



REGIONAL LABOUR MARKET ADJUSTMENT AND THE MOVEMENTS OF PEOPLE: DIRECTIONS FOR FUTURE WORK

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Abstract

This paper summarises work that is under way in the Treasury to investigate the link between internal migration and regional labour market adjustment. We are currently working on a scoping document to assist in focusing our ongoing work. This larger document will contain a review of relevant international and New Zealand literature, and will outline proposals for future research. The current paper outlines the motivation and scope of our enquiry, and discusses the three key questions that we plan to pursue. The first question examines whether migration helps or hinders regional labour market adjustment. The second question investigates how important migration is as a regional labour market adjustment mechanism. The final question looks at who is moving and whether it matters for regional labour market adjustment.

Keywords: *Regional labour market, internal migration, regional labour market adjustment.*

This paper is part of a broader work programme in the Treasury that raises the profile of regional issues in public policy debate. Earlier work has set out the key concepts of economic geography, made progress on the database front, and illustrated some applications of the data (Box 2000; Kerr and Timmins 2000; Kerr, Timmins et al. 2000). We are currently working on a scoping document to assist in focusing our ongoing work on the role of migration as a regional labour market adjustment mechanism. This larger document has four aims. The first is to identify the key questions that will help inform policy makers and contribute to the New Zealand research literature. Secondly, it reviews relevant international and New Zealand literature to identify the range of methods and models that are used to shed light on the key questions. The third aim is to briefly summarise key evidence in relation to each key question. Finally, it suggests possible approaches for further research aimed at improving our understanding the role of migration in regional labour market adjustment.

The current paper outlines the motivation and scope of our enquiry, and discusses the three key questions that we plan to pursue. This paper also includes some preliminary recommendations of future work that can contribute to

policy making and filling research gaps.

The next section outlines the motivation for our work in this area, covering both the policy environment and research gaps. Section 3 outlines a framework for thinking about the underlying issue – migration as a regional labour market adjustment – and thus, provides a map to guide the reader through the issues. Section 4 outlines and discusses three key questions that serve to focus our work. Finally, section 5 proposes four possible areas for future empirical work.

Motivation

This section covers the factors that led us to embark on the scoping document. These are discussed under two headings - the policy environment and the research literature (what we do know, what we don't know, and other current related work).

Policy Environment

Government policies can affect outcomes in regions within New Zealand in various ways. These can be policies specifically aimed at intervening in a region, or policies that are not specifically aimed at particular regions (non-

spatial policies) but that have regional implications. Both are considered below.

Regional Development Policy

It is clear that there is a resurgence of interest in the regional economic development debate. New roles in the current government were created, such as the Minister for Economic Development and Minister for Industry and Regional Development. The Ministry of Commerce was renamed the Ministry of Economic Development, and Industry New Zealand was established to enter partnerships with the private sector and with local communities to transform the economic base of New Zealand.

Migration patterns are relevant for designing spatially targeted policies. Attempts to improve the prospects of people in particular regions may be confounded if the migration response is large. Assistance could, in this case, end up benefiting new entrants to the region rather than the initial targeted population or community, or could create concentrations of poverty. Also, even if a particular policy does lower unemployment in one area, from a national perspective, these benefits could be offset by increased unemployment in other areas. Does out-migration from less well-off areas increase or decrease the welfare of those remaining? How do we address declining regions?

Also, differences in unemployment across New Zealand regions have been remarkably persistent over the post war period (Morrison, 1999). There is a need for more geographically based research to aid our understanding of these patterns. In particular, we need more knowledge of the differences between places and the way in which the local economy and associated opportunities interact with the presence of vulnerable groups.

The focus of active labour market programmes in New Zealand has traditionally been on the characteristics of vulnerable groups. There is little focus on the characteristics of the local labour markets in which many currently seek employment. However, there has been an increasing interest in devolution. For example, the Minister of Employment and Social Services has recently announced that he intends to introduce greater "flexibility" in the delivery of employment services in the regions.

Closing the Gaps

There has been a significant amount of attention on the gaps between Maori and non-Maori recently (see for example, the *Closing the Gaps 2000* report by Te Puni Kokiri). There is a clear regional dimension to disparities between Maori and non-Maori. To what extent does migration ameliorate or worsen the disparities? Does the migration patterns of Maori differ from those of non-Maori? Are Maori more or less mobile than non-Maori? Do they vary with iwi area? How do we best close the gaps? The more important that iwi affiliations are in determining Maori migration patterns, the more policies will need to explicitly account for iwi.

One could also investigate regional disparities in other

dimensions, such as education and health. In terms of education, what effect does parental mobility have on educational disparities? Who are the ones leaving the origin regions and how does this change the nature of the demand for education in various regions? The same questions can be asked for health outcomes.

