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The Omani Journal of Applied Sciences provides a forum for researchers and practitioners to discuss, analyse and shape current issues related to their specialization as well as from a multidisciplinary perspective. The journal will have an applied research orientation, and will include both quantitative and qualitative empirical studies on contemporary issues and debates that encourage and motivate future research as well as providing the foundations for the application of such research findings. The journal will adopt a region-specific as well as an international orientation with a comparative approach.

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- (1) Publishing academic research, and scientific studies in the fields of applied science in communication, design, IT, international business, engineering & english language.
- (2) Reviewing discussions of new issues related to higher education and scientific research.
- (3) Developing scientific research and encouraging academic specialists to carry out scientific research.
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Welcome Note from HE Dr Rawya Al Busaidi

Dear Readers and Authors

We are proud to welcome you to the inaugural edition of the Omani Journal of Applied Sciences which endeavours to encourage the creation of a research culture by emphasizing the importance for both instructors and students in Higher Education of engaging in practical research - in order to apply theoretical concepts; to advance practical knowledge; and, to develop research skills. Research and development are critical to the future of any country in the knowledge-based economy of the global era, despite the challenges arising from the recent worldwide financial crisis.

This endeavour is consistent with some of the conclusions of the recent Muscat Summit of the AGCC, where it was noted that, “The state of scientific research activities in general, and applied research in particular, is not strong. In addition, the links of universities and educational institutions with the labour market are weak”. As a consequence, it was emphasized in the summit that “GCC universities and other educational institutions should undergo a qualitative change in their scientific and educational plans and programs, in order to keep pace with recent developments in science and technology throughout the world. They should also expend every effort to achieve the goals of educational reform in the GCC states in order to advance their progress into the ranks of developed nations.”

Taking this into account, the MoHE has aligned its efforts with those of The Research Council by taking an initiative which aims to support research undertaken by Omani graduate students at home and abroad, as well as supporting applied research in Higher Education Institutions. It is my strong belief that this journal, by sharing the results of research with a broader public will reinforce the practice of research and stimulate further research. As no such international research journal with a wide scope is available in the region, the Omani Journal of Applied Sciences will provide a platform for Oman and other GCC countries, as well as for international academics, practitioners and students to publish papers on a wide range of topics, including applied science, humanities and education.

It is a remarkable achievement, only three years after the establishment of the Colleges of Applied Sciences in 2006, to put this, the first issue in your hands. I would like to welcome and congratulate the authors of the papers published in this issue, and to invite new authors to contribute to future issues. We are fortunate to have several distinguished scholars and practitioners across the world contributing to this inaugural issue; and we cordially invite you to serve the region and humanity by contributing articles to the Journal of Omani Studies in the future.

Thanks are expressed also to the expert reviewers of the papers in this issue, as well as those preparing the forthcoming issues. We would be delighted to hear from qualified professionals who are willing to act as reviewers for the journal.

It would have been impossible to publish this journal at its high standard without the unstinting and dedicated efforts of the members of the Academic Publications Governing Board, the Editor-in-Chief and Associate Editor, the Guest Editors, Members of Editorial Boards and Members of the International Advisory Board. I am deeply indebted to all the members of my team. It is my sincere hope and intention that The Omani Journal of Applied Sciences will contribute significantly to major issues in this field across the country, in the region and around the world.

We hope you enjoy this inaugural issue,

With best wishes,

Dr Rawya Saud Al Busaidi
Minister of Higher Education

A NOTE FROM THE GUEST EDITORS

It gives us great pleasure to present the inaugural issues of the Omani Journal of Applied Sciences. The publication of the journal is the fruition of the concerted effort and hard work of the Editorial Board who are committed to fulfil vision of the Research Council in Oman to become a leader in research on the regional scale. To this end, the journal will adopt a region-specific as well as an international orientation with a comparative approach. The Omani Journal of Applied Sciences will endeavour to provide a forum for researchers and practitioners to discuss, analyse and shape current issues related to their specialization as well as from a multidisciplinary perspective.

The focus in this inaugural issue of the journal is on international business, given that despite the onset of the global financial crisis in 2008 the irresistible forces of globalization will continue to pose challenges especially for small open economies. Such challenges can stimulate research that in turn can help policymakers better understand the complexities of the international business environment. This inaugural issue contains four papers covering topical research debates in the area of international business that have been contributed by academics that are highly regarded for their research in the international academic community. Our sincere appreciation goes to the contributors of the papers. We hope that these papers, which are not combined by any special overarching theme, will offer the readers a variety of angles on some of the pressing issues of contemporary international business.

In the first paper, Professor Graeme Hugo examines from an Australian perspective issues and options for enhancing the international mobility of researchers. The paper has important policy implications as more than ever before academics (in particular those with a research focus) today are a very mobile group, working within international labour markets and having strongly developed international networks. In the global context of massively increased mobility of researchers there are increasing challenges to governments (including in Oman and other countries in the Gulf region) to achieve the right balance between training researchers, recruitment of researchers from foreign countries and retention of researchers tempted to move to a foreign country. In this context, a competitive advantage for a country like Oman is that it offers the potential of being viewed as a research “heaven” for transnational researchers which could lead to the development of international research networks and joint research projects.

In the following paper, Professor Lindsay Turner examines the Oman tourism potential in the perspective of other developments world wide. The paper states that world international tourism has been increased by nearly 5.4% between 2005 and 2006. Professor Turner notes that Oman is a small tourism destination on the world scale, but also one that is growing rapidly and there are expectations of strong growth in the near future. He concludes that for the development of demand for foreign international tourism, it is useful to place the Oman market into a world perspective, and from this position to identify future market size, sustainability and marketing. The paper offers

useful insights that are consistent with current policy developments in the tourism sector in Oman.

The next paper by Professor Petrakos and Dr Paschalis Arvanitidis explores experts' views on the factors underlying economic growth. The paper has important policy implication as it identifies a number of important determinants of economic dynamism at the global scale. These determinants are consistent with the relevant mainstream literature (human capital, innovation, openness, FDI, infrastructure), but also with its most recent developments, highlighting the increasing importance of political and institutional factors. The paper also identifies various countries, areas and regions that exhibit the greatest economic dynamism in the near futures. The paper further explores that the determinants of economic dynamism do not have the same influence in the advanced and the less advanced countries (or regions). Therefore, they conclude that the priorities in terms of policies for economic dynamism should be quite different between countries of different state of development.

The final paper by Dr Sophia Philippidou deals with the notion of constant transformation and organizational change in the public sector which is gaining increased attention. It is argued that public organizations face the challenge of rapid and discontinuous change that has come to undermine the relevance of traditional approaches on how a public organization should be managed. The paper presents a descriptive case study of the operation of "Centers for Citizen Service" in Greece which constitutes an innovative change effort for the Greek Public Administration and formulates an excellent example of applying new managerial practices in the Greek Public Administration, aiming to introduce new managerial and administrative practices and issues that are harmonized to the European Union directives. This research is also of relevance to countries like Oman where managing change in the public sector is also the subject of research, especially as the GCC states following the 29th AGCC summit have reaffirmed their commitment to strengthen Gulf integration.

Overall, this issue offers the readers a good mixture of both conceptual and empirical papers, which is consistent with the approach and the objectives of the journal. It also provides an update on related doctoral dissertations completed recently by Omani students as well as an overview of important conferences that were held in Oman in 2008. The publication of this journal attests the commitment of the members of the Editorial Board to make it a success. We look forward to your comments and suggestions – with regard to published material, as well as to the further development of our journal. Thank you for your interest in our journal and we hope you enjoy reading it as well as considering your contribution, whether it is papers, book reviews, conference notes or special issues proposals!

Drs Steve Bakalis and Iqtidar Ali Shah
Guest Editors
Omani Journal of Applied Sciences

Short Bios of Contributors

Professor Graeme Hugo

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Graeme Hugo is a University Professorial Research Fellow, Professor of Geography and Director of the National Centre for Social Applications of Geographical Information Systems at the University of Adelaide. He is the author of over two hundred books, articles in scholarly journals and chapters in books, as well as a large number of conference papers and reports. In 2002 he secured a \$1.125 million ARC Federation Fellowship over five years for his research project, “The new paradigm of international migration to and from Australia: dimensions, causes and implications”.



Research Interests

- Urban and population geography and demography, social geography, demographic trends (especially population mobility) and development in Southeast Asia. The impact of development on economic and social well-being in Southeast Asia.
- Population trends and their implications in Australia
- Immigration, its changing patterns, causes and implications for social and economic change.
- Ageing, its changing patterns and implications for social and economic change.
- Internal Migration and Urbanization in Australia and Asia.

Professor Lindsay Turner

Lindsay W. Turner is professor of econometrics and Head of the School of Economics and Finance at Victoria University, Melbourne. He is a PhD graduate of the University of New South Wales in Sydney, where he completed an honours degree in geography and economics. Major research interests include econometric modeling of international tourism demand, risk management models in international trade and cross-cultural models in tourism. He is also joint editor of the journal *Tourism, Culture and Communication*, and on the editorial boards of the *Journal of Travel Research*, *Tourism Economics* and *China Tourism Research* and a member of the research board of the Asia Pacific Travel Association.



Professor George Petrakos

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George Petrakos (PhD) is a Professor of Spatial Economic Analysis at the University of Thessaly, Department of Planning and Regional Development. He is also the Director of the South and East European Development Center (SEED) and the Vice President of the European Regional Science Association (ERSA). His research interests include urban and regional economics, development, transition economics, Balkan studies and international economic relations. He has published several books and a large number of articles in international journals such as *Environment and Planning A and B*, *European Planning Studies*, *Regional Studies*, *Papers in Regional Science*, *Urban Studies*, *International Urban and Regional Research*, *European Urban and Regional Studies*, etc.



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Paschalis A. Arvanitidis (MLE, PhD) is a Lecturer of Economic Analysis of Institutions at the Department of Economics and visiting Lecturer of Urban Studies at the Department of Planning and Regional Development (University of Thessaly, Greece). He is an engineer and an economist with specialisation on institutional economics, urban economics and real estate markets. His research interests include institutional economics, urban and regional development, real estate market analysis and environmental economics. He has participated in many research projects funded by European and national sources and has published a number of papers in national and international journals.

Sophia Philippidou (PhD) is a post-doctoral researcher at Athens University of Economics & Business and working as a part-time consultant in S&F consulting company. She has been teaching organizational change and organizational behavior at the M.B.A program of the University of Aegean for a year and she has participated in various research and business consulting projects in the field of innovation management, change management, HR management, R&D assessment and policy for various organizations (e.g., European Commission, Ministry of Development-Greece, Emporiki Bank, EOMMEX, Ebusiness Forum etc.). She has recently been involved in two large-scale projects of EC-DG Enterprise and Industry on the analysis and evaluation of the impact on innovation of publicly funded research programmes (Lot 1 and Lot 2). Dr. Philippidou is an elected member of the Board of Directors of the Hellenic Operational Research Society (HELORS), and Associate Editor of the “*International Journal of Services, Economics and Management (IJSEM)*”- Interscience Publishing (2006- Currently). She has published over 16 research papers in peer reviewed journals and conference proceedings.



Issues and Options for Enhancing the International Mobility of Researchers- an Australian Perspective*

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ABSTRACT

Researchers have long been a very mobile group, working within international labour markets and having strongly developed international networks. However this mobility has reached unprecedented levels due to the increasing global quest for talent and reduction in the function of distance and cost of international travel.

KEYWORDS:

Transnationalism, Mobility of Researchers, Australia, Universities, Academic Networks

* Paper was prepared for OECD Committee for Scientific and Technological Policy (CSTP) and Steering and Funding of Research Institutions (SFRI) - Workshop on The International Mobility of Researchers, IEA Paris, March 28, 2007.

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1.1. INTRODUCTION

Researchers have long been a very mobile group, working within international labour markets and having strongly developed international networks. However, the international mobility of researchers has reached unprecedented levels in the contemporary world due to two developments. Firstly with the emergence of knowledge-based economies there has been recognition that the key to national prosperity is maximising the national stock of human capital, particularly the brainpower which provides innovation and major breakthroughs in advancing knowledge. This has led to an unprecedented global quest for talent (Kuptsch and Fong, 2006) in which scientists and researchers are among the most eagerly sought after. Secondly, the reduction in the friction of distance and cost on travel and international flows of people, information, money and goods has made increased migration between nations more possible than ever before. In the European context Morano-Foadi (2005) has argued:

“For many, mobility is not so much a choice as a necessity in science careers either due to the lack of employment opportunities or because progression demands acceptance of mobility by researchers.”

