The mining industry in Queensland, Australia: Some regional development issues

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ABSTRACT

Mining boom has created various impacts in the regions of Queensland, Australia. However, it is not clear how to increase positive impacts from mining within the regions. Mining industry may be the dominant industry in the local community and in the region in terms of providing local employment and generating income; it does not necessarily have direct linkages to the local economy and therefore does not contribute fully to diversified sustainable development of the local community or the region. This paper discusses the dependency of mining communities on the resource industry. The regional economic diversity is identified using the input–output analysis. This paper attempts to identify the key sectors, backward and forward linkages within three regions in Queensland: Fitzroy, South West and Darling Downs Statistical Divisions in order to analyse which industries in each region are needed to be encouraged to increase their connections with the mining industry to induce higher retention of benefits from mining boom and reduce regions dependence on mining.

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Introduction

From the early 2000s due to the strong growth in Asia Australian's resource sector has been receiving many positive impacts on Australia's economic growth. The benefits were for example a growth in the commodity prices, a rise in Australia's terms of trade, the appreciation of the exchange rate, the strong investment in resource sector and growth in employment in resource and resource related activities (Plumb et al., 2013). While some benefits from the mining activity at national level are clear and substantial, the mining activity at the regional level might result in negative impacts. For example, the strong positive economic impacts from mining are royalty and taxation that are collected by the federal government, while there is a pressure to provide services on the state or local government. The negative impacts of mining activities such as unaffordable housing, exhaustion of natural resource and increased cost of local production are often felt in the local region (Rolfe et al., 2007). Furthermore, the mining industry may be the dominant industry in the local community and in the region in terms of providing local employment and generating income; it does not necessarily have direct linkages to the local economy and therefore does not contribute fully to a diversified

sustainable development of the local community or the region. Therefore, the regions' reliance on export oriented industry can cause communities' instability due to fluctuation of external demand, deficiencies and stagnation in other areas of economy. It also can lead to the lack of economic diversification in the regions.

This paper provides an overview of mining industry in Queensland and discusses the dependency of mining communities on resource industry in Queensland. It analyses the industry's contribution to three Queensland regions (i.e. Fitzroy, South West and Darling Downs Statistical Divisions (SDs)). Fitzroy region is a well-established mining region, while Darlings Downs and South West regions are a part of the Surat Basin emerging mining region in Queensland. Surat Basin region once dominated by agriculture are experiencing a rapid mining boom with a potential to increase tension on various infrastructure and public services.

The regional economic diversity of three regions in Queensland is identified using the input–output analysis. This paper identifies the key sectors in three regions in Queensland which stimulate regional growth more than other sectors and have greater impacts in terms of investment, employment and income on the regional economy than other sectors. It then explores whether the connections between those key sectors and mining industry exist. It offers a new method for policy analysis built on a staple theory and input–output analysis.

Input–output analysis is a widely used analytical technique to identify how different sectors in an economy interact, their impacts

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on economy, backward and forward linkages. The pattern of industrial inter-dependence or backward and forward linkages were first analysed by Hirschman (1958) and further developed by others (e.g. Rasmussen, 1956; Cella, 1984). Comparison of the backward and forward linkages in regional economies allows to identify the key sectors that can be used to enhance economic development through the inter industry linkages in regional economies. Understanding of the pattern of linkages is especially useful in order to identify the level of regional dependency on specific industries.

The identification of key sectors can be useful for economic planning, aiming at generating above average economic activity (Lenzen, 2003). This is especially important in Australian (Queensland) context where some regions are substantially dependent on mining. This paper illustrates the necessary differences in policies regarding which industries need to be encouraged to stimulate the economic growth within the regions. The scope of such analysis can be local, regional, state or nation-wide. Since most analysis is typically focused on the national or state benefits from mineral exploitation, while fewer studies address its regional and local consequences (e.g. Stevens et al., 1983; Ivanova and Rolfe, 2011), the additional contribution of this paper is its focus on the regional analysis of impacts from mining industry. This paper illustrates the importance of more comprehensive economic analysis on the regional level using three case studies in Queensland and supports the economic diversification of the regions strategy.

The new method for policy analysis is suggested as follows. First, the region's dependency on an industry of interest is identified. Second, the disaggregated multipliers are estimated for the industry of interest. Third, the key industries in the region are identified. Fourth, the key industries which are stimulated by the industry of interest in the region are determined. Fifth, policy measure to enhance the connections between the industry of interest and the key industries are suggested.

