



CRC Construction Innovation
B U I L D I N G O U R F U T U R E

Summary

Multi-Outcome Construction Policies: Industry-Focused Research Summary

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1. Introduction

The Multi-outcomes Construction Policies research project, funded by the Cooperative Research Centre for Construction Innovation (Project 2006-036-A), sought to explore the costs and benefits of leveraging social outcomes on public construction contracts. The context of the research project was the trend towards the contracting out of public construction works and the attempts that have been made to use new contractual arrangements with construction companies to construction achieve a wide range of social outcomes. In federal and state jurisdictions it is now common for governments to impose a range of additional requirements on public works contractors that relate to broad social/community objectives. These requirements include commitments to train apprentices and trainees; to provide local and/or indigenous employment opportunities; to buy local materials; and to include art works.

The cost and benefits of using public construction contracts to achieve social/community goals have, to our knowledge, not been thoroughly researched in an Australian context. This is likely to reflect in large part the relatively short history of contracting out public works. As Jensen and Stonecash (2004) explain, most previous empirical studies of contracting out have attempted to measure the cost savings achieved through privatization, as this was the focus of policy debate in the 1980s and 1990s. Relatively few studies have addressed the ability of contracting arrangements to ensure the delivery of desired ‘quality’ outcomes¹, or the costs of achieving these outcomes via contracting arrangements.

One of the potential costs of attempting to leverage social/community outcomes on public construction projects is a reduction in the amount of competition for these projects, with obvious consequences for average bid prices and choice. In jurisdictions, such as Western Australia and Queensland, where currently construction market conditions are already

¹ A notable exception is Domberger and Jensen (1997) which explored the ability of a public authority to ensure adequate investments in vehicle maintenance in its contractual arrangements for the provision of refuse collection services

causing a shortfall of tenderers and rising costs, this potential competitive effect is of particular concern.

Further costs may be involved with the inclusion of contract provisions relating to social outcomes. These include costs of policy development, the administration and monitoring of contract performance, and, for contractors, costs associated with compliance and reporting.

The basic principles of welfare economics – and, in particular, cost-benefit analysis – require that the sum of the social costs of a policy intervention be justified by its contribution of social benefits. In the case of training policies desired benefits include an increased supply of skilled construction labour. In the case of local employment policies, improved opportunities for local enterprise and employment development are the aims. Indigenous employment policies seek to secure positive economic outcomes for indigenous communities. Percent-for-Art policies aim to increase the stock and quality of public art.

The multi-outcomes project assembled quantitative and qualitative information on the various categories of costs and benefits associated with the leveraging of social outcomes on public construction projects. The quantitative parts of the project (summarised in the next section) explored the nature and extent of the competitive effects of such leveraging. It did so by examining the effects on the level of bid activity for public construction projects of two policies of the Western Australian government: the Priority Access Policy and the Building Skills Policy. Both of these policies aimed at ensuring an adequate supply of skilled labour in the construction industry². The Priority Access Policy, first implemented in August 1999, required contractors to meet a range of minimum training requirements³ before being eligible to tender on public building and construction

² *Priority Access n.d.* Retrieved October 20, 2006, from <http://policies.det.wa.edu.au/>; *Building Skills n.d.* Retrieved October 20, 2006, from <http://policies.det.wa.edu.au/>.

³ Contractors need to meet a minimum of 100 points in order for them to be able to tender. Points are allocated based on the contractor's involvement in specified employment and training activities, such as employing apprentices and/or trainees, staff with recognised VET qualifications, staff with tertiary qualifications, or having staff participating in work related training programs.,

contracts. The Building Skills Policy, which was first implemented in October 2002, specified that 10% of deemed labour hours be allocated to the employment of apprentices and/or trainees. On January 1 2007 both policies were integrated into the Priority Start – Building Policy.

The qualitative parts of the study furnished information on stakeholder perceptions of the costs and benefits of key social provisions in public construction contracts. A wide range of contractors were interviewed as part of the study, providing detailed information on the magnitude and variety of costs imposed on them as a result of the social provisions. The contractors also provided information on the effect of the policies on, for example, their training or hiring decisions, thus contributing important insights to the scale of the benefits of the policy interventions. Policy officers in the key government agencies responsible for either sponsoring the policies or ensuring their implementation were also interviewed. This contributed important information on the rationale for the different policies and experiences with policy implementation.

In Section 3 the results of the qualitative analysis of the costs and benefits of training policies are described in some detail. Section 4 summarises the details of local employment and indigenous employment policies in WA and Queensland, together with an overview of the qualitative information on costs and benefits. Concluding comments are made in Section 5.

2. Quantitative Analysis of Training Provisions in Government Construction Contracts

As noted in the introduction, the project's analysis of the competitive effects of leveraged social outcomes focused on a particular case study: the effects of the training provisions inserted into contracts for Western Australian government construction contracts. The choice of this case study was largely motivated by the availability of suitable data. The WA Department of Housing and Work's (hereafter DHW) Tender Registration System

was available to study the effects of the implementation of the Priority Access Policy in 1999 and the Building Skills Policy in 2002.

The Tender Registration System (TRS) was implemented in 1996 as a way of recording the tender details of all WA government construction projects. The TRS database contains records on the details of each project: a description of the works to be undertaken; the location of the planned work; and the estimated pre-tender value of the project. The database also contains information on the number of tender documents requested for each project, together with details on each of the tenders received and the winning bid. As such, the TRS is a unique and comprehensive resource for examining changes and variations in bid activity in an important segment of the construction 'market'.

In the study use was made of the TRS project and tender details on 2519 government non-residential construction contracts awarded between 1997⁴ and 2006. For these contracts 11525 tender bids were submitted. This represents close to all the contracts and bids included in the TRS over the ten year period. Only a very small number of contracts were excluded from the analysis due to incomplete recording of their details⁵.

The analysis presented in this part of the report is important for a number of reasons. First, it comprises a detailed quantitative analysis of a large set of data on public construction contracts. To our knowledge, little use has been made by academics of the data that now exists on tender bids and outcomes in most Australian jurisdictions. This research project hopefully highlights the potential to draw on these sources to gain greater insights into the trends and issues affecting the construction market in Australia. Second, it is a novel attempt to examine the efficiency of using the contracting arrangements of public works authorities to achieve training goals. Specifically, the analysis generates unique information on the effects on competition for public construction contracts that may stem

⁴ Although the TRS was initiated in 1996, records in this year were incomplete and, thus, excluded from our investigation

⁵ The omission of records on location and tender value appeared to be due to record keeping errors and is, thus, unlikely to be a source of systematic bias in the results of our analysis.

from different types of ‘leveraged’ training policies. The rising trend towards the contracting out of public sector activity, together with concerns about the availability of skilled labour makes this type of information of great policy relevance.

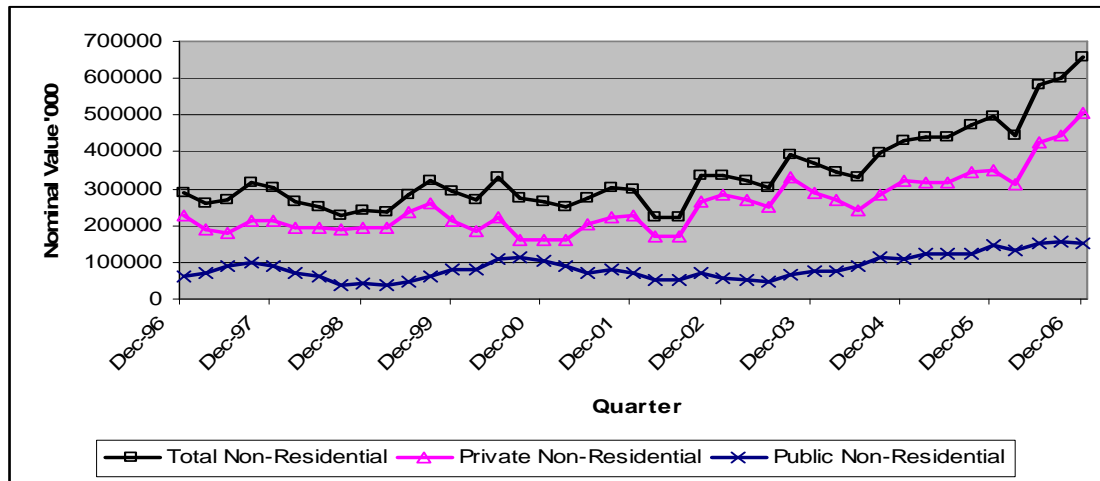
The remainder of this section is organised in a straightforward manner. Section 2.1 gives an overview of activity in the public non-residential construction ‘market’ in WA generated from the TRS and other data sources. Section 2.2 provides an overview of the methodology used to analyse the relationship between the implementation/application of the Priority Access and Building Skills policies and bid activity in the public construction ‘market’. Section 2.3 presents the results of this empirical analysis, whilst the final section provides a discussion and summary.

