills and capabilities of those doing the work.

Key elements of the risk-based consenting system provided for under the Building Amendment Act 2012:

- A simplified and more prescribed consenting process for certain simple residential building work at the lower-end of the risk spectrum (e.g. simple single-storey buildings with low structural and weathertightness risks), putting more reliance on the skills and experience of licensed building practitioners but retaining some limited involvement of building consent authorities in compliance checking
- Retaining existing consenting and inspection requirements for moderate to high-risk residential building work, until such time that it is clear that regulatory oversight could be further reduced without compromising quality.
- Commercial provision of consenting services.

The introduction of risk-based consenting for residential housing will start to differentiate the level of building controls that apply depending on whether or not a licensed building practitioner is involved. Licensed building practitioners are individuals rather than corporates. The majority of the Amendment Act, creating the risk-based consenting system, will be brought into force by Order in Council after regulations containing the details of the system are made.

The approach taken in the Building Amendment Act 2012 recognises that there are similarities between the commercial building sector and the larger, more-sophisticated players in the residential sector.[9] Therefore, where builders can demonstrate sound systems for design and construction, including third-party review, then they could be granted automatic consents and face limited (and prescribed) inspection regimes. This would have the benefit of reducing the direct costs of consenting and inspection, as well as the attendant holding costs and uncertainty of timing.

The implementation of this system depends only on the development and introduction of appropriate regulations. However, its uptake will likely depend on there being a sufficient number of larger builders with adequate internal controls to warrant a reduction in BCA oversight.

**Questions for submitters**

*Alternative Solutions*

1. Which of the four options (or combination of options) described above will be most effective at improving access to Alternative Solutions for demonstrating Code compliance? Why?
2. What unintended consequences for the construction sector or the economy as a whole might each of the four options entail?

*Specification by Brand*

3. Which of the two options described above will best promote competition in building products? Why?
4. Which of the two options described above will carry the least compliance costs for industry participants? Why?
5. What unintended consequences for the construction sector or the economy as a whole might result from each of the two options?

*Risk Aversion*

6. Will the recognition of manufacturer warranties in liability and consenting (as described above) mitigate against BCAs being overly conservative? Why?
7. What unintended consequences might result for the construction sector or the economy as a whole from this option?

[9] A key difference is that, unlike residential buildings, the Courts have not found that BCAs owe a duty of care to commercial building owners, who are therefore highly incentivised to manage building quality risks.

*Acceptable Solutions*

8. Could greater government funding in relation to Acceptable Solutions promote competition from innovative systems? Please provide details.
9. Would this represent an efficient use of public money? Please provide reasons.
10. To what extent should Acceptable Solutions be used as a path to greater innovation, vis-à-vis Alternative Solutions?

*Inefficiencies in the Consenting Process*

11. To what extent will greater use of risk-based consenting enable efficiency gains to be made within the residential construction sector? Please provide reasoning.
12. What negative effects might arise as a result of any increased use of risk-based consenting?

# 4. Competition impact of strategic conduct in construction markets

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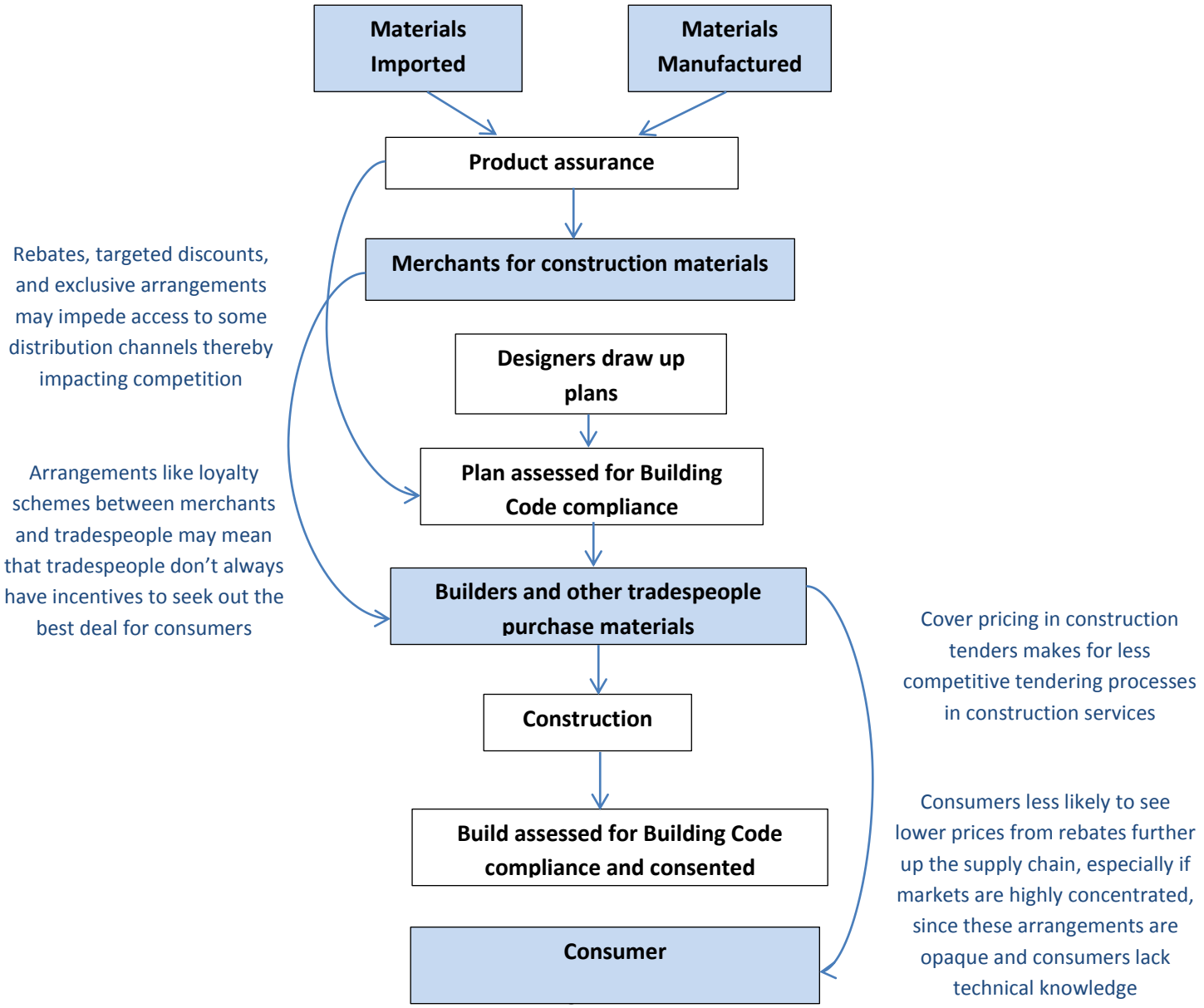
|---|
| **ISSUE: LACK OF TRANSPARENCY OF STRATEGIC PRACTICES**<br>Strategic practices such as the provision of rebates or targeted discounts have the potential to constrain access to distribution channels for building materials. The lack of transparency around their use also means that benefits that result from them are less likely to be passed to end consumers. |
| **Option**: Require disclosure of financial and other benefits |
| **Option**: Industry self-regulation to achieve disclosure |
| **Option**: Targeted advocacy of the Commerce Act |
| **ISSUE: STRATEGIC PRACTICES INTRODUCING INEFFICIENCY**<br>Practices within the market, such as cover pricing can have negative impacts on competition. Some strategic practices are also inefficient, and result in higher prices than optimal competition would. |
| **Option**: Government procurement as best practice |
| **Option:** Government procurement to influence market behaviour |

**Illustration of barriers discussed in this Chapter**



As described in the Introduction, a number of submissions indicated that there was a good deal of competition within much of the sector and that firms commonly face pressure from rivals that requires pricing competitively, enhancing product quality and range, and improving services.

However, some submissions suggested that strategic practices prevalent in the construction sector may be hindering both productivity and competition in construction markets. This Chapter outlines the various strategic practices that appear to occur in building materials and construction services markets; and presents possible policy responses aimed at enhancing the operation of construction markets.

A challenge in assessing the various strategic practices observed in the construction industry is distinguishing conduct that is anti-competitive from that which is simply a form of competition. This is because the very same conduct, for example, targeted discounts or bundling, may be either depending upon the specific circumstances in which it occurs.

In distinguishing between anti-competitive and competitive conduct, two main theories are relied on: raising rivals' costs and predation.

If conduct renders a firm's competitors less competitive (or forecloses them from the market entirely), then this may be cause for concern if it is achieved by having raised those competitors' costs. For example, favourable terms provided to a merchant for agreeing to exclusively carry a manufacturer's product may be a form of price competition (with possibly additional efficiencies). Rivals are free to similarly compete to provide the product to the merchant on similar or more favourable terms (with or without an exclusivity provision). If, however, as a result of the exclusivity provision a rival manufacturer is foreclosed from such a large portion of the market that it is no longer able to achieve competitive scale, thereby increasing its production costs, the conduct may be anti-competitive. Even if the conduct has the potential to be anti-competitive, any efficiency reason for the conduct would have to be considered when assessing whether the conduct is harmful.

Predatory pricing, by contrast, primarily involves offering discounts to consumers at a loss to the firm, with the expectation that otherwise effective competitors will be disciplined, eliminated, or deterred from entering, allowing the firm to exercise market power by raising prices later on. The main way in which anti-competitive predatory prices are distinguished from competitive prices is on the basis of whether the firm is pricing below cost. Even in such a situation, however, it must be considered whether there was a reasonable business justification for the conduct. For example, the discount may have been a short-lived means to quickly sell product that is otherwise about to expire.

## Strategic conduct as raised in submissions

It is important to note that it is not entirely clear that the described behaviours occur, or if they do, to what extent. Despite the concerns raised by a number of submitters, no detailed evidence of the kinds of conduct at issue has been presented to us. This may be, in part, due to the commercial sensitivity regarding many aspects of these practices. Moreover, whether these practices are in actual fact harmful or helpful to competition and to consumers depends on the specific circumstances in each case. Submissions were mixed as to what the effect is.

*Conditional discounts*

A number of submitters raised concerns about the use of rebates – volume-based rebates or conditional discounts – between manufacturers and merchants and between merchants and tradespeople. For example, arrangements could involve the manufacturer paying a discount to merchants based on some measure of the quantity of the manufacturer's products that the merchant sells.

Some submitters claim that these discounts are structured to entrench a manufacturer's market share. An example provided was that a manufacturer possessing market share of, say 90 per cent, in a market where consumption was relatively stable and known, might provide a substantial discount conditional on the sale of a total volume equal to or greater than that represented by 90 per cent of predicted consumption.

Some submitters suggested that merchants then structure their discounts (or other non-cash benefits) to tradespeople to ensure they achieve the required sales which then in turn ensure that they receive the discount/rebate from the manufacturer.

*What could be the impact on competition and consumers?*

Volume-based rebates or bulk discounts are a standard business practice. They are a form of price competition that may result in lower prices to consumers. They are likely to be used where production is subject to economies of scale or if there are significant storage, transactional or delivery costs associated with servicing more small purchases as opposed to fewer large purchases. Therefore, financial incentives provided by manufacturers to merchants to generate larger orders are not necessarily anti-competitive and may promote efficient market outcomes. Providing rebates to merchants may also enable manufacturers to compete more effectively by incentivising merchants to sell more of their products.

However, in some circumstances volume-based rebates could stymie competition in the building materials sector. This may be the case if:

- rebates are provided by manufacturers that possess market power; and
- these rebates are structured to incentivise merchants not to sell rival manufacturers' products; and
- there is no close substitute to the distribution channel provided by the existing merchant chains that provides an effective alternative for rival manufacturers/importers to access a significant proportion of the market; and
- there are no offsetting efficiency reasons for the rebates, such as lower prices to consumers.

There is no definitive evidence for the existence of the types of rebate structures described to us. However, if they are in place in a way that is contingent on "tipping points" as described above, then they are likely to be limiting access to distribution channels for some manufacturers. It is unclear if there is a net harm to consumers, but the lack of transparency in relation to these arrangements means that consumers are less likely to see any benefits that might be accruing further up the supply chain.

There may also be some features of these incentive arrangements between merchants and builders that mean benefits are less likely to flow through to consumers. Submitters have reported incentive schemes based on the total volume of particular products sold. Incentives could include overseas travel, new vehicles or tickets to sporting or other events. These incentives will be made available based on the total volume of materials purchased by a builder over a given time period, rather than in relation to any single project.

*What could be the impact on competition and consumers?*

There are a number of factors that could mean that volume-based incentive schemes for builders do not result in benefits flowing through to consumers:

- The incentives are opaque in nature, and it is unlikely that individual customers are aware that builders are receiving them across the entirety of their materials purchasing.
- The non-cash nature of the incentives means that they are not easily quantifiable in relation to any particular consumer. This makes it more difficult for their value to be passed on.
- Due to bulk discounts and similar incentives operating on merchants, merchants may be structuring these schemes to favour products produced by larger incumbent suppliers. These products may not necessarily represent the best value for money for the end consumer.

Ordinarily, where a market possesses sufficient transparency and competition, benefits of this sort would be expected to be passed through to consumers in the form of discounts on labour charges or the total cost of a construction project. However, the opacity of the incentives and the reliance traditionally placed on builders by consumers who lack industry knowledge, may mean that this is not occurring.

Also, whereas materials costs are passed directly onto end consumers, the time taken in obtaining competitive quotes for a range of materials across several merchants will feed through into builders' labour charges. Therefore a builder may wish to avoid spending significant time carrying out such activity to avoid the possibility that their labour charges become uncompetitive. As a result, many small building contractors have a limited number of preferred merchants from whom they source as many materials as possible.

It is not clear from submissions provided to this enquiry that volume discounts offered by merchants to builders are harmful to competition. However, the lack of transparency around these discounts, and the fact that they usually consist of goods, rather than cash, makes it more likely that their benefit is not flowing through to consumers.

*Preferential vertical arrangements*

Submitters queried the impact of preferential vertical arrangements between product manufacturers and merchants. These arrangements may include an agreement with the merchant not to stock, promote or support the sale of a competing manufacturer's product. Such arrangements could be either formal in nature – i.e. legally binding contracts – or may be based on informal understandings.

*What could be the impact on competition and consumers?*

Preferential vertical arrangements can promote effective competition and may be beneficial from an overall economic efficiency perspective. This is because such arrangements can help ensure that merchants provide sufficient service quality and support to customers and therefore allow manufacturers to better compete with their rivals. These arrangements can also provide manufacturers or merchants with the certainty that other manufacturers or suppliers will not be able to 'free ride' on any investment in pro-competitive promotional and advertising activity.

However, preferential vertical arrangements could also work to establish barriers to rivals' access to distribution channels. If these agreements relate to a significant proportion of merchants, they may have the effect of hindering the ability of other manufacturers to access customers. For example, if a significant proportion of merchants are disincentivised from promoting alternative products, it may be difficult for new entrant manufacturers to increase awareness of their products and develop the volume of sales required to be commercially viable.

Hard evidence of these arrangements is, perhaps unsurprisingly, scant. However, if they are occurring, as alleged by some submitters, then it is possible that they are acting to constrain market access for some smaller manufacturers. The impact on consumers is unknown, however there is no clear reason that they should not be made more widely known and receive greater scrutiny, so that market participants can judge them for themselves.

In addition, although merchants will typically source any specific material sought by builders if requested, if a product is not held in stock this can create problems if a builder seeks additional product, particularly at short notice. The potential for delays in obtaining products may reduce demand for such products in these stores.

*Targeted discounting*

Some submitters suggested that there are instances where manufacturers have hindered the attempted entry or expansion of rivals by undercutting rivals' products whenever they attempt to sell to new customers. A manufacturer may do this by offering targeted discounts only to specific customers seeking to purchase rivals' products. Submitters have reported discounts of this sort in the vicinity of 15 per cent of the originally listed price. The alleged aim of this conduct is to prevent new entrants from winning new customers and gaining greater market share that might enable them to realise scale efficiencies. Some submitters further suggest that similar targeted discounting may also be undertaken by merchants, as a means of realising the conditional discounts discussed above.

*What could be the impact on competition and consumers?*

Reducing or discounting prices in response to competition is typically the most beneficial impact of the competitive process. Such pricing responses can produce substantial benefits for consumers.

However, in rare circumstances, including if undertaken by firms with a degree of market power,[10] the act of reducing prices in response to rivals can have an anti-competitive effect. This may be the case if price reductions are of sufficient size and duration so as to have the effect of eliminating more or equally efficient competitors or 'disciplining' rivals so that they compete less vigorously in the future.

In addition, if such targeted discounting is not publicised by either the merchant or the manufacturer, the lack of transparency surrounding this form of price discrimination may mean that other customers do not benefit from this conduct. The majority of customers will be unaware of the more favourable prices that could be obtained in this manner, and so will continue to pay the full listed price. In large part, therefore, the price-reducing effects of competition are defeated.

*Promotional and educational activity*

A number of materials manufacturers engage in substantial marketing activity to promote their products. This marketing activity can include sponsorship of industry events and trade organisations, advertising and educational activity. Educational activity can involve providing information for tradespeople who use and install these products. This 'up-skilling' within the sector can assist in ensuring better building outcomes for property owners and can reduce the risk of occurrence of liability issues for building professionals.

*What could be the impact on competition and consumers?*

This promotional activity is commonplace in a wide range of sectors and is usually an effective method for firms to compete. Such activity is likely to be pro-competitive and is mainly beneficial for the sector. It would not normally be considered anti-competitive. Despite this, such activity could make it more difficult for rivals to increase awareness of their products and thus may make it more difficult for rivals to effectively enter an industry.

*Strategic tendering practices*

The use of tenders is common practice in the construction industry. This is partly as a result of the organisation of the construction sector, with a large number of sub-contractors who undertake work on behalf of a main contractor (discussed further in Chapter 6). The Productivity Commission noted that this traditional tender approach is often based on the assumption that market forces will generate the best value project at the lowest fixed cost. We note, however, that the Productivity Commission's comments referred to the wider construction industry, and tendering is likely to be less common in residential construction.

[10] A firm may possess market power for benign and legitimate reasons. For instance, economies of scale may give a firm cost advantages that limit the ability of other firms to compete effectively. Additionally, a firm may obtain market power by out-competing its rivals as a result of providing superior products and service quality. Feedback has suggested that there are several firms within different building materials markets that likely have market power, particularly in markets that are highly concentrated and where there are barriers to entry or expansion. Regardless of the cause, the existence of market power is not necessarily an indicator of anti-competitive behaviour nor does it automatically result in economically inefficient market outcomes. Rather it is the *use* of this market power to hinder efficient competition that would be of concern.

*What could be the impact on competition and consumers?*

Tendering, if run well and in the right circumstances, is an important and useful tool to achieve an efficient price for work. However, it can incur significant transaction costs. BRANZ noted in response to the consultation that current tendering processes are inefficient as many parties prepare tenders, but only one wins. BRANZ suggests that cooperative approaches like partnerships can reduce this inefficiency.

Moreover, tenders are usually evaluated on price alone, leading to an incentive for sub-contractors to bid at an unrealistically low price in order to win the tender. A possible negative outcome of unrealistically low tender pricing is that, during the construction process, the subcontractor could seek variations to the original contract and/or substitute for cheaper materials and take short-cuts.

In 2010, the Commerce Commission undertook research to gather information about the construction sector's current levels of awareness and understanding of competition law. The research found that there is an indication that "cover pricing" is being practised by some companies in the sector and/or that is has been practised in the past.

Cover pricing can occur in any bidding or tendering situation. Cover pricing occurs where a party wishes to be been seen as tendering for a particular project but either does not wish to wish to win the tender and/or does not have the time or resources to prepare a tender for that project.

Cover pricing in the construction industry works as follows: the first builder, who wishes to be seen as tendering for a project but does not wish to win it, asks the second builder, who is known or believed to be tendering for that project, for a "cover" price. The second builder then invents a "cover" price, which will always be higher than the second builder's own price. This cover price will be submitted by the first builder as their tender price. The purchaser will be unaware of the cover pricing arrangement and will assume that all bids received are independent and genuine. There are a range of motivations to cover price and one of these may be to make another tenderer's bid look more favourable. The 'favour' may also be returned on a future tender and more than two bidders may be involved.

*What could be the impact on competition and consumers?*

Cover pricing is misleading and may breach the Commerce Act as it impacts on the competitiveness of tenders in the construction sector. Cover pricing conduct in the construction industry in Australia was found to be unlawful in 2011.[11] By making their intentions known to each other, competitors are reducing or distorting the independence and competitiveness of the tender, and this may directly or indirectly affect the price paid and/or identity of the winning bidder. The extent of any impact is likely to depend on factors such as how many bids were involved in the tender and how many were genuine.

[11] Between 2004 and 2007, three Queensland construction companies (TF Woollam & Son, JM Kelly and Carmichael Builders) engaged in cover pricing when bidding on four government projects. The companies also misled their clients by signing statements that they had not colluded with their competitors during the bidding process. In 2011, the Federal Court of Australia found that the three companies had engaged in price fixing and misleading or deceptive conduct. The three companies were penalised a total of $1.3 million and two key individuals received penalties totalling $80,000.

## Potential options

There are difficulties in assessing the actual competitive effect of the various strategic behaviours discussed above on the residential construction sector. Even if it could be assumed that the above conduct is occurring to a substantial degree, it is not possible to say with certainty what its effect on the market is. There are four possible conclusions in relation to conduct of this sort:

1. The conduct is anticompetitive and illegal under the Commerce Act. If this is the case then it is exclusively the purview of the Commerce Commission to investigate and prosecute if warranted.
2. The conduct is pro-competitive and represents a manifestation of an efficient and competitive market. In this case, policies that aim to eliminate the behaviour risk inadvertently reducing competition and efficiency.
3. The conduct is overall harmful to competition and/or productivity, but either does not reach the threshold of illegality under the Commerce Act or is not dealt with under the Commerce Act. There is a role for policy intervention here.
4. The conduct has no significant impact on competition, but has other negative impacts on the efficient allocation of resources within the market. There is a role for policy intervention here.

Given the difficulties in establishing the exact nature of possible competition issues in the sector, a cautious approach should be taken in relation to policy interventions. However, there are a number of actions that are likely to reduce the likelihood of strategic practices harming consumers while not unduly impeding competition or efficiency:

- Greater transparency of strategic practices. For example, well informed trade customers and others are more likely to shop around for deals or demand the pass-through of rebates to the end benefit of consumers.
- Improved knowledge of the Commerce Act. This is likely to ensure that anticompetitive practices are not inadvertently undertaken and that illegal practices, if they do occur, are more likely to be reported to the Commerce Commission and punished.
- Improved knowledge of best practice procurement and other business practices. This may help businesses to move to more efficient ways of doing things where the practices are simply undertaken because “that’s how things have always been done”.

If any party is aware of anticompetitive conduct, including potential cartel activity, concerns should be raised with the Commerce Commission, which has responsibility for enforcing the Commerce Act. Under certain conditions, persons notifying cartel activity may be eligible to apply for leniency from prosecution under the Commerce Commission Leniency Policy.[12]

**ISSUE: LACK OF TRANSPARENCY OF STRATEGIC PRACTICES**

**OPTION: REQUIRE DISCLOSURE OF FINANCIAL OR OTHER BENEFITS**

For example, this option could involve requiring builders or designers to disclose, to their clients, any benefits (whether monetary or non-monetary) they obtain as a result of different choices. For example, builders could be required to disclose benefits they obtain from purchasing materials from

[12] See: http://www.comcom.govt.nz/cartel-leniency-policy/

a given merchant. This may help to overcome the misalignment of incentives between consumers and tradespeople (see box text below).

The greater transparency could lead to two key benefits: firstly, by shining a light on the benefits, it increases the likelihood that some of the value flows through to the end-consumers; secondly, it may lead consumers to query why a particular product was selected and, in turn, to seek out the best value product that meets their needs.

*Information Asymmetry and Agency Problems*

An underlying issue appears to be that home owners are not well informed about building materials markets and the degree to which alternative products at better prices and terms may be available. Many end consumers will simply rely on builders, architects, and draftsmen to select, source, and purchase materials. Moreover, the information asymmetries mean that, where end-consumers do input into the design or construction process, it may increase costs.

Such information asymmetries are not a problem if all players in the industry are incentivised to seek out the best deals for their clients. However, submissions to the Issues Paper pointed to the multiple different motivations of these players. For example, as described above, builders and other tradespeople might be motivated to buy all materials from one merchant due to loyalty schemes, the benefits of which may not be passed on to consumers. These are called principal-agent, or agency, problems, and are usually overcome by either aligning incentives or through reducing information asymmetries.

Note that a Bill is currently progressing through Parliament (the Building Amendment Bill (No 4)) which includes new information disclosure requirements for building contractors about their skills, qualifications, licensing status, and track record. This should overcome some information asymmetries to assist consumers in selecting a building contractor and should enable them to make more informed trade-offs between price and quality of various building contractors.

**OPTION: INDUSTRY SELF-REGULATION**

Many other industries, especially those providing services directly to customers, institute voluntary codes of practice through industry bodies. These codes of practice often become the norm within the industry, and determine behaviour across the vast majority of participants. A code of practice of this type within the building industry could guide behaviour in relation to many of the types of strategic conduct discussed above. For example, it could specify the way builders must inform consumers of any volume-based incentives. There could be a facilitative role for government in a code of practice of this type; helping to "bring parties to the table" and encouraging the application of standards that meet policy objectives.

**OPTION: INCREASED TARGETED ADVOCACY OF COMPETITION LAW**

The Commerce Commission already undertakes targeted education campaigns aimed at improving awareness of competition law in the construction sector and thereby promoting compliance and competition.

For example, in 2010, the Commission undertook qualitative research to gather information about the construction sector's current levels of awareness and understanding of competition law. The results indicated that the businesses surveyed had generally low levels of awareness of what constituted anti-competitive conduct under competition law. The Commission responded with a targeted education initiative, which included giving presentations, providing information packs, and publishing articles in industry publications. The Commission also recognised the importance of the Christchurch rebuild effort and the potential for anticompetitive conduct to emerge. As a result, the Commission is undertaking a targeted advocacy regime aimed at increased stakeholders' awareness of Commerce Act risks in the Christchurch rebuild, with the aim of helping those organisations to detect and deter any collusive activity.

There is a question of whether more could be done, or a different approach taken, to improving the knowledge and understanding of competition law in the construction industry. However before such a decision could be made, we would need to have a better understanding of the nature and extent of the strategic conduct raised by submitters. This would enable us to better understand whether the conduct raises competition issues. It can be difficult to distinguish conduct that is anti-competitive from that which is simply a form of competition. And it will always depend on the particular market, market structure and practices concerned.

We recommend that businesses seek guidance or legal advice if they have concerns about whether certain kinds of strategic conduct raise issues under the Commerce Act (especially where the conduct will raise rivals' costs or involves predation).

One option might be, for example, for the Commerce Commission to undertake targeted education in those markets where potential problems have arisen. And as is always the case, businesses can make a complaint to the Commerce Commission, who may then open an investigation to establish whether the alleged behaviour breaches the Commerce Act.

**ISSUE: STRATEGIC PRACTICES INTRODUCING INEFFICIENCY**

**OPTION: GOVERNMENT PROCUREMENT AS BEST PRACTICE**

Significant effort has been made to develop efficient and effective government tendering, contracting and reporting best practices. These methods allow for direct cost savings by reducing inefficiencies associated with repeated tendering and contracting, as well as by encouraging competitive and efficient construction practices. There is no reason that the use of these best practice procedures should be confined to government. Once developed, these procedures could be disseminated to the private sector as a means of realising further efficiencies across the market. The Productivity Commission recently recommended the establishment of best practice guidelines for the selection of subcontractors, referencing a code of best practice from the UK Construction Industry Board.

**Government's significant role as a participant in the construction sector**

Recent work in the area of government procurement has highlighted the significant opportunities to influence outcomes in the construction sector through government's direct role as a market participant. Estimates suggest that government procurement of construction services represents 27 per cent of the non-civil construction sector. While a large portion of this construction is likely to be

commercial in nature, any impact is likely to spill-over into the residential construction sector, particularly in markets that straddle both residential and commercial construction.

Therefore, aside from the direct benefit of enhancing government procurement to make direct savings of taxpayer money, there is significant potential for government practices in relation to the procurement of construction services to influence the market as a whole. This can occur through highlighting best practice procurement (described above) and influencing wider market conduct (described below).

**OPTION: GOVERNMENT PROCUREMENT TO INFLUENCE MARKET CONDUCT**

Given the sheer size of government procurement as a proportion of the market (see box above), government contracts could be utilised to influence wider conduct in the sector. For example, government contracts could promote greater transparency by ensuring that any benefits, like obtaining discounts for purchasing in larger quantities, are not 'hidden'. While, in the first instance, this will directly benefit the goods or services being procured, it is likely to have a longer-term spillover effect on private construction contracts.

**Questions for submitters**

*Reducing information asymmetries*

13. Which of the options to improve the transparency of strategic conduct, such as rebates, will be most effective? Why?
14. What specific arrangements are currently opaque to consumers or clients and so should be subject to the increased disclosure?
15. What are the costs of these options including any unintended consequences?
16. What else could be done to overcome information asymmetries and increase transparency in the residential construction sector?

*Promoting best practice*

17. How effective do you think government procurement could be in promoting best practice in construction contracts and tendering? How could the work around best practice procurement best be disseminated to the sector?

# 5. Import Barriers

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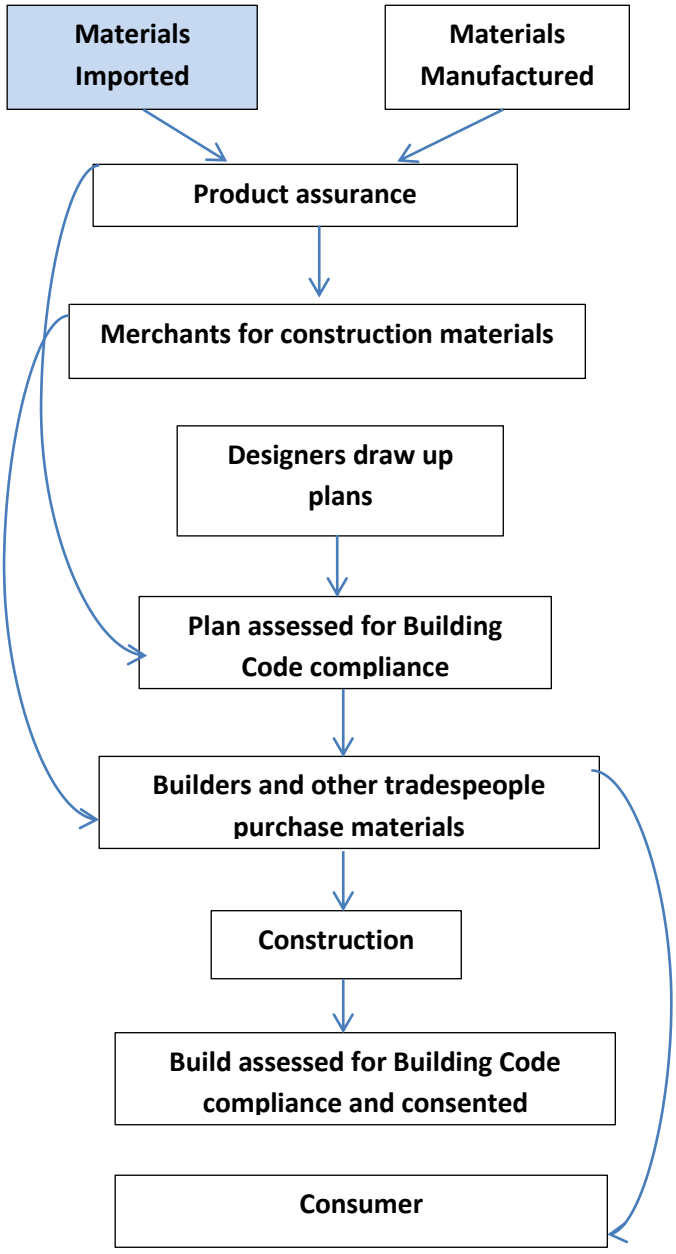
|---|
| **ISSUE: ANTI-DUMPING DUTIES**<br>Anti-dumping duties imposed on certain imported building products effectively serve to set a minimum price for imports, impeding import competition on price, thereby allowing domestic manufacturers to maintain higher domestic prices. |
| **Option**: Bounded public interest test |
| **Option**: Allow for consideration of government policy statement |
| **Option**: Limit continuation of anti-dumping duties |
| **ISSUE: TARIFFS**<br>Tariffs remain on some imported building materials. Although Free Trade Agreements mean that in reality most products are imported without any tariff, there is still some restriction on the ability of imported materials to compete. |
| **Option**: Tariff concessions on key construction materials |

Anti-dumping duties impede importers' ability to compete on price. May harm competition and in turn increase prices paid by consumers

**Illustration of barriers discussed in this Chapter**



According to BRANZ[13] approximately 19 per cent of the output of the residential construction industry is made up of imported content. Imports therefore play an important role in providing a competitive constraint in relation to many of New Zealand's construction materials.

This Chapter considers the extent to which direct import barriers – namely import tariffs and anti-dumping duties – reduce the ability of imports to provide this competitive constraint, and hence to reduce construction costs. Where relevant, potential options are described to mitigate or remedy any impact. Barriers to imports may also arise from the implementation of 'domestic' standards and regulations, such as requirements relating to product approvals. These barriers are addressed in Chapter 3 and may be at least as significant as the direct import barriers discussed in this Chapter. When discussing the role of imports in the construction sector, some submitters noted that imports are often of inferior quality or lack the after-sales technical support of domestically produced goods; any such issues, to the extent that they exist, should be dealt with directly, for example through the product approval regime. It is not the role of tariffs and anti-dumping duties to overcome any such issues.

Anti-dumping duties seek to remedy the injury caused by 'dumped' imports on New Zealand's domestic industries. Goods are dumped if the export price to New Zealand is less than the price they are sold for in the domestic market of the exporting country (the 'normal value'). In essence, dumping is price discrimination between an export and domestic market. Dumping can be remedied by the imposition of anti-dumping duties at the border to "level the playing field". Since 1990 anti-dumping duties have not been applicable to imports from Australia. Anti-dumping duties are currently applied to three construction materials: reinforced steel bar from Thailand; plasterboard from Thailand; and nails from China.

Import tariffs are applied to certain products imported from overseas that are also made in New Zealand. Most goods are now imported into New Zealand duty free and tariff rates are effectively declining as Free Trade Agreements (FTAs) phase in and additional FTAs are negotiated. Tariffs notionally still apply to most items used in housing construction, such as timber products, steel and aluminium joinery, particle board, plasterboard, insulation and roofing materials. Importantly, however, adjusted tariffs – i.e. the estimated duty as a percentage of the value of imports, taking into account the effect of FTAs – are small and diminishing.

While the rationale for applying tariffs or anti-dumping duties is different, both would be expected to have the following impacts (relative to a situation where no tariffs or no anti-dumping duties are applied):

- They may support greater activity, employment, and investment in domestic industries producing goods 'like' those subject to the duty or tariff, and, in the case of anti-dumping duties, may bolster support amongst domestic manufacturers for further tariff liberalisation.
- On the other hand, since they distort relative prices, tariffs and duties may increase the use of New Zealand's labour and capital resources in relatively inefficient sectors; freeing up these resources for use in more productive sectors would generate better returns across the economy.

[13] BRANZ New House Price Model Study Report 196

- Domestic industries that use the goods subject to tariffs or duties as inputs would be expected to face higher prices for inputs with a flow on impact on their activity and investment.
- End-users or consumers may face higher prices, effectively causing a reduction in their disposable income.

## Anti-dumping duties: current situation

Some interviewees questioned whether anti-dumping duties on construction materials in particular are acting as a barrier to lowering construction costs.

Anti-dumping duties are currently applied to three construction materials: reinforcing steel bar from Thailand; plasterboard from Thailand; and nails from China (see box below). Duties are determined under the Dumping and Countervailing Duties Act 1988. Under this Act, New Zealand producers of 'like' goods, when applying for an investigation, need to provide evidence that goods are dumped into New Zealand and that the dumping causes material injury to the New Zealand industry. If these conditions are met, based on an investigation, the Minister sets a duty which may not exceed the difference between the normal value and export price of the goods but can be at a lesser rate if this is sufficient to prevent material injury. Duties expire 5 years after they were imposed or last reviewed unless a review determines that the removal of the duty is likely to cause a continuation or recurrence of dumping and material injury.

**Current anti-dumping duties applicable to the construction industry**

- Duties on certain standard **plasterboard** imports from Thailand have been in place since 1989. Most recently, in 2011, a review was initiated to examine the likelihood of a continuation or recurrence of dumping and material injury to the domestic industry should the anti-dumping duties be removed. The investigation was initiated following an application by Winstone Wallboards Limited (Winstone), the only New Zealand producer of goods "like" those imported from Thailand. The investigation found that Thai plasterboard was being dumped, that this was likely to continue, and this would likely cause a recurrence of material injury to Winstone.
- Duties on imports of certain **wire nails** from China have been in place since 2011. The 2011 review was initiated following an application from Wireplus Limited (Wireplus). The investigation concluded that the domestic industry (considered to be Wireplus for the purpose of the Act given that Wireplus on its own constitutes a major proportion of the New Zealand production, though there are three New Zealand manufacturers of wire nails) had suffered material injury caused by dumped imports from China.
- Duties on **reinforcing steel bar and coil** imports from Thailand have been in place since 2004, after an investigation established that the goods were being dumped and were causing material injury to the New Zealand industry (Pacific Steel). In 2009, a review found that if the current anti-dumping duties were to be removed there was a likelihood of a recurrence of dumping and this was likely to cause material injury to Pacific Steel.

Currently, the test for material harm is a straightforward assessment of whether the domestic industry has suffered material injury or is threatened with material injury as a result of the dumping, relative to their position if there were no dumped imports. It does not include consideration of the wider benefits that may arise as a result of the dumped goods nor does it assess whether the current

prices charged by the domestic industry are reasonable. There is a question of whether the wider effects of imposing anti-dumping duties should form part of the test.

It is difficult to assess, on the basis of anti-dumping duties applied to date or the price or volume of imports, what the wider impact of removing anti-dumping duties would be. This is because the duties, and even the threat of duties, may be changing the underlying behaviours/incentives of firms. For example, firms currently *not* subject to anti-dumping duties may be avoiding competing vigorously due to the potential for duties to be applied. Foreign exporters subject to reference price duties (duties set at a non-dumped or non-injurious price whereby duty is payable only if the import price is below the reference price and is equal to the difference between the reference price and the import price) may be "pricing up" to legitimately avoid some or all of the duty.

Notwithstanding this, the box below considers the potential impact of the plasterboard anti-dumping duties – as an example – on construction costs.

**Impact of plasterboard anti-dumping duties**

In 2008, BRANZ estimated that plasterboard contributes around 5 per cent of the cost of materials in a new house[14]. The following factors may be relevant in determining whether the market for plasterboard in New Zealand is resulting in prices that are reasonable relative to those seen in other countries:

- The Productivity Commission[15] estimated that Australia's trade price for plasterboard (including labour costs for installation) is 71 per cent of the New Zealand price[16]
- Submissions to the 2011 investigation into plasterboard anti-dumping duties showed that 2010 export prices of plasterboard from Thailand to all of the top-10 export destinations other than New Zealand are between 23 and 38 per cent lower than the current export prices to New Zealand[17].

*Findings of likely outcomes in the absence of anti-dumping duties*

The levels of both current and previously applied duties are confidential, as are the anti-dumping investigations' findings of the magnitude of price decreases that would result if the duties were removed. Therefore, only the general findings can be presented here. In particular, the 2011 investigation into whether to continue the application of anti-dumping duties for plasterboard found that if the duties were to be removed:

- Companies currently subject to anti-dumping duties would pass on those cost savings, or a proportion thereof, to customers in order to gain market share.
- The New Zealand producer – Winstone – would likely need to respond to the lower-priced imports with price decreases in order to stay competitive.

[14] BRANZ New House Price Model Study Report 196
[15] Productivity Commission (2012) Housing Affordability Inquiry.
[16] As discussed in Chapter 3, submissions to the issues paper noted that there may be legitimate reasons for such differences.
[17] http://www.med.govt.nz/business/trade-tariffs/pdf-docs-library/current-investigations/review-initiation-report-plasterboard-from-thailand.pdf

MBIE considers that the price of plasterboard would reduce if anti-dumping duties were removed and that this could make a contribution to reducing residential construction costs in the first instance, in addition to promoting greater competition and efficiency in construction markets.

## Tariffs: current situation

New Zealand has pursued a policy of tariff reduction – both through unilateral reductions and through trade agreements – over the past two decades and has some of the lowest tariffs in the world. It is possible that further reductions in tariffs could help to intensify competition, increase productivity and drive economic growth, though the economy wide significance of removing remaining tariffs looks to be relatively modest[18].

The table below shows the tariff rates that apply to a selected set of construction materials. Notionally, tariff levels of 5 per cent apply to most items used in housing construction, such as steel and aluminium joinery, particle board, plasterboard, insulation and roofing materials, although items imported from many of our FTA partners are already duty free or currently phasing to duty free. A key point is that adjusted tariffs – calculated to take account of the preferential rates available under FTAs where they apply – are small and diminishing.

| Materials | Headline Tariff rate | Adjusted Tariff 2012 | Adjusted Tariff 2016 | Adjusted Tariff 2020 | Adjusted Tariff for FTAs in negotiation |
|---|---|---|---|---|---|
| Rebar (reinforcing steel bar) | Free or 5% | 3.0% | 2.5% | 2.3% | 1.2% |
| Bricks | 5% | 0.01% | 0.01% | 0.01% | 0.01% |
| Windows & doors, aluminium | 5% | 0.9% | 0.8% | 0.8% | 0.7% |
| Insulation, glass fibre | 5% | 2.4% | 1.7% | 1.7% | 0.3% |
| Plasterboard | 5% | 0.7% | 0.04% | 0.04% | 0.001% |
| Nails | 5% | 0.8% | 0.5% | 0.6% | 0.4% |

** Note: the 'headline tariff rate' is the formal tariff level, the 'adjusted' rates reflect the estimated duty as a percentage of the value of imports (calculated using preferential rates available under FTAs where they apply).

[18] http://nzier.org.nz/sites/nzier.org.nz/files/WP%202010-1%20Tariffs%20in%20New%20Zealand.pdf

## Potential options

**ISSUE: DUMPING REGIME CANNOT ACCOUNT FOR WIDER GOVERNMENT POLICY CONSIDERATIONS**

The common criticism of anti-dumping decisions is that they cannot, under the current legislation, take into account the wider impacts on the economy or consumers. However, the Government recognises that the anti-dumping regime is a vital part of the trading system in that it protects New Zealand industry from unfair trading practices by giving domestic producers a mechanism to seek relief from dumped imports under New Zealand law. As such, there is no intention to reform the fundamentals of this regime, such as by introducing a full public benefit test which would measure the impact of anti-dumping duties on New Zealand consumers. Rather the intention is look at more limited options that would facilitate government policy approaches in such areas as residential construction costs.

Potential options are discussed below. All options presented are assumed to be in addition to the current criteria (that goods are dumped into New Zealand and that the dumping causes or threatens to cause material injury to the New Zealand industry).

If evidence shows that there is a strong case for widening the test for imposing anti-dumping duties or similar, then this would need to be implemented through amendments to the Dumping and Countervailing Duties Act. Reviews under that Act would subsequently need to be undertaken to determine whether or not specific anti-dumping duties should apply.

**OPTION: BOUNDED PUBLIC INTEREST TEST**

Recognising the significant costs and judgement required in a full public interest test, a first option is to specify particular elements that should be taken into account in imposing anti-dumping duties, but with a presumption toward the imposition of duties.

For example, the criteria for imposing anti-dumping duties could include the ability for the Minister to take into account whether, by restricting the availability of goods at competitive prices, anti-dumping duties would be likely to cause injury to downstream industries that significantly outweighs the potential injury caused by the dumped goods to domestic producers.

Relative to the status quo, and if the additional criteria are tightly specified, this option would be expected to ensure that measures would not be imposed if they could be shown to impose disproportionate costs on downstream industries relative to the benefit to the domestic producers. Such criteria would increase the costs of investigations relative to the status quo but to a lesser degree than a full public interest test. As per the box text below, where countries include public interest considerations, they typically have bounded tests with a presumption in favour of duties if material injury is found.

**Global context of anti-dumping criteria**

The implementation of anti-dumping duties is governed under a WTO agreement. The agreement is partly principles-based and, as a result, there are some differences in anti-dumping systems

internationally, including in relation to whether or not a public interest test is included in the decision-making criteria.

As is the case in New Zealand, most countries (including Australia, the USA, and India) do not explicitly provide for public interest criteria.

In contrast, Canada and the European Union do include public interest tests however, in both cases, there is a presumption in favour of the imposition of duties if dumping and material harm are found:

- The European Union provides for a "community interest" test which applies to all anti-dumping investigations[19]. The provision specifies that "in such an examination [of community interest], the need to eliminate the trade distorting effects of injurious dumping and to restore effective competition shall be given special consideration".
- Canada provides for consideration of public interest if requested from an interested party and if a tribunal decides that there are reasonable grounds to believe that the imposition of duties may not be in the public interest. The vast majority of anti-dumping investigations have not included a public interest test.

**OPTION: PROVIDE FOR CONSIDERATION OF GOVERNMENT POLICY STATEMENT**

Under this option, the Dumping and Countervailing Duties Act 1988 could be amended to provide for Government Policy Statements to be produced which would set out, as relevant, government priorities to be taken into account in deciding whether or not to impose anti-dumping duties. For example, a statement could be produced which set out the Government's commitment to affordable housing and direct MBIE to take account of the impact of anti-dumping duties on construction costs in investigating whether or not to impose a given duty. In effect, it allows the Government of the day to widen the discretion of the Minister in deciding whether or not to impose a duty (at present, there is very limited discretion).

A benefit of this option (relative to the first option above) is that it recognises that this process is seeking to tackle a particular issue (residential construction costs) but that amending the anti-dumping regime more broadly would have wide-reaching, and potentially unforeseen, impacts on other sectors/products subject to anti-dumping duties. A cost of this option is increased uncertainty (as policy statements would be subject to changing government policy) relative to the status quo and option 1 presented above.

**OPTION: LIMIT THE CONTINUATION OF ANTI-DUMPING DUTIES**

A further option is to limit the number of times an anti-dumping duty can be continued. At present duties are in place for five years, after which time they expire unless a review finds that the removal of the duty would likely result in a continuation or recurrence of dumping and material injury, but there is no limit on how many times they may be continued. Plasterboard anti-dumping duties have been in place since 1989.

[19] http://trade.ec.europa.eu/doclib/docs/2010/april/tradoc_146035.pdf

The Australian Productivity Commission recommended limiting the continuation of anti-dumping duties in Australia to one further term after the initial five year term[20] (although the Australian government did not accept this recommendation). In doing so the Commission noted the following considerations:

- The longer that measures remain in force, the more they become protective devices that undesirably shield recipient industries from the need to adjust to structural pressures.
- With measures already in place, it is not possible to directly test for injury and causality.

On the other hand, there is nothing about the underlying purpose of anti-dumping duties to suggest they should be removed after a specified number of years if the dumping and harm continues. That is, the duties seek to remedy the injury caused by dumped imports and this continues to hold true irrespective of how long a given duty has been in place.

**ISSUE: TARIFFS MAY RESTRICT ABILITY OF IMPORTED MATERIALS TO COMPETE**

**OPTION: TARIFF CONCESSIONS ON KEY CONSTRUCTION MATERIALS**

The extent of any benefits that would be brought about through tariff reductions is difficult to quantify, but it appears there are limited gains to be made at this time, especially as most goods are phasing to duty-free through FTAs currently in force or still being negotiated. Given the limited gains foreseen, full scale elimination of tariffs is not envisaged at this stage. However, in light of the Christchurch reconstruction, one option that would fall short of full scale elimination would be to provide that applicable tariffs be suspended for the time being for some or all of these imports using the system of tariff concessions. Tariff concessions may exempt goods under specific tariff lines from customs duties at the discretion of the Minister of Customs.

**Questions for submitters**

*Anti-dumping duties*

18. Which of the two options for widening the test for imposing anti-dumping duties will most effectively allow for consideration of the wider interests of the New Zealand economy? Please provide reasons.
19. What adverse effects on the New Zealand economy or international position might occur as a result of any of the two options for widening the test for anti-dumping duties proposed above?
20. Do you consider that there should be a limit on the continuation of a given anti-dumping duty, e.g. to one five year continuation after the initial five years? What would be the pros and cons of such an approach?