Hence while much attention is focused on a flow of talented researchers from south to north nations, in fact there is heavy interaction between OECD nations.

The dominant discourse regarding this migration in the past has been the so-called brain drain phenomenon whereby development in origin countries is constrained by the loss of human capital so that the gap between developed and developing nations widens. This model presumes the emigration of researchers and other skilled workers and involves a definitive, permanent relocation and total loss of the brainpower of the emigrant researchers for the origin country. However, there has been a paradigm shift in global international migration thinking from one in which permanent relocation of migrants has been replaced as the dominant form of migration to transnationalism. The latter suggests that in the contemporary world while permanent migration occurs it is the two-way movements and circulation between origin and destination and the linkages developed and maintained by movers with their origins which are the defining features (Faist 2000; Levitt 2001). It is argued here that this transnational migration of researchers provides potential for both origin and destination to benefit from the new mobility of researchers. This paper explores the range of issues which arise from this new movement as well as the opportunities which arise from the mobility of researchers with specific reference to Australia.

The paper begins with a brief discussion of the contemporary trends in global migration which impinge on researcher mobility and then demonstrates contemporary patterns

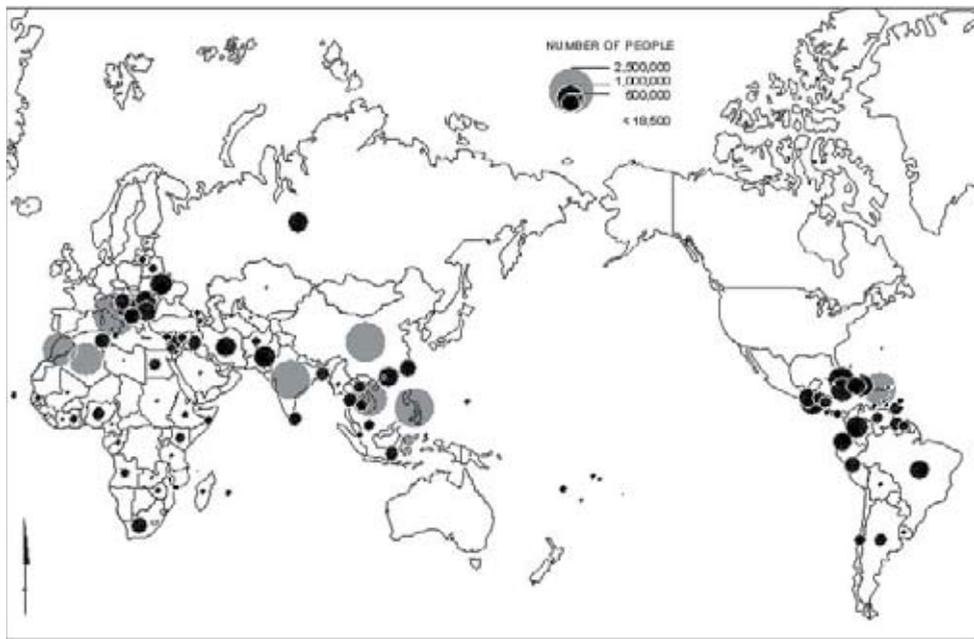
of researcher mobility using the example of Australia. Like other nations Australia experiences both an inflow and outflow of researchers and a number of issues relating to both groups are discussed. In particular it is argued that the ease of international travel and exponential improvements in information and communication technology have made it possible for researchers to maintain close, strong, immediate and intimate contacts with their origin countries to an extent that has never before been possible. It is argued that expatriate researchers can contribute to their home countries not only by eventually returning to their homeland but also while they are still living abroad. This is achieved both through regular return visits but especially by continuous 'virtual return migration' via modern information and community technology. The final section of the paper discusses some of the policy interventions which can be initiated by governments to enhance the advantages which they can gain from researcher mobility. In the global context of massively increased mobility of researchers there are increasing challenges to governments like that of Australia to achieve the right balance between training researchers, recruitment of researchers from foreign countries and retention of Australian researchers tempted to move to a foreign country. However, it is argued here that there is another dimension to add to this mix – to what extent can governments capitalise on the human capital of native researchers they have 'lost' to foreign countries by drawing on their social capital to remain engaged with Australia?

1.2 THE NEW GLOBAL MIGRATION

There are a number of features of contemporary international migration systems which are of particular salience when considering the mobility of researchers. There has undoubtedly been an increase in the scale, complexity and diversity of migration. Whereas for much of the postwar period only a minority of nations were influenced in a major way by international migration, it is now an important process in almost all nations (United Nations, 2006a). In particular the movement from less developed to more developed nations has increased.

Figure 1 shows the distribution of the countries of birth of the 58 million persons residing in OECD nations in 2000 who had been born in non-OECD nations. The dispersed pattern across Africa, Asia and South America is clearly in evidence. At the 2000 round of censuses there were around 65 million migrants from south countries in north countries (United Nations, 2006b)

Figure 1: Persons Born in 'South' Nations Enumerated in OECD Nations at the 2000 Round of Censuses

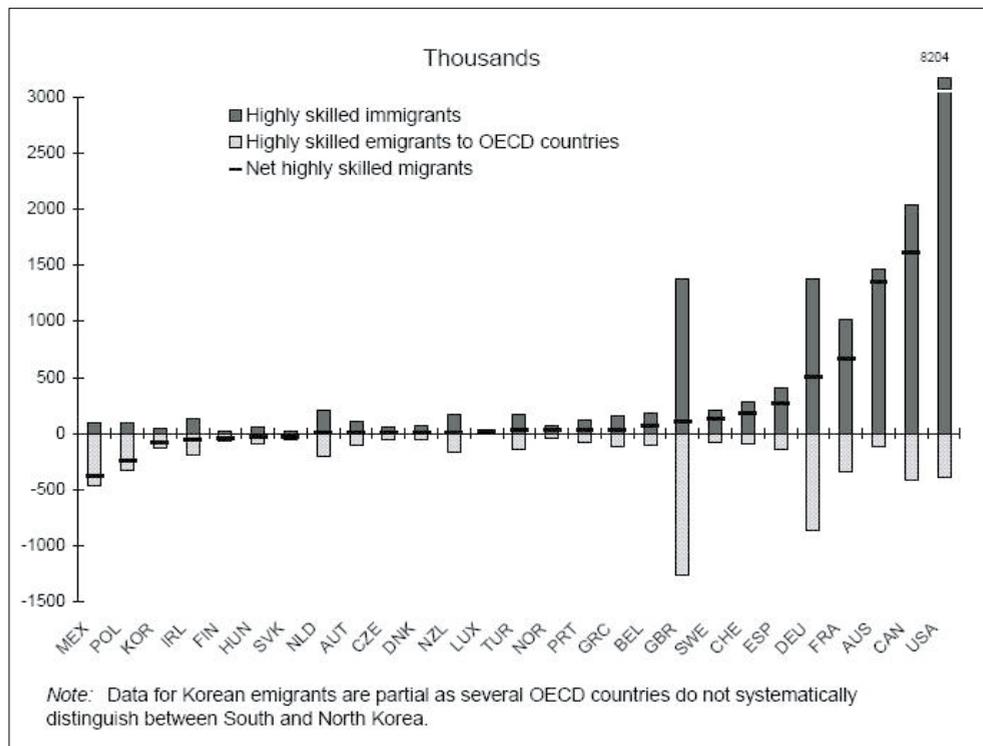


Source: OECD data base on immigrants and expatriates

However, this significantly underestimates the amount of south-north movement because, as was mentioned in the previous section, there has been a shift away from a dominance of permanent migration in the system and a tremendous increase in temporary movements of one kind or another.

The increase in mobility has embraced a wide range of groups. The previous predominance of males has given way to a more or less equal balance of males and females. While the new migration has involved large numbers of unskilled and skilled migrants, Castles and Miller (1998) point to an increasing 'bifurcation' in global migration patterns. On the one hand the mobility of skilled migrants has been facilitated by nations allowing them to enter readily while on the other unskilled migrants are increasingly confronted by barriers erected by potential destination nations. Accordingly, the migration is particularly selective of highly skilled persons, especially that from south to north nations. Dumont and Lemaitre (2005) demonstrated that for all south nations, emigration to OECD nations was highly selective of the highly skilled. Some 88 percent of immigrants from less developed countries in OECD nations have secondary or higher levels of education.

Figure 2: Immigrant and Emigrant Population Aged 15+ with Tertiary Education in OECD Countries

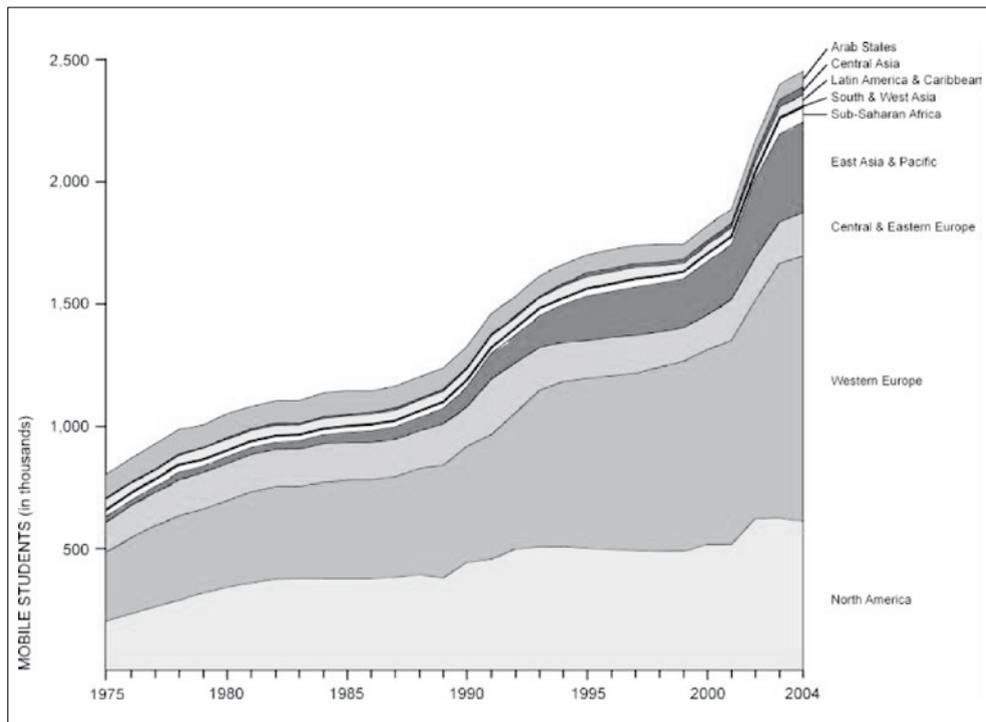


Source: Dumont and Lemaitre, 2005

Figure 2 shows the number of highly skilled immigrants in each OECD nation in 2002 and indicates that the numbers are greatest in the US, Canada, Great Britain, Australia, France and Germany. The diagram also shows that there is a significant skilled emigration out of these nations as well so that the net migration is smaller than the gross volume of movement, especially in some countries like the United Kingdom.

One area of concern in ‘brain drain’ migration relates to the increasing numbers of students from less developed countries who migrate to OECD nations to study but who subsequently remain in those countries after graduation (Tremblay, 2004).

Figure 3 shows the increasing scale of international student mobility and the dominance of OECD nations as destinations, although south-south student migration is increasing.