2.1: Overview of the Non-Residential Construction Sector in WA, 1997-2006

The total value of non-residential construction activity completed in Western Australia in 2006 was \$2280m. As the following chart shows private sector work dominates this total, comprising close to 75% of all non-residential construction work in 2006. Public sector activity in 2006 was valued at \$592m.

The information in Figure 1 also shows the strong upward trend in non-residential construction work in the state from the beginning of 2002, with this increase being dominated by private sector activity. Between December 2001 and December 2006 the total nominal value of private sector work increased by 120.6%. This compared to a 3.1% increase between December 1996 and December 2001.

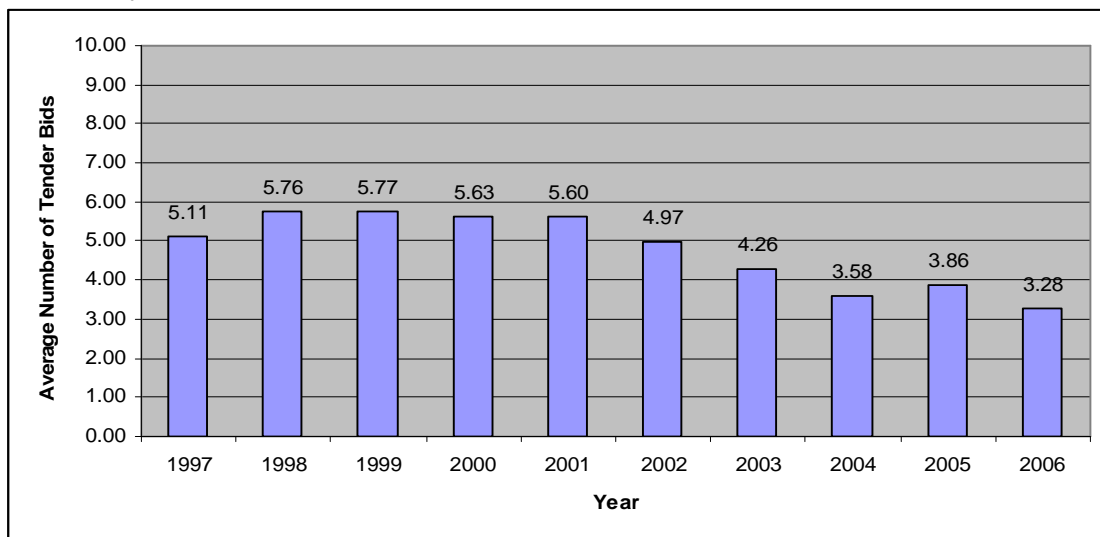
Figure 1: Total, Private, and Public Nominal Values for Non-Residential Construction Work done in Western Australia by Quarter, December 1996 to December 2006.



Source: Australia Bureau Statistics, 8752.0 Building Activity, Australia, Table 45. Value of Building Work by Sector, Western Australia: Original. (Series Identifications: A2057722C, A2034996K, and A2046139R).

It is not particularly surprising that the 1996-2007 period was also characterised by a sharp fall in the average number of tender bids for WA government non-residential construction contracts. As is shown in the following diagram, between 1997 and 2006 the average number of bids on these contracts fell from 5.1 to 3.3 bids, or by 35.3%. A large part of this change was concentrated in the years from 2001.

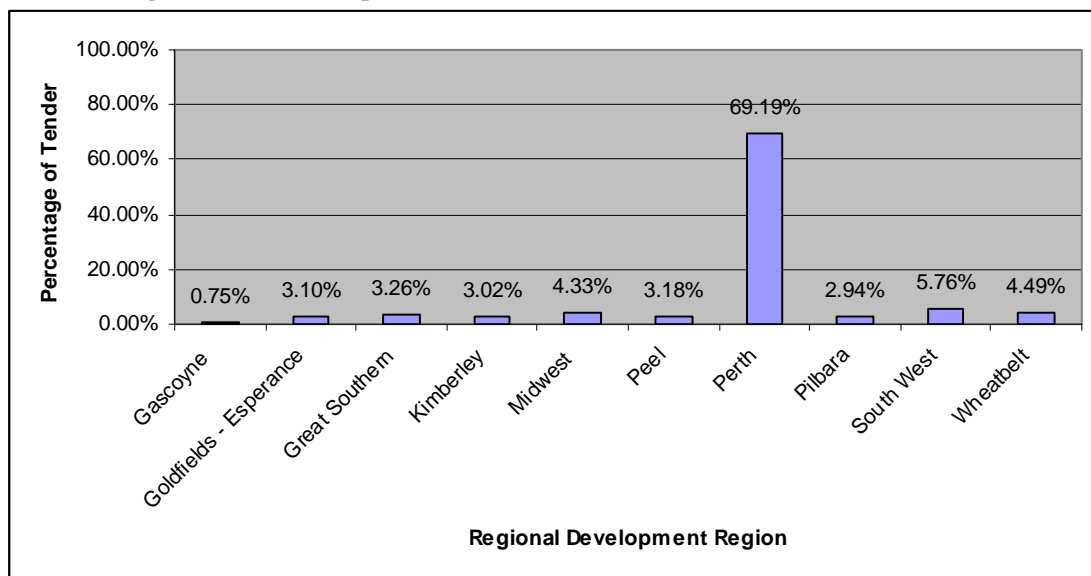
Figure 2: Average Number of Tender Bids on WA Public, Non-Residential Construction Contracts by Year, 1997 to 2006



Western Australia is a large and geographically diverse state and, as such, any analysis of construction activity needs to take into account sizeable regional differences in costs of production. In the study period, the large majority (70%) of public construction contracts related to work undertaken in the Perth region⁶. A further 9% of contracts were located in the South West and Peel regions, both of which are relatively close to Perth. As is shown in Figure 3, the remaining contracts were spread across a range of remote regions.

The decrease in bid numbers observed in the state as a whole also occurred in the two groups of regions identified here. In the regions located relatively close to Perth – that is, the Perth, Peel, and South West regional development regions – the average number of tender bids declined by 42% between 2001 and 2006. In the remaining, more remote regions, this decline was 35%.

Figure 3: WA Public Non-Residential Construction Awarded Contracts by Regional Development Region, 1997 to 2006 (per cent)

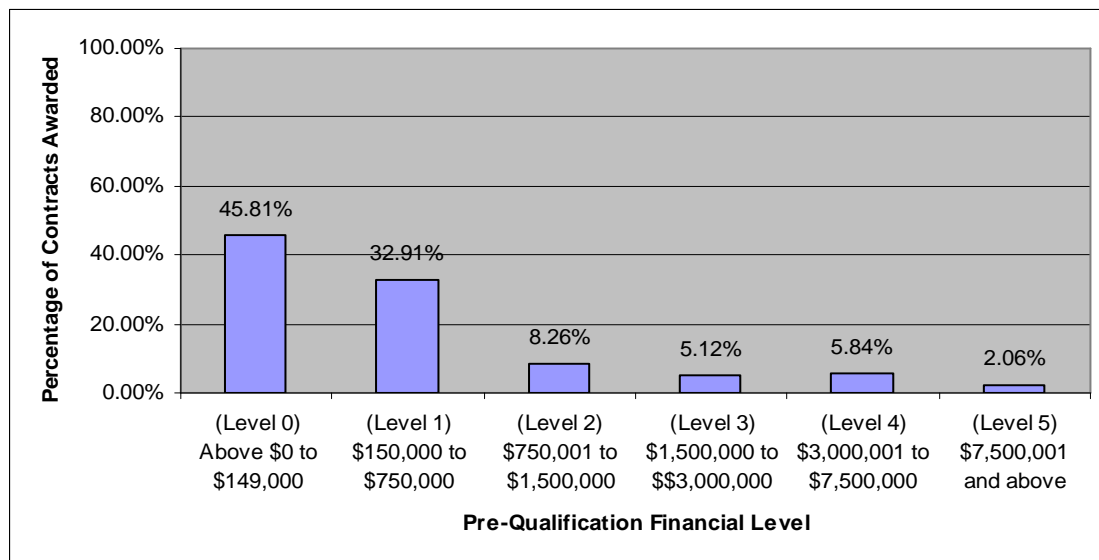


Another source of diversity in public non-residential construction work in WA is the size of the work undertaken. Projects range from small additions to local schools to large