*Tariffs*

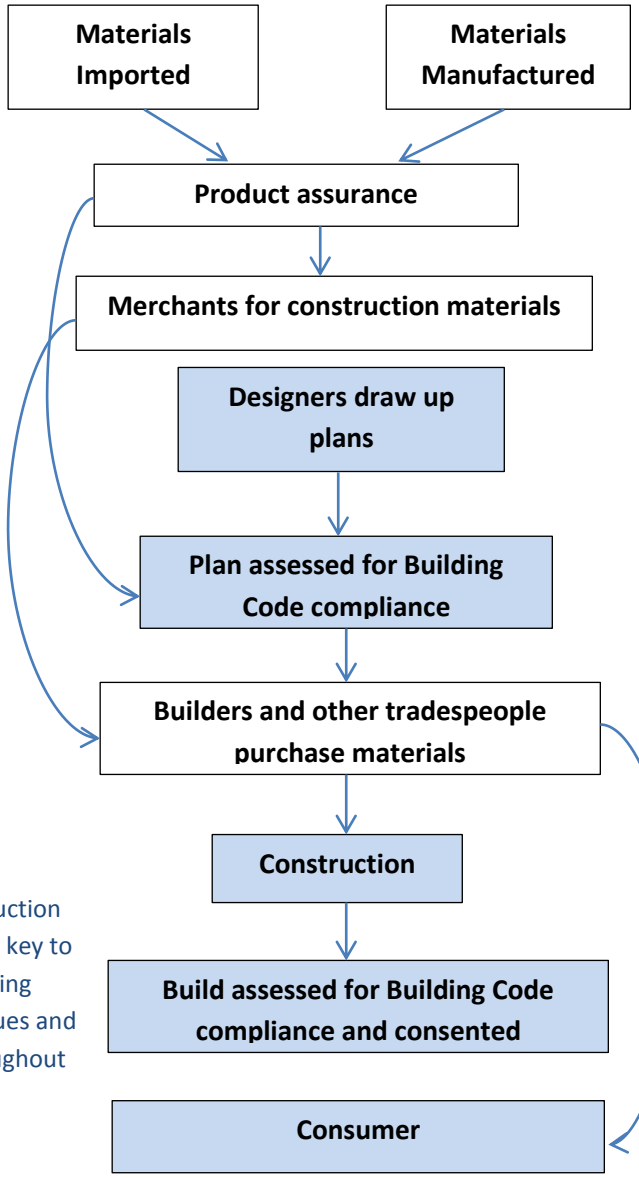
21. Do you agree with the assessment that import tariffs are likely to have a minimal impact on construction costs, especially given that most materials are phasing to duty-free through Free Trade Agreements? Or would provision for applicable tariff duties to be suspended for the time being under the system of tariff concessions help lower costs in specific instances?

[20] http://www.pc.gov.au/projects/inquiry/antidumping/report

# 6. Industry Fragmentation, Innovation and Productivity

| |
|---|
| **ISSUE: LIMTIED INTRODUCTION AND DIFFUSION OF INNOVATIVE PRODUCTS**<br>The residential construction sector is characterised by the limited introduction of innovative products to the market, and slow diffusion once introduced. This impedes its ability to realise continuous efficiency gains and input price reductions. |
| **Existing Work**: Productivity Partnership building systems workstream |
| **Existing Work:** Building and Construction Industry Research Strategy |
| **Option**: Social housing as "proof of concept" |
| **Option**: Innovation network |
| **Option:** Criteria to promote innovation through BRANZ use of Building Research Levy |
| **Option**: Targeted education |
| **ISSUE: INEFFICIENT CONSTRUCTION MANAGEMENT PRACTISES**<br>A lack of specific project management and business skills within the industry prevents the realisation of efficiency gains, and consequent price reductions, on building sites. |
| **Existing Work**: Productivity Partnership skills workstream |
| **Option**: Industry education programme |
| **Option:** Licensed Building Practitioner requirements |

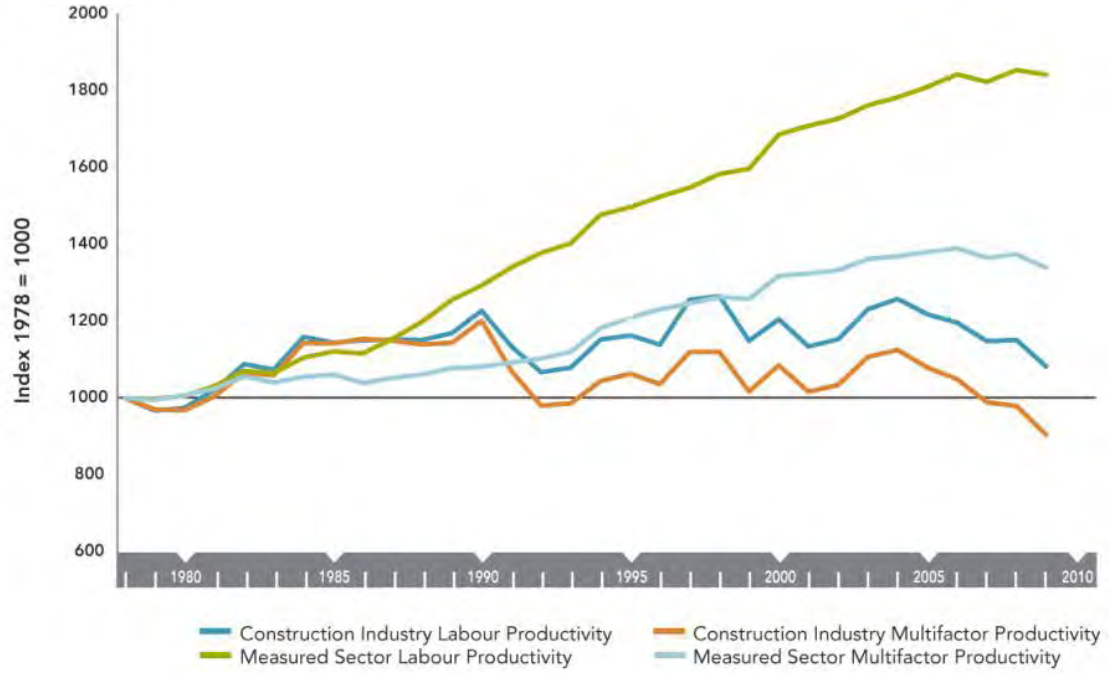
**Illustration of barriers discussed in this Chapter**




Low uptake of innovative construction systems and processes, which are key to raising productivity and reducing construction costs. Perception issues and risk aversion act as barriers throughout the supply chain

Significant downtime and coordination issues in construction including due to shortage of project management skills. Cost of inefficiencies passed through to consumers

This chapter considers the way the structure of the industry, and the factors that underpin it such as market size, volatility and attitudes to risk, affect uptake of efficiency-enhancing innovations in the residential construction sector. Impediments to the development and adoption of innovations have the potential to hamper productivity growth in the residential sector. Over time, low productivity growth results in construction costs being higher than they would otherwise be. As described in Chapter 2 and depicted in the graph below, productivity in the construction sector has been poor compared to other parts of the economy.




*Source: Productivity Commission Inquiry into Housing Affordability*

## Structure of the residential construction sector

The residential construction sector is dominated by very small firms. About 92 per cent of all residential construction and construction services firms have 5 or fewer employees.[21] Few construction firms operating in the residential sector would be considered large by international standards, although there are a small number of group-home builders and construction firms building upwards of 50 or 100 houses per year.

The majority of construction firms do not specialise in any particular segment of the market, although around 20 per cent of medium-to-large firms (those with more than 5 persons) focus on new housing.[22] Most firms build one house at a time, with a handful of firms building more than 100 houses per year.[23] New Zealand's scale builders (group-home builders and residential construction companies) are smaller in size than their Australian counterparts. In 2011/12, the top 5 Australian home builders each started more than 2,000 dwellings, and more than 20 builders built in excess of 850 dwellings.

[21] Page, IC (2013) Construction industry data to assist in productivity research: Part 2, BRANZ Study Report 283.
[22] Page, IC and MD Curtis (2013). 'Small firms' work types and resources'. BRANZ Study Report SR 284.
[23] Page, IC and J Fung (2011) Cost efficiencies of Standardised New Housing, BRANZ Study Report 247.

At the same time there is a high degree of labour specialisation in the residential construction sector, with a large number of individual sub-trades and specialists. A typical residential new build will involve a designer, a main contractor - a builder who coordinates and oversees the build process and completes much of the construction work - and a number of sub-contractors (e.g., plumber, electrician, plasterer, painter, tiler, roofer). There is a lack of vertical integration in the sector, with even the largest firms making extensive use of sub-contractors for each of their projects.

There is significant churn in the sector with high rates of firm entry and exit. Alongside agriculture, forestry and fishing, the construction industry has the highest proportion of firm births and deaths.[24] This churn extends to the workforce as well, with significant inflows and outflows of labour over time. The workforce is lowly qualified and booms are frequently characterised by skills shortages, with some important occupations in long-term shortage.[25]

**A range of factors or drivers underpin the current industry structure:**

- *Small market size* – The small size of the New Zealand market, and competition between builders, makes it difficult for firms to achieve economies of scale. There are few significant growth opportunities outside of the metropolitan areas of Auckland and Christchurch, and even these markets are small by international standards.
- *Volatility of demand* – The volatile or boom/bust nature of demand similarly acts as an impediment to firms' building scale, as it leads to a short-term focus and a reluctance to make longer-term investments (e.g., decisions that involve long-term financial commitments to workforce growth, retention, and development or high initial outlays with long pay-back periods such as investment in off-site prefabrication facilities).
- *Scarcity of large developable land parcels* – Most new house construction occurs on small land parcels involving one or a small number of dwellings. Larger land parcels that can accommodate a significant number of houses, like those seen in some international markets, are scarce.
- *Customised house design* – Most new houses tend to involve bespoke or one-off designs. This equally applies to small and large builders. Around 46 per cent of new detached houses are one-off designs built by small-scale builders and a further 50 per cent select a design from the builder's standard plans and then make modifications. Only 1.4 per cent of homebuyers select a design from a builder's standard plans with no changes or buy a spec-built house. [26]
- *Increased complexity of building systems and materials* – The increasing technical complexity of today's buildings, and the proliferation of building materials and associated installation systems, have resulted in increased labour specialisation. Individual contractors specialise in narrow parts of the building process and, consequently, a significant number of contractors are involved in each new build.
- *Liability issues* – Recent experiences with leaky buildings, including uneven (and potentially unfair) allocation of costs, has undermined trust, confidence and cooperation within the sector. For more detail, refer to the box text in Chapter 3 on joint and several liability.