Figure 3: International Mobile Students by Region of Study, 1975-2004

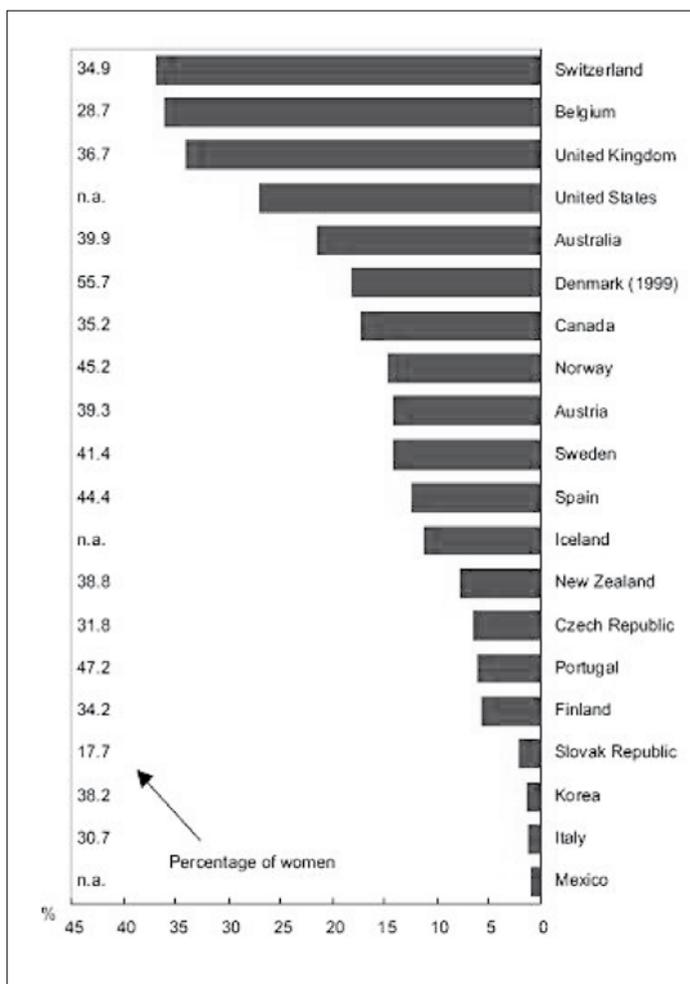
Source: UNESCO, 2006

It is estimated that around 2 percent of the world's 100 million university students are enrolled outside their country of birth and citizenship. Most of the latter are south-north migrants with the largest origins being India and China (*Migration News*, April 2005). The United States remains the pre-eminent destination with 586,000 foreign university students in 2002 although its dominance may be eroding due to increasingly aggressive marketing of international education as an export industry by other countries, especially the English speaking nations like the United Kingdom, Canada, Australia and New Zealand (*Migration News*, January 2005). Figure 4 shows the large proportions of PhD students in OECD nations which are now made up of foreign, especially south-origin students.

South-north student migration is potentially a contributor to the development effort at home because many students are able to work at their destination and remit money home, through knowledge transfer and the enhancement of national human resources when they return after completing their studies. In reality, however, it often has become a net loss to development in origin countries. On the one hand there is a significant south-north flow of money for fees and living costs with the total paid to host nations each year by foreign students being US\$30 billion (*Migration News*, April 2005).

On the other there is a growing nexus between south-north student migration and permanent settlement in north countries. Many student migrants see their movement as the first stage to settlement while several OECD nations have immigration regulations which favour recruitment of these students as they are seen as ideal migrants, having qualifications recognised at the destination and first-hand experience of the destination country labour and housing markets and living situations. Moreover, the host nation often hasn't paid for their training. The growing linkages between student migration and permanent settlement are a major component in the increasing incidence of south-north skilled migration.

Figure 4: Foreign PhD Students as a Percentage of Total Enrolment, 2000



Source: Trewin, 2004.

Until recently the predominant discourse on south-north migration has been of the high degree of selectivity of that migration which has drained poor nations of their most talented residents and hence exacerbated the constraints which low levels of human capital have imposed on development in those countries. It has been only in recent years that there has been a counter view stressing some of the positive impacts of migration on origin areas. Positive views (World Bank, 2006; United Nations, 2006b; Global Commission on International Migration, 2005) of the impact of international migration upon development have been driven by a new appreciation of the scale and impact of remittances. Diaspora-led development in origin nations incorporates a much wider range of impacts than remittances but there is little doubt that in development organisations like the World Bank and the Asian Development Bank, remittances are the centre of attention (Terry and Wilson, 2005). Much of the migration and development discourse focuses on the scale and impact of remittances. However, there has been realisation that the developmental effects of migration are more complex. The networks which are often set up by migrants between their destination and origin countries can be conduits for more than remittances and the developmental implications of these other flows need to be considered. As Lucas (2001) points out there is a growing recognition 'that a highly skilled diaspora may play several important roles in promoting development at home'. This is achieved through the diaspora promoting Foreign Direct Investment, acting as bridgeheads for export of home produced goods, acting as a conduit for knowledge transfer or through their return migration.

A recent analysis (Ioannidis, 2004) analysed the countries of birth of 1,523 highly cited scientists. Almost a third (31.9 percent) resided in a nation other than that of their birth. Migration was more prominent among some research fields (e.g. mathematics, computer science, economics/business and physics) than others (social sciences, immunology and clinical medicine). Three quarters of the migrants had immigrated to the United States and foreigners accounted for a third of cited researchers in the USA, Australia, Switzerland, Israel, France and the Netherlands but almost two thirds in Canada. Foreign scientists were uncommon in Japan, Italy, Sweden, Denmark and the rest of the world. On the other hand only 2 percent of US-born cited scientists resided outside the USA. Rates were high for China (100 percent), Taiwan (90 percent), India (84 percent) and the rest of the non-European world (86 percent).

This is the context in which the contemporary international migration of researchers needs to be considered. Developments in international researcher mobility are illustrated below by examining the pattern for Australia.

1.3 RESEARCHER MIGRATION TO AND FROM AUSTRALIA

Australia is a useful case study to demonstrate the nature and significance of researcher mobility. This is firstly because it has high quality data on both stocks and flows of international migration and secondly because few countries have been more influenced by migration than Australia where almost a quarter of residents are foreign-born (Hugo, 2004).

Table 1: Australia: Percent Overseas-Born in Research Occupations, 2001

Research Occupations	Foreign-Born	Percent Foreign-Born	Total
Natural and Physical Science	1,971	41.9	4,752
Chemists	1,927	36.0	5,433
Geologists and Geophysicists	1,799	35.6	5,086
Life Scientists	1,574	30.3	5,252
Environmental and Agricultural Science	2,722	16.4	16,704
Medical Scientists	3,591	32.6	11,108
Other Natural Physical Science	929	30.6	3,071
Electrical and Electronics Engineers	5,254	36.6	14,502
Mining and Materials Engineers	1,091	34.4	3,196
Engineering Technologists	167	37.8	447
Computing Professionals	49,680	39.7	126,497
Mathematicians, Statisticians and Actuaries	1,178	34.6	3,428
Nurse Educators and Researchers	627	24.0	2,631
University Lecturers and Tutors	12,375	39.1	31,901
Economists	690	28.9	2,412
Visual Arts and Crafts Professionals	2,816	29.3	9,780
Medical and Science Technical Officers	1,171	32.2	3,695
Medical Technical Officers	3,862	28.1	13,932
Science Technical officers	3,765	24.8	15,357
Total Researchers	97,189	35.2	279,184

Source: ABS 2001 Population Census, unpublished tabulations

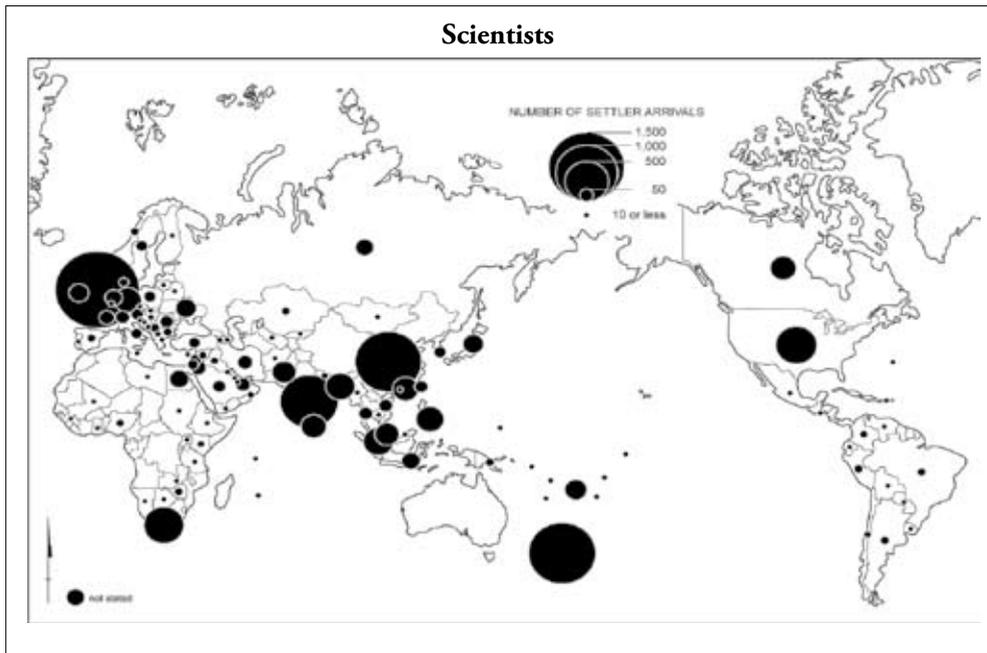
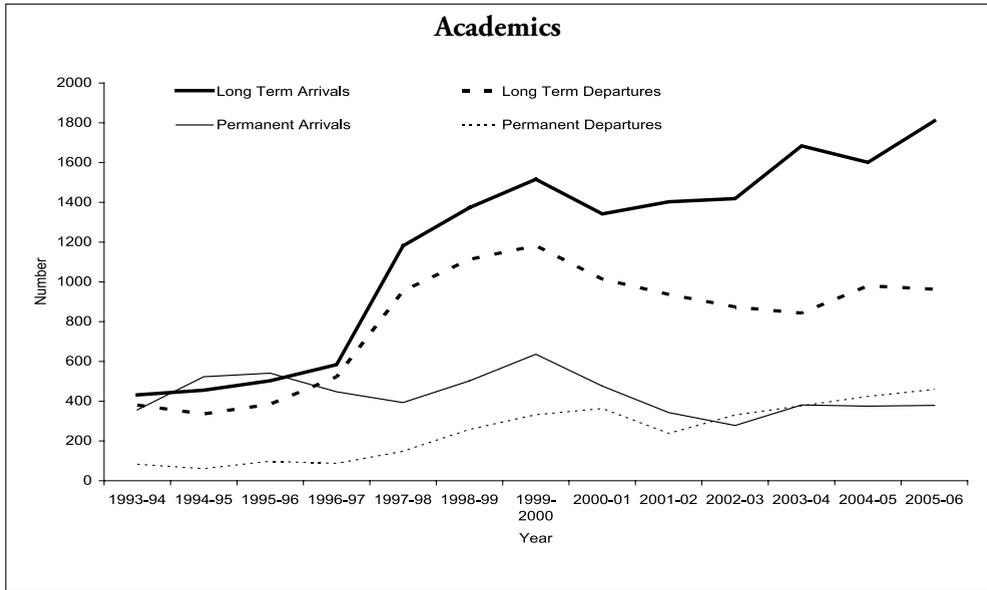
Table 1 shows that at the 2001 census the proportion of researchers who were foreign-born ranged between 41.9 percent for Natural and Physical Science Researchers and 24.8 percent for Science Technical Officers. While 24.3 percent of all workers were born overseas, the proportion for all researchers was 35.2 percent. This is a function not only of the globalised labour market for researchers but also the highly selective Australian immigration system and the rapid postwar expansion of Australian universities (Hugo, 2005a and 2005b). Clearly immigration has played a major role in building up Australia's researcher human capital. At the 2001 Census of Population and Housing 47 percent of all Australians with a postgraduate degree were overseas-born – more than twice the representation of migrants in the total population.

The significance of international migration of researchers to Australia is also evident in flow migration data. Figure 5 shows the numbers of incoming and outgoing academics and scientists over the last decade and an upturn in the number of arrivals. The movement is broken into permanent and long term movers. At the border all persons entering or leaving Australia are asked about their intended duration of stay/absence and are accordingly divided into:

- Permanent Movements
 - *Immigrants* are persons arriving with the intention of settling permanently in Australia.
 - *Emigrants* are Australian residents (including former settlers) departing with the stated intention of staying abroad permanently.
- Long Term Movements
 - Overseas arrivals of visitors with an intended or actual length of stay in Australia of 12 months or more.
 - Departures of Australian residents with an intended or actual length of stay abroad of 12 months or more.
- Short Term Movements
 - Travellers whose intended or actual stay in Australia or abroad is less than 12 months.