The rest of the paper is structured as followed. Section 2 outlines resource dependency and economic development issues. Section 3 briefly describes the input–output technique and its application to identification of the key sectors. Section 4 describes the contribution of resources sector to export, employment and GDP and dependency on mineral resources sector in Queensland, Australia. Section 5 illustrates the potential for diversification using three case studies. Section 6 concludes.

Resource dependency and economic development

The growth in the resource industry might not necessarily benefit the economy but it can result in the "resource curse" in some cases. Auty (1993) described "resource curse" as how countries rich in natural resources were unable to use that wealth to boost their economies and how, counter-intuitively, these countries had lower economic growth than countries without an abundance of natural resources. Sachs and Warner (2001) concluded that the "resource curse" is a solid fact that cannot be explained by other variables other than the existence of abundant resources in the country. They suggested that resource abundant countries tended to be high-price economies and these countries systematically failed to achieve strong economic growth. Van der Ploeg (2010) argued that country's abundance of natural resources can be a "curse" or a "blessing" depending on real exchange rate, strength of institutions and financial systems.

The "Dutch disease"[1] literature is a part of a wider "resource curse" literature. It suggested that the economic boom in one industry (e.g. resource extracting industry) can lead to decline in other industries

such as manufacturing or agriculture (Corden, 1984; Sachs and Warner, 1995). Innis (1933) in his studies of the growth of the Canadian economy showed the crucial importance of the export staple in shaping new economies. "Staple" generally refers to the main extractive industry commodity produced by the region. With the regions' growth around the export base industries, some regions secured federally subsidised improvements in roads, ports and other infrastructure necessary to be competitive with other regions in hosting the resource extractive industries as well as developed some industries supporting export oriented extractive industry. The capital investments in these regions tend to be from the existing export oriented industries rather than from new industries. Thus regions became more dependent on the export oriented industry without diversifying their economies.

Innis (1933) further noted that a staples provider nation causes deficiencies and stagnation in other areas of the economy. Watkins (1982) investigated the economic development in Canada and argued that the "staple-trap" leads to the lack of regional reinvestment in a staples-based economy and creates a blockage to diversification and therefore creates underdevelopment. He also suggested that the shareholders not regional economies were primary beneficiaries of the exploitation of Canadian resources.

Markey et al. (2005) argued that the traditional linear regional growth model is not appropriate for the export oriented regions. On contrary the staple theory suggested that the transportation of raw materials over long distances, dependency on external industrialised areas for export and for capital can cause local instability due to fluctuation of external demands and lack of local industries in the staples producing nations and not necessarily leads to diversified sustainable local economies (Innis, 1933; Drache, 1976). Several models were developed to include the mobile labour and capital (e.g. Corden and Neary, 1982; Corden, 1984 and Moretti, 2010). For example, Moretti (2010) examined the welfare implications of the spatial equilibrium model of the mobile labour. He analysed how mobile skilled labour responds to the higher wages and moves to the areas of higher demand, thus pushing the cost of housing up and putting the unskilled workers in disadvantage because of increased cost of living and imperfect substitution between skilled and unskilled labour.

It was suggested be North (1955) that an inevitable decline in the export oriented industry has to be compensated by the growth of others or the region will be "left stranded". The main reason for decline in such industry was the change in demand outside the region, exhaustion of natural resource or increased cost of local production (e.g. land and labour) related to other regions as well as technological changes (North, 1955). Markey et al. (2005) argued that the staples development causes intense economic specialisation, inertia with respect to change, centralisation, environmental decline, low entrepreneurial activity among other impacts on local economic development capacity.

Wellstead (2007) in his review of history of the post staples state summarised that staples dependence could over a long period of time lead to well established investment and market patterns that are difficult to change. In some cases, regional decision-makers can become 'addicted' to resource extraction with little opportunity to escape. He further noted three strategies used by governments to escape from the staple's trap.

The first strategy was to do nothing. That means to continue historical resource exploitation patterns, which led to resource exhaustion and permanent underdevelopment. For example, in Atlantic Canada such strategy has lead to the exhaustion of its key resources such as the fisheries and coal, and the subsequent decline of its economy.

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[1] The term was first mentioned in "The Dutch Disease", The Economist, November 26, 1977. pp. 82–83.