[24] Productivity Commission (2012) Housing Affordability Inquiry.
[25] Davis, N, L. Cowey and E. l'Ami (2008) Skills Issues in the Building and Construction Sector: Scoping Report, Unpublished Report to the Department of Building and Housing.
[26] Page, IC and J Fung (2011) Cost efficiencies of Standardised New Housing, BRANZ Study Report 247.

## Consequences of industry structure for innovation and efficiency

The fragmented structure of the industry is not a problem in and of itself. However, it does pose challenges for the adoption of efficiency-enhancing innovations and business models in the residential construction sector. The highly specialised and fragmented structure of the industry also poses challenges for coordination and the overall efficiency of the sector. In this section we consider the relationship between industry structure, innovation and efficiency.

*Adoption of efficiency-enhancing innovations*

Customised house design and the lack of standardisation contributes to higher build costs. A BRANZ study found that standardisation of designs and materials could lead to savings of up to 15 per cent compared to one-off designs.[27] There is a widespread perception in the industry that there is a lack of consumer appetite for spec-buildings and that offering customisation of designs to meet individual household requirements is necessary to be competitive.

**Path dependencies and the way things have always been done**

Submissions to the Issues Paper pointed to "path dependencies" as a root cause of some demand preferences in the construction industry. In particular, the idea is that there are self-reinforcing features of the construction sector which mean that the technologies, materials, or methods that were originally favoured in New Zealand will continue to be favoured, irrespective of whether better or cheaper alternatives emerge.

For example, training for construction trades tends to prepare students predominantly to use those materials most commonly used in New Zealand. While this makes sense, it can make it difficult for an alternative technology to get a foot-hold in the New Zealand market. Specific examples noted in submissions were the need for greater familiarity with and training relating to steel framing and pre-fabrication before these technologies will gain market share.

A similar issue is that many of the opportunities to significantly reduce construction costs require a significant change to the way houses are built in New Zealand, enabled by significant investment by construction firms. Where there is uncertainty as to the customer appetite for these changes, the risks of making the necessary investments are frequently considered too great. This is likely to be a reason why prefabrication of housing has not previously occurred on a large scale in New Zealand. Many respondent group home builders expressed reluctance to increase standardisation due to a belief that consumers are resistant to standardised product.

The wider adoption of innovative construction systems, technologies and practices, and the associated reduction of waste, rework and time involved in construction, is key to raising labour productivity and reducing the costs of construction. As noted earlier, the time required to construct a house appears to be significantly greater in New Zealand than in Australia, and a reduction in labour hours could significantly reduce the labour cost component of house building.

[27] Page, IC (2009). 'New house price modelling', BRANZ Study Report SR 196.

A number of submitters suggested that increased use of prefabrication, including modularised construction, would be an effective mechanism to lift building productivity and reduce construction costs of new houses. Prefabrication involves the manufacture and assembly of whole buildings or substantial parts of buildings prior to installation at their final location. BRANZ research found that available prefabricated techniques and technologies have the potential increase productivity in the housing sector and help overcome the skilled labour constraint.[28]

Almost all New Zealand houses contain prefabricated building components, such as pre-nailed frames and trusses. However, beyond the widespread use of pre-nailed framing, the uptake of prefabrication in the New Zealand residential construction sector is low. For example, it is relatively uncommon to see the offsite manufacture of 2-D panels (e.g., pre-lined walls with pre-installed doors and windows), 3-D modules (e.g. prebuilt bathrooms) and complete buildings in New Zealand.

Construction industry participants have identified several issues inhibiting the uptake of prefabrication:

1. Low consumer awareness and acceptance of prefabrication, including perceptions of poor quality design and construction.
2. The need to improve awareness, technical knowledge and acceptance of prefabrication by designers.
3. The high familiarity and acceptance of building practitioners with traditional on-site construction methods using 'tried and tested' materials, combined with a reluctance to 'experiment' with non-traditional construction and materials
4. Obstacles to the commercialisation of prefabricated products, including in relation to demonstrating Code Compliance and gaining acceptance of building officials (especially given aversion to new or novel construction systems because of concerns with liability)
5. Low demand for prefabricated construction constrains the number of suppliers offering prefabricated building products, particularly given the capital investments required.

*Coordination challenges*

The increased complexity of the construction process, increased specialisation of the workforce, and concerns about liability issues lead to complex contracting structures, sub-optimal procurement practices and risk avoidance behaviours that undermine the achievement of efficiency. The lack of horizontal integration of supply relationships increases the potential for coordination problems, leads to the development of adversarial relationships, with the potential for delays in the construction process and the need for rework. The efficient and effective construction of houses demands highly effective project, supply chain and financial management skills, yet such skills are in relatively short supply in the building industry. In addition, there is low uptake of new information technologies that may assist in better coordinating the construction process.

Recent research undertaken by the Construction Systems work-stream of the Building and Construction Productivity Partnership has identified significant bottlenecks and areas of inefficiency in the residential construction process.

[28] Burgess, J.C., Buckett, N.R. and Page, I.C. (2013) Prefabrication Impacts in the New Zealand Construction Industry, Study Report 279, BRANZ Ltd.

The same research suggests significantly reduced build times, reduced rework and cost savings are possible through improved management practices including:

- Stronger client relationship management, including a significant investment in upfront planning that reduces the incidence of changes to designs and materials during the construction process
- Better integration of the design and construction process, so that plans are buildable and do not require amendment during the construction process to address buildability issues
- Improved project management of the construction process, to more tightly sequence and coordinate the various trades and supplies that are required. BRANZ estimates that better project management and planning could reduce actual build time from 15 weeks to 9 weeks.
- Alternatives to traditional procurement practices, which can drive up costs during the project (often exceeding the original tender), result in lower quality building, time delays can lead to disputes between parties

In its submission, BRANZ estimated potential cost savings associated with:

1. Designs that have sufficient detail and are "buildable" (average potential savings of 8 per cent)
2. Client education and clarity of requirements (average potential savings of 7 per cent)
3. Project and firm management improvements (average savings of 15 per cent)

In other words, BRANZ estimates savings of up to 30 per cent are possible on a typical new residential construction project provided all the planning, client and project management is close to ideal.[29]

In addition, there is low awareness and uptake of new information technologies (e.g., Building Information Management) and construction practices (e.g., Integrated Project Delivery) that can improve coordination of the construction process.

## Potential options

Together, the above factors both limit the uptake of efficiency-enhancing innovations in the residential construction sector and reduce the efficiency of the construction process. This is consistent with the evidence that residential construction labour productivity is lower in New Zealand than in Australia and that the construction sector has had low productivity growth over a long period.

Many of the impediments to increased scale and innovation, such as the small size of the domestic market and the volatility of demand, are not easily influenced through government policy.

Some work is currently underway to incentivise and stimulate innovation within the construction sector. For example, "Building Better Homes, Towns and Citiies" (Challenge 11) is proposed for inclusion in the National Science Challenge. If approved, this will mean a strengthened focus of

[29] BRANZ response to Ministry of Business, Innovation and Employment Residential Construction Sector Market Study, June 2013.

publicly-funded research on projects that contribute to improved efficiency and innovation in house construction. The Productivity Partnership is also active in this area.

**The Productivity Partnership**

The Building and Construction Productivity Partnership is a partnership between industry and government and is jointly funded by the two. Its aim is to improve the productivity of the construction sector overall. Its work is divided in to four streams: skills, evidence, procurement and construction systems.

The skills and construction systems streams are of particular relevance to industry innovation and productivity. The former, for example, has recently focused on the issue of pathways within the industry. This means looking for ways to provide better and clearer paths in to the sector, between different parts of the sector and in to higher skilled and more productive parts of the sector. Similarly, the construction systems work-stream has recently focused on encouraging the uptake of productivity-increasing IT technologies.

In addition to the work already underway, there may be further opportunities to improve innovation and productivity though:

- Creating an environment that better enables the introduction and diffusion of innovative construction systems and building technologies
- Promoting the uptake of more efficient construction management and information technologies.

**ISSUE: LIMTIED INTRODUCTION AND DIFFUSION OF INNOVATIVE PRODUCTS**

**The Building and Construction Industry Research Strategy**

The Building and Construction Industry Research Strategy, a joint effort between MBIE, BRANZ, the Construction Industry Council and the Construction Strategy Group, sets out research needs within the sector. It groups these needs in to nine areas: Better Buildings, Materials Performance, Maintaining and improving the performance of existing buildings, Sustainability, Automation, industrialisation and new technologies, Operating environment, Productivity, Meeting the housing needs of all New Zealanders and Building better cities and communities.

**OPTION: SOCIAL HOUSING AS PROOF OF CONCEPT**

The government's significant programme of investment in social housing, including redevelopment of the state housing portfolio, affords an opportunity to trial, test and prove the efficiency and cost effectiveness of new construction systems and techniques.

**OPTION: INNOVATION NETWORK**

An innovation network could be established to support firms to introduce and commercialise new construction systems, including adapting overseas systems and processes for use in New Zealand. For example, a Residential Building Innovation Network could be established, with the aim of supporting firms to overcome technical, regulatory and market-related barriers to the commercialisation of innovative new construction systems and products. The Network could comprise industry participants (ie designers, producers, assemblers, regulators and customers),

research and educational institutions, and relevant government agencies and support the development of demonstration and proof-of-concept projects. Additionally, with leveraged government funding it could act as a driver of innovation; funding projects to develop new systems and processes or improve existing ones.

**OPTION: CRITERIA FOR EXPENDITURE OF BRANZ LEVY FUNDS**

In line with comparable industry bodies in other sectors, criteria could be established in legislation in relation to what the BRANZ levy money can be spent on.

The Building Research Levy is authorised under the Building Research Levy Act 1969. Under this Act, 0.1 per cent of the contract value (exceeding $20,000) of every construction project put forward for building consent in New Zealand is payable by the builder to BRANZ. The intent is to provide money for research into improved techniques and materials for use in the building industry.

Under the Building Research Levy Act 1969, the levy is to be used by BRANZ for the purposes of promoting and conducting research and other scientific work in connection with the building construction industry.

The decision-making process for levy investment decisions is not specified in the Act. To inform their levy investment decisions, BRANZ undertakes industry consultation which has included an industry needs survey and workshops, and receives advice from its Building Research Advisory Council, to develop an industry research strategy.

