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Assessing the Effectiveness of Regional Policy Responses to Mass Redundancies: The Case of the Illawarra Region, Australia

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Abstract

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Assessing the Effectiveness of Regional Policy Responses to Mass Redundancies: The Case of the Illawarra Region, Australia*

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Regional economies historically reliant on large-scale manufacturing are particularly susceptible to episodes of mass employee redundancies. This was evident in the case of the Illawarra region in 2011 following the announcement of BlueScope Steel to close one of its two remaining blast furnaces. In common with recent closures of large manufacturers in regional Australia, the Federal Government reacted with policies to help redundant workers obtain reemployment as well as investment attraction strategies to create employment in the region. The research presented here uses a longitudinal and mixed methods approach to analyse the effectiveness of these policies. We uncovered a number of deficiencies in the implementation and evaluation of these policies and offer a number of recommendations with respect to programme flexibility, stakeholder representation and government transparency.

Keywords: R58 Regional Government Analysis: Regional Development Planning and Policy, R23 Household Analysis: Regional Labor Markets, J21 Demand and Supply of Labor: Labor Force and Employment, Size and Structure, J4 Particular Labor Markets: Public Policy.

1. Introduction

Structural change often manifests in mass scale redundancies concentrated in regional economies. Prominent recent examples in Australia are the closure of car manufacturers in South Australia and Victoria and the decline in forestry operations in Tasmania. Redundancies are also relatively common in steel manufacturing, with mass redundancies experienced over time in Newcastle and the Illawarra (New South Wales, Australia), alongside dramatic job loss overseas in regions such as Sheffield (England), Pittsburgh (United States) as well as numerous regions in Europe. The spatial concentration of job loss has led to a rich literature documenting post-redundancy outcomes for affected workers and a burgeoning interest in effective regional policy intervention.

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In this paper, we present a case study of the Illawarra region of New South Wales in Australia, an area historically dependent on steel manufacturing. In 2011, Australia was experiencing a mining boom, resulting in the increased prices for iron ore and coal, and an appreciating Australian dollar. The increase in input prices and weakened export competitiveness resulted in the major steelmaker in the Illawarra region (BlueScope) ceasing exports and halving its production capacity, resulting in the redundancy of 800 steelworkers. The Federal Government immediately announced a \$40 million package consisting of the Illawarra Region Innovation and Investment Fund (IRIIF) to attract capital investment to the region to create sustainable and diversified employment, in addition to a Labour Market Program (LMP) focusing on Job Service Providers (JSPs) aiding redundant steelworkers regain employment.

The objective of this research is to document post-redundancy employment outcomes of steelworkers and IRIIF job creation and offer an evaluation of the effectiveness of these policies. In common with other similar regional programmes in Australia, our task was impeded by the lack of data in the public domain and refusal to provide such upon request to government agencies. We ultimately provide a number of policy recommendations based on our limited analysis and with reference to overseas regional policies.

The structure of the paper is as follows. A general review of literature addressing structural change, redundancies and its impact on regions is provided in Section 2, followed by the case study of the Illawarra region in Section 3. Research and policy evaluation methods are discussed in Section 4, with post-redundancy findings in Section 5 and analysis of IRIIF in Section 6.

2. Structural Change, Workforce Redundancy and Regional Impact

Structural economic change entails a shift in the industrial composition of production and employment (Ngai & Pissarides, 2007). Over time, developed economies have evolved from a focus on agriculture to manufacturing and then services and innovation, with the downward trend in manufacturing often associated with global integration and emerging market economies (Autor *et al.*, 2013). Redundancies can have far-reaching effects for the individual worker, family and local community. As such, a wealth of redundancy research literature has emerged, analysing the effects of redundancy from numerous viewpoints and disciplines.

From an economic perspective, various labour supply factors have been identified in empirical research as influencing redundant workers' re-employment prospects including age (Oesch & Baumann, 2015), migrant status (Hardoy & Schöne, 2014) and human capital (Kriechel & Pfann, 2005). The finding that older age inhibits the chances of workers finding re-employment is common across these studies (Walker *et al.*, 1985) and reflects more general research that older workers tend to experience longer unemployment or become only marginal attached to the labour force following job loss (O'Brien, 2011).