Figure 5 shows that the most rapid growth in numbers of incoming researchers has been in the 'long term' category. This partly reflects a change in immigration policy in Australia which introduced a number of new visas to allow skilled workers to move to Australia for a period of up to four years. This represented a major departure in postwar migration in Australia which strongly eschewed temporary migration in favour of permanent settlement programs (Hugo, 1999). Obtaining a temporary visa is a much quicker process than obtaining entry as a settler. The number of researchers entering Australia on a long term basis increased from 1,382 in 1995-96 to 4,823 a decade later. Over the same period the numbers of researchers arriving in Australia as permanent settlers decreased from 1,406 to 1,137.

Figure 5: Australia: International Migration of Academics and Scientists, 1993-94 to 2005-06



Source: DIMA

One of the most striking features of Figure 5 is that there are significant (albeit smaller) *outflows* of researchers. Australia is one of the few nations which collects information on persons leaving their country as well as arrivals and these indicate that emigration levels of researchers from Australia are significant. This reflects the highly mobile nature of this group which means that even countries with significant net migration gains of researchers there is also a substantial outmovement of skilled workers. Table 2 shows that in Australia these emigrants can be divided into two groups:

- Overseas-born persons who in many cases always intended for their stay in Australia to be short. This includes mainly those who entered on temporary residence visas but also some who entered as permanent settlers.
- Australians who are leaving on a long term or a permanent basis.

Table 2: Australia: Permanent and Long Term Departures of Scientists, 1993-94 to 2005-06

Year	Permanent Departures		Long Term Departures	
	Australia-Born	Overseas-Born	Australia-Born Residents	Foreign-Born Residents
1993-94	56	88	357	235
1994-95	55	78	340	237
1995-96	77	95	311	247
1996-97	81	103	400	233
1997-98	150	182	861	462
1998-99	227	158	894	454
1999-2000	212	162	903	438
2000-01	248	191	1065	484
2001-02	284	233	989	434
2002-03	278	163	864	377
2003-04	277	202	816	385
2004-05	348	340	886	354
2005-06	389	239	1012	383
Total	2682	2234	9698	4723

Note: Visitors are not included

Source: DIMA, unpublished data

Clearly both groups of emigrant researchers are significant in the Australian context and Australia should not just be depicted as a destination for migrant researchers but also an important source for such migrants (Hugo, 2006).

There are some interesting patterns of origins of immigrant researchers and destinations of emigrant researchers. Table 3 shows the origins of Australia's researcher population at the 2001 census. A third is from Northwest Europe reflecting the fact that there are longstanding flows of researchers from the United Kingdom to Australia. However, 34.6 percent came from Asia. It is apparent that Australia has been increasingly recruiting researchers from the

Asian region.

Table 3: Australia: Country of Origin of Overseas-Born Researchers at 2001 Census

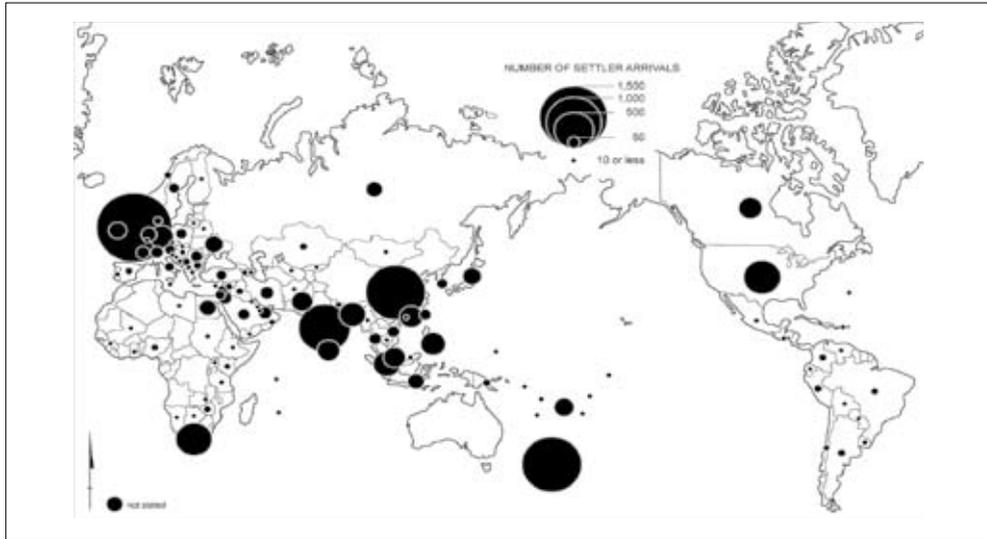
Region of Birth	Number	Percent
Oceania other than Australia	8,693	8.9
Northwest Europe	31,061	32.0
Southern and Eastern Europe	9,107	9.4
North Africa and Middle East	3,373	3.5
Southeast Asia	14,577	15.0
Northeast Asia	9,619	9.9
South and Central Asia	9,423	9.7
Americas	6,490	6.7
Sub-Saharan Africa	4,846	5.0
Total	97,189	100.0

Source: ABS Census of Population and Housing, unpublished tabulations

Turning to the flows of researchers into or out of Australia, Figure 6 shows the countries of origin of the number of scientists moving to Australia as permanent settlers over the 1993-2006 period. There are some interesting patterns in evidence:

- The largest single source is the United Kingdom (1,850).
- However, China (1,156), India (889) and New Zealand (1,184) are not far behind.
- The United States, Canada, South Africa and several Asian countries are also of significance.

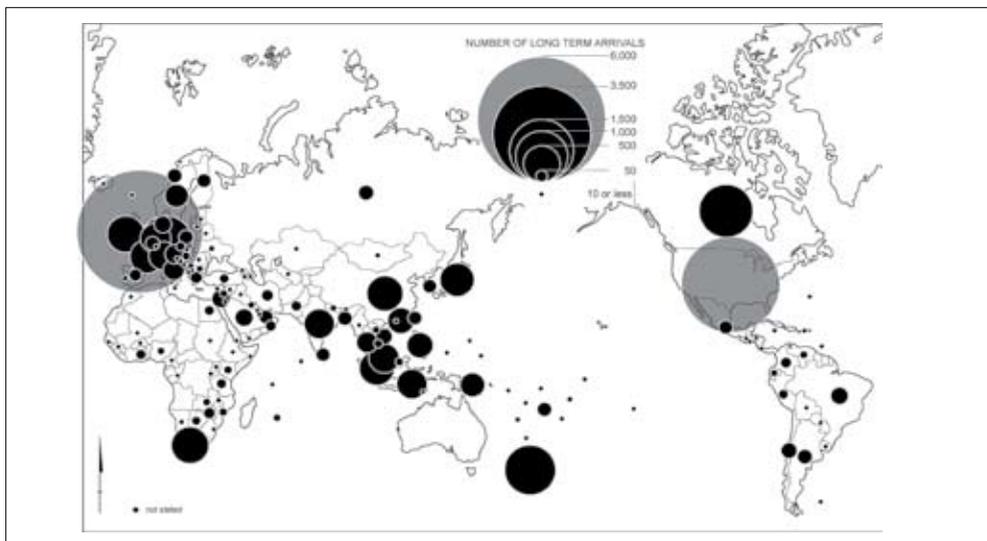
Figure 6: Australia: Countries of Origin of Researchers Entering Australia as Permanent Settlers, 1993-2006



Source: Unpublished data of Department of Immigration and Citizenship

When we turn to long term arrivals on temporary residence visas, Figure 7 shows a somewhat similar pattern although the United States and the United Kingdom are the dominant origins.

Figure 7: Australia: Countries of Origin of Researchers Entering Australia as Long Term, Temporary Residents, 1993-2006

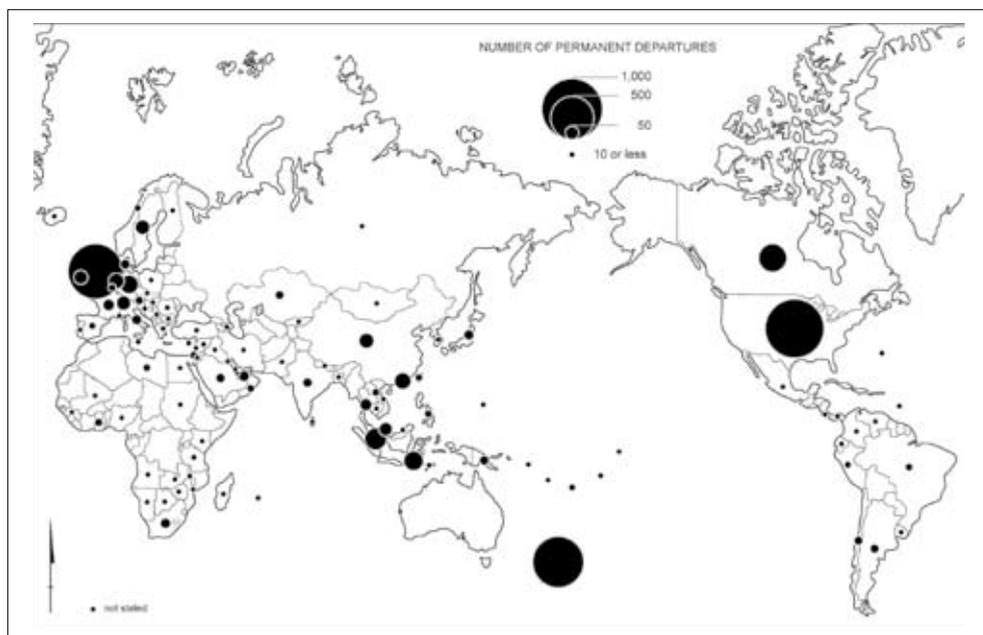


Source: Unpublished data of Department of Immigration and Citizenship

The distribution of destination countries of researchers leaving Australia on a long term or permanent basis is quite different to the patterns of origins of immigrants.

Figure 8 shows the destination countries of scientists leaving Australia on a permanent basis. There are three major destinations – the United Kingdom (817), the United States (929) and New Zealand (703). These were of course also major origins of researchers permanently settling in Australia over the same period. For the UK and New Zealand the number of incomers comfortably outnumber the outflow for net migration gains of 1,033 and 481 respectively. However, in the case of the US there is a net *loss* of 478. The key point to note, however, is that while Asian countries, especially India and China, are major origins of permanent settlers there are only very small flows of researchers in the opposite direction and Australia experiences substantial net migration gains of researchers from these countries.

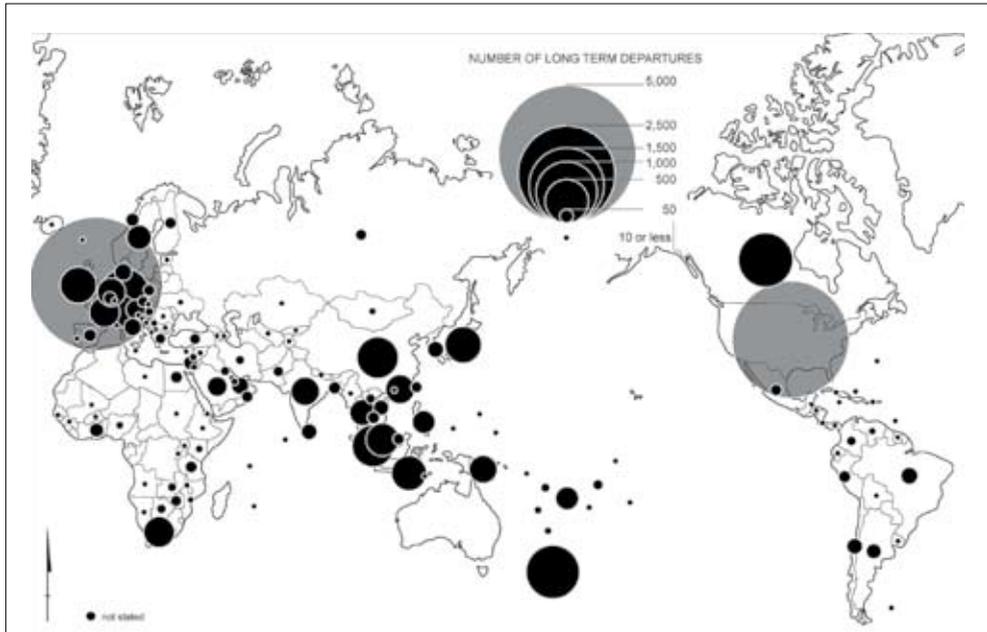
Figure 8: Australia: Countries of Destination of Australian Researchers Leaving Permanently, 1993-2006



Source: Unpublished data of Department of Immigration and Citizenship

Figure 9 shows the destinations of researchers leaving Australia on a long term basis. Again the USA and the UK are the main destinations but Canada, Other Europe and Asia are also significant. Nevertheless, there is a consistent pattern of substantial researcher immigrants from Asia but emigrants being destined predominantly for Europe and North America. This is even more apparent if the pattern is looked at only for the period since 2000.

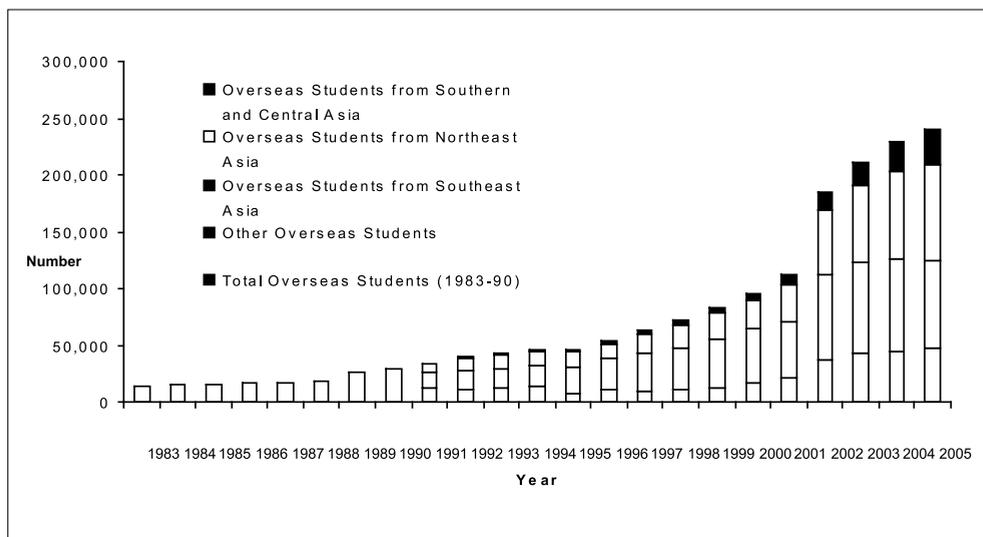
Figure 9: Australia: Countries of Destination of Australian Researchers Leaving on a Long Term Basis, 1993-2006



Source: Unpublished data of Department of Immigration and Citizenship

A significant element in the researcher migration are students and Australia has become an important education destination, being second only to Switzerland, in the proportion that foreign students make up of the national tertiary student population.

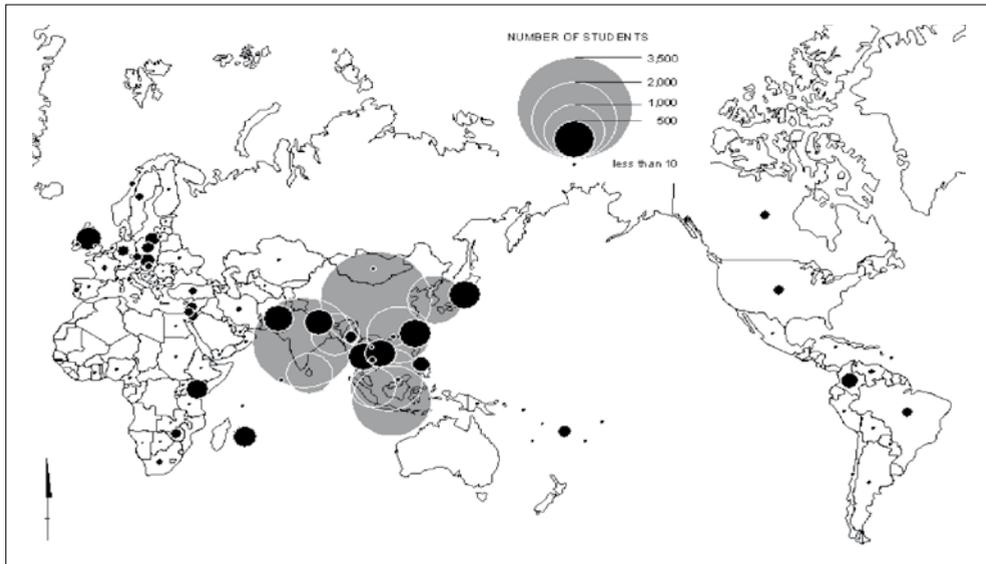
Figure 10 shows that there has been an exponential growth of foreign students, with Asia the predominant source. Until the late 1980s the bulk of Asian students in Australia came under the Colombo Plan, which meant that their costs were met by Australia's Development Assistance Funds. Moreover, these students were compelled to return to their home country on completion of their studies. The late 1980s saw a major shift with the development of an 'education export' industry which not only saw a massive growth in foreign student numbers but the imposition of fees on them and it is now estimated that student migration generates A\$4 billion annually for the Australian economy. While the numbers presented here cover all university students, overseas students are becoming an increasing proportion of the postgraduate research population in Australia.

Figure 10: Overseas Students in Australian Universities, 1983-2005

Source: DEST *Students: Selected Higher Education Statistics*, various issues

While we have dealt with long term and permanent migration separately here it is important to point out that there are strong linkages between them. It has become increasingly the pattern in Australia that temporary residents seek, and get, permanent residence. Accordingly, an increasing proportion of Australian 'settlers' are in fact already in Australia as temporary residents. In 2001 the Australian government made it easier for some foreign students to convert to Permanent Resident Status by granting additional points for Australian qualifications to applicants for immigration. Accordingly, in 2004-05, some 16,485 of the 123,424 'immigrants' to Australia were in fact students who had applied for, and received, permanent residence in Australia. Figure 11 shows that the overwhelming majority of these 'on-shore migrants' were from Asia.

Figure 11: Australia: Overseas Students Transferring to Permanent Residence by Country of Citizenship, 2004-05



Source: DIMIA unpublished data

One perspective on the data presented above is that the pattern of research mobility presents a large number of potential opportunities for Australian research to be linked with research around the world. On the one hand more than a third of researchers in Australia have come from other countries. On the other, there are a large number of expatriate Australians who work as researchers in other countries, especially in Europe and North America. We will now move to a consideration of this potential, the extent to which it is being realised, and the policy implications.

1.4 RESEARCH AND DIASPORA: THE AUSTRALIAN CASE

The research capacity of a nation can be decreased by researcher mobility to the extent that there is an emigration loss of high quality researchers who were trained in-country. However, it can be enhanced by mobility through:

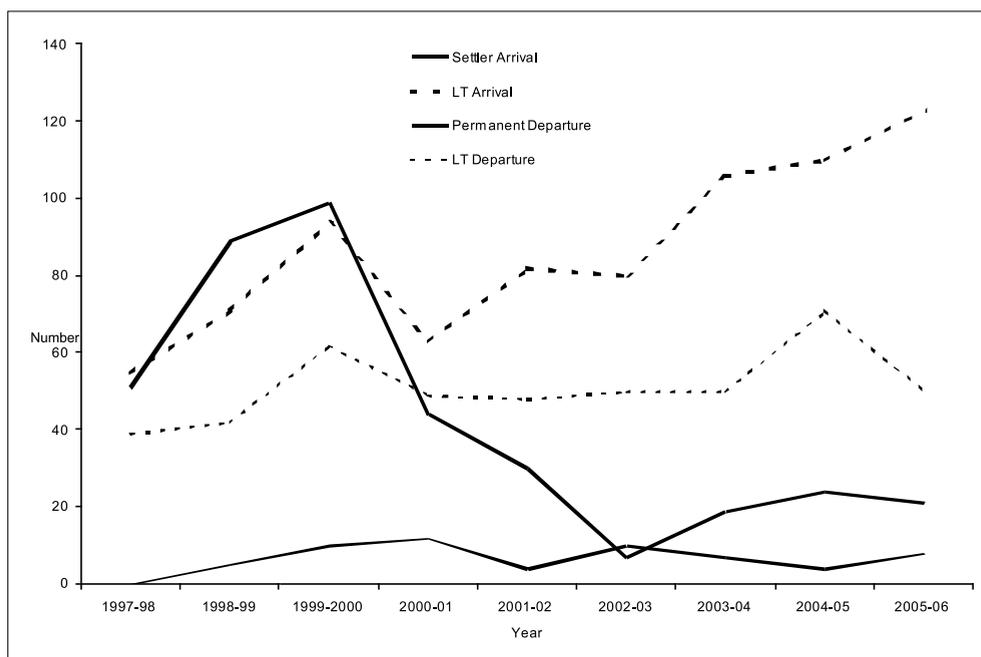
- An influx of researchers who are trained in another country on both a permanent and temporary basis.
- The extent to which those newcomers retain active research networks in their origins which facilitate knowledge transfer.
- The extent to which emigrant researchers from the country develop and maintain strong research links with their home country through:
 - returning on a permanent and temporary basis;
 - returning 'virtually' by interacting regularly with researchers in their home country.

Hence both immigration and emigration of researchers can enhance national research capacity. National research human capital can include not only researchers resident within national boundaries but also nationals and former residents who live in other countries but maintain active research networks with their former countries. We will examine both of these types of researcher mobility using examples from Australia. Firstly considering the impact of the influx of foreign researchers we draw upon a survey of researchers from China currently residing in Australia. Secondly regarding the potential role of diaspora in facilitating research development in their home nation we draw upon three recent surveys of Australians residing in foreign countries.

1.4.1 Chinese Migrant Researchers in Australia

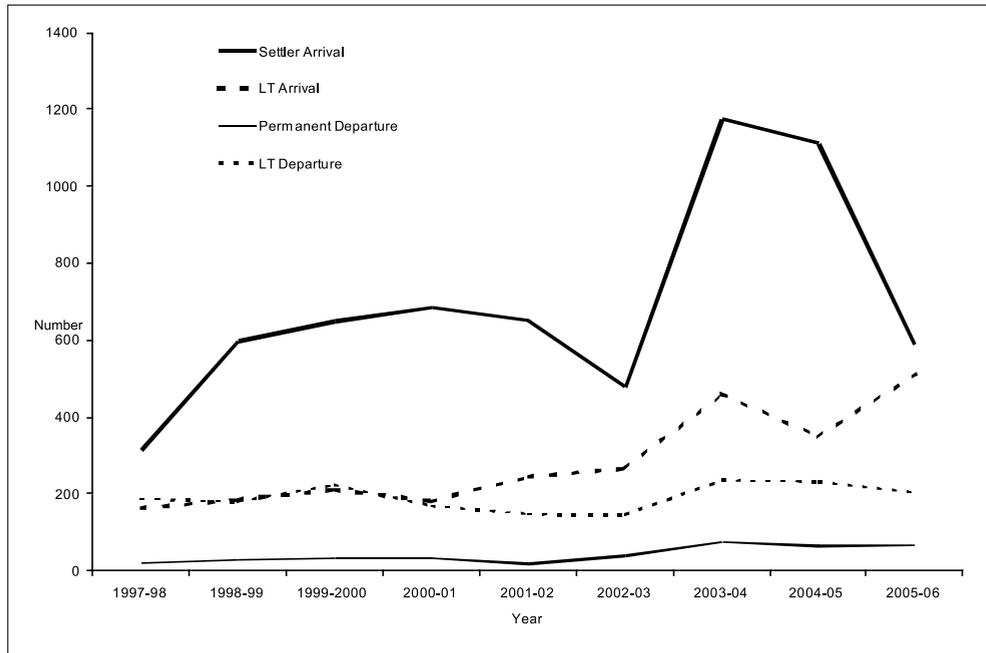
Figure 12 and Figure 13 show the long term and permanent migration of academic teachers and researchers to and from China between 1997-98 and 2005-06. All told over this period there were 384 and 6,264 permanent arrivals of teaching university lecturers and tutors and researchers respectively while the numbers of long term arrivals were 784 and 2,589. There are contrasting patterns. With respect to university teachers it is clear that Universities have

Figure 12: Australia: Permanent and Long Term Movement To and From China of Academics, 1997-98 to 2005-06



Source: DIMA unpublished data

Figure 13: Australia: Permanent and Long Term Movement To and From China of Researchers, 1997-98 to 2005-06



Source: DIMIA unpublished data

switched from using permanent settlement to temporary business visas to bring in staff. This is partly a function of the increased number of contract positions in Australian universities but also is partly a function of the speed and relative simplicity of the 457 Temporary Business Visa, many of whom subsequently seek permanent residence (Khoo *et al.*, 2003). Researchers on the other hand are predominantly coming to Australia as permanent settlers.

There is likely to be a substantial increase in the flow over the next decade. This is not only due to the increasing internationalisation of academic and researcher labour markets associated with globalisation but also because academics are one of the oldest occupational sub-groups in the Australian workforce (Hugo, 2005a). At the 2001 census, some 19 percent of the university academic workforce were aged 55 years and over and 51.2 percent 45 years and over. Hence, there will be a high level of recruitment in Australian universities over the next two decades and it is unlikely that this demand will be met within the Australian labour market. Accordingly the opportunities for Chinese academics and researchers in Australia will increase.

A sample of 239 Chinese academics and researchers in Australian universities was interviewed in 2006 (Hugo, 2007a) and among other things they were asked about the

linkages they maintain with their home country. Only 57 percent of the sample indicated that they intend to remain permanently in Australia although another 23.4 percent responded that they were undecided about where they will settle in the future. This again points to the very high mobility of the researcher population. A fifth had definite plans of leaving Australia and an additional 29.2 percent of respondents indicated that they would go back to China if they were offered an appropriate position. Hence, the potential for Chinese academics to be lured back to China is significant.

It has been demonstrated (Hugo, 2007a) that there has been a significant flow of return migration of Chinese settlers from Australia to their homeland. Over the decade 1994-2004 there were 66,172 permanent settler arrivals from China but also 13,223 China-born persons who left Australia permanently, most returning to China. It is clear that researchers are part of this group.

It was also interesting in the study that of those who indicated they would not stay in Australia, half envisaged that they might move to another country, especially the United States or United Kingdom. Hence there is some indication of Australia being perceived as a stepping stone toward migration to North America, and to a lesser extent, Europe as has been observed in Canada. DeVoretz (2005) has identified a pattern of 'triangular' movement among the Chinese diaspora which sees that movement as a complex transnationalism model involving Canada, China and the Rest of the World. This model would certainly seem to have relevance to the Australian researcher context.

There is a growing appreciation that 'a highly skilled diaspora may play several important roles in promoting development at home' (Lucas, 2001). In terms of researchers in the diaspora it is their role in transmitting knowledge and in facilitating technology transfer which is most significant. Lucas (2001) has shown how professionals in origin and destination countries have maintained strong linkages so that ideas flow freely in both directions. In the scientific world, flows of information are of utmost significance and it may be that diaspora can play a role in knowledge and technology transfers between nations of origin and destination. The potential for such interaction to accelerate diffusion of new ideas, products, processes, etc. is considerable. Undoubtedly, the ethnic linkages between Taiwan and India with Silicon Valley have had a major impact on the development of the information technology in the home countries (Saxenian, 1999). There has been an increasing recognition that there is considerable potential for linking expatriate researchers and scientists with colleagues in their home countries to facilitate knowledge transfer and the development of tertiary research and teaching organisation in the home nation (Meyer and Brown 1999).

One of the strongest findings of the survey of Australian Chinese Academics was that they maintained strong linkages with China. More than half of the sample (56.5 percent) have contact with China several times a week and 59.9 percent visit China at least once a year. In addition, almost half of the respondents (40.2 percent) had

active joint research projects with colleagues in China. Half of these projects receive at least some funding from China sources. Hence, there are strong professional linkages being maintained by Chinese academics in Australia with their homeland. This is attested to by the fact that the majority of respondents (91.1 percent) indicated that they would like to have a joint position between Australia and China. Table 4 shows the main linkages which were maintained by respondents with their homeland. The most frequent linkage is visiting with family in China (84.4 percent) but there are also high proportions having collaborative research with Chinese colleagues (65.6

Table 4: Australian Chinese Academic Study: Linkages with Mainland China

Link	%
Running Seminars and mini courses in China	61.0
Training Chinese students in Australia	51.5
Editing book with Chinese Scholar	19.5
Collaborative research with Chinese scholars	65.6
Give academic paper in China	59.5
Consultancy work in China	24.6
Have regular visits with colleagues in China	69.0
Have regular visits with family in China	84.4
Have commercial interests in China	3.9

Source: Survey (N=231)

percent) and making regular visits to those colleagues in China (69 percent). Other important linkages relate to running courses/seminars in China, training Chinese students, giving academic papers in China and, to a lesser extent, editing-books with Chinese scholars and undertaking consulting work in China. Few however had commercial linkages with companies involved in China. Individual respondents have a range of special linkages with China with a few having adjunct positions in Chinese universities; others have set up joint China-Australia programs and some serve on advisory committees to the Chinese government in Beijing.

Just over half of the respondents (56.6 percent) indicated that the Chinese Embassy in Canberra had facilitated their interactions with China and some 20.9 percent saw the Embassy's role as being important in the networks and activities they maintain with China. The respondents put considerable importance on their linkages with China. More than half of the respondents indicated that their reasons for placing such importance on the linkages is not only for the enhancement of their own careers but they were interested in facilitating technology transfer to China and almost all said that they had an interest in promoting quality research in China. Most also indicated that they have

an interest in attracting good PhD students from China and several indicated that they wish to make a contribution to the development of China.

There has been an increasing recognition in the literature that the existence of a diaspora of researchers, scientists and technologists can provide a 'brain gain option' without returning to their home nation since they can be avenues for technology transfers, information spread and training for people in their home country (Barre, Hernandez, Meyer and Vinck 2003, Meyer *et al.* 1997, Meyer 2001a and b, Meyer *et al.* 2001). China has used administrative means in order to encourage such networking (Biao, 2006). The findings here indicate that the diaspora of Chinese academics in Australia have maintained strong connections with colleagues and institutions in China which would facilitate this non-return brain-gain phenomenon.

In summary then the case study of Chinese researcher migration to Australia has shown:

- There is an accelerating flow of Chinese researchers into Australia as part of an increasing presence of Asians in the researcher population which in the past has been dominated by persons of European origin.
- This has been partly associated with the ageing of the Australian academic and researcher workforce but also with the increased flow of Chinese research students into Australia.
- The Chinese researcher population has developed and maintained very strong linkages with colleagues in China and synergised a substantial flow of knowledge in both directions.

1.4.2 Australia's Researcher Diaspora

Australia has a diaspora of around a million people and it is highly selective of skilled workers and, as was indicated earlier, scientists, academics and researchers are a significant element of emigration out of the country (Hugo, 2006). Three separate studies of Australian expatriates are drawn upon here to examine some of the characteristics attitudes and behaviour of Australia's diaspora of researchers:

- A 2001 survey of 2,072 made up of 1,327 respondents from a sample drawn from the alumni registers of a sample of Australian universities and 745 respondents to advertising on a range of expatriate newspapers and websites (Hugo, Rudd and Harris 2003). Some 167 respondents were researchers.
- A sample of 9,529 respondents to a web based survey timed to coincide with the Australian Census of Population and Housing of 2006.¹ A number of expatriate

1 This survey entitled the One Million More Survey was undertaken by a consortium of Australian expatriate groups.

organisations encouraged their membership and their acquaintances to respond and there was an intensive advertising campaign in relevant expatriate media to recruit respondents. Some 1,329 respondents in this group could be considered researchers.

- A sample of 1,563 Australians in the United States in 2005 obtained by advertising in relevant expatriate organisation newsletters and websites (Parker forthcoming). Some 135 respondents could be considered researchers.

One thing that is common among the three survey populations is a strong attachment to Australia reflecting a potential for development of networks with their homeland. In the 2003 survey, 67.7 percent of respondents indicated that they still 'called Australia home' while more than a third had definite plans to return to Australia and another third were undecided as to whether they would return. In the larger, 2006, survey, Table 5 indicates that while many are still undecided, a significant number of researchers plan to return to Australia.

Table 5: One Million More Survey 2006: Future Intentions of Australian Academics/ Researchers Living in Foreign Countries

Intentions	Academics/Researchers		Other	
	Number	Percent	Number	Percent
Will or are Likely to Remain Overseas	125	9.4	849	11.2
Will or are Likely to Return to Australia But May Go Away Again	643	48.5	3,505	46.4
Will Return to Australia	195	14.7	1,294	17.1
Undecided	362	27.3	1,906	25.2
Total	1,325	100.0	7,554	100.0

Source: One Million More Survey, unpublished data

Among researchers in the United States survey, some 34.6 percent had definite plans of returning to Australia while 19.1 percent have full intentions of remaining in the United States. Again a very high percentage (41.9 percent) was undecided (Parker forthcoming). The following quotations from Australian researchers in the UK and USA recorded in the 2001 survey indicate the determination of many to return to Australia:

'Having lived in the US for nearly 4 years now, I am more than ever determined to return to Australia. I simply love the lifestyle, the people and the beauty of the cities and environment. Having said that the jobs here are tempting in my field (environmental engineering) ...'

'I dearly miss Australia and would love to be able to give something back to my homeland. My earning power in the USA is high but I would trade it for the chance to come home.'

My partner and I both have PhDs and we would have to take a large pay cut.’

It is apparent therefore that there is some potential among Australian researchers overseas to return. It is worth while noting however those intentions are not always a good indicator of future behaviour. Parker (forthcoming) found, for example, that 72.1 percent of the researchers she interviewed had stayed longer in the United States than they had originally intended. Again to quote one of the 2001 survey respondents...

‘We moved overseas initially only for 2-4 years for my husband (PhD in Science) who had greater opportunities overseas. We also now are earning a much higher income than we ever could in Australia. We are now prepared to take a cut in wage for a better lifestyle than you have in Australia, and want to be close to family and friends as we are expecting our first child.’

The key point is that this latent desire to return among a significant proportion of expatriate researchers provides a basis for the development of effective ‘bringing them back’ policies and programs. Indeed without such intervention it may well be that potential returnees will eventually not come back because the latent desires are not triggered into action.

While the survey data indicated that there is a number of Australian expatriate researchers who will potentially return to Australia more than half appear unlikely to return. The following reasons were especially important among this group:

- Integration into larger and better resourced research teams abroad than was possible in Australia. Indeed superior research infrastructure and funding was a frequently mentioned reason for migrating in the first place as well as not planning to return.
- Family reasons such as taking a non-Australian partner or children having grown up in another country.
- Economic, income considerations.

Again it is useful to quote some of the respondents to the 2001 survey:

‘I see myself as part of a ‘brain drain’ of academic achievers who have left Australia for the UK or USA because of the gradual decay/active destruction of Australian universities. Salaries, teaching conditions and research funding are all of massive concern – as is job security. I hope the results from this survey send a clear message that many of us who have left would like to return eventually but fear it is difficult or impossible to do at the present.’

‘The most useful point I can make is that I am one of a group of a growing number of Australian academics who realise that I can earn a lot more, get better research funding and a perfectly good lifestyle in Europe.’

‘Since leaving Australia, my career in medical research has broadened in teaching, research and administration in ways that would be extremely difficult or impossible in Australia. I have no doubts that my career would have remained stunted had I decided to remain in Australia.’

‘I would love to return but none of my compatriots in Australia can come close to the resources and funds at my disposal. I don’t feel it is worthwhile to fight for a small grant in Australia when I can readily get large grants (US\$3 million) here. Until the NH and MRC (National Health and Medical Research Council) is properly funded there is no point in returning.’

We want to go ‘home’ to Australia eventually but you can’t go home to no job. Every time we look for work advertised in Australia in the research field, either university or industry-based, there is next to nothing available. In the States there is a shortage of PhD research trained people so jobs are plentiful. It’s hard to justify moving home to nothing.’

‘If employment opportunities were anywhere near comparable we would choose to stay in Australia. In our experience this applies to most Australians in High-Tech in Silicon Valley.’

Moreover some returned Australian researchers experience difficulties in adjusting back to life and work in Australia when they do return. As Doherty (2004, 1) has pointed out:

‘Bringing highly qualified Australians home can be problematic. Returning to the much smaller Australian pond is not always easy, especially as some of the pond life may not be comfortable with these differently evolved life forms’

Taking advantage of the international mobility of Australia’s researchers then should go beyond bringing some of them back. It is necessary to develop strategies that engage the diaspora while they are residing in foreign countries and some of these are considered in the next section.

1.5 POLICIES FOR ENHANCING BENEFITS FROM RESEARCHER MOBILITY

The enhanced mobility of researchers presents challenges to national policy makers. On the one hand there is general recognition that high levels of mobility can be beneficial because they facilitate knowledge exchange and advancement, contribute to the advancement of understanding and stimulate innovation (OECD, 2007) in addition to enhancing the human capital of destination areas. On the other, are concerns of the loss of human capital through emigration although there also may be possibilities of origin countries benefiting through return migration or maintenance of active research

based networks with expatriate researchers. There have been a range of policies and programs advanced by countries as they seek to maximise national benefits accruing from researcher mobility. These policies can be divided into the following categories.

- Those which facilitate the international mobility of nationals to gain the benefits of interaction with international colleagues.
- A range of immigration policies which attract the permanent and temporary in-movement of foreign researchers
- Return migration programs which encourage expatriate researchers to return to their home country after a period in a foreign country.
- Diaspora-based policies which aim to capture some of the human capital of expatriate researchers who are domiciled in foreign countries.
- Of course there are also *retention* policies which seek to discourage international mobility by keeping some of the best national researchers at home.

We will now consider each of these policy areas in turn. It is argued that while researchers have always had high levels of mobility there are now developments accompanying globalisation which have created an unprecedented level of opportunity to enhance this mobility and gain from its benefits. In particular there are two major changes:

- Firstly, there has been a massive increase in the ability to travel quickly, and relatively cheaply, between nations. The exponential increase in the ability to travel frequently between nations and to be able to return to one's homeland quickly should the need arise has meant that temporary and semi permanent relocation has been made much more possible for researchers at all levels. Indeed these developments make it increasingly possible for researchers to hold joint appointments in institutions in different countries and lead a truly bi-national life.
- Secondly, the ability to maintain and develop strong, effective, functional and even intimate relationships and linkages with colleagues, friends and family across national boundaries has been enormously enhanced. There has been a parametric change in what Dade (2004) refers to as new international 'hyper-connectivity' as a result of the proliferation and cheapening of modern information and communication technology.

These developments have opened up a whole range of new possibilities for policy makers to facilitate research mobility to the benefits of their countries.

1.5.1 Policies to Enhance International Mobility of Nationals

These comprise a range of policies which encourage and enable national researchers to carry out extended research activity abroad, in foreign institutions with foreign colleagues. Clearly international student migration is an important subset of this category of policy.

For research students, particularly there is the opportunity for nationals to gain access to training and experience which is just not available in the home country. With more experienced researchers, however, it provides an opportunity not only to access more advanced knowledge in their area of expertise and enhance their skills but also to gain access to greater resources and critical mass of researchers with similar skills to advance the body of knowledge in a particular field. Of course a significant danger of such programs is that the national researchers will remain overseas once they settle at the destination, despite what their original intentions to return were. This is certainly the case in the Chinese and Australian cases considered earlier. However, another dimension here is that such policies to enhance travel can have retention impacts because they allow national researchers to gain international experience and access to greater knowledge and resources while at the same time not having to abandon their homeland permanently.

There are of course a plethora of international scholarships and fellowships which facilitate this form of mobility. However in general they are made available by the destination institutions and governments and not so much by origin countries to enhance outward mobility of researchers. One exception is the increasing tendency in poorer nations, with limited university infrastructures, sending students to study overseas. Nevertheless there is growing recognition of the need for national researchers to have the opportunity to interact with their counterparts in foreign nations. Some of the options which are being tested include:

- Collaboration between national science bodies (National Science Foundation, Economic and Social Research Council, Australian Research Council, etc.) to allow researchers in two countries to submit linked proposals to their own national competitive grant bodies in order to undertake joint research across more than a single nation.
- Eliminating administrative and legal barriers to movement between institutions as in the case of the European Commission advocating and facilitating 'brain circulation' within the Europe Research Area (Potocnik, 2006 and OECD, 2007)
- Travel grants facilitating researchers moving on a temporary basis to a foreign research institution. The Australian Research Council, for example, has a sub-program in which researchers who are successful in one of the main grant programs can apply for additional funding to facilitate interaction with relevant foreign researchers (the *international linkage* program). In addition, the Australian Government provided A\$100 million over five years in the *Innovative Access Program* to facilitate Australian scientists working collaboratively with foreign counterparts.

There are a number of international schemes which encourage mobility of researchers such as the ERASMUS/SOCRATES programs for the travel of postgraduate and undergraduate students (King and Ruiz-Gelices, 2003).

1.5.2 Policies Which Facilitate the Immigration of Foreign Researchers

There are a much wider range of policies and programs which seek to attract foreign researchers than there are those which facilitate the mobility of native researchers. The first set of policies here relate to the immigration regulation regime of nations being what the OECD (2007) refers to as 'researcher friendly'. Such policies reduce the barriers to the immigration of researchers on both permanent and temporary bases. Some countries (e.g. France) have introduced a 'scientific visa'¹ that is not subject to labour market testing and eases the immigration of researchers (OECD, 2007). More generally 'researcher friendly' schemes are embedded in broader skill based immigration programs. The Australian case here is instructive. Australia has a skill based sub-program of its immigration scheme², under which 81,893 people settled in 2004-05 and 91,501 in 2005-06. While there are several parts of the program, most skilled applicants for settlement need to pass a Points Assessment Test in which they are given points according to age, skill, English language ability, whether their occupation is listed or in demand, work experience and Australian qualifications (Birrell, Hawthorne and Richardson, 2006). Researchers generally can score well on this assessment and gain access to permanent residence. However, Australia also has a strong Temporary Migration Program which is even more focused on skill. Unlike the settlement program it is market-driven in that Australian institutions (including research institutions) apply for the entry of particular workers and provided they meet minimum criteria they can enter Australia and work for up to four years (Khoo *et al.*, 2003). Australia has had a special 'Educational Visa' which allowed 'educational and research institutions or organisation to fill academic, teaching and research positions ... and research institutions to appoint internationally regarded academics and researchers who are able to contribute new ideas and knowledge as well as enhancing international co-operation' (DIMIA, 2006). However this visa is becoming little used because educational and research institutions are finding it faster and more efficient to become registered as favoured institutions under the broader 457 (Temporary Business) Visa category. This system allows institutions to appoint foreign researchers to positions for up to four years and they are also eligible to apply for permanent residence once they are established in Australia.

An important dimension of 'researcher friendly' immigration regulations can also be demonstrated with respect to Australia. This relates to student migration and the increasing nexus in OECD nations between this form of mobility and eventual permanent settlement in the destination. Australia has become one of the pre-eminent destinations of research students from Asian countries, as was indicated earlier. Since 2001 foreign students completing their courses in Australia have been able to apply onshore for permanent residency in Australia as skilled migrants. In 2004-05, 16,485

1. South Korea has a 'science card' facilitating the entry of PhD and Masters researchers to work there for up to 3 years (OECD 2007, 31).
2. The others are refugee-humanitarian, family and special categories including New Zealanders who get more or less free access.

foreign students were granted permanent residency (41.6 percent of all onshore migrants) an increase of 25.4 percent over the previous year. In 2005-06 the number granted increased to 20,360 an annual increase of 23.5 percent. Moreover students in Australia wishing to remain permanently can obtain additional points in the Points Assessment by studying in regional institutions outside of the main centres such as Sydney.

The 2001 change in policy which allowed students to apply for permanent residency onshore was a major break with previous policy which had little provision for changing status as an 'integrity measure' (Mills, 2006). However the release of an Australian Government Report entitled *Backing Australia's Ability* in 2000 recommended, among other things, that completing foreign students with particular skills should be allowed to apply for permanent residence. The nexus between student migration and skilled permanent settlement is further evident in the fact that over 60 percent of skilled immigrants have an Australian qualification. This indicates that not only students completing their studies apply for permanent residence but also many who have returned to their home country.

The existence of an immigration regulation structure which makes researcher immigration possible is necessary but not sufficient conditions however and there are a range of policies and programs which can facilitate such mobility. These programs can operate at national, regional and institutional level and include not only the availability of funds but also having administrative and selection procedures which do not discriminate against foreigners and processes for formal recognition of foreign qualifications. Beyond these elements which make immigration of foreign researchers possible are the more active policies which involve specific and targeted 'talent searches'. Pang (2006) points out that no country has been as assiduous as Singapore in such talent searches, not only in the research area, but across the spectrum of skilled workers.

The types of programs which can be instituted to facilitate the immigration of skilled researchers include:

- Availability of PhD research scholarships earmarked for foreigners of talent.
- Encouragement of local researchers to include foreign researchers in their nationally funded research proposals and to facilitate their visits.
- Availability of research positions at all levels to foreign researchers.
- Specific funding for talent searches to attract high level foreign researchers in targeted areas of research.
- Funding of exchange schemes which allow temporary exchanges of native researchers with foreign counterparts working in similar areas.
- Making provision for joint appointments of high quality researchers in institutions in two countries.

One of the most significant policies which have been used by OECD countries to develop their research human capital has been through attracting high quality research students from less developed nations, especially Asia. There has been a massive increase in tertiary education in Asia. In China there was a doubling of the number of students in tertiary education between 1998 and 2002 and a doubling again between 2001 and 2004. Indeed in 2004 China had 19 million tertiary students, the largest number of any country and 15 percent of the world total (UNESCO, 2006). While the growth in other countries such as India has been more modest, the overall picture for Asia is of substantial growth. On the surface, the massive increase in the numbers of tertiary students in Asia, especially East Asia, would seem to be substantially expanding the pool of potential skilled researchers for OECD nations. However it has been argued (Hugo, 2007b) that a number of developments in Asia including the increased availability of research, and other high level, opportunities in the region will mean OECD nations will face increasing competition for these researchers and other skilled workers and will need to develop a range of innovative approaches to attract the best researchers from these sources. One issue is that OECD nations will not be able to rely on these students 'paying their own way'. With increasing competition for high quality research students their ability to command scholarships will increase. Australia for example has increased the funding under its International Postgraduate Research Scholarship Scheme (IPRS) and currently has around 1,000 foreign students on scholarships (<http://www.dest.gov.au/highered/research/aiprсс.htm>).

There are then currently a range of approaches adopted to encourage the immigration of researchers. However, while schemes can facilitate an influx of foreign researchers, the research indicates that the main attraction for high level researchers are access to funding, resources and an environment which encourages and facilitates high quality research. The studies of expatriate Australian researchers referred to in the last section confirmed that while higher salaries were certainly an attraction the most important thing drawing them to, and keeping them in, North America and Europe was the conducive research environment. Appropriate funding of research, the availability of high quality research students, a critical mass of fellow researchers and time to be able to carry out research were crucial. Nothing replaces the appropriate funding of high quality research as the main condition necessary to encourage an influx of high quality researchers.

1.5.3 Return Migration Programs

While there is considerable debate about the impact that the loss of skilled workers has on the economies of south countries (Rosenzweig, 2005), countries with a net migration loss of skilled workers like researchers face a real dilemma with respect to the emigration of skilled persons and students. Although such movement potentially can contribute to development, the reality is that it often results in a loss of important human capital. The emigration of researchers, other things being equal, represents a loss not only to national research capacity but also Lucas (2005) has identified that the departure of highly skilled people from south countries imposes three sets of costs on those nations:

- Productivity losses – there is a correlation between average years of schooling and the rate of economic growth in nations but Lucas points out that it is contentious whether educational expansion causes growth or expanding incomes permit educational expansion.
- Loss of key professions not allowing basic needs to be met – the loss of key groups may lower access to health care and quality education for future generations.
- Fiscal losses – this involves two elements – the loss of any net contribution the educated migrant would have made to the fiscal balance had they remained at home, and secondly, the loss of such a migrant exports the returns to the public investment made to their education.

Brain drain is a term which is usually applied to less developed nations but as Cervantes and Guellec (2002) point out ... 'The risk of brain drain damaging rich countries is arguably lower, but it does exist.' Countries like Australia and Canada lose substantial numbers of researchers to the USA and Europe but their numbers are less than the numbers of researchers they gain through immigration. However in dealing with talented researchers there are important *quality* issues involved although studies which assess the relative quality of incoming and outgoing researchers are lacking. As Cervantes and Guellec (2002) put it ... '... the quality of the two way flow is key, though it is difficult to calculate whether the loss of a top genetics researcher at a public lab can be compensated for by the arrival of even several hundred IT specialists'. Human rights considerations and the realities of global migration make it impossible to prevent emigration. Nevertheless, the number of less and least developed nations that reported to the United Nations (2004) that they had policies to reduce emigration increased from 17 in 1976 to 43 in 2003. However, the main way in which net emigration countries have attempted to recoup the human capital of skilled emigrants is through return migration programs. Some of the major attempts to encourage expatriates to return have been made by Asian countries. Korea and Taiwan (Englesberg, 1995), for example, initiated programs to encourage a 'reverse brain drain' (Chang 1992; Hugo 1996) with some success (Yoon, 1992), although it is not clear the extent to which this was due to the programs and how much was a result of rapid economic development (Lucas, 2001). Saxenian (1999) points out that some of the advantages flowing from these activities was an increase in interaction between Taiwanese and Korean scientists and engineers with expatriate colleagues in the United States facilitating knowledge transfer, investment and business cooperation (Lucas, 2001). Taiwan has had one of the most comprehensive reverse brain drain programs among Asian countries. Among the initiatives taken by government include:

- They advertise jobs overseas where it is known Taiwanese with relevant skills live, and provide travel subsidies and temporary job placements to returnees.
- They have a program to recruit expatriates to Taiwan's growing universities.

- They developed the *Hinschu Science-Based Industrial Park (HSIP)* in 1980 to duplicate the Silicon Valley-type situation. The government provided financial incentives and planned infrastructure to companies relocating to, or forming in, the area. Subsidised Western style housing and commercial services were provided to attract Taiwanese living overseas. The government sponsored international conferences on science and technology to give workers of the HSIP access to the international scientific community.

While it is difficult to assess the role of these initiatives in the massive economic growth of Taiwan in the last two decades, it has undoubtedly played a role. The 'reverse brain drain' is a common term in Taiwan and the 1990 census indicated that around 50,000 highly skilled Taiwanese returned during the 1985-90 period (Tsay and Lim, 2001). Another important group are '... 'temporary returnees' or 'transnational workers' ... who work on both sides of the Pacific ... play the role as the middlemen linking businesses in the two regions together with their personal networks, technological and market know-how' (Luo and Wang, 2001).

The largest outflow of talent has been from China. A recent Chinese Academy of Sciences Report (*Asian Migration News*, 1-15 February 2007) estimated that one million Chinese students had left to study abroad in the two decades to 2006 and two thirds had chosen to remain abroad after graduation. Chinese governments at national and regional levels have put in place a large number of programs to attract these migrants back on a permanent or temporary basis (Zweig, 2006). While there are national policies to attract back skilled expatriates individual Chinese provinces, companies and development parks also offer a range of incentives to return, including equivalent salary packages taking into account purchasing power, expenses paid trips to China etc. (*Asian Migration News*, 16-30 November 2002). The Chinese government program offers high salaries, multiple entry-exit visas and access to strictly controlled foreign exchange (*Asian Migration News*, 16 August 2001).

A distinctive feature of the Chinese policy to encourage students and scholars to further their professional development in foreign nations since the late 1970s has been sustained efforts to ensure and encourage them to return to China but the numbers of returned students was very small in the 1980s and early 1990s. However as Zweig (2006) points out there have been a 'reverse tide' since the mid 1990s with the numbers coming back increasing rapidly although there has not been an increase in the *percentage returning*. He demonstrates that large numbers and levels of Government organisations actively promote the return of scholars and students but also that the return wave has been associated with 'political stability, improved housing, better business opportunities and a more vibrant private sector, more modern equipment and management procedures, higher salaries and special incentives' (Zweig, 2006). The term *Hai Gui* meaning the returning sea turtles that were born onshore, grew up at sea but eventually returned to shore again has been applied to this group (Wattanavitukul, 2002). Zweig, Changgui

and Rosen (2004) have shown that foreign PhDs are worth more than domestic PhDs not only in terms of perceptions in Chian but in their ability to affect technology transfer and capital and bring benefits to China.

The Philippines had a *Return Scientist Program* (Balik-Scientist Program) which identified Filipino expatriates in science and technology and offered them the opportunity to return to the Philippines, usually for a temporary period, to work on specific national projects such as geothermal development (Wescott, 2005). However the program was a small one with limited funding and has been discontinued.

Programs to bring back expatriate researchers have not been used to a significant extent by OECD countries. Yet they may in fact represent one avenue to recruit researchers in an increasingly competitive international labour market. Research institutions in OECD countries have significant and widespread alumni, many of whom remain nationals of the country although currently living in a foreign country. Australia is typical in this respect. The studies referred to earlier interviewed expatriate researchers and asked them about whether or not they intended to return to Australia. Table 6 shows that in the 2001 survey the overwhelmingly dominant reasons given by those researchers with definite intentions to return to Australia did *not* relate to their research but to lifestyle and family. Hence, while it is of basic importance for return migration programs to provide researchers with well remunerated and resourced research

Table 6: Survey of Australians Overseas, 2001: Reasons Given by Researchers for Intending to Return to Australia (N=57)

Reasons	<i>Percent of Respondents</i>
Work	17.5
Family	71.9
Lifestyle	80.7
Education	7.0
<i>Retirement</i>	1.8

Source: Emigration Survey 2001

positions their main motivation for returning is not necessarily only work related. This provides recruiting institutions in the home country with an important advantage – many expatriates have a real desire to come home based on family, cultural and lifestyle considerations. Hence it may not be necessary to offer them a financial package larger than that which they are getting in the destination. Moreover the Australian research has found that there is an important lifecycle factor which operates. The group which are most susceptible to return, and also who may be most amenable to recruitment from a home country institution have the following characteristics:

- They tend to be in the early family formation years of the late 30s and early 40s. Hence well established their research careers rather than just starting out.
- They often have a partner who is also a native of their home country.
- They have maintained strong linkages with their home country at a number of levels during their sojourn abroad.

It is also instructive to examine the reasons given by those expatriate researchers who did *not* plan to return to Australia.

Table 7: Survey of Australians Overseas, 2001: Reasons Given by Researchers for Not Returning to Australia (N=167)

Reasons	Number of Respondents	Percent
Employment Opportunities	65	38.9
Career and Promotion Opportunities	66	39.5
Business Opportunities	8	4.8
Partner's Employment	23	13.8
No Equivalent Jobs in Australia	20	12.0
Marriage/Partnership	32	19.2
Children Grew Up Here	40	24.0
Family/Friends Here	23	13.8
Lifestyle	33	19.8
Established in Current Location	51	30.5
Higher Income	50	29.9
<i>Better Taxation System</i>	<i>21</i>	<i>12.6</i>

Source: Emigration Survey 2001

Table 7 shows the reasons they gave. While family linkages and lifestyle factors are in evidence here they are not the dominant reasons for staying. The latter strongly relate to their employment conditions. As was indicated in the quotations from these expatriates given earlier, even among many who remain strongly identified with Australia they will not return while there are not equivalent research opportunities, facilities and funding which they currently have access to in a foreign nation.

The Australian government has two small schemes to promote the return migration of expatriate researchers:

- Federation Fellowships administered by the Australian Research Council are designed to attract and retain Australia's leading researchers and outstanding international researchers in key positions to lead world class research teams in work of significant national benefit.

- The National Health and Medical Research Council has special fellowships for health and medical researchers working overseas to return to Australia – the Burnet Award for senior researchers and Howard Florey scholarships aimed at more junior researchers.

One of the major OECD initiatives in facilitating return migration of expatriate researchers is Spain's *Ramón y Cajal* Program. The objective of this program has been to provide subsidies to universities and research centres to contract researchers for five years. One of the stated objectives is 'to facilitate the return of Spanish researchers abroad' (Cruz-Castro and Sanz-Menendez, 2005). The first three years of the program saw 1,960 researchers contracted and the proportion who were Spanish living abroad increased from 16 percent in 2001, to 28 percent in 2002 and 35 percent in 2003.

One of the indications gained from the Australia research was that there may be more value in countries developing programs which encourage and facilitate temporary as well as permanent return migration among their expatriate researchers. Many respondents in the studies were essentially bi-national in that they retained a strong commitment to, and interest in, Australia while they have no intentions of permanently returning (Hugo, 2006). In such cases programs which allow joint appointment, joint research projects with Australian-based counterparts, short term visits to work with Australian counterparts, etc. would seem more likely to succeed than permanent return. Such 'brain circulation' programs for expatriate researchers need to be investigated further.

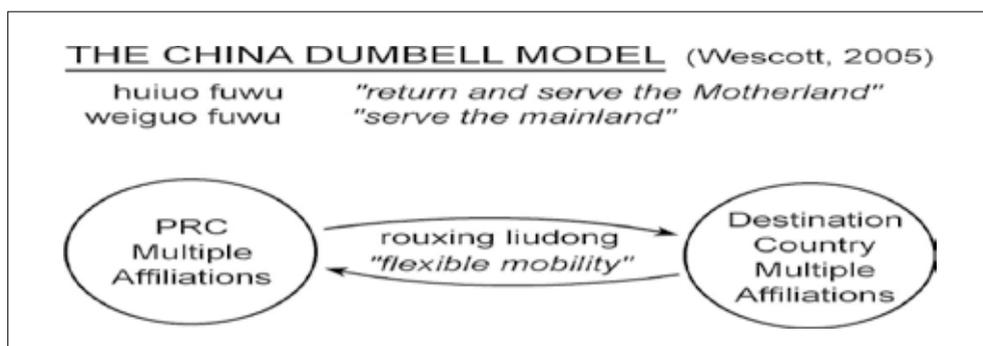
Zweig (2006) has shown that China began to encourage overseas scholars to return for short visits in 1992. Through the 1990s this program was increased and in 2000 a new program 'encouraged people to return during summer vacation and paid them as much as five times their overseas salaries'. He reports that between 1996 and 2003 the Ministry of Education of China bought over 7,000 individuals and 50 groups back under these schemes.

1.5.4 Diaspora Based Policies

International migrants throughout history have developed and maintained strong networks connecting them with their home country while living in another. However developments in modern information and communication technology and in international travel have revolutionised the ability of expatriates to remain in constant, instantaneous and intimate contact with family, friends, colleagues, events and because of the most subtle and minute developments in their home country. The development of the internet, cheapening of international telephone calls and travel have meant that many expatriates can and do make a *virtual* return to their home country each day. This provides an important potential addition to the researcher human capital of origin countries. The body of national researchers contribution to the national research effort need not only include those who reside within their national boundaries but also those living elsewhere but retain significant research linkages with their home country.

While the potential of the ‘virtual return migration’ of the diaspora has been little explored in OECD nations, Wescott (2005) and Biao (2006) have showed how China has made important steps in this direction. In the last two decades of the last century, China’s main policy direction toward its students who had remained overseas after graduation was ‘*huiguo fuwu*’ or exhorting them to return and serve the motherland (Zweig, 2006). This is the concept encapsulated in the commonly used analogy of ‘turtles eventually returning to their birthplace’ mentioned earlier in this paper. At the turn of the century however there was an important change in policy direction (Biao, 2006; Wescott, 2005) which is articulated in the term ‘*weiguo fuwu*’ which encourages ‘flexibility mobility’ rather than permanent return. The direction of policy is depicted in the so-called ‘dumb bell’ model shown in Figure 14. Chinese Government and other agencies now do not necessarily advocate that skilled Chinese

Figure 14: The Dumb Bell Model



Source: After Wescott, 2005

return home but that they maintain and develop a range of affiliations, linkