BRIDGING THE GAP BETWEEN ANECDOTAL AND EMPIRICAL EVIDENCE IN THE INTERNATIONAL EDUCATION MARKET: INSIGHTS FROM THE US AND UK

by

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INTRODUCTION

Education is an industry which has seen rapid growth in its trade over a short period of time. From the import and export of textbooks to international examinations such as the British Advanced and Ordinary levels and the American GMAT, GRE, LSAT, TOEFL and others, international trade in education has truly become a multidimensional phenomenon (Liston and Reeves, 1985). While all these aspects have largely contributed to the development of the so called “academic trade” (McMahon, 1988), it is the cross-border migration of international students which however remains the most visible aspect of this trade (Bourke, 2000). Indeed, recent estimates by the Organisation for Economic Cooperation and Development (OECD) suggest that nearly 1.9 million students were abroad in 2002 (OECD, 2004). There are probably thousands more foreign students involved in lower level education, language training and the like, but at the time of writing, no comprehensive statistics is yet available on international students enrolled in non-tertiary level institutions (Knight, 2002). As a result, it is vital to stress at the outset that this paper focuses exclusively on cross-border tertiary education but parallels can be drawn for lower level education.

Figure 1: International Student Numbers at the Tertiary Level from 1955-2002


The resulting outcome of this rapid increase in international students has led to significant economic benefits for a number of host countries. Estimated at US$30 billion or 3% of the OECD’s total trade in services (Johnston, 2002), cross-border student exchanges has indeed become a major export sector in the traditional host countries of international students including the United States, the United Kingdom, Canada, Australia and New Zealand (Larsen, Martin and Morris, 2002).

However, in spite of the growing importance of the international education industry, its dynamics are not well understood. In particular, little research has been undertaken to understand the factors which mostly influence international student mobility. Lulat and Cordaro (1984), for instance conducted a comprehensive bibliography on the literature on foreign study but found very few studies that have investigated the drivers behind international student mobility. Post 1984, through a broad review of both the business and education literature, I found a similar dearth of research into the drivers of foreign student mobility with most studies addressing the foreign study phenomenon taking an educational perspective focusing on curriculum development and delivery issues as well as cross-cultural, psychological and adjustments issues (Altbach, 1991; Bourke, 2000). Through such
lack of research, much of our knowledge on the factors influencing international student mobility is anecdotally rather than empirically based. Indeed, as professionals in the field of international education, we very often find ourselves relying on hearsays as opposed to concrete empirical evidence in formulating policy directions and strategies.

Through the use of econometric methodologies, this paper seeks to bridge this gap between anecdotal and empirical evidence by addressing key factors which have commonly been linked to international student mobility. In examining these factors, the scope of this study will focus on the United States (US) and the United Kingdom (UK) only. This limitation was the result of a lack of comprehensive time series data on international student enrolment in other host countries such as Australia and New Zealand. Nevertheless, this limitation should not weaken the value of this study since the US and the UK are the two major hosts for international students accounting for approximately 42% of all international students in 2002 (OECD, 2004) and the parallels of this study’s findings can be drawn for other host countries. In terms of the source countries sampled, my focus is on the Asian region given its high demand for international education. In particular, the case of China, Hong Kong, India, Indonesia, Japan, Malaysia, Singapore, South Korea and Thailand are analysed as major source countries. These countries were selected based on their classification by the OECD as being among the top 30 source countries for international students worldwide (Larsen and Vincent-Lancrin, 2002a). Furthermore, the time frame of the study is 1985-2003, a period which represents the most recent wave of globalisation within the international education sector. Indeed, it should be noted that in the pre and early 1980’s, international student mobility was largely influenced by foreign aid rather than being viewed from a trade perspective (Marginson, 2001). In what follows, a model explaining some of the key drivers influencing international student mobility will be advanced.

MODELLING INTERNATIONAL STUDENT MOBILITY: SOME KEY FACTORS

The modelling approach adopted in this paper is a pooled cross-section time series econometric model whereby international student mobility is equated with the proposed factors discussed below. Without getting too technical, the results from such an analysis inform us which one of the factors is statistically significant and thus provide empirical support to factors which previously have only been anecdotally linked to international student mobility. The next section briefly overviews how the proposed factors are empirically measured before discussing the results.

Access to education in the source country (ACCESS)

One of the most apparent demand factor leading students to look overseas for higher education is the lack of access to domestic higher education. Many countries, especially the developing ones, are unable to accommodate their growing domestic demand for higher education for both political and economic reasons. Larsen and Vincent-Lancrin (2002b) for instance, reported that in most developing countries, higher education institutions can only accommodate less than 5% of those who demand post-secondary education. In China for example, some five million high school students passed the university entrance exams in 2001 and yet Chinese universities could accommodate less than half of that number (Kaufman and Goodman, 2002). Faced with a limited access and prospects for domestic higher education opportunities, students tend to look at overseas institutions as an alternative (Altbach, Kelly and Lulat, 1985). Hence, it is hypothesized that there is an inverse relationship between access to domestic education and international student mobility.
ACCESS in this study is measured as the tertiary enrolment in country $i^*$ as a proportion of the total student population.

**Tuition in host country (TUI)**

There is an extensive literature on ‘student demand’ studies which supports an inverse relationship between tuition and higher education enrolment (e.g. Campbell and Siegel, 1967; Leslie and Brinkman, 1987; Heller, 1997). While this literature has largely focused on domestic education, a parallel argument can be drawn in the case of international education demand (Agarwal and Winkler, 1985). Thus, based on the above arguments, I suggest that there is a negative relationship between international students flows from country $i$ to country $j$ and tuition fees in country $j$.

The *International Handbook of Universities* published by the International Association of Universities in association with UNESCO provided the data for the tuition measure. To account for inflation, this measure was also deflated by the respective consumer price index (CPI).

**Bilateral exchange rate between source and host country (EXCHA)**

Another commonly linked factor to international student mobility is exchange rate since this causes the costs of overseas study in country $j$ to change in terms of the domestic currency in source country $i$ irrespective of whether the nominal costs of study in host country $j$ have actually changed or not. Thus, the stronger the currency of the source country $i$ relative to the host country $j$, the greater the number of students from country $i$ to $j$. Hence, it is hypothesized that there is a negative relationship between country $i$’s currency and the number of student outflows of that country.

**Global involvement of the source country (INVOL)**

Given the level of integration that is currently taking place in the geo-political economic arena, it can be argued that many countries are increasingly under pressure to develop their human capital into a resource capable of handling the challenges of operating in a global system. In other words, it can be stated that the more involved a country is in the global economy, the more emphasis it will put on international education since as conducting business in a global system becomes more and more integrated, a supply of human capital with the knowledge and awareness of other cultures and systems will become more and more important for a country to ensure its economic competitiveness. Guoqing (2003) for instance, stated that in the case of the internationalized China of today, overseas study is increasingly becoming a must for its future workforce to be conversant with the practices of the advanced western countries. Indeed, by ‘learning from foreigners’, this future workforce will be equipped with “cultural capital” (Bourdieu and Passeron, 1977) and with the proficiency in the language, technologies and orientations of the industrialised western world (Altbach et al, 1985), skills that are all necessary to operate in a global economy. Hence, it can be argued that from the angle of improving its competitiveness in a globally integrated system, a country might encourage and facilitate overseas study.

A measure of global connectedness is created by aggregating country $i$’s openness to trade and foreign direct investment (FDI). It is suggested that the more open to both trade and FDI a country is, the more involved in the global economy it ought to be and the higher the need for developing its citizens’ global experience and knowledge will be.

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1 Henceforth, country $i$ refers to source countries (China, H Kong, India, Indonesia, Japan, Malaysia, Pakistan, Singapore, S Korea, Pakistan, Thailand) while country $j$ represents host countries (the US and the UK)
Econometric model specification.