With regard to labour demand, economic downturns and recession are often the catalyst for mass redundancies (Pascoe-Deslauriers *et al.*, 2016), with the state of the business cycle and local labour market conditions also affecting post-redundancy outcomes (Webber & Campbell, 1997). Recent research has highlighted the prevalence of precarious employment for those obtaining jobs after redundancy (Armstrong *et al.*, 2008; De Ruyter *et al.*, 2010).

Structural change often manifests in mass workforce redundancies concentrated in specific regions (Webber & Campbell, 1997). This is particularly common for large-scale manufacturing operations such as steelmaking. As such, international research on the post-redundancy employment outcomes of steelworkers has been conducted in a number of locations such as Sheffield (Westergaard *et al.*, 1988) and Wales (Gardiner *et al.*, 2009) in the United Kingdom, Pittsburgh (Treado, 2010) in the United States, as well as numerous regions in Europe (Sziraczki, 1988; Winter-Ebmer, 2001; Sznajder, 2006). Recent economic geography research into structural change affecting regions highlights the role of related industries and skill relatedness as key influences for workers' post-redundancy employment success (Diodato & Weterings, 2015; Otto *et al.*, 2015; Neffke *et al.*, 2017).

Other relevant literature considers the policy response of governments in face of structural change. In recent times, many governments have been active in the process of industrial rejuvenation and

regional regeneration. Innovation is often seen at the core of this rejuvenation process as well as cooperation and linkages between government, industry, unions and the research community (Spoehr, 2014). Trippel and Otto (2009) also emphasise the role of different types of cluster renewal and formation for the recovery of old industrial areas. Perhaps, the most comprehensive policy guidelines come from the European Commission consisting of analysis of the regional context and potential for innovation, ensuring participation and ownership in governance, development of an overall vision and policy map for the future of the region and integration of monitoring and evaluation mechanisms (Foray *et al.*, 2012; Carayannis & Rakhmatullin, 2014).

In the Australia context, Beer (2015) states that the policy responses to mass redundancy in regional Australia tend to be *ad hoc*. The preferred response of recent years has been a combination of investment attraction and LMPs. For example, in the wake of Mitsubishi's closure in 2004, governments committed \$45 million to private sector capital subsidies and \$10 million to JSPs to assist displaced workers attain reemployment. Similarly, the closure of Ford in Geelong in 2016 was met with a \$29.5 investment attraction fund (Department of Industry, Innovation and Science 2015) and JSP assistance for displaced workers.

Research relating to Mitsubishi redundancies was generally critical of JSP effectiveness in assisting redundant workers. Anaf *et al.* (2013) stated that JSPs seemed preoccupied with compliance issues rather than helpful assistance. Redundant Mitsubishi workers commented that JSPs were ill-suited to assist them, being more used to dealing with long-term unemployed rather than skilled workers with a long work history (Armstrong *et al.*, 2008). Notably, little analysis exists of the investment attraction strategies. Beer and Thomas (2007) found that projects were not necessarily targeted to the same region where jobs were lost, while Armstrong *et al.* (2008) made a passing comment that job targets were not met, with no further information. Daley and Lancy (2011) are critical of the effectiveness of investment attraction strategies in general in Australia, stating that recipients are sometimes not made public, evidence of jobs created not collected, evaluation being only qualitative and outcomes not disclosed. The OECD (2016) also notes a lack of monitoring or reporting of outcomes from these regional adjustment programmes.

In summary, there is a burgeoning literature on the causes and effects of mass redundancies and a growing interest in the regional policy responses. An in-depth analysis of the effectiveness of investment attraction strategies is largely absent from the research literature in Australia. Furthermore, while investment attraction strategies are typically announced at the same time as LMPs in response to mass redundancies, there has been no attempt to explore any links between the redundant workers and investment attraction strategies. The circumstances of our case study are rather unique. The catalyst of the job loss appears related to the Dutch disease rather than recession or traditional structural change. Therefore, of interest to the study will be the role of the mining boom within the regional adjustment process.