⁶ This study matched the postcode information contained in the TRS with the WA Department of Land Information's regional development regions⁶ to identify the regional distribution of contracts

infrastructure projects. This diversity is especially important in the context of the current investigation because the training policies being studied only apply to relatively large projects. The Priority Access Policy applies only to contracts with a pre-tender value of \$150,000 or more; the Building Skills Policy to contracts with a pre-tender value of more than \$2 million. 1019 contracts (or 54.2% of all awarded contracts) have been subject to the Priority Access Policy since its introduction in August 1999. The Building Skills Policy has applied to 160 contracts (or 11.8% of all awarded contracts) since its introduction in October 2002. Further information on the size distribution of awarded contracts is contained in Figure 4.

Figure 4: WA Public Non-Residential Construction Contracts by Pre-Qualification Financial Level, 1997 to 2006 (per cent).



The downward trend in tender bid numbers was common to each of the pre-qualification levels associated with the contracts, but it was largest in magnitude in the Level 2-4 (mid-range) categories. This pattern is summarised in the following table.

Table 1: Percentage Decline in the Average Number of Tender Bids by Pre-Qualification Financial Level between 2001 and 2006.

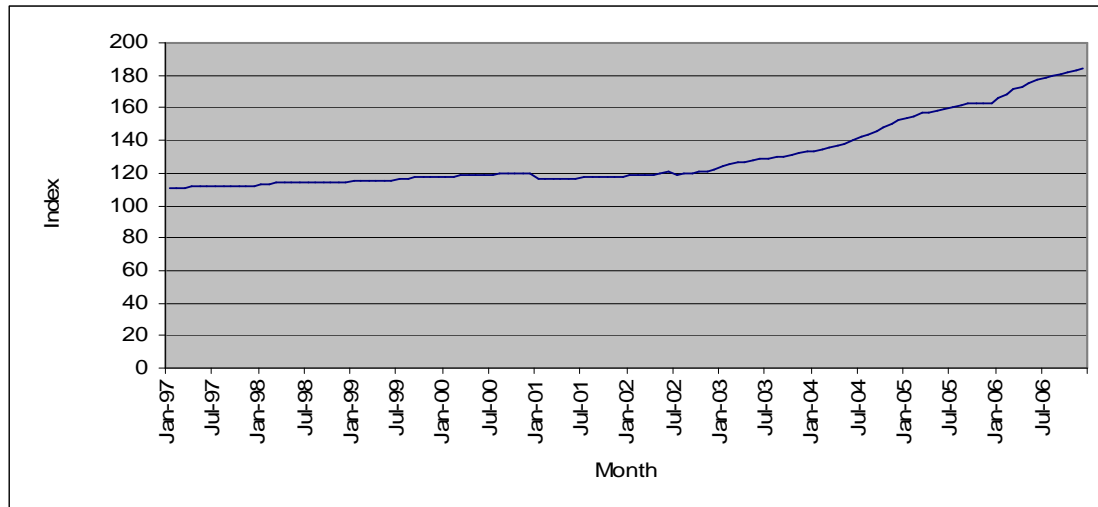
Pre-Qualification Financial Level	Percentage Decline in the Average Number of Tender Bids
(Level 0) - \$1 to \$149,000	22.9%
(Level 1) - \$150,000 to \$750,000	50.2%
(Level 2) - \$750,001 to \$1,500,000	56.4%
(Level 3) - \$1,500,001 to \$3,000,000	60.4%
(Level 4) - \$3,000,001 to \$7,500,000	56.4%
(Level 5) - \$7,500,001 and above	26.2%

The observed trends in bid numbers are likely to have been strongly influenced by changes in factors affecting the availability of other construction work and the cost/availability of resources. The years since 2002 have been associated with substantial growth in WA's resource and construction industries and this has produced large pressures on available labour and materials.

A number of related statistical measures convey information on these pressures. For example, as is shown in the following chart, the DHW's Building Cost Index⁷ there was only a slight rise in building costs (by around 8%) from the beginning of 1997 up to mid 2002 but these then increased rapidly (by around 55%) to the end of 2006.

⁷ for the Perth region includes both labour and material costs.

Figure 5: Building Cost Index for the Perth Region by Month, January 1997 to December 2006.



Source: The Western Australian Department of Housing and Works. Works and Building Construction Building Cost Index – Perth, File BB 576/87, Personal communication DHW, May 30 2007

The building cost index is derived from measures of labour and materials costs and reflects the costs of accomplishing standard types of public and private sector construction projects⁸. The influence of labour costs on the index is apparent in the similar pattern of change in construction industry wages over the study period. These remained relatively stable between February 1996 and August 2002 (increasing by only 1.6%). However, they rose rapidly from August 2002 onwards, increasing by 40.8% by November 2006 (ABS, 2006a). Materials costs rose by only 6.1% between December 1996 and September 2002 but rose by 23.6% between the September 2002 and December 2006 (ABS 2006b).

Labour shortages emerged in the state post 2002 and were an important contributor to the rising wage costs. Illustrating this, the Department of Employment and Workplace Relations skills vacancy index (DEWR n.d.), which provides a monthly indicator of the degree of difficulty that employers have in filling vacancies in occupations or specialised skill needs, recorded a 129.5% increase between the start of 2002 and the end of 2006.

⁸ For example, it reports the current cost of a typical school and prison.

2.2: Multi-Factor Analysis of Bid Activity

The central research question addressed in the study was whether the additional training requirements imposed as a result of the Priority Access and Building Skills policies had a *measurable and distinct* impact on bid activity for public construction contracts. That is, was there a measurable effect of these policies on bid numbers that was separate from the impacts on bid activity generated by changing economic conditions in the state?

Conducting such an analysis clearly requires a multi-factor approach that is able to ‘control’ for the influence of the range of other factors on bid numbers (such as changes in private construction activity and costs, as well as variations in contract region and project size) before focusing on the relationship between the implementation of the policies and bid activity.

The approach adopted for this investigation was to examine variations in the number of tender bids for non-residential government construction contracts around the time of the implementation of each policy⁹. In the case of Priority Access policy, the analysis period was August 1997 to August 2001, which encompasses the 24 months prior to and the 24 months after the implementation date of the policy. In the case of the Building Skills policy, the 48 month analysis period was October 2000 to October 2004.

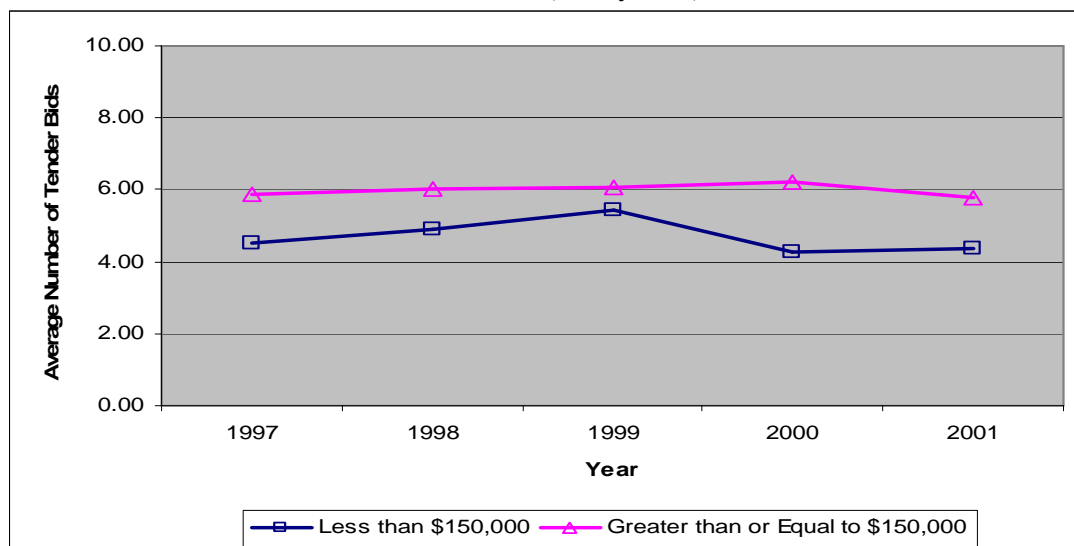
The analysis focused on differences in bid activity between the ‘market’ segments affected and unaffected by the policy. In the case of the Priority Access Policy this involved a comparison of changes in bid activity across the analysis period between a) projects with a pre-tender value of at least \$150,000 (and thus potentially affected by the policy); and b) projects with a pre-tender value of less than \$150,000 (not affected by the policy). In the case of the Building Skills Policy the two comparison groups were a) projects with a pre-tender value of more than \$2million; and b) projects with a pre-tender value of \$2 million or less. In each case we hypothesised that if the policies were

⁹ This approach to restricting the time period allows us to focus more fully on the effects of the policy whilst allowing for the possibility of anticipatory or delayed effects

affecting bid activity, activity levels would have fallen in relative terms in the market segment affected by the policy. Furthermore, this fall would be observed in the analysis period.

The following chart shows bid activity in the two market segments associated with the Priority Access policy over the analysis period. This data is clearly not supportive of the above hypothesis. In fact an opposite pattern is apparent: the average number of bids declined for contracts *not* subject to the Priority Access policy over the analysis period, whilst there was negligible change in the average number of bids for tenders subject to the policy.

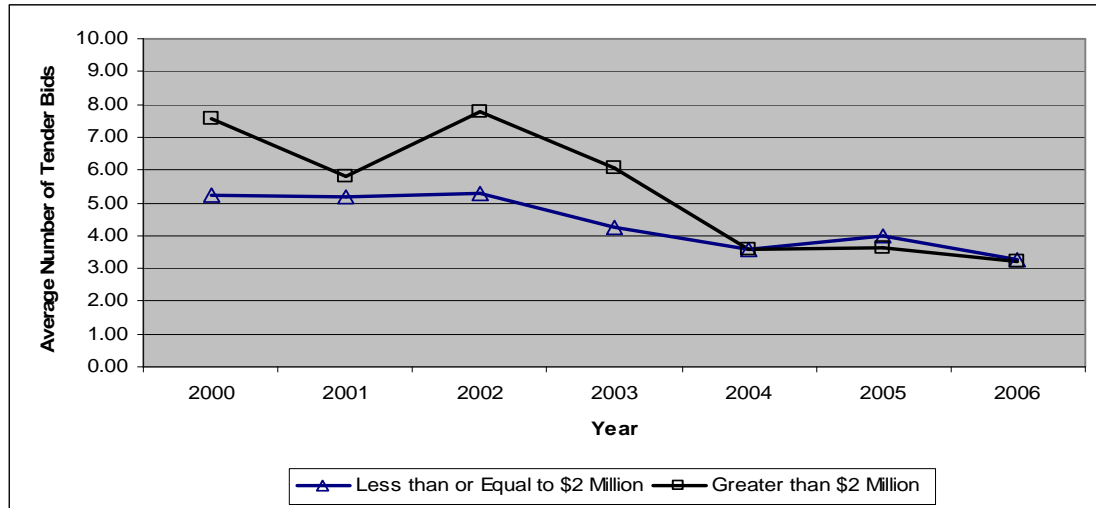
Figure 6: Average Number of Tender Bids for Contracts with a Pre-tender value < \$150,000 and Tenders with a Pre-tender value ≥ \$150,000 by Year, 1997 to 2001



The following chart provides information on changes in the average number of bids for contracts affected/not affected by the Building Skills policy between 2000 and 2004. At face value this data is more supportive of a hypothesis that the policy affected bid activity: the average number of bids for contracts subject to the policy fell at a greater rate than those not subject to the policy over the analysis period. There is also an apparent alignment between the introduction of the policy and this relative change. However, given the strength of the other influences on the construction market (as described in the

previous section), there is a need for caution before reaching firm conclusions about the effects of the policy. The following section provides more definitive insights.

Figure 7: Average Number of Tender Bids for Tenders with a Pre-tender value \leq \$2m and Tenders with a Pre-tender value $>$ \$2m by Year, 2000 to 2006.



2.2.a: Econometric Strategy

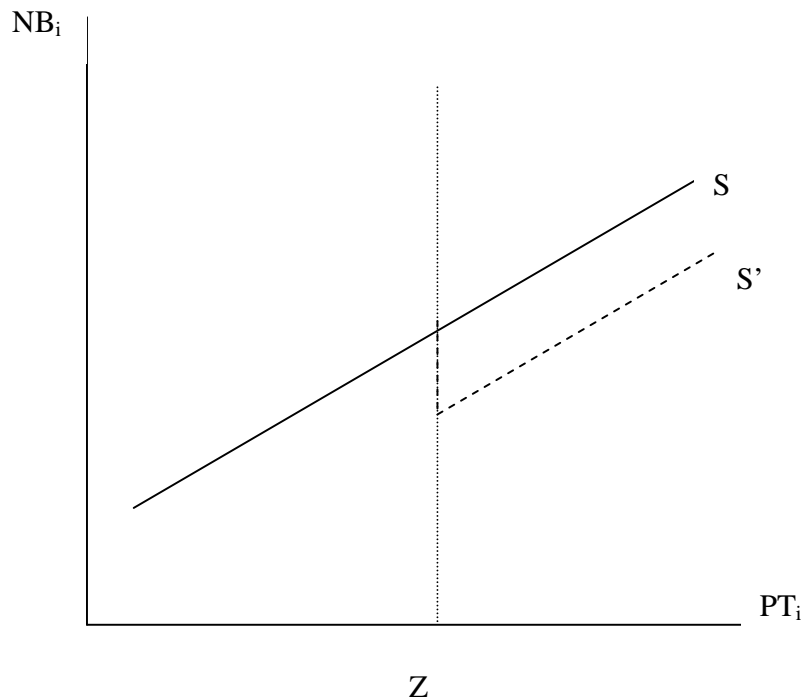
The multi-factor analysis of the relationship between bid activity and policy settings was structured into two parts, each relating to the key policy initiatives: Priority Access and Building Skills. In each part, however, the same approach was taken to the measurement of the effects of the policy. Specifically, linear (OLS) regression techniques were used to estimate the following equation, which relates to the determination of the number of bids for public construction contracts.

$$NB_i = \beta_1 + \beta_2 PD_i + \beta_3 Z_i + \beta_4 PT_i + \beta_5 RN_i + \beta_6 OF_i + \gamma_2 (Z_i \times PD_i) + \varepsilon_i \quad (1)$$

NB_i , is the number of bids submitted on contract i ; PD_i is a dummy variable that is based on the date of implementation of the policy (for example, in the case of Priority Access this variable takes on a value of 1 for all contracts dated after August 1999); Z_i is a dummy variable that identifies whether the contract falls within the scope of the policy's application (in the case of Priority Access this variable is coded as '1' for all contracts with a value of \$150,000 or more); PT_i is a continuous measure that relates to the

contract's pre-tender value; RN_i is a dummy variable that identifies whether the location of the project was in the Perth, South-West or Peel Regions, or in another, more remote region. OF_i is a continuous variable based on the value of the Building Cost index in the month that the bids were recorded. It is used in this model to proxy the level of competition in the construction market¹⁰. Finally, the interaction term (Z_i*PD_i) identifies those projects that were affected by the implementation of the policy (for example, in the case of Priority Access this variable will only take on a value of 1 for contracts with a pre-tender value of \$150,000 or more and dated after August 1999). ϵ_i is a random error term, which is assumed to be normally distributed with $E(\epsilon_i)=0$ and the var (ϵ_i)= σ^2 .