From the preceding discussions, the number of students from country \( i \) studying in country \( j \) is specified as:

\[
\text{ENROL}_{ij} = \alpha + \beta_1 \text{ACCESS}_i + \beta_2 \text{TUITION}_i + \beta_3 \text{EXCHANGE}_i + \beta_4 \text{INVOL}_i + B_5 D_j + \beta_6 D_{\text{China}} + \beta_7 D_{\text{India}} + \beta_8 D_{\text{Indonesia}} + \beta_9 D_{\text{Japan}} + \beta_{10} D_{\text{Malaysia}} + \beta_{11} D_{\text{Singapore}} + \beta_{12} D_{\text{S Korea}} + \beta_{13} D_{\text{Thailand}} + \epsilon_{ij}
\]  

[1]

With the expected signs:
\( \beta_1 < 0, \beta_2 < 0, \beta_3 < 0, \beta_4 > 0 \),

As a result of pooling our observations together in one data set, a number of 0-1 dummy variables for each of the host and source countries were also added to the model.

DISCUSSION OF RESULTS

The statistical results of the proposed econometric model are outlined in table 1 and their implications are discussed next.

<table>
<thead>
<tr>
<th>Explanatory variables</th>
<th>Hypothesized Sign</th>
<th>Mean</th>
<th>SD</th>
<th>Coefficient Estimate</th>
<th>T- value</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td></td>
<td>7181</td>
<td>0.69</td>
<td>0.48</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access</td>
<td>-</td>
<td>21.34</td>
<td>16.08</td>
<td>-69.9</td>
<td>-1.96</td>
<td>0.05</td>
</tr>
<tr>
<td>Tuition</td>
<td>-</td>
<td>122.78</td>
<td>19.11</td>
<td>-66.19</td>
<td>-3.16</td>
<td>0.0017</td>
</tr>
<tr>
<td>Exchange</td>
<td>-</td>
<td>554.46</td>
<td>1257</td>
<td>-0.11</td>
<td>-0.32</td>
<td>0.75</td>
</tr>
<tr>
<td>Host Country Dummy</td>
<td></td>
<td>27744</td>
<td>2.46</td>
<td>0.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>India Dummy</td>
<td></td>
<td>9640</td>
<td>2.48</td>
<td>0.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indonesia Dummy</td>
<td></td>
<td>-10910</td>
<td>1.79</td>
<td>0.07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Japan Dummy</td>
<td></td>
<td>-6808</td>
<td>0.93</td>
<td>0.35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malaysia Dummy</td>
<td></td>
<td>-5743</td>
<td>0.81</td>
<td>0.41</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Singapore Dummy</td>
<td></td>
<td>-2946</td>
<td>0.34</td>
<td>0.73</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S. Korea Dummy</td>
<td></td>
<td>-3556</td>
<td>0.44</td>
<td>0.66</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thailand Dummy</td>
<td></td>
<td>-9892</td>
<td>1.02</td>
<td>0.31</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| \( R^2 \) | 0.6178 |
| Adj \( R^2 \) | 0.5936 |
| F Value | 25.26 |
| DW | 2.02 |
ACCESS

There is support to empirically argue that domestic tertiary education opportunities are inversely related to international student mobility. This finding suggests that overseas study is thus likely to be a substitute to domestic education. As noted above, due to the increasing importance of education, students who do not gain access to domestic tertiary education might be more than willing to incur the costs involved with overseas study such that international student mobility is negatively and, as per our analysis, significantly related to access to domestic higher education.

The policy implication of this finding is that as source countries adopt a capacity building approach to international education and improve access to their domestic higher education systems through the establishment of offshore campuses or “twinning” arrangements whereby foreign education providers deliver their courses by partnering with local education institutions, international student mobility to host countries is likely to decrease. Hence, tertiary institutions in host countries need to be alert to such “capacity building” trends. Statistics by the Australian Vice Chancellor’s Committee show that Australian tertiary institutions are already well placed in taking first mover advantages in the offshore programmes market with 1569 such programmes recoded by May 2003. By contrast, New Zealand’s entrance on the offshore education market has been more recent with only 47% of public tertiary education providers operating offshore in 2001 compared to 88% in Australia (NZ MOE, 2002).

TUI and EXCHA

The influence of tuition on international student mobility was found to be the strongest in all the factors tested. This implies that the higher the level of tuition fees charged to international students, the lower their respective demand for international education will be. This finding thus reinforces Agarwal and Winkler (1985) and numerous other studies from the “student demand” literature whereby a negative price elasticity was found vis-à-vis educational enrolment.

As for exchange rate, although the associated negative coefficient suggests that there is indeed a negative relationship between exchange rate appreciation and international student mobility, this variable was not however significant in explaining changes in international student mobility. This can be explained by the fact that over time, exchange rates fluctuate up and down. Hence, the negative influence of an appreciating exchange rate on international student mobility cancels itself out when the exchange rate depreciates over time.

Consequently, in the long term, the influence of exchange rates on international student mobility is not empirically significant when compared to tuition fees unless they keep on appreciating over a long time period. Indeed, while the former fluctuates up and down with respect to market forces, tuition fees rarely go down (if ever) once they have been increased. This finding has an interesting policy implication since a decline in foreign demand for higher education is commonly blamed on the host countries’ appreciating exchange rate. Yet, quite interestingly, it would seem that over time, it is increases in TUI that are likely to reduce foreign demand. This finding should make education exporting countries rethink their position on price setting for international students. For many educational institutions in the host countries, overseas students have very often been viewed as an alternative source of revenue when faced with reduced state-financial support (Kwiek, 2001). Under this market-oriented approach, many of these institutions have had a tendency to treat international students as cash cows. However, our finding would caution against this approach.
As hypothesized, the level of involvement a source country has in the global economy was positively associated with international student mobility. As countries become more involved in the global economy, they often encourage students to study overseas to learn the language, technologies and orientations of the industrialized western world (Altbach et al, 1985). However, this does not mean that source countries are content to be culturally assimilated in the western way of doing things (Hood and Shieffer, 1983 cited in Altbach, 1991). Rather, it is often the case that the education importing countries want to retain the best of both worlds by adapting the knowledge they have imported from overseas to fit the local environment. Hence, those tertiary institutions that can target their educational product to the specific needs of the source country are likely to be the preferred study destination.

CONCLUSION

This study has been motivated by the lack of research in understanding international student mobility despite the fact that an increasing number of students, particularly from the emerging Asian countries, are known to go overseas for higher education. Indeed, while some research from a pedagogical perspective related to foreign students exist, there has been little attempt to gain a better understanding of the factors which influence international student mobility. For professionals involved in the field of international education, the dearth of such research has meant that many of our policy formulations and recruitment strategies are based on anecdotal as opposed to empirical evidence. Through the use of econometric methodologies, this study contributed to the field of international education by bridging the gap between anecdotal and empirical evidence and aims to provide a starting point for improved policy and strategy formulations. The study empirically shows that access to domestic tertiary education opportunities and tuition fee increases have a significant negative impact on international student mobility. By contrast, the level of involvement of the source country in the global economy showed a significant positive impact on international student mobility. In addition, quite surprisingly, an appreciating exchange rate in the host country was not found to have any long term significant influence on international student enrolment.

As with any research, this study has several limitations. First, the focus of the study is limited to the US and UK as the main host countries because of the lack of reliable data for Canada, Australia and New Zealand which would allow us to compare all five English-speaking host countries. Ideally, the inclusion of these three additional countries would result in a more complete study and would allow for a better understanding of the dynamics of international student mobility. The second limitation of the study relates to the nature of some of the data used in the empirical model. The tuition data for instance, is at best an aggregate estimate and does not reflect any particular institution. As tuition is known to vary greatly between different educational institutions, the use of aggregate data can lead to misleading findings.

REFERENCES


