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Editorial Correspondence should be addressed to: *Christine Smith, Editor (AJRS) Department of Accounting, Finance and Economics, Griffith University, Nathan, Qld 4111, Australia*. Details concerning the preparation and submission of manuscripts can be found on the inside back cover.

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FOREIGN STUDENTS AND REGIONAL ECONOMIES: A MULTIREGIONAL GENERAL EQUILIBRIUM ANALYSIS

James Giesecke

Centre of Policy Studies, PO Box 11E, Monash University, VIC 3800

ABSTRACT: A major development in the Australian higher education sector has been the rapid increase in foreign student enrolments. This growth has been due, in part, to universities responding to limits on federal funding by seeking alternative revenue sources, such as foreign student fees. As a result, universities across the country now compete for foreign student numbers. One expression of this competition has been the undertaking of studies to investigate the regional effects of foreign students and university activity in general. These studies have tended to focus on local economic effects, overlooking that the economic phenomena under study - local foreign student expenditures and university activity in general - are often an irreducible part of a wider national economic phenomenon. This study takes a whole-of-economy perspective on the regional economic consequences of foreign students. Specifically, a dynamic multiregional computable general equilibrium (CGE) model is used to examine the effects of foreign students on the economies of Australia's eight states and territories.

1. INTRODUCTION

Australia has experienced a substantial increase in enrolments of foreign higher education students in recent years¹, and the provision of education services to these students is now a significant export industry, generating approximately \$AUD 2.0 billion in export revenue in 2000. This increase is, in part, an expression of the limits on growth in federal funding of Australian universities and the resulting movement by the universities towards alternative revenue sources such as foreign student course fees². Universities throughout the country have increased their marketing efforts in their competition for foreign student numbers, and the further increase of foreign student numbers is a major component of the strategic plans of many universities.

One expression of the universities' marketing efforts has been the commissioning of studies to investigate the regional economic consequences of foreign student expenditures and the regional economic consequences of university activity in general. These studies are used by universities in their

¹ Between 1988 and 2000 the number of foreign higher education students enrolled in Australia grew by 425 percent, or 15 percent per annum. In comparison, the total number of higher education students in Australia grew by only 65 percent, or 4.3 percent per annum (DETYA, 2001).

² The success of Australian institutions in this market has also been assisted by cost advantages relative to other major English-speaking destinations for foreign students.

lobbying of Commonwealth and state governments for funding increases³. For example Chapman (1997) notes that it is sometimes argued in Australia that an important dimension to policy making relating to higher education is the geographical location of universities because of the economic and social effects of their presence on the regions in which they are located. The Australian Vice-Chancellors' Committee (2001) cites the regional economic benefits of foreign student expenditures as an additional positive effect of greater foreign student numbers, stating "the regional impacts of international education may in some instances be much greater in relative terms than national impacts. Universities are major employers in many regional areas and the spending by thousands of international students would be a major boost to regional economies".

The effects of foreign student expenditures on regional activity in Australia have been investigated by McKay and Lewis (1995), Peter (1997) and Duhs and Duhs (1997). McKay and Lewis (1995) evaluated the effects of foreign student expenditures on the regional economy of Wollongong, concluding that each foreign student at Wollongong University created an average of 0.57 full time equivalent jobs in the region. Peter (1997) used a multi-regional CGE model to investigate the impact on Tasmania of foreign student expenditures in Tasmania alone. He found Tasmanian real GSP to be 0.14 per cent higher in the short-run. Duhs and Duhs (1997) considered the general significance for the Queensland economy of the growth in the export of education services from that region. A feature common to each of these studies is that no account is taken of the indirect effects on the region under study of expenditures by foreign students located in regions outside of that under study.

As part of their marketing and political lobbying efforts, many Australian universities have also thought it worthwhile to commission studies that investigate their contributions to regional economic activity. Examples of such studies include Latrobe University (Michael, 1996), Southern Cross University (Davis *et al.*, 1996), the University of Western Australia (Greig, 1997); the University of New South Wales (Milbourne *et al.*, 1993), the University of Southern Queensland (Temple-Smith and Elvidge, 1996), the University of Central Queensland (Zimmer, 1992), the three South Australian universities (South Australian Vice-Chancellors, 1996) and the Curtin University of Technology (Cabalu *et al.*, 1999). This interest by universities in their impact on the local economy is not confined to Australia. Overseas examples of such studies include the investigation of the economic impact of the University of Waikato (Hughes, 1994); Lancaster University (Armstrong, 1993); the University of Nottingham (Bleany *et al.*, 1992); the Wolverhampton Polytechnic (Lewis, 1988); the University of Portsmouth (Harris, 1997); and the University of Exeter (Coates, 1994).

A feature common to each of these studies is a focus on only the activity of the local university or spending by local foreign students. Little or no

³ Such lobbying can be effective because of the political imbalance favouring the smaller states in the Australian Senate (see Madden, 2002) and the more general importance of regional development issues in attempts by politicians to secure marginal seats.

consideration is given to economy-wide factors such as those relating to the funding of the university, or the indirect effects of university operations and foreign student expenditures in other regions. This focus is not necessarily a shortcoming of these studies, to the extent that the direct effects under investigation (local foreign student enrolments or local university activity) can be said to be independent policy instruments under the control or influence of the decision makers in the region under study. In the Australian case, marginal changes in the direct effects (that is, a change in the current level of foreign students enrolled in the region, or a change in the current level of local university activity) might be influenced by regional decision makers. However, the same cannot necessarily be said for the total of the direct effect. The Australian higher education system remains largely funded by the Commonwealth Government out of taxes levied economy-wide, and foreign students are attracted to Australia as much by general factors (such as the exchange rate, visa requirements, and perceptions of the country as a whole) as by factors specific to the region in which their university of enrolment is located. Hence there is a second dimension to the problem of measuring these impacts, namely, taking account of the indirect effects on the region under investigation of the spending by foreign students taking place in other regions.

This paper attempts to elucidate this dimension of the problem in its assessment of the effects of the provision of higher education services to onshore foreign students on the distribution of economic activity across Australia's eight states and territories (hereafter, "states"). In assessing the consequences of foreign student expenditures in any one region, the modelling takes explicit account of the indirect effects on that region of foreign student expenditures in other regions. The regional economic consequences of foreign students are calculated by considering a hypothetical scenario in which, starting in the year 2000, foreign higher education students do not come to Australia. The implications for the Australian economy of such a scenario are then tracked over the period 2000 to 2005. Examining the question over this time frame illuminates both the short-run and long-run consequences of foreign student expenditures for regional economic activity⁴. The modelling methodology employed in this paper is similar to that used by Dixon, *et al.*, (1998) and Dixon, *et al.*, (2002) who investigated the consequences of changing the future growth rate in foreign student numbers to reflect the (then) expected downturn in student arrivals to Australia following the Asian financial crisis.

The remainder of this paper proceeds by first describing the model in Section 2. Section 3 describes the data used in the analysis. Section 4 presents the results. Naturally, the discussion of results emphasises the regional consequences of foreign student demands. However the regional effects are best

⁴ While 2000 to 2005 is not a very long period, the modelling of the labour market allows long-run conclusions to be drawn by 2005. We follow the conventional Australian macroeconomic modelling assumption that changes in aggregate employment are largely eliminated by changes in real wages within five years of an initial shock. While adjustments to capital stocks will continue beyond this point, the direction of change in the aggregate capital stock is established by 2005.