The modelled relationship can be described in the following simplified terms. First, the function S , shown in the diagram below, represents the positive relationship between the pre-tender value of the contract and the number of bids.



¹⁰ As noted in the previous section, this index reflects current costs of accomplishing the types of construction projects contracted for via the TRS. A variety of measures of market conditions (such as indexes of labour availability, materials costs, etc) are available. However, testing indicated that these are strongly correlated with the Building Cost Index.

The other factors in the model are hypothesised to be associated with shifts in this function. For example, in more remote regions the function S could be expected to shift downwards (implying a positive coefficient on the variable RN_i in equation 1) due to the greater difficulties in accomplishing construction work in these areas as compared to less remote regions. The background statistics shown in earlier parts of this paper support this hypothesis. Higher building costs are likely to be associated with a downward/rightward shift in the function (implying a negative value on the coefficient on OF_i). If the introduction of a training policy has a negative effect on bid activity, its application only to projects with a $PT_i \geq Z_i$ would cause a discontinuity in S around point Z_i (as represented by the function S'). Evidence in support of this hypothesis would be a significant negative coefficient on the interactive term ($Z_i * PD_i$). The individual term PD_i controls for the possibility (seemingly remote) that there was a change in bid activity for all contracts around the time of the introduction of the policy. The individual term Z_i controls for the possibility (more likely) that there are underlying differences in the relationship between tender activity and pre-tender prices in the group of contracts 'priced' above and below the trigger value of the policy.

2.3: Results of Quantitative Analysis

The estimated relationships between tender bid numbers and the various explanatory variables included in the RHS of equation 1 using DHW data are outlined in this section. Reflecting the above discussion, these results are presented separately for the Priority Access and Building Skills policies.

Priority Access Policy

Equation 1 was first estimated with reference to data on bid numbers on DHW contracts for the period August 1997 to August 2001. In this case Z_i is defined by the introduction of the Priority Access Policy in August 1999 and PD_i is defined by the policy's application to projects with a value of \$150,000 or more.

The results of this analysis are presented in Table 2 below.

Table 2: Estimated Coefficients for Equation on Bid Numbers on Government Non-Residential Construction Contracts (*Priority Access Policy*), Western Australia 1997-2001.

Variable	Coefficient	Prob.
Constant	-4.2950	0.6142
Policy Implementation Date (PD)	-0.4990	0.3528
Contract above trigger value (Z)	0.9299	0.0007
Pre-Tender Value (PT)	-1.29E-07	0.0033
Region	1.4243	0.0000
Building Cost Index	0.0720	0.3394
PD*Z	0.0216	0.9612

Notes: Log-Likelihood: 1957.8; Nobs: 789; Method: OLS

The data in Table 2 indicate that the implementation of the Priority Access Policy in August 1999 *did not* have a significant effect on competition for government non-residential construction contracts in WA. The reduction in bid numbers observed around the time of the implementation of this policy was similar in ‘market segments’ subject to the influence of the policy (i.e. contracts with a value of \$150,000 or more) and in other parts of the ‘market’. The figures in Table 2 show, rather, that during the analysis period (August 1997 to August 2001) bid numbers varied between contracts firstly due to regional factors. The average number of bids on contracts in more remote regions was 1.42 bids less than the number of bids on contracts in the Perth, South West and Peel group of regions. Bid numbers in the analysis period were also significantly affected by the value of the contract. Contracts with a value of \$150,000 or more had, on average, close to 1 additional bid per contract than those with a lower pre-tender value. A somewhat surprising result is the lack of a statistical significant relationship between the building cost index and bid numbers. The most likely explanation for this is that, as was outlined in previous sections, the period 1997 to 2001 was a period of relatively stable economic conditions. There was little variation in the building cost index over the analysis period and, thus, this was not an important source of differences in bid activity.

Building Skills Policy

The results derived from the application of Equation 1 to TRS data relevant to the Building Skills Policy are presented in Table 3. In this case the analysis period spans October 2000 to October 2004; Z_i is defined by the introduction of the Building Skills

Policy in October 2002; and PD_i is defined by the policy's application to projects with a value above \$2 million. The results of this analysis are presented in Table 3 below.

Table 3: Estimated Coefficients for Equation on Bid Numbers on Government Non-Residential Construction Contracts (Building Skills Policy), Western Australia 2000-2004.

Variable	Coefficient	Prob.
Constant	9.3524	0.0000
Policy Implementation Date (PD)	-0.4719	0.0516
Contract above trigger value (Z)	1.4512	0.1009
Pre-Tender Value (PT)	1.39E-07	0.0008
Region	1.2794	0.0000
Building Cost Index	-0.0436	0.0004
PD*Z	-1.4152	0.0986

Notes: Log-Likelihood: 1873.5; Nobs: 807; Method: OLS

The data in Table 3 provide some evidence of a negative impact of the Building Skills Policy on bid activity relating to government non-residential construction contracts in WA. Bid numbers on contracts affected by the policy (i.e. above \$2 million in value and commencing after October 2002) were, on average, 1.42 bids lower than contracts not affected by the policy after 2002. However, this effect was only statistically significant at the 10% level.

A further contrast between the results in Table 3 and those in Table 2 is the significance of building costs as a source of variation in bid numbers. The figures in Table 3 indicate a strong negative relationship between the building cost index and bid numbers. The difference between the results in Table 2 and 3 is likely to derive from the relatively large rate of change in the building cost index between 2000 and 2004, as compared to 1997-2001.

A similarity between the two sets of results is the measured importance of regional factors as a source of variation in bid numbers. In Table 3 the average number of bids on contracts in more remote regions was 1.27 bids less than the number of bids on contracts in the Perth, South West and Peel region. Finally, bid numbers in the analysis period relevant to the Building Skills Policy were positively affected by the value of the contract.

2.4: Discussion of Quantitative Results

The quantitative analysis identified that the Building Skills Policy, but not the Priority Access Policy, affected bid activity for non-residential construction contracts in WA. Bid numbers were lower on contracts affected by the Building Skills Policy following the implementation of the Policy in October 2002. This effect was distinct from the influence of changes in construction costs and regional and project size factors on bid numbers.

These results are significant for two key reasons. First, they indicate that the Building Skills Policy contributed to a lowering of competition for public construction contracts in the 48 month period surrounding its implementation. Such an impact has efficiency consequences for the public construction program, potentially contributing to higher costs and/or lower quality outcomes. Given that WA is currently under the influence of a range of economic pressures, these added costs are of particular concern.

However, this conclusion does not necessarily imply that the Priority Access Policy was a superior training policy. It is important to ask why the Priority Access Policy *did not* affect the willingness of construction companies to bid for public projects. One possible answer is that it did not impose high training requirements – or affect the training actions of construction firms in a significant manner. If this is the case, the evidence presented in this paper can not be interpreted as supportive of the policy.

In sum, the results from the quantitative analysis indicate that the Building Skills Policy affected the actions of construction companies, causing some to avoid tendering for public construction contracts. These results also suggest, however, that the policy was effective in influencing the inclusion/exclusion of public contractors according to their training commitments. There is little evidence that the Priority Access Policy affected bid activity in the public construction ‘market’. Although this may be interpreted in the positive light – that is, of the policy not having negative competitive effects - it is also possible that the policy did not affect training outcomes on public works. The qualitative results, presented in the following section, cast further light on these outcomes.

3. Qualitative Analysis of the Training Provisions in Government Construction Contracts

This section presents a qualitative analysis of the training policies of the Western Australian and Queensland governments. The analysis is based on the costs and benefits as perceived by the main entities affected by these policies, which include the contracting agencies, such as the Department of Housing and Works in WA and the Department of Main Roads in Queensland; sponsoring agencies, such as WA's Department of Education and Training; head building contractors; and subcontractors. The section adds important details on the costs and benefits of training policies leveraged on public construction contracts and, as such, it complements the quantitative materials outlined in the previous section.

The qualitative investigation surveyed key policy officers of the contracting and sponsoring agencies in each State, as well as groups of head and subcontractors. The contractors that participated in the study included those whose companies are currently engaged on public works projects, as well as those who have ceased tendering for public construction contracts. A range of small, medium, and large head and sub-contractors were surveyed in each State and from metropolitan and regional areas. The following paragraphs outline the general nature of the responses recorded on questions relating to the costs and benefits of the different policies.

3.1 Western Australia's Priority Access Policy

Supporting the conclusions reached in the quantitative study, the transcript evidence relating to the Priority Access Policy indicates that it involved only negligible costs but also few benefits. The sponsoring agency, the Department of Education and Training identified only minor costs associated with processing the Priority Access application forms and monitoring the policy:

“It was pretty light. Once people got their certificate and were deemed as Priority Access compliant that was it, there was no heavy monitoring. We had one person

on it, working on Priority Access, so there weren't a lot of resources put in it from our end." (Key policy officer, DET, WA).

Similarly, the contracting agency, the Department of Housing and Works, incurred few additional administrative costs – primarily associated with including the provisions of the policy in the Department's tender and contract documentation

"It's not hard to write things into contracts, it's very easy to write obligations into contracts". (Key policy officer, DHW, WA).

However, the DHW did raise concerns about the impacts of the Priority Access Policy on tender prices, expressing a belief that the Policy had created a disincentive for contractors to bid on government contracts. The contractors that were interviewed during the study did not offer any support for this proposition: claiming that the Policy had no effect on their willingness to bid for government contracts or on the level of their bids (more information on this is contained in coming paragraphs).

The head and subcontractors interviewed associated the Priority Access Policy only with minor time costs. These costs were linked to the tasks of completing and submitting necessary paperwork. The Policy was *not* associated with any additional training costs. The contractors interviewed perceived that they were already compliant with the Policy and that the Policy was *not* the source of their firm's training decision.

This last observation also has relevance to the benefits of the Priority Access Policy. Keeping in mind that the Policy's objective was to:

"Increase the number of apprenticeship and traineeship opportunities for job seekers" (Priority Access n.d., p.3).

The last comment by the contractors suggests it was not successful. Indeed this was also the assessment of the government agencies associated with its implementation. Key problems apparently related to the low training requirements of the Policy. A DET policy officer commented:

“It [the Policy’s training criteria] became so flexible over the years so that people just needed to show that they were committed to training, they provided work experience, and they employed uni-graduates, that sort of thing. It got a piece of cake to meet. At the end of the day I didn’t believe it added any value to the system other than one of perception.”

A similar assessment was made by a DHW policy officer, who also highlighted some counter-productive elements of the Policy:

“When they brought in Priority Access the Priority Access that we ended up with had no particular focus on training either apprentices or professionals or graduates, so providing a contractor could demonstrate training obligations...they became registered...There were comments made across the industry that ‘well now we’ve sacked all of our apprentices because we don’t need them’”.

The contractors who participated in the study were also fully aware of the lax monitoring of compliance with the Policy – and apparently felt no pressure to alter their training decisions as a result of the Policy.

Thus, consistent with the quantitative results, this part of the study concluded that the Priority Access Policy imposed few additional costs on the construction industry but, and possibly more importantly, it also resulted in few (if any) benefits. There were a number of problems with the Policy, which should be avoided in other attempts to achieve social outcomes from public construction contracts. These included, most notably, poorly specified policy objectives and a lack of resourcing of policy compliance. The ability of firms to nominate a range of expenditures on staff development clearly confused the policy intent and undermined efforts to monitor and enforce the Policy. The Policy is likely to have been more effective if it had nominated a small range of training activities (for example, apprentices, trainees and cadets). This would need to be complemented with an adequate resourcing of efforts to monitor compliance and a willingness to reject non-conforming bids.

3.2 Western Australia's Building Skills Policy

The transcript evidence on the Building Skills Policy also creates a negative impression of the net benefits of the policy intervention. Additional administrative costs were generated by the Policy; however, few tangible benefits can be identified.

The sponsoring agency, the Department of Education and Training identified additional costs that were associated with the development and evaluation of what was, apparently, a 'complex policy'. The DHW incurred some minor additional costs due to the need to incorporate the Policy's provisions into standard construction contracts. However, as before, its primary concern was with the negative impacts of the Policy on contractors' willingness to bid on government contracts.

The contractors interviewed typically didn't associate the Policy with more than 'nuisance level' costs. Importantly, in the main, they didn't link the Policy to their decisions about bidding on government projects. Only one of the participants in the study claimed he had been dissuaded from competing for government jobs because of the training provisions.

The industry participants also typically did *not* link their training decisions to the requirements of the Building Skills Policy. As was the case for the Priority Access Policy, these comments also have importance for assessments of the benefits of the Policy - especially as its stated objective was to:

"ensure an adequate supply of skilled labour for current and future needs"
(Building Skills n.d.: 3)

One contractor commented that the Building Skills Policy:

"...wouldn't encourage me to employ apprentices. We employ apprentices because we employ apprentices. I'm not going to employ an apprentice just because I want to get a government job."

The policy officers interviewed were also skeptical about the positive effects of the Building Skills Policy. A telling comment was made by a policy officer from the DET, based on his department's own previous evaluation of the Policy:

“The evaluation of the Building Skills Policy was not very positive, it was found not to have added any new apprentices, we could only find one, we could only identify one.”

The critical reasons for this Policy's lack of success also appear to relate to measurement and monitoring problems. First, once again, contractors appear to have found the Policy's provisions easy to avoid (limiting compliance incentives). One contractor provided the following example:

“You get a hospital say, and you've got a component for the mechanical contractor, whose got to provide so many training hours, and he's got a DHW contract with us, and he's got 15 others with a resource company, and he's got two apprentices, he shoots those two apprentices over here, and meets all his requirements. He hasn't actually gone forward. You know, so that's where the whole system flounders.”

The sponsoring agency also apparently encountered difficulties in measuring actual training outcomes:

“The Policy required that we could only count people working on the site, we could only count people or trades that were actually working on the sites, so you had your cabinetmakers and refrigeration people that didn't count, even though they were doing work for that building.”

In summary, the information collected in the interviews with participants in the industry indicates that there were few benefits generated by the Building Skills Policy. The Policy was not perceived by the interviewees as a significant influence on their training decisions. Other factors – such as confidence in future projects – were much stronger influences on these decisions. However, the Policy was associated with administrative costs for both the government agencies and, to a lesser extent, the contractors. There is

some evidence in the interview transcripts that these deterred some contractors from bidding for government contracts. To the extent that this evidence is representative of the response of a number of contractors across the State, the Policy can be seen to have reduced the pool of competitors for government contracts. This constitutes another important cost of the Policy. The contractors who remained interested in tendering for government contracts appear likely to be those who were already committed to training and/or were able to spread the administrative and training costs across a range of projects. Those who dropped out were either less committed to training or less able to meet the administrative and/or training costs. The incidence of training on government projects may have increased due to these 'selection effects' of the Building Skills Policy. There is no evidence in our transcript evidence that the Policy altered the level of training investment in the State.

3.3 Queensland's 10% Training Policy

The costs associated with the 10% Training Policy appear to be of a similar magnitude and scope to those experienced in WA with the Building Skills Policy. That is, the size of the costs appears to be relatively small and relate primarily to incremental administrative costs. For the sponsoring agency, the Department of Education, Training and Arts (DETA), costs were associated primarily with the initial costs of establishing a database to record relevant information and the staff engaged in monitoring the Policy. For key contracting agencies, such as the Departments of Public Works and Main Roads, small costs are associated with ensuring compliance with the additional contract provisions. No negative impacts on competition for government contracts were perceived by these agencies. Supporting this, most of the contractors interviewed in the study attributed negligible administrative and additional training costs to the 10% Training Policy.

The contractors that were interviewed also attributed only small benefits to the 10% Training Policy. Many of the contractors had already committed to employing apprentices and, as such, identified no impacts of the Policy on their decision to employ apprentices or trainees.

In contrast to these viewpoints and the opinions expressed by the policy officers in the WA government agencies, the Queensland government representatives were positive about the benefits of the 10% Training Policy. Although the Policy's specific contribution to the supply of skilled labour proved hard to quantify, the officers were confident that the Policy had contributed to the creation of a training culture in the construction industry. The following extract from the interview with a representative of the Department of Public Works is illustrative:

Interviewer: *“Do you think that a few of the Departments benefit from that Policy?”*

Policy Officer: *“Yeah I suspect that we do in terms of its overall aims....to improve skills development and training in the industry. Whether I could quote you anything on thatit's very subjective from that point of view.”*

One factor that may have contributed to this positive perception is the inclusion in the Queensland policy framework of a committee of major stakeholders affected by the 10% Training Policy. This is convened by the Queensland Department of Education, Training, and the Arts to discuss issues with the Policy and suggest ways the Policy can be modified to improve the efficiency of its implementation. An equivalent 'feedback' mechanism does not feature in the formal arrangements for the Building Skills Policy in Western Australia.

As this mechanism provides industry feedback on policy design in Queensland it is likely to serve a positive role in communicating the objectives of the Policy, and in building shared commitments to training. Its absence from the policy framework in Western Australia may be an important omission that could be addressed in future developments of that State's policy framework.

Beyond this, the lack of strong evidence in either jurisdiction on the contribution of the policy interventions to actual training outcomes raises questions about their net benefit.

Both the Building Skills and 10% Training Policies contribute additional administrative costs and, at the margin, may discourage some firms from bidding for government projects. Firms that do perform government work may, ultimately, be those committed to training. As noted above, this may indicate that the Policies have ‘selection effects’ – in that government work becomes concentrated in the hands of firms who already share the government’s commitments to training. However, it appears that the Policies do not encourage government contractors to increase their investments in training. Furthermore, especially in times when non-government is easily available, the Policies do not influence the training decisions of the (much larger) group of firms engaged in non-government work. As such, there appear to be important reasons to reconsider the design of these policy interventions.

4. Other Multi-Outcome Policies

This section provides an overview of the differences and similarities in the objectives and implementation frameworks of the employment policies applying to public construction projects in Western Australia and Queensland. These policies include those directed towards indigenous employment and local employment and/or economic development.

4.1 Indigenous Employment Policies

The two jurisdictions approach the promotion of indigenous employment and economic opportunity through their public works contracts in quite different ways. The Aboriginal Enterprise and Employment Tendering Preference Policy (Western Australia) is a tendering price preference policy, where as the Indigenous Employment Policy (Queensland) is a post-tender policy that applies to specific indigenous communities within Queensland. As such, the WA policy delivers potential benefits to construction companies that are already either owned by indigenous people or that currently employ indigenous workers. In contrast, the Queensland policy potentially improves employment and training opportunities for indigenous people in non-indigenous construction companies and/or companies that do not currently employ indigenous workers. A further important difference between the two indigenous employment policies is that the Queensland policy specifically targets employment and training opportunities in

particular communities, whereas the WA policy has no such focus. The table on the following page summarises the features of the two policies.

The qualitative evidence gathered on the costs and benefits of these policies, was limited by the scope and scale of the multi-outcomes project. Indeed, one of the recommendations of the study for a detailed, dedicated study of these particular policy interventions.

Table 4: Indigenous Employment Policy Objectives and Implementation Frameworks

WESTERN AUSTRALIA		QUEENSLAND	
The Aboriginal Enterprise & Employment Tendering Preference Policy		The Indigenous Employment Policy for Queensland Government Building and Civil Construction Projects (IEP)	
Objectives	The objective of the Aboriginal Enterprise and Employment strategy is to increase the number of Aboriginal owned and operated enterprises, or enterprises that employ Aboriginal people, that supply government agencies.	Objectives	The Indigenous Employment Policy has the stated objective of maximising: <i>“.... the potential employment opportunities on Queensland Government building and civil construction projects and address skills shortages in Indigenous communities. It also aims to build Indigenous capacity to participate in building and civil construction.”</i> (IEP, n.d., p.2)
Policy Trigger Value	All State Government building and construction contracts.	Policy Trigger Value	All State Government building and construction contracts in specified Indigenous communities with a total contract value exceeding \$100,000 for building or civil construction contracts of any value.

Implementation Time	Tender evaluation.	Implementation Time	Post-tender.
Quantity Requirements	The policy has been implemented through the use of a tendering preference. The tendering preference is calculated as 10% of the tender amount, with the maximum tendering preference being set at \$100,000. The preference amount depends on whether the organisation employs indigenous people or is an indigenous enterprise.	Quantity Requirements	The policy replaces the 10% Training Policy in specified indigenous communities. The quantity requirements in the policy require that a minimum of 20% of the deemed labour hours be undertaken by indigenous people recruited from the local community, with half of the 20% of labour hours to be in accredited training.
Quality Controls	None.	Quality Controls	None.
Responsible Entity	Tenderer	Responsible Entity	Contractors and/or subcontractors.

The qualitative information gathered on the Aboriginal Enterprise and Employment Tendering Preference Policy indicates that it has had little to no effect. For example, data provided in a personal communication by a policy officer at the Department of Housing and Works, indicate that the Policy has only affected the awarding of *one* contract out of seventy (or 1.43% of contracts that included bids from indigenous enterprises).

The Queensland Indigenous Employment Policy appears to be associated with a relatively large commitment of government resources (primarily by the sponsoring agency, the Department of Employment and Industrial Relations) and more substantial benefits. Some indication of these benefits is provided in the following communication from a policy officer at DEIR:

“Available data from January 2006 to 30 June 2006 indicates that 410 jobs were created through the IEP (20% Policy) on 23 building construction projects and 43 civil construction projects. It is expected that this figure would be higher if all agencies strengthened the reporting compliance obligations in their contracts with successful tenderers.”

Against this, concerns were raised by some study participants about the possible transient nature of the employment and training opportunities created by the Policy. Contractors also referred to some costs associated with the Policy, especially those due to the employment of relatively low-skilled labour. Commitment to the objectives of the scheme by contractors and indigenous communities were identified as vital components of its success.

4.2 Local Employment Policies

There are currently substantial differences between the Queensland and WA approach to the promotion of local employment/enterprise via state government construction contracts. The WA Buy Local Policy is based on a tendering price preference scheme whereas the Queensland Local Industry Policy is based on identifying potential local suppliers and disseminating information to local contractors and subcontractors about

forthcoming construction projects. As such, the Queensland approach avoids a limitation of the price preference approach, that it is negated by the Australian and New Zealand Procurement Agreement when a tender is submitted from either another state in Australia or from New Zealand.

The Local Industry Policy is also implemented much earlier in the life-cycle of construction projects than the Buy Local Policy. Specifically, it comes into operation in the planning/pre-tender stage of a project, whereas the Buy Local policy is not implemented until the tendering stage of a project. The Queensland approach features a role for the Industry Capability Network in gathering, providing, and/or disseminating information to project proponents on the capabilities and competitiveness of local suppliers. This proactive approach to involving local suppliers in state construction projects is not evident in the WA approach.

The Local Industry Policy, unlike the Buy Local Policy, also adopts a focused approach to the pursuit of local employment opportunities. The Policy is only applied to construction projects when benefits are anticipated. Projects that, for example, by their nature already contain high levels of local content are exempted from the Policy. This provides a mechanism whereby the administrative and other costs of the Policy's imposition can be weighed against potential benefits.

The Local Industry Policy also features a flexible approach to the definition of the local area, which is not evident in the WA Buy Local Policy. In the Queensland policy, the prescribed distance from the contract location is based on the existence of a competitive pool of tenderers, whereas in the WA policy the prescribed distance from the contract location is fixed. This difference between the policies is likely to affect the policies' respective impacts on the competitiveness of the tendering process and, potentially, contract prices. The details of the two Policies are summarised in the following table.

Table 5: Local Employment Policy Objectives and Implementation Frameworks

WESTERN AUSTRALIA		QUEENSLAND	
Buy Local Policy		Local Industry Policy	
Policy Objectives	The stated objective of the Buy Local Policy is <i>'To maximise supply opportunities for competitive local Western Australian businesses when bidding for State government contracts'</i> (Buy Local Policy 2002, p.1). The Policy's specific aims include: increasing local contracting opportunities, facilitating sustainable local business employment growth, maximising industry development potential, stimulating competition, and ensuring that government agencies' purchasing decisions are based on best value for money.	Policy Objectives	The preamble to the Local Industry Policy also implies objectives relating to maximizing local employment: <i>"Whilst recognising that investment decisions are made in a competitive global market, it is desirable to achieve the maximum level of local content in goods, services and labour where these are competitive as to price, quality, and delivery requirements."</i> ("Local Industry Policy" n.d., p.2)

Policy Trigger Conditions	A “local content” selection criterion is applied to the evaluation of state government tenders that have an estimated contract value of \$750,000 or above.	Policy Trigger Conditions	Queensland government funded projects with a value greater than \$5 million or major projects where the Queensland government has provided a significant contribution (i.e. the Queensland government has made a total financial contribution with a value greater than \$2.5 million).
Implementation Time	Tender Evaluation.	Implementation Time	Pre-tender.
Quantity Requirements	Two <i>Regional Price Preference</i> schemes apply: the Regional Business Preference scheme; and the Regional Content Preference scheme. The Regional Business Preference scheme provides businesses that are located within a prescribed distance from a contract point with a price preference that applies to their total tender bid. When assessing tender bids, the scheme allows government agencies to reduce the value of total tender bids of	Quantity Requirements	The preparation of a Local Industry Participation Plan.

	<p>eligible businesses by a specified percentage.</p> <p>For the assessment of goods and services purchase or contract tenders, the total tender bid is reduced by 10%, up to a maximum reduction of \$50,000, and for the assessment of housing and works purchase or contract tenders, the total tender bid is reduced by 5%, up to a maximum of \$50,000.</p> <p>The Regional Content Preference provides businesses located beyond a prescribe distance from a contract point with a price preference that applies to the total cost of goods and services purchased from businesses within a prescribed distance from a contract point. When assessing tender bids, the regional content price preference scheme allows government agencies to reduce the value of the total cost of goods and services purchased from businesses within a</p>		
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	<p>prescribed distance from a contract point by a specified percentage. For the assessment of goods and services purchase or contract tenders , the total cost of goods and services purchased from businesses within a prescribed distance from a contract point is reduced by 10%, up to a maximum reduction of \$50,000. For the assessment of housing and works purchase or contract tenders, the total cost of goods and services purchased from businesses within a prescribed distance from a contract point is reduced by 5%, up to a maximum of \$50,000.</p>		
<p>Quality Controls</p>	<p>Not applicable.</p>	<p>Quality Controls</p>	<p>Not applicable.</p>

The transcript evidence on the costs and benefits of the WA Buy Local Policy generally follows a similar pattern to that established in the discussion of the State's training policies. That is, the Policy was generally perceived as imposing small additional administrative costs but also as generating few benefits. In addition, the Buy Local Policy is perceived by some in the industry as producing substantial anti-competitive effects.

Administrative costs were associated for contracting agencies, such as the Department of Main Roads, as a result of the imposition of a more complicated project assessment process. However, for this Department at least, the process did not result in a substantial change in the decisions made on tenders; largely due to the relatively low value of the price preference in relation to the size of most projects.

The transcript evidence from the interviews with contractors suggests that the Buy Local Policy has substantial anti-competitive effects. To the extent that this limited sample is representative of the relevant section of the industry, this is likely to have raised the cost of construction projects in remote or regional areas, but may have, via the protection afforded to local firms, encouraged local employment.

One of the head contractors interviewed thought that the Buy Local Policy acted as a negative incentive for 'external' (non-local) companies to bid on government contracts in particular areas. His assessment was that non-local firms were placed at a 5% to 10% disadvantage and that this reduced the number of bids for contracts subject to the Policy. His own company had stopped bidding on regional contracts subject to the Buy Local Policy because of a perception that it gave local contractors an unfair advantage.

Another head contractor that we interviewed asserted that the Policy produced further inefficiencies. Specifically, he believed that local builders *should* be able to put in cheaper bid prices for local projects because they don't have to pay travel and accommodation expenses. By further reducing the competitiveness of external bidders,

the Policy presumably reduces the pressure on local builders to reflect these cost advantages in their tender bids.

Another interviewee alleged additionally that the Buy Local Policy was subject to widespread rorting, with companies falsely claiming they have a business located and operating in the area. He gave the example of a company claiming they had a business located and operating in a local area when in fact they only had a shed without any facilities. This interviewee also claimed that there is no monitoring or validation of values claimed against the Buy Local Policy. This is likely to cause the benefits of the Policy to be overstated.

“We had a project that was in ... for ten or twelve houses, and a builder, I won’t give you his name, he had a so called registered office in ...and he was going to turnaround and workout of that office. That office in ... was a shed. He didn’t have anyone up there, he didn’t have a phone up there, he didn’t turnaround and have anything up there.”

The Queensland Local Industry Policy appears to have also generated small additional administrative costs. However, concerns about these costs and the Policy’s potential anti-competitive effects appear to have been mitigated by the flexible approach adopted to the Policy’s implementation.

Administrative costs have been associated with the development of the Local Industry Policy and with the operation of the ICN. However, the application of the Policy only to projects that are likely to generate substantial local benefits has, apparently generated cost savings, as is reflected in the following comment (made by a policy officer from the Department of State Development):

“If you are putting up a \$5 million school out in Longreach or somewhere like that, it’s going to be all Bessablock and it’s all going to be local.... So do we really want to go chasing that? And the answer is no, because it was putting an imposition on agencies to do something that wasn’t going to make a difference.”

The impact of the Policy on contracting costs also appears to have been limited by the flexible approach that has been adopted to the definition of ‘local’. This is done with reference to the existence of a competitive pool of tenderers – rather than a fixed geographical distance. This helps to ensure that, even in the presence of the Policy, sufficient bids are received for government construction contracts.

5. Concluding Comments

The evidence that has been compiled on the leveraging of social outcomes on public construction projects raises substantial concerns about the net social benefits of many current interventions. Several interventions appear to involve a ‘light’ approach to the imposition of training or employment obligations on contractors. As such, they have the advantage of keeping administrative and additional contracting costs to a minimum. However, the positive impacts of the policy interventions on training and employment outcomes also appear to have been very small.

The comparison of the policy approaches adopted in Queensland and WA has yielded some insights into possible improvements. The positive assessment of the impact of the committee established to provide industry feedback on the 10% Training Policy in Queensland indicates that structures of this type could be important innovations in other jurisdictions and for other policies. The higher level of resourcing of Indigenous Employment Policies in Queensland – together with the adoption of employment and training targets for specific indigenous communities – appears to have been much more successful than the WA approach, based on tender preference. The resourcing of the Industry Capability Network in Queensland - together with the adoption of a flexible approach to the application of the Local Employment Policy – appears to have avoided many of the problems experienced with the WA Buy Local Policy.

Generally, however, the project has highlighted that in the absence of strong industry commitment to policy objectives, policy interventions are likely to result in high levels of avoidance activity, substantial administrative costs and very few benefits. Thus, for

policy action on, for example, training or local employment to be successful, compliance issues must be adequately addressed.

Currently it appears that pre-qualification schemes (similar to the Priority Access Scheme) and schemes that rely on measuring, for example, the training investments of contractors within particular projects do not achieve high levels of compliance and involve significant administrative costs. Alternatives need to be developed to these policies. One *possibility* is a levy on each public construction project – set as a proportion of the total project costs. Although a full evaluation of this policy alternative was beyond the scope of the multi-outcomes construction policies project, it appears to offer the potential to minimize the transaction costs on contractors whilst enabling the creation of a training agency dedicated to improving the supply of skilled construction labour. A recommendation is thus made that this policy alternative be fully researched and evaluated.

The outcomes of the multi-outcomes research project also highlight the need for sensitivity to project circumstances in the development and implementation of policies for public construction projects. Ideally a policy framework would have the flexibility to respond to circumstances where contractors share a commitment to the policy objectives and are able to identify measurable social outcomes from the particular government projects they are involved in. This would involve a project-by-project negotiation of goals and performance measures. It is likely to only be practical for large, longer term projects.

As a final observation, the multi-outcomes project has also shown the potential for policy development in each State to be informed by the experiences of other jurisdictions. As Queensland and Western Australia share many similar economic and other characteristics, and have very similar social and economic goals, this potential is especially large. Thus, it can be expected that there will be ongoing collaborations between the State governments on research aimed at further improving training and employment outcomes via public construction projects.

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