3. Steelmaking in the Illawarra region, Mass Redundancies and Policy Response

The Illawarra region is the tenth largest in Australia with a population of approximately 300,000 (Branigan *et al.*, 2016). The region has a long history of steelmaking dating back to the early 1900s. In 1926, the Hoskins steelworks relocated their company from Lithgow to Port Kembla (Illawarra) and in 1928 Australian Iron and Steel Ltd. (AIS) was formed. In 1935, AIS merged with Broken Hill Propriety Ltd. and the new company was named BHP/AIS. This new company expanded its operations purchasing coal mines and expanded into shipping and, by 1936, employed 3700 workers in Port Kembla. In 1939, Port Kembla and its associated industries accounted for the employment of over 60 per cent of male employees in the region (Markey & Wells, 1997; Lee, 2001; Rittau, 2001). The BHP Steelworks grew to become the largest steel producer in Australia during the 1960s, and continued to account for around two-thirds of the region's manufacturing employment (Mangan & Guest, 1983).

During the early 1980s, the steel industry experienced a global crisis which led to major local job losses and redundancies. Employment at the Steelworks fell from 20,350 in May 1981 to 14,400 in May 1983 (Mangan & Guest, 1983). In response, the Steel Industry Plan was developed by the Federal government in 1983, requiring the company to maintain its steel-making capacity, to invest

\$800 million over a five-year period and refrain from further compulsory retrenchments (Steel Industry Advisory Council 1983). During the early 1990s recession, the steel industry experienced another significant downturn, resulting in BHP employing only 22 per cent of the region's workforce by 1991 (Lee, 2001). The workforce at BHP Port Kembla, renamed BlueScope Steel in 2003, continued to decline with approximately 4,000 employed throughout the 2000s (IRIS Research 2013).

On 21 August 2011, BlueScope Steel announced a \$1 billion loss. Citing high raw material costs and exchange rate associated with the mining boom, BlueScope reacted by discontinuing exports. This resulted in the shutdown of one of its remaining two blast furnaces and the direct loss of 800 employees, with at least 300 regular contractors thought to be displaced. The estimated multiplier effect was that a total 2567 jobs would be lost in a region with an employment base of less than 100,000 (Braithwaite *et al.*, 2011).

The Federal government's response to the job loss at BlueScope was swift. The \$30 million IRIIF was announced on 22 October 2011. Its role was to support new investment projects that created sustainable job opportunities in the Illawarra region. Its stated purpose was to support innovative job creation projects with high skilled jobs that would diversify and strengthen the regional economy (Carr, 2011). The assessment criteria for projects consisted of the:

- 1 number of new jobs;
- 2 contribution of the project towards the diversification of the region's economy;
- 3 sustainability of the project over the longer term without the need for ongoing government support;
- 4 extent to which the project would be unlikely to proceed without support; and
- 5 introduction of new innovations or technology.

In addition to the IRIIF, a \$10 million LMP was allocated to JSPs to aid the redundant steelworkers directly. Redundant workers were provided with individual case managers, a \$9000 relocation allowance, a \$3000 jobseeker account for retraining and equipment as well as wage subsidies.

4. Methodology

The research methods offer a microeconomic analysis of supply and demand with perspectives from ex-BlueScope workers and IRIIF recipients. Building upon O'Brien and Burrows (2018), post-redundancy experiences of steelworkers displaced after the 2011 downsizing were traced over an eighteen-month period using longitudinal surveys and interviews. This longitudinal analysis was focused on recording workers' labour force status. Survey data were collected from ninety-two respondents in May 2012, with a matched sample of fifty-four respondents in July 2013. Our goal was to collect data from all redundant workers, so this response rate was relatively low and may reflect our ethics approval process that dictated that BlueScope contact the workers in the first instance via mail. Notwithstanding this low response rate, a positive sign of sample representation was that the age profile of our sample matched that of the population (the only demographic information provided by BlueScope). In addition to the surveys, interviews were conducted with fifteen respondents to collect deeper qualitative insights. Of interest to both survey and interviews were job mobility for workers of different ages, the effectiveness of JSPs in assisting displaced workers find employment and also whether any found jobs in IRIIF organisations.

Next, a policy evaluation of IRIIF, and to a lesser extent the LMP administered by JSPs, is provided. Evaluation of government programmes such as IRIIF allows an assessment of a policy's efficacy, value for money as well the accountability of public bodies involved. An appropriate evaluation methodology requires three key components (Wren, 2005). First, the *policy effect* needs clear definition and must reflect the aim(s) of the policy. Second, the *measurement* step requires the counterfactual position, being the hypothetical outcome if policy intervention did not occur. Related to this issue is the concept of "additionality," being the extent to which an activity is undertaken on a larger scale, takes place at all, or earlier than planned, as a result of the public intervention (Wren, 2007). Third, an appropriate *appraisal technique* must be chosen. At the micro level, we can attempt to measure the policy outcome, representing the short-run effect occurring in the market affected directly by the

intervention. Alternatively, we can attempt to measure the longer term and wider macro impact using a technique such as cost–benefit analysis, which can take into account a number of external displacement, linkage, feedback and multiplier effects.

The stated aim of IRIIF was to create a sustainable and diversified employment base in the region, while the aim of the LMP was the re-employment of redundant workers. Therefore, employment creation is the primary policy effect of interest. The biggest problem faced in the policy evaluation of both IRIIF and LMP is the measurement step, requiring the estimation of the counterfactual employment level at firms if IRIIF support was not received, or the number of redundant workers who would have been reemployed in the absence of the LMP. Indeed, a comparison of the two outcomes for the same unit when exposed/not exposed to the programme is often described as a fundamental problem of causal inference (Holland, 1986; Imbens & Wooldridge, 2009; Morgan & Winship, 2015). A number of problems can emerge in this step if we rely on the subjective assessment of grant recipients or policy-maker. Alternatively, if general survey data are used and non-recipients are included as a control or comparison group in statistical or econometric analyses we run into a number of other issues such as selection bias (Girma *et al.*, 2008). Another approach commonly used in the United States involves individuals randomly assigned to a programme and is seen as a more accurate, albeit less ethical, approach as the control group is deliberately denied assistance (Card *et al.*, 2010). Unfortunately, general survey data at the firm or employee level are not available and a random trial was not conducted. Therefore, we are left to rely on primary data collected from IRIIF grant recipients and redundant steelworkers. Finally, with respect to appraisal technique, we are again hampered by data constraints. We do not possess displacement, linkage, feedback and multiplier effects and thus rely on approximate cost per job estimates of IRIIF. No actual cost data exists for the LMP, leaving us with qualitative data only in its evaluation.

While we were able to access public data on projected employment creation and funding costs of approved IRIIF projects (Bulletpoint n.d.), data on actual outcomes were collected directly from grant recipients. No data on actual IRIIF outcomes was publicly reported and relevant government departments refused to release “confidential” employment data in response to multiple freedom of information requests. Of the thirty-eight approved IRIIF projects, seventeen participated in face-to-face or phone interviews, nine via email correspondence, information for a further seven organisations was obtained via media releases or bankruptcy notices, while no contact was obtained for the remaining five recipients. The refusal of relevant government departments to release useful evaluation data was also encountered by politicians (DIIRS, 2015) and is common to past regional schemes (Daley & Lancy, 2011; OECD, 2016). In addition, some IRIIF recipients stated that they were directed by government departments not to disclose any information to third parties such as us.

5. Outcomes for Redundant Steelworkers

The employment status of our steelworker sample in May 2012, approximately six months after redundancy, is reported in Table 1. Overall, 40 per cent of respondents were reemployed, with a labour force participation rate (LFPR) of 66 per cent and an unemployment rate of 40 per cent. These percentages compare relatively favourably to past BHP Newcastle redundancy research

Table 1. *Employment Status May 2012 by Age Group*

Age (years)	Employed (%)	LFPR (%)	Unemployment rate (%)	<i>N</i>
25–44	100	100	0	13
45–54	44	77	43	18
55–59	31	60	48	35
60–64	19	50	62	26
Total	40	66	40	92

Source: BlueScope Redundancy Surveys, May 2012 authors’ calculations.

from the 1980s (Gordon *et al.*, 1986, 1989). However, in common with past research, we can see that the percentage of those employed clearly decreased, and unemployment rates ascended, with older age.

Other findings indicated just over half (62 per cent) of respondents described their current job as similar to their BlueScope job, with less than a quarter in casual employment. Approximately a quarter of respondents had to relocate outside of the Illawarra region. Some of these results can be attributed to the natural resource boom with mining companies providing over a quarter of jobs. This reinforces economic geography research emphasising related industries and skill relatedness for structural change adjustment. Another defining feature of successful re-employed workers was the use of personal networks in the job search process, with over a half attributing re-employment to their friends and network, compared to only 16 per cent attributing their success to their JSP. Some were quite critical of their relationship with their JSP, with 17 per cent of the unemployed actually citing the JSP as a barrier to their re-employment. Another finding from this research is that none of our re-employed steelworkers named any IRIIF recipients as their new employer. In fact, only 56 per cent of redundant workers indicated that they had even heard of the IRIIF.