These questions suggest that we need a better understanding of what is happening at the regional level, what effect mobility has, and whom it affects the most. Only then can we develop more effective policies when intervening specifically in regional differences (if it is justified in the first place). It is noted, however, that an understanding of the regional dimension is important even for policies that are not aimed specifically at regions, as explored below.

Spatial Impact of Non-spatial Policies

Some policy instruments, although not specifically aimed at particular regions (i.e., non-spatial policies), nevertheless have regional implications or a spatial impact. Examples of such cases include the minimum wage, wage-bargaining system, unemployment benefits, housing market arrangements, and industry assistance policies, as discussed below.

Where there are regional differences in the price level, national policies such as minimum wages or benefit levels can have uneven spatial impacts. In areas with lower price levels, the national minimum wage or benefit level will be worth more. This means that any effects of minimum wages in reducing the number of jobs on offer, or of benefit levels in reducing people's willingness to work, will be concentrated in low-price regions.

Public housing policy is yet another way the government influences regions, whether intentionally or not. When public housing is concentrated in particular areas, it restricts the mobility options of people receiving housing assistance. Public housing policy can also influence housing ownership patterns. There has been much debate about the link between housing tenure structure and the level of labour mobility (see for example, Cameron and Muellbauer 1998, Böheim and Taylor 2000, and Gardner, Pierre et al. 2000). A very high rate of owner-occupation (illiquid rental markets) may impede labour mobility because of higher transaction costs than in private renting. Illiquid rental markets make it difficult for workers to move, especially the less affluent groups of workers (i.e., typically the low skilled).

Finally, industry assistance (or protection) policies such as import licensing, tariffs, and export subsidies, can create regional imbalances (Gibson 1993 and references cited therein). These studies find that industry protection policies may have been an important cause of internal migration patterns from provincial areas to metropolitan areas. Metropolitan areas such as Auckland, Lower Hutt, Wellington and Christchurch were favoured by having a high concentration of protected, import-substitute manufacturing. On the other hand, provincial areas were less favoured because their industries tended to be export ori-

ented ones which received lower levels of assistance.

There appears to be a wide range of policy questions that renders the regional dimension important, if not essential. This scoping document is aimed at providing broad-based knowledge, which is useful as background in a variety of applications and specific policy questions such as those above. This "baseline" knowledge requires a survey of the relevant literature, the results of which are scantily outlined here.

Research Gaps

A great deal of research, both theoretical and empirical in nature, has been conducted in the internal migration, and in the regional labour market areas. It is not our aim here to summarise the literature; there are comprehensive literature surveys already being done (see for example, Greenwood 1997). However, it is worth pointing out the main strands of the literature. Firstly, there are many studies that examine the determinants of internal migration. These include investigating people characteristics (e.g. age, gender, level of education, and marital status) and area characteristics (e.g. labour market conditions, housing, climate, cost of living) that drive moving decisions. There are studies that examine the consequences of migration. These studies evaluate the performance of migrants themselves, and the impact of their moving decisions on both the origin and destination areas (e.g. demographic, housing, social and labour market effects). There is also a separate literature looking at different types of moves – for example, residential moves vs labour market moves, internal migration and international migration.

The New Zealand literature is, of course, less extensive than the international literature just outlined. There are, however, several valuable studies that serve as a foundation for our work.

There has been substantial work documenting demographic patterns and trends in New Zealand. The authority on this line of work is the Migration Research Group (MRG) in the University of Waikato, comprising of Professor Richard Bedford, Dr Elsie Ho, Dr Jacqueline Lidgard, and others. The MRG are actively involved in research on both internal and international migration. It is noted however, that most of their work in relation to our focus (i.e. internal migration as a regional labour market adjustment mechanism) have been largely descriptive in nature.

There have also been studies which model the determinants of migration flows. Most of these studies have focussed on modelling trans-Tasman migration, that is, migration flows between Australia and New Zealand (see Brosnan and Poot 1987; Brosnan and Poot 1987; Gorbey, James et al. 1999). The general conclusion of these studies is that migration flows can be explained reasonably well by economic and demographic factors.

Meanwhile, there has been a separate line of work that provides descriptions of local labour market conditions

in New Zealand. These studies identify appropriate labour market indicators across the regions. For example, Morrison (1999) finds that the 14 regional labour markets in New Zealand can be characterised in terms of four indicators, namely the labour force participation rate, unemployment rate, fulltime work rate and fulltime wage income. Other contributors to this line of work include Simon Chapple and the New Zealand Planning Council (see Chapple 2000 and NZPC 1989). Generally, these studies help us look at how different regional labour markets are.

Significant gaps in our knowledge remain. In the international context, a good review of research gaps can be found in Greenwood (1997). In the New Zealand case, Burnley (1993) is a good starting point. Essentially, the identified gaps are in linking or drawing interactions between the different strands of work already done. Our scoping work attempts to address interactions between regional adjustment and migration patterns – how internal migration acts as a regional labour market mechanism.

Other Current Work

There is a range of projects currently undertaken in this area in the New Zealand context. We want to highlight the complementarities between our work and the current projects, as well as avoid, as much as possible, any redundant efforts. Some of these are presented at this conference (see for example, Bartley, de Bruin et al. 2000 and Morrison and Berezovsky 2000). Some others are discussed below.

Maryanne Ansley is currently working on a project, which looks at regional labour market adjustments in Australasia (Australia and New Zealand). The work focuses on adjustments at the national level. She is using VAR techniques, based along the lines similar to Blanchard and Katz (1992) and others. It complements our work given the different units of analysis (national vs regional).

There are also other ongoing studies, for example in the Labour Market Policy Group at the Department of Labour. There was a scoping project on Regional Migration and Labour Market Interactions undertaken by James Newell and Kerry Papps.

Although the methods and models identified in our work can help to provide some insight into the role of internal migration as a regional labour market adjustment mechanism, they do not address specific issues of motivations at the individual level. Statistics New Zealand is considering appending a set of questions to an existing survey or designing a separate survey (if necessary) to understand the motivations behind decisions to move (both to elsewhere in New Zealand and overseas), or not to move. This will complement the "bigger picture" we get from the methods proposed in this paper.

Where do immigrants live? When they first arrive in New Zealand, do they usually stop in a particular region, for example Auckland? Do they move on to other regions

over time? If yes, where do they go? To address these questions, the New Zealand Immigration Service is conducting a survey of regional immigration impacts.

There are also graduate students working on specific areas of interest. For example, Hattie deVries (under the supervision of Philip Morrison) is currently looking at various ways of identifying local labour markets using GIS, how their spatial properties changed with developments in the economy (from 1986 to 1996), and how spatial properties of local labour markets vary by attribute of workers (e.g. age, occupation and sex). Meanwhile, James Kaiser (under the supervision of Philip Morrison) is trying to get a better understanding of the changing pattern of demand for labour at a regional and local level. This project will not only document the magnitudes and trends involved in the relocation of business units and the jobs they offer but will also start raising questions about the nature of demand change at the local level. The aim is to document and model the migration of business units and associated employment within New Zealand over the period 1987/88 through 1999/2000.

This is not meant to be an exhaustive list. The idea is to illustrate that our work programme is only one piece in the jigsaw puzzle. Other studies, some of which are discussed above, are also part of this puzzle. None gives the whole picture, but each contributes to the mosaic. The challenge of course is to make progress on each of them and eventually see how they all interact. Against this broad setting, it is appropriate to identify our key questions and the focus of our own work programme, which is the topic of the ensuing section.

Structuring Our Thoughts

Within the context of the policy environment and research literature, we next need to focus our work to find key questions for which tractable research projects can be developed. In an economy, much is happening simultaneously. We generally have a limited ability to conduct controlled experiments. We face the problem of disentangling cause and effect from the maze of correlations observed between and amongst a whole range of economic and social variables. This is often called the identification problem, which virtually every researcher encounters.

How do researchers and modellers isolate the relationships and simplify the complex true state of the world? We try to make use of prior beliefs and/or assumptions and/or empirical patterns to impose some structure on the data (which is often limited, and hence acts as a constraint). Some of these assumptions and beliefs are discussed in one of Peter Gorrings' unpublished papers. Gorrings also appropriately points out the range of problems that researchers face, as reproduced below.

"The identification problem, the scarce data problem and the specification search problem together strongly limit what we can learn from the data about how the world

works. The changing structure problem and the uncertain human action problem add to these difficulties. Together all these problems make nonsense of the idea of relying solely on induction - that how the world works can be gleaned from the data alone. Each of them in different ways forces on us the necessity to add to the data a set of assumptions, and our own judgements as to the appropriateness of these assumptions, if we are to make any sense of the world at all."

Our approach is to narrow and structure our work by firstly defining the scope of our enquiry. Within the scope defined, we shall focus our research around a few key questions. Following this, we use theoretical concepts to discipline our thinking and to provide insights into how we can even begin to understand the complexities of the real world. Finally, when we do empirical work, we inadvertently have to deal with some data and empirical issues. Each of these is covered briefly below.

Scope

If we were asked to characterise our focus using just three key phrases, they would be internal migration, labour market and regional adjustment (see Figure 1 below). Each of these is an interesting topic and has a substantial literature on its own. We are mainly concerned with the intersection of the three. The areas excluded from our work include people moving for non-labour market reasons (e.g. residential moves, social migration, better climate/amenities), regional adjustments in response to a shock other than a labour market adjustment (e.g. via the housing, goods and services markets), and international migration (Maré and Timmins 2000 in this volume discusses whether it is appropriate to exclude international migrants), as elaborated below. However, it is important that our research is eventually placed into a larger context, linking to the areas that we are currently excluding.

Key Questions

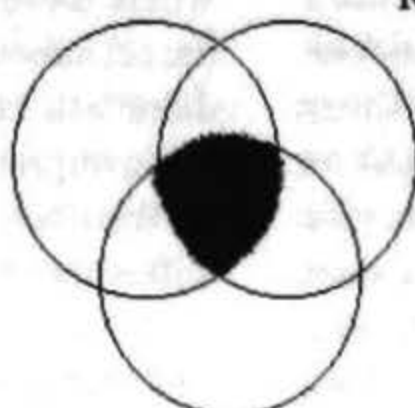
Within this scope, there are still potentially many questions that can be asked. For example, one could investigate the role of information flows in matching labour demand and labour supply across regional labour markets (see for example, Bartley, de Bruin et al. 2000). Our interest is in how regional labour markets adjust when there is a shock, and the role of internal migration. We further focus down to three key questions, as Figure 2 illustrates.

When a region experiences a shock, the region must adjust in one way or another. We are interested in how the regional labour market adjusts. There are different forms of regional labour market adjustments - internal migration is one of them. The first key question asks whether internal migration responds to labour market reasons, and if so, whether it helps the particular region to adjust. The second key question compares internal migration to other forms of regional labour market adjustment. The final question looks at who is migrating and whether it matters for regional adjustment.

Figure 1. The Scope of Our Work

Internal Migration

Regional Adjustment



Labour Market

Researchers do not generally use the same methods, models or approaches to investigate these three questions. To do so would require an approach that explicitly deals with many complex interactions. What is more common is to choose an approach that enlightens us about one of the questions, while controlling for the more important sources of heterogeneity or bias that arise due to the partial nature of the analysis.

Therefore, for each key question, we will identify the sort of evidence that people look for (the 'what'), the way they identify/isolate patterns/relationships (the 'how'), and what evidence they have found (the 'findings'). These are discussed in more detail in our full paper.

Theory and Concepts

Another way of imposing structure is to adopt some theory and concepts. The purpose of a theoretical framework is to foster understanding of phenomena encountered in the real world. Any such framework necessarily abstracts from details of the complex true state of the world in order to develop an explanatory model able to provide insight into these complexities. Different explanatory models are

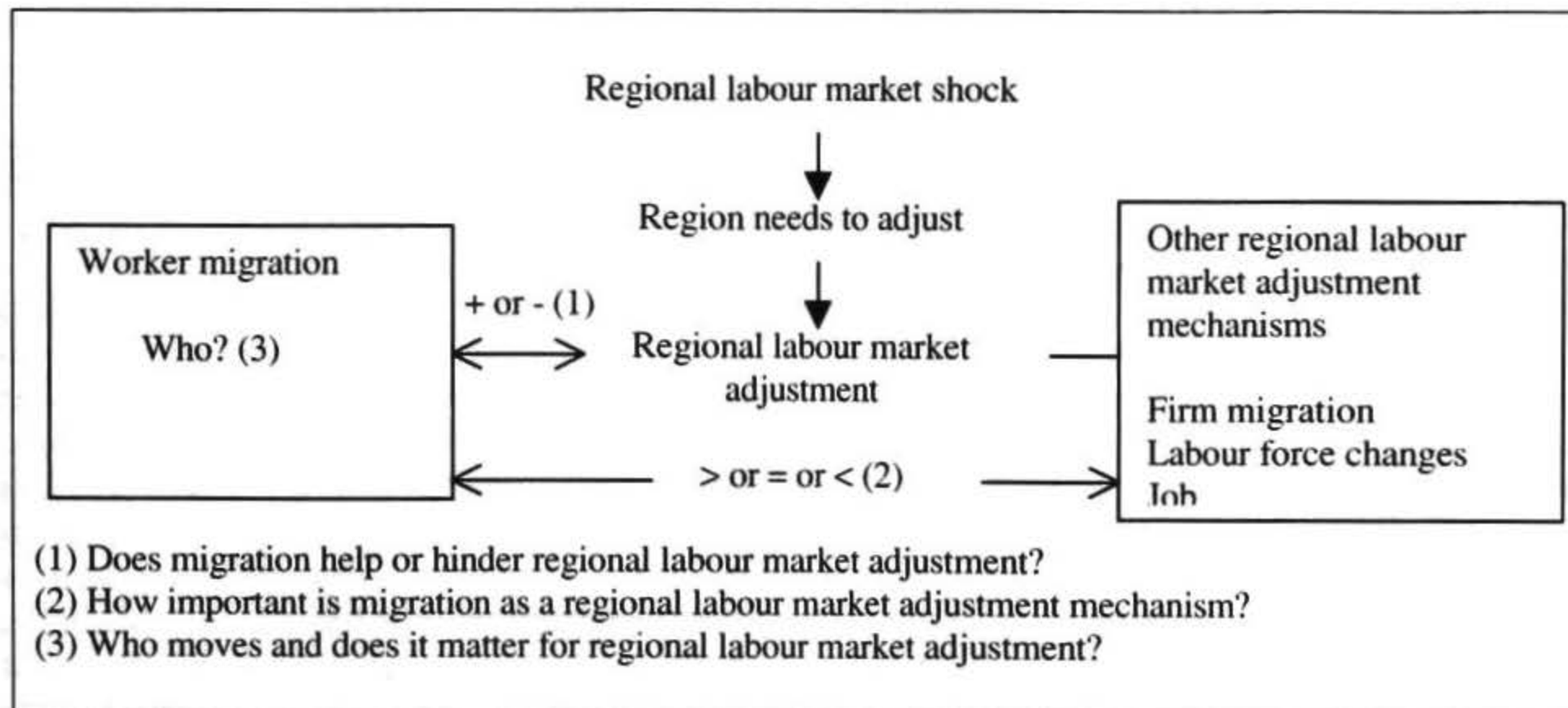
designed to help us understand different facets of the world. Where do we begin? A good starting point is to consider an economy with only two regions.

Suppose that a region experiences a local labour market shock. This shock can be either a supply shock (e.g., workers do not work anymore for whatever reason, a sudden change to the labour force participation rate) or a demand shock (e.g., a firm closes down, a new firm opens, or an increase in the demand for the underlying product/service, hence more workers needed to accommodate the higher production). We are interested in how regions respond or adjust to these shocks.

To be specific, we shall look at one shock consistently throughout. Given there is some interest in regional development, let's suppose that a new policy (e.g. wage subsidies, tax breaks) is put into place to attract companies to set up in a particular region (region A). As a result, the demand for labour in region A rises.

Now let's assume that there is only one other region in the whole economy (region B) and that regions A and B are not closed (i.e., labour and capital are allowed to flow

Figure 2. Defining Our Key Questions



across regions). We allow amenities in regions A and B to be different; hence the absolute level of wages in regions A and B are not expected to be equal. For instance, if region A is a nicer place to live in (e.g., better views, more fresh air, less traffic congestion, etc.), then workers would be willing to accept lower wages in region A than in B. Alternatively, workers need to be compensated for working in the less attractive region B. This compensation is to ensure that in the equilibrium state, utility is equalised across regions, from both consumers' and the producers' points of view. In such circumstances, the demand for and supply of labour curves (in the initial equilibrium state) would be as depicted below (where the y-axis for the two regions have different starting points).

We are interested to see the effects of the rise in the demand for labour in region A. The initial impact of this positive shock will be a rightward shift in the labour demand curve in region A (annotated as (1) in Figure 3 below). What would follow this rise in labour demand in region A? For now, let's assume that region A can only adjust in one way (worker migration). Workers will out-migrate from region B to A, because of better employment opportunities and possibly higher wages (this depends on whether wages are flexible) in A. Therefore, there is a rightward shift in the labour supply curve in region A (annotated as (2) in Figure 3). Similarly, region B will experience a leftward shift in the labour supply curve (annotated as (2) in the Figure 3).

For simplicity reasons, the diagrams above have focused only on internal migration as a regional adjustment mechanism. There are other regional labour market adjustment mechanisms, as explored further below. This simple model can also be used to examine the effects of a negative shock.

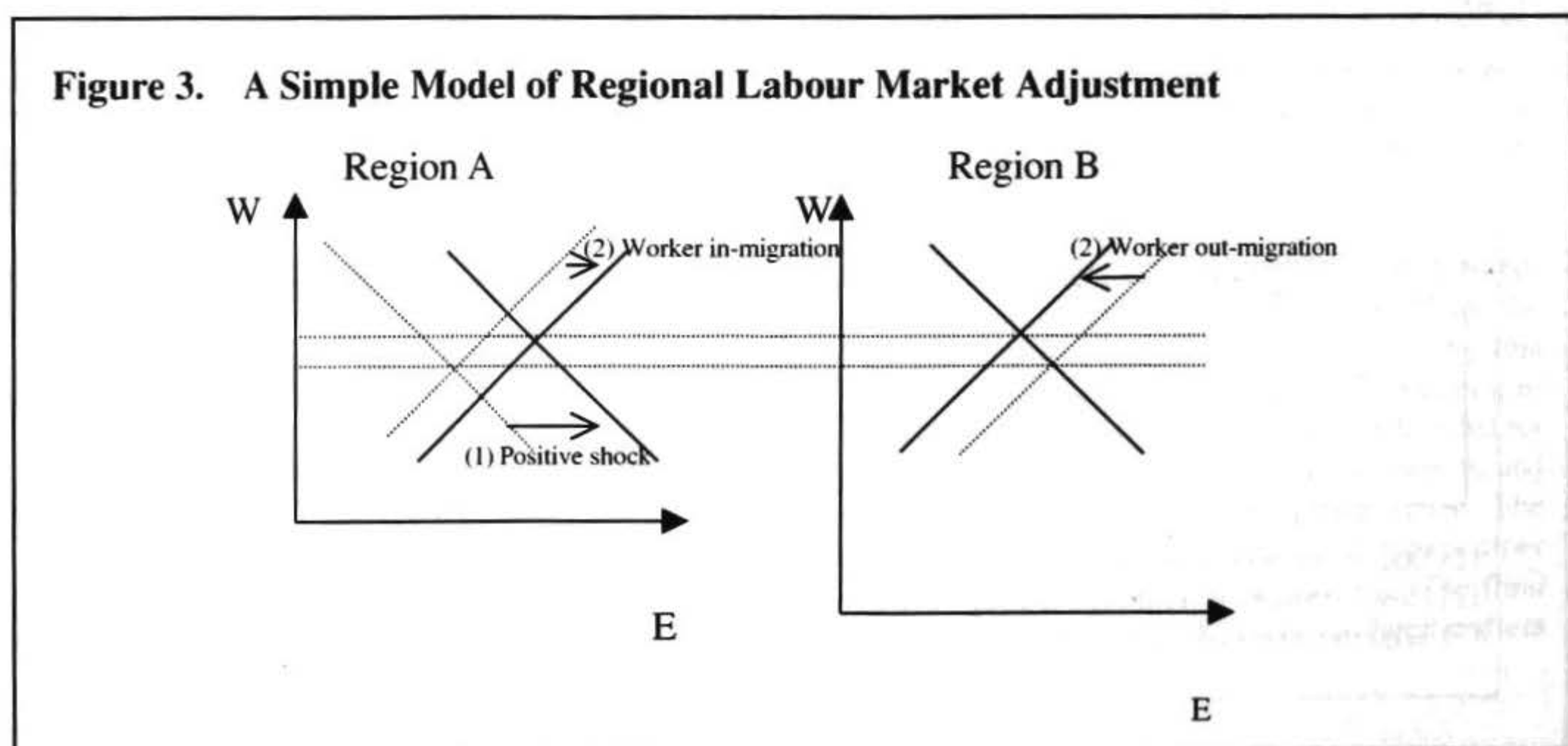
Recall that in the initial equilibrium state, utility is equalised across regions, from both consumers' and the producers' points of view. The adjustment mechanisms of both firms and workers should operate until there is equal-

sation of utility across regions once again. However, this assumes that there are no costs of adjusting for workers and firms alike (i.e., no mobility costs). In the real world, where there are adjustment or mobility costs, two possible scenarios are possible. If mobility costs are very high, there will be very little migration or none at all. Otherwise, migration will take place until the difference in utility from living in one region rather than the other region will equal the mobility cost.

Unfortunately, in real life, things are not that simple. There are many more regions, many different reasons why people may move from one place to another (not merely job related or amenities). However, the general principles above still apply. The paragraphs below elaborate on the range of potential adjustment mechanisms to a regional labour market shock.

In a well-functioning labour market, geographical unemployment differences resulting from past shocks should be reduced, if not eliminated, relatively quickly. There could be two scenarios – firstly, suppose there is a *positive* region-specific shock due to a regional development program, and secondly, suppose there is an *adverse* region-specific shock on the labour market. The potential adjustment mechanisms for each of these scenarios are:

- 1 Creation or destruction of jobs – With a positive shock, existing or new local firms could create new jobs to take advantage of or as a result of the regional development program. On the other hand, a negative shock could result in local firms destroying jobs and retrenching employees.
- 2 Migration of firms – A positive shock could attract firms from other regions to relocate to the region to take advantage of the regional development program. Conversely, a negative shock will motivate existing firms in the region to move to other regions. However, an adverse shock can also attract firms from other regions to relocate to the



region to take advantage of the relatively larger pool of unemployed workers, particularly if there is a fall in wages.

- 3 Changes in the labour force participation rate – A positive shock will result in an increase in the relative demand for workers in the particular region. There may be eventually an outward shift in the relative supply curve for labour either because of changes in the education and training decisions, or through non-labour force participants re-entering the labour force. On the other hand, if there is an adverse shock on the local labour market, some unemployed workers will remain in the region, but become ‘discouraged’ and drop out of the labour force. Obviously, this is not a desirable adjustment mechanism.
- 4 Migration of workers – A positive shock will attract workers from other regions, especially the unemployed ones. Conversely, with a negative shock, unemployed workers will migrate to seek jobs elsewhere. Unemployment itself is an incentive to migrate, but the incentive is even greater if there is a wage difference.
- 5 Wage adjustments – Unlike all the four *quantity* adjustments above, we could also have a *price* adjustment, that is wage differentials, to provide a further incentive for the *quantity* adjustments to occur. A positive shock will raise the region’s wage relative to the rest of the country. A negative shock, on the other hand, results in the wage in the region falling relative to the other regions.

Table 1 Forms of Regional Labour Market Adjustment

Quantity adjustments	Within region	Between regions
Labour Demand	(1) Job creation or destruction by local firms	(2) Firm migration
Labour Supply	(3) Labour force participation changes	(4) Worker migration
(5) Price adjustment (Wage changes)		

Table 1 summarises the range of regional labour market adjustment mechanisms discussed above.

Our review focuses on worker migration. One might ask how appropriate this is. In some countries, for example in the United States, worker migration is an important adjustment mechanism (see Blanchard and Katz 1992). However, in a few European countries (see Decressin and Fatas 1995, Mauro and Spilimbergo 1998 and Mauro, Prasad et al. 1999), worker migration is not as important. Therefore, we need to see how New Zealand compares with other countries in terms of the size and composition

of its migration flows. Also, focusing on worker migration is an appropriate first step given that there is lack of data for the other three forms of quantity adjustments.

Packed with some theory and concepts above, we should consider the next set of tools for our journey towards gaining an understanding of the role of internal migration as a regional labour market adjustment mechanism – data and empirical issues.

Data and Empirical Issues

When we do empirical work, we inadvertently have to deal with some data and empirical issues. This can be considered another way to impose structure on the world, although it can be a constraint rather than an explicit choice on our part. This subsection highlights a few common empirical issues that research work in this area will encounter. We will address these issues in more detail (where relevant) as we make more progress on future work.

In the literature, there is a distinction between regional shocks and aggregate shocks. Regional shocks are likely to trigger different adjustments of labour, capital, and output than do aggregate shocks. One reason may be that some regions are specialised in the production of particular goods and services, and thus national markets are somewhat arbitrary constructs. If regional dynamics are different, policymakers may need to identify regional differences and/or imbalances in formulating policies and assessing their consequences.

There is also the issue of what the appropriate unit of analysis is when considering migration flows. This is essentially defining the parameters of what constitutes a migration flow. The first dimension is a *temporal* one – what the appropriate time period for the analysis is. In New Zealand, we only have census data to track internal migration flows. As a result, there is a five-year cut-off period, which is determined by the date of the previous census. The scope, limits and reliability of our census data for internal migration flows have been well documented (see for example, Poot 1986).

The second dimension of concern is a *spatial* one. Studies have shown that alternative calculations of distance between origin and destination areas can have very significant effects on the migration measures. In particular, place-to-place migration declines with distance. Put in another way, as we move from an aggregate unit of analysis (e.g. regions) towards a more disaggregated level of analysis (e.g. territorial local authorities (TLA), area units (AU), or meshblocks (MB)), the number of *counted* moves will presumably increase. Distance is also important because reasons for moving may vary by distance moved, that is, local movers (within area units or labour markets) and longer distance migrants (across area units or outside labour markets) move for different reasons. There is evidence that economic and employment factors are much more important in long distance than local movements (see Green 1994 and Lichter and De Jong 1990).

One common strategy is to work with administratively defined areas within which labour market policies can be taken by planning authorities, such as regional councils and territorial local authorities. Alternatively, one can use functional labour market areas, which are usually preferred on theoretical grounds, although this strategy has several drawbacks in practical modelling situations (Isserman, Taylor et al. 1986). Definitions about what constitutes a local labour market vary considerably in the literature (see for example Box 1 in OECD 2000). Otherwise, one could also define boundaries strictly by distance. The concept of distance can simply be the distance over the Earth's surface between points (e.g. 20 kilometres), or a distance through a transportation network (e.g. road distances).

One might then ask what the most appropriate spatial framework is. The answer is that it depends on the purpose of analysis. This question has to be asked whenever we conduct any empirical work. It might well vary according to the key question at hand.

These are just a few empirical issues that are important in migration research. The key message from this discussion is that there are important decisions and judgements to be made on how to treat these empirical issues and that we may want to vary these treatments according to the key question at hand. (Maré and Timmins 2000) provides a discussion of some of these issues in more detail.

Key Questions

As mentioned earlier, we have three key questions to address, and each of them is briefly explained below.

1. Does migration help or hinder regional labour market adjustment?
2. How important is migration as a regional labour market adjustment mechanism?
3. Who moves and does it matter for regional labour market adjustment?

1. Does migration help or hinder regional labour market adjustment?

Why does migration occur? There are many reasons why people change locations (housing, amenities, weather, family reasons, labour market reasons, etc.). We are particularly interested in the labour market story - for example, does migration occur because of changing unemployment rate and wage differentials? One might well ask whether there is in fact a labour market story.

Looking at the empirical evidence and some preliminary stylised facts for New Zealand (Maré and Timmins 2000), there is indeed a labour market story, but it is not the complete story. Therefore, it is important to consider amenities and non-labour market factors.