In 2012-13 the industry consultation process was replaced by a cooperative industry initiative to develop the 'Building a Better New Zealand' research strategy. This attempts to canvass the research needs of the whole building sector and is not restricted to only levy-funded activities or areas where BRANZ has expertise or interest. The intent is that the research strategy will inform research investment by a range of providers including MBIE, BRANZ and universities.

The Act could include further criteria for the expenditure of levy funds to shift the focus to innovative or new building materials and products (to remove any perception of bias towards existing industry interests) or could set out the decision-making process for levy investment decisions.

**OPTION: TARGETED EDUCATION PROGRAMME**

A targeted education programme could be established for designers, producers, regulators and clients to improve understanding, awareness and receptivity of alternative construction systems. It could showcase demonstration and proof-of-concept designs and construction systems, building on initiatives such as the HIVE Home Innovation Village.

**HIVE: Home Innovation Village**

HIVE is New Zealand's first Home Innovation Village. The purpose of this Home Innovation Village is to showcase permanent materials, quality architectural design, environmentally sustainable buildings that are produced using prefab / offsite construction technologies. Based in Christchurch, HIVE is a place where people can inspect innovative home options that are sustainable, architect-

designed, affordable and innovative. HIVE is facilitated by PrefabNZ, a non-profit incorporated society established to inform and educate New Zealanders about prefabrication.

**ISSUE: INEFFICIENT CONSTRUCTION MANAGEMENT PRACTICES**

**OPTION: INDUSTRY EDUCATION**

Industry education could be better focused to promote understanding and use of new technologies and construction management practices, potentially targeted to holders of Licenced Building Practitioner design and site licenses. This could include showcasing projects that demonstrate how smart construction approaches can lead to significant efficiencies in the construction process. Partnerships could be promoted between industry, industry training organisations and tertiary education providers to strengthen the educational offerings in construction management and to promote greater uptake of these qualifications.[30]

**OPTION: LICENSED BUILDING PRACTITIONER REQUIREMENTS**

It could be worth considering the benefits and costs of introducing a requirement for Licensed Building Practitioners to undertake continuing professional development, similar to that which exists for Registered Architects and Chartered Professional Engineers, and use this to drive more efficient construction management practices.

**Questions for submitters**

*Innovation*

22. What, in your opinion, should be the government's role in promoting innovation in the residential construction sector?
23. Which of the above options would be most helpful in terms of showcasing what can be done and helping the sector to adopt new technologies? Why?
24. To what extent is there a risk of adverse consequences if any of the above options are implemented? Please provide reasoning.

*Construction Management*

25. Which of the above options will best promote more efficient construction management practices? Why?
26. Which of the above options will carry the least compliance costs for the sector? Please provide reasoning.
27. To what extent is there a risk of adverse consequences if any of the above options are implemented? Please provide reasoning.

[30] For example, just 20 people completed the Bachelor of Building and Construction Management in 2010.

# Appendix 1: Case study of the brick market

*Overview*

Clay brick is used as external cladding on around 40 per cent to 45 per cent of all new standalone residential dwellings. At a broad level brick competes against a range of other materials within a broad cladding market. These materials include wood weatherboards, fibre cement weatherboards, concrete and masonry, and other cladding systems. Many dwellings are also constructed using a combination of these materials.

Brick has several advantages over other cladding materials. Chief amongst these is its relative cost. A typical cost saving from using brick cladding instead of the next cheapest material may be around $5,000 to $7,500 for a standard 200m$^2$ standalone dwelling, which leads to strong demand by group home or speculative builders. There is also relatively strong demand by homeowners for brick not only because of cost advantages but also because of its low maintenance, lack of weathertightness issues and high degree of durability. Brick also has heat and noise insulating advantages over many other materials.

These advantages mean that in many cases other cladding materials are not sufficiently substitutable so as to provide a competitive constraint on the prices of bricks. Consequently, the demand for brick may be such that it constitutes a separate product market from some or all other cladding materials.

*Suppliers*

The main suppliers of bricks include:

- New Zealand Brick Distributors – the recently merged entity formed from CSR (selling products under the Monier brand) and Brickworks (Austral brand). This owns a brick manufacturing plant in Auckland (owned by CSR) and also imports bricks directly from Australia (Brickworks);
- New Zealand Brick & Stone (Midland brand) – imports bricks produced by Australian supplier Boral;
- Canterbury Clay – is a Christchurch-based brick manufacturer. It supplies mainly within South Island.
- Clay Bricks – is a Huntly-based brick manufacturer. It supplies mainly around Waikato and Bay of Plenty regions. It has a relatively small plant that focuses more niche brick products.

The newly merged New Zealand Brick Distributors is the largest supplier, accounting for around three quarters of sales. New Zealand Brick and Stone has a market share of around 15 per cent with the remainder (approximately 10 per cent) split evenly between Canterbury Clay and Clay Bricks. These two smaller regional suppliers do not currently have a significant amount of spare capacity and so would need to invest in more plant to be able to provide a substantial competitive constraint in the market.

Other potential suppliers include Australian brick manufacturers Selkirk and Brikmakers, although neither of these two firms currently produce bricks suitable for the New Zealand market. Bricks used in New Zealand are typically smaller than those used in Australia because, unlike in Australia, bricks are primarily used for cladding and are not typically used for structural purposes. These firms would need to invest in new plant to enable them to produce bricks for the New Zealand market.

*Buyers*

Buyers range from large group home buyers to smaller building contractors and bricklayers operating as subcontractors. Builders and bricklayers who provide construction services under contract to property owners (developers or homeowners) typically purchase bricks on behalf of owners. These owners are involved in brick purchasing decisions to varying degrees. Architects or draftsmen may also have some degree of influence over brick purchasing decisions.

*Recent market trends*

In early 1990s brick cladding accounted for almost half of the new build market. This proportion fell over the decade with the move towards monolithic cladding systems but increased to around 60 per cent following weathertightness issues with these systems. This share has now returned to around 40 per cent to 45 per cent. On a regional basis, the demand for brick cladding within Christchurch does not appear to have been substantially impacted by the earthquakes.

The long term trend of brick prices over the last two to three decades is that nominal brick prices have been relatively stable with a slight overall downward trend until very recently (this equates to a significant decrease in real terms over the same period as illustrated in the graph in Chapter 2). Prices for standard bricks in the mid-1990s, when the historic brick monopolist first faced large-scale competition, were in the vicinity of 80c per standard brick. Prices remained at this level for around a decade. Following the entry of Brickworks in the mid-2000s, prices declined with standard bricks being sold for around 60c to 80c and lower quality bricks being sold for around 50c to 60c.

Prices remained relatively low until recently when, in contrast to the long-term downward trend, prices have increased within the last 12 months. Prices have now returned to levels that are similar in nominal terms to the 1990s. This indicates that in real terms prices are still lower now than 20 years ago, with current prices being around 80c to $1 per brick. If adjusted for inflation prices in the mid-1990s were equivalent to around $1.20 in today dollars.

A possible reason for the recent price increase could be the recent merger of the two largest suppliers, CSR and Brickworks. This merger was cleared by the Commerce Commission in October 2012 and implemented in April of this year. However, Austral Bricks implemented standard price increases in January before the JV commenced. These price increases were also due to underlying costs, expected returns and overall market conditions. No changes were made to the prices of Austral Bricks when the JV commenced. The JV has reduced the number of current suppliers within the sector from five to four, although the Commission noted in its decision that there are two potential additional suppliers in Australia, Selkirk and Brikmakers. Australian clay bricks manufacturers are considered by the Commission as near competitors. This is because they can easily and readily supply to New Zealand - which includes their ability to manufacture New Zealand sized clay bricks and to import these quickly and with little difficulty. While in New Zealand clay

bricks are 70mm, the Commission considered that Australian clay brick manufacturers could shift production of their 110mm clay bricks to manufacturing New Zealand 70mm clay bricks easily, quickly and cheaply if incentivised to do so. The Commission also pointed to competition from non-brick cladding suppliers as a potential constraint on prices.

In considering whether a merger may lessen competition the Commission bases its decision on whether the merged entity would be able to sustain a price increase over a two year period. As the merger was completed in April there has been insufficient time to determine whether recent price increases by New Zealand Brick Distributors are sustainable. In fact, some evidence from the market suggests that customers dissatisfied with the increase in New Zealand Brick Distributors' prices are seeking alternative sources of supply. Such behaviour would be consistent with the Commission's reasoning for granting clearance.

Another rationale for the recent price increases is that previous prices were not commercially sustainable. Industry sources have suggested that in an effort to maintain output volumes and gain market share in the face of the fall in construction activity since 2007, brick suppliers aggressively cut prices, effectively instituting a 'price war'.

Such aggressive pricing may have been a function of the cost structure of brick production, which has relatively high fixed costs and low variable costs, combined with the desire of some brick producers within the wider Australasian region to maximise output. Many of the costs of operating a brick kiln are fixed with regard to the number of bricks produced. Additionally, it may cost in the vicinity of $1 million to restart a kiln once it has been turned off.

Consequently, it may be rational in the short run for Australian producers that manufacture bricks largely for the Australian market to produce additional bricks for New Zealand, even if the bricks sold in New Zealand are sold for prices that only cover variable costs. However, over the longer term the absence of sufficient commercial returns would tend to lead to rationalisation in manufacturing capacity. In this regard it is interesting to note that several manufacturing plants in Australia have closed in recent years.

An additional factor that may have previously placed downward pressure on prices was the withdrawal from New Zealand of Boral, an Australian company that formerly operated its own distribution network in New Zealand selling bricks under the Midland brand. Because of a lack of financial returns, Boral recently exited the New Zealand market (although it currently supplies bricks to local seller New Zealand Brick and Stone). In the course of closing its New Zealand operations, Boral sold off much its remaining stock of bricks at relatively low prices.

Consequently, industry sources have suggested that recent price increases are a correction back towards more sustainable prices. Furthermore, some proportion of these price changes may also reflect recent industry-wide cost increases, specifically an increase in imported brick prices.