Of the ninety-two respondents to the first survey, fifty-four also responded to the July 2013 survey to create our matched longitudinal sample. Checks were made to ensure that this matched sample was representative of the original sample to minimise the possibility of non-response bias. Analysing employment status by age in Table 2, we observe a near identical LFPR as May 2012; however, employment rates had increased from 40 to 51 per cent while the unemployment rate had declined from 40 to 25 per cent.

Contrary to previous post-redundancy studies, we observe that the main improvement came from the older age group of fifty-five to fifty-nine years. Exploiting the gross flows of information available from the longitudinal nature of the data, we observed all unemployed from the original survey were now employed, except for one worker who had retired. A common explanation given by these older workers was an adjustment to their job search strategy. While 80 per cent of the unemployed in wave one stated that they were reliant upon their JSP in the months after redundancy, many gave up relying on this means, with the majority indicating that either the Internet or their friends and networks were the means through which they ultimately achieved their new job.

With regard to policy evaluation of the \$10 million LMP, the key question surrounds how many of the reemployed workers would have obtained their jobs without support from their policy-funded JSP. Our analysis indicated that only 16 per cent attributed their employment success to their JSP, while virtually no respondents who obtained their employment in the following twelve months gave their JSP any credit for their re-employment. If we infer that all 16 per cent of those re-employed would not have obtained their employment without JSP intervention, an extremely generous assumption, a total of fifty jobs could be attributed to the LMP. However, given that most of those that subsequently transitioned from unemployed to employed in the second wave did so without JSP assistance, our estimate of the policy is almost certainly biased upward. This is especially so, given the presence of the mining boom and labour shortages in that sector. Our estimate differs greatly to a claim made by a contractor

Table 2. *Employment Status July 2013 by Age*

Age (years)	Employed (%)	LFPR (%)	Unemployment rate (%)	N
25–44	100	100	0	7
45–54	45	73	38	11
55–59	52	60	12	25
60–64	18	55	67	11
Total	51	67	25	54

Source: BlueScope Redundancy Surveys, May 2012 and July 2013.

for the Department of Education, Employment and Workplace Relations reported in local media that attributed re-employment of 262 redundant workers to JSPs (Paver, 2012).

6. An Analysis of the Effectiveness of IRIIF

A total of thirty-eight successful IRIIF recipients were announced over two rounds in April and November 2012 (Bulletpoint n.d.). To be compliant with grant rules, recipients had to fund at least 50 per cent of the project, expend grant funds by 30 June 2014 and create the jobs, which were then required to be retained until at least 31 January 2016 to be deemed “sustained.” The expected number of jobs was 985.5 full-time equivalents (FTE) with total combined investment from government and recipient firms exceeding \$95 million. Individual projects ranged from \$234,256 and the creation of two jobs to a number of multimillion dollar projects, the largest individual grants being to establish a printery (190 jobs), IT services hub (ninety-eight jobs), call centre (ninety-seven jobs), health facility (eighty jobs) and expansion of a tourist water park (fifty-four jobs).

A sectoral breakdown in Table 3 shows that twelve projects were approved in manufacturing, nine in IT and five in mining support. The establishment of new firms in the region was evident in seven projects while the remainder consisted of expanding existing Illawarra firms. Ultimately, according to our data collection, the number of jobs actually created was somewhere between 346 and 385 FTEs or 35–39 per cent of the original job creation target (the uncertainty in our estimates is due to the absence of data for five firms). The weakest job creation outcome relative to target was in manufacturing where less than 20 per cent of jobs was achieved. Between fourteen and nineteen approved projects did not commence due to difficulties in contract negotiations, such as reluctance to commit to grant conditions, or due to takeovers and mergers of recipient organisations. Of particular concern was that most of the large employment creation projects did not proceed.

Using IRIIF project assessment criteria as our reference point:

1. *Job creation*: well under 50 per cent of the job creation target was met. A large contributor was the high proportion of projects that did not proceed, with our estimates suggesting that less than one-third of the expected government funding was expended. From the scant public data available, thirty-one IRIIF contracts were registered with the Department of Industry in 2013 worth \$25.8 million, but in 2014–2015, this was reduced to twenty-two contracts worth only \$13 million (Department of Industry, Innovation and Science 2013, 2015).

One of our interviewees commented that there were large delays in the announcement of recipients of the second round of funding; however, job creation deadlines were not adjusted accordingly. This was seen as placing undue pressure on firms to create jobs in a short amount of time and deterred many from proceeding. In addition, while the mining industry was booming at the time of the IRIIF announcement, a subsequent decline in commodity prices resulted in a sectoral downturn, affecting projects tied to that industry’s prosperity.

Table 3. IRIIF Job Creation Targets and Outcomes by Sector

Sector	Projects approved	Projects that proceed	Target no. of jobs	Actual no. of jobs	Percentage of job target	Cost per job (\$)
Manufacturing	12	6–8	278.8	36.4–53.4	13–19%	29,470–30,174
IT	9	5–7	291.7	74.7–96.7	26–33%	36,114–37,922
Mining	5	2	94	33	35%	32,173
Tourism	3	3	89	90.3	101%	39,224
Finance	2	0–1	45.5	0–30.5	0–67%	0–10,294
Other	7	2	186.5	82	44%	23,337
Total	38	18–23	985.5	346.85–385.9	35–39%	30,044–30,926

Source: IRIIF Recipient Interviews, Media releases, Bankruptcy notices, authors’ calculations.

At least half of recipients that proceeded with projects stated that they were unable to achieve their job targets on time. However, there was mixed evidence as to the reaction from programme administrators. Typically, those who had experience in previous schemes commented that administrators were very flexible with deadlines. However, numerous others were frustrated that they were unable to seek accommodating extensions when unexpected events occurred, with some forced to pay back portions of the grant. One interviewee indicated that the cordial relationship with administrators and flexible attitude to job creation deadlines appeared to suddenly change when a negative story regarding IRIIF administration surfaced in national media (Atkin, 2013).

Finally, some IRIIF recipients complained about the lack of coordination between government departments as impediments to their planned job creation, such as local council development application delays, changes to apprenticeship and traineeship rules and patent and commercialisation delays. As an aside, none of the firms receiving IRIIF funding indicated that they employed any redundant BlueScope workers.

2. *Diversification*: Ministerial guidelines for IRIIF were contradictory in nature with official documentation stating that the purpose was to create jobs to diversify the regional economy, but elsewhere stating that these jobs were expected to be in manufacturing (Carr, 2011). Parliamentary notes reported that sixty-four firms applied for funding, but we have no information on the unsuccessful applicants in terms of the projects proposed nor the industrial sector (Parliament of NSW 2013).

Furthermore, it is apparent from the programme description and assessment criteria that that proposed projects were assessed individually, meaning that there was no consideration or encouragement for the formation or expansion of clusters, agglomeration or consortiums in particular sectors as recommended in regional innovation literature (Trippel & Otto, 2009).

3. *Sustainability*: This concept appeared to be quite narrowly defined as the jobs being created by 30 June 2014 and still existing in 31 January 2016. This was a relatively short time period for the creation of a substantial amount of jobs unless a project was effectively ready to go immediately. There appeared to be little to no consideration of *environmental sustainability*, with many of the projects approved in manufacturing and support of the mining industry.

4. *Need for Government support to proceed*: Applications were viewed favourably if they were unlikely to proceed without government support. Most smaller firms confirmed that they would have been unable to proceed in the absence of the investment funds. However, many of the interviewees suggested that the larger projects would have occurred in the absence of government funding, albeit at a slower pace or at a later point in time. This information is relevant to the “additionality” associated with IRIIF or the true job creation of the policy intervention. While we have qualitative data from our interviews suggesting that some projects would have occurred (eventually) without IRIIF support, it may be impossible to attain an accurate estimate of additionality, or likewise the counterfactual employment levels. However, given the responses of IRIIF interviewees, it is certain that the true number of jobs created by IRIIF is overstated by our figures.

5. *New innovation and technology*: The focus of approved projects appeared to be capital expenditure, with little in the way of innovation or creation of high skills jobs. Only one project appeared to be focussed on the development of a new technology associated with a newly awarded patent. The rush to have a carefully planned budget executed and jobs targets achieved within eighteen months played into the hands of established firms looking to expand. The inherent risk and uncertainty surrounding the process of innovation would have deterred other project submission or approvals. One interviewee lamented that his application for a lathe was approved, yet his other application for a 3D printer (a relatively new technology in 2012) was rejected. To this end, the assessment criteria likely induced a level of risk aversion not conducive to innovative projects.

In the absence of a sound counterfactual level of employment, and assuming that all IRIIF jobs created were due to the policy success, cost per job estimates are reported in the far right-hand side column of Table 3. Here, we observe an overall cost per IRIIF job of approximately \$30,000. Sector estimates vary from approximately \$10,000 per job in Finance to \$39,000 in Tourism, and generally reflect the capital intensity of the projects. As policy evaluation data are routinely not reported by relevant government departments, we have no direct comparisons, although Daley and Lancy (2011)

estimate costs per job of between \$20,000 and \$60,000 for other regional schemes derived from ministers' press releases. However, IRIIF costs appear to be favourable when compared to historic cost estimates from regional policies in the United Kingdom of £47,750 per job (Wren, 2005).

7. Conclusion

Labour Market Programs and investment attraction strategies have been the favoured policies of successive Australian governments to address concentrated structural industrial decline in regional economies. Using the case of BlueScope and the Illawarra region, this study is the first attempt to collect and analyse employment data from both labour demand and supply perspectives to assess the effectiveness of such policies.

With respect to the displaced steelworkers, we observed that only half were employed eighteen months after redundancy. As expected, older workers fared relatively poorly at first but in an optimistic sign, many subsequently obtained employment over the longer term. LMPs providing funds to JSPs appeared to be largely ineffective with most reemployed workers relying on their personal networks. In addition, the mining boom softened the blow of job loss from BlueScope with around a quarter of redundant steelworker obtaining re-employment in the mining sector. As such, our estimates suggested that the JSPs may have been effective in reemploying approximately fifty of the 800 redundant workers.

Primary data collected indicated that the IRIIF produced well under half of the jobs target, with less than a third of the funds spent. Delays in announcing recipients, in combination with short and inflexible job creation deadlines, meant that many firms did not proceed with projects or did not reach their job target. Strict job creation deadlines are also presumed to have stifled the submission or approval of innovative projects with inherent risk and uncertainty.

According to our analysis, no redundant BlueScope workers obtained jobs in IRIIF projects. It is somewhat ironic that the IRIIF was announced directly as a result of the redundancies, received \$5 million in funding from BlueScope, was announced as intending to predominantly produce manufacturing jobs for high skilled employees, yet there was no explicit mention of BlueScope workers in IRIIF nor ultimately any formal connection observed in our data.

Numerous policy lessons can be learned from our analysis, particularly for investment attraction strategies. First, a longer and more flexible time horizon is required for job creation. This rigidity is likely to have resulted in the non-commencement of many approved IRIIF projects which had been judged as potential job creators. In addition, this inflexibility is likely to have dissuaded the approval and/or compliance of projects with significant elements of innovation.

Second, rather than design the programme solely for individual projects, there should be encouragement of cluster formation or expansion in order to better achieve the goal of diversification. Trippel and Otto (2009) emphasise the importance of various cluster-based renewal strategies for the economic recovery of old industrial areas including innovation-oriented adjustment of mature clusters (incremental change), the emergence of new agglomerations in established industries (diversification) and the rise of knowledge-intensive and high-technology activities (radical change).

Third, we recommend the unification of structural adjustment programmes under one umbrella, with a committed and inclusive collective of stakeholders taking responsibility and ownership for job creation, regional regeneration and renewal. Some IRIIF recipients complained about the lack of coordination between Government departments impeding their job creation. Others complained about Government department preoccupation with rules compliance and their own key performance indicators. The IRIIF emphasised innovation, diversification and the creation of high skilled jobs, yet ultimately, it was dominated by the approval of many low skill employment projects, many of which did not proceed.

Finally, policy lessons can be learned from the European approach to structural change at the regional level, particularly in ensuring participation and ownership in governance, developing an overall vision for the region and the integration of monitoring and evaluation mechanisms. To be successful in creating jobs and diversifying regional economies, a multifaceted approach is

required that encompasses regional innovation systems. Representation of key stakeholders is vital, requiring the inclusion of local council, business chamber, JSPs and trade unions. This would allow for a body that is intimately invested in the region and for workers to take ownership and responsibility for the goals of the programmes. Finally, it is imperative that government departments thoroughly evaluate their programmes or allow access to relevant data for others to conduct rigorous evaluation.

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