Does migration take place in the direction we expect - for instance, from a high-unemployment rate area to a low-unemployment rate area? In other words, does migration

help ("right" direction) or hinder ("wrong" direction) regional adjustments? If worker migration does hinder regional labour market adjustment, it would not be surprising to see persistence in regional disparities. Incidentally, there is indeed some evidence of persistence in regional labour market disparities in many OECD countries, including New Zealand (OECD 2000 and Maré and Timmins 2000). Regions badly affected by adverse shocks will continue to be poor performers because the worker migration mechanism is hindering the adjustment process. There are of course other reasons why there could be persistence in regional disparities. For example, this could be due to productive amenities (better roads, infrastructure, etc. in some regions), or it could reflect people's preference and lifestyle choices (Bay of Plenty being a nice place to live in), or it could simply be due to slow adjustment processes, or perhaps migration only plays a small role, compared to the other regional labour market adjustment mechanisms. This leads us to our next key question.

2. How important is migration as a regional labour market adjustment mechanism?

Worker migration plays a substantial role in the local labour market adjustment process in the US (Blanchard and Katz 1992). Interstate migration plays quite an important role in Australia as well (Decressin and Fatas 1995). However, labour mobility plays a much smaller role in the adjustment of European labour markets to region-specific shocks (Mauro and Spilimbergo 1998 and Mauro, Prasad et al. 1999). Where does New Zealand fit in? This is the gist of the second key question.

3. Who moves and does it matter for regional labour market adjustment?

Who is migrating and who is not? Are there characteristics that make some people more mobile than others? Migrants' behaviour is far from homogenous. Factors that have been found to influence the propensity to migrate include age, qualifications/skills, gender, family structure, home ownership, ethnicity, etc. (see for example, OECD 2000, Goodwin and Bedford 1997, Young and Bedford 1996, Gardner, Pierre et al. 2000, Mauro and Spilimbergo 1998, Vaithianathan 1995 and references cited therein). Generally, there is evidence that younger, highly skilled, single males who do not own homes are relatively more mobile.

A further question is whether and how this heterogenous pattern matters for regional labour market adjustment. It certainly does. Firstly, more mobile people can capture the gains (or avoid the costs) of regional shocks. Secondly, the incidence of migration could well have an impact on the origin and destination communities. For example, the continuous outward migration of highly skilled young people from declining regions may have negative effects of deskilling regional populations and further weaken regional growth potential. Thirdly, our modelling work would need to control for the heterogeneity. The final point concerns the selectivity bias issue. The migration decision in fact separates the population into those who

expect to gain by moving, and those who expect to gain by staying. Ignoring this (for example, through the use of average attributes), one might wrongly find more gains to migration than there actually are.

Future Research

This is a broad area of research and there remains a lot of work to be done. We are currently considering projects along the following lines to answer our key questions.

Generalised Gravity Models

This type of models basically tries to model the relationship between migration flows and area characteristics and distance. Area characteristics here include labour market variables (e.g. wages, employment growth rates, unemployment rates, etc.) and non-labour market variables (e.g. various types of amenities, different costs of living, etc.). In other words, these area characteristics are effectively the "push" and "pull" forces which might affect migration flows across regions. Meanwhile, distance here includes spatial distance (proxied by linear distance, road distance, travel time, etc.), and the extent to which origin and destination areas differ (e.g. cultural differences, whether people speak the same language, etc.).

Regional Vector AutoRegressive (VAR) Models

As mentioned before, regional VAR is a convenient modelling technique that looks at patterns of adjustment of a selected set of variables over time. Essentially, this method uses information on how different labour market series such as unemployment, wages, employment and labour force participation change together over time, allowing for lagged effects. The VAR technique addresses the following question: when the system is shocked, what adjusts quickly or a lot?

Unit Record Analysis and Survey of Migration Decisions

We could examine mobility decisions in more detail if we have unit record data. One potential advantage of using micro data is that we could overcome selectivity bias problems. Alternatively, a survey on New Zealanders' motivations behind decisions to move (both to elsewhere in New Zealand and overseas), or not to move is potentially useful. Both these options enable us to better address specific issues of motivations at the *individual* level.

Case studies, Event Studies and Regional Studies

Most studies impose the rather strong assumption that the responses to a shock are identical across all states or regions. For example, in many studies, when using the impulse response function and VAR techniques, the results are strictly speaking the *average* response across states or regions to a labour demand shock. Different regions are likely, in fact, to have different responses. Another example is when we use gravity models to infer about the direction of migration flows. Most of these studies present evidence on the *average* relationship between area characteristics and distance, and migration flows. How do we

get behind these *average* responses or *average* relationships?

Notes

- 1 **DISCLAIMER:** The views expressed are those of the authors and do not necessarily reflect the views of the New Zealand Treasury. The Treasury takes no responsibility for any errors or omissions in, or for the correctness of, the information contained in this paper.
- 2 By abstracting from these important factors, we are not simply ignoring them. We wish to find ways of satisfactorily accounting for them in order to highlight our main focus.
- 3 These are fleshed out in more detail in the full paper which is due to be completed early 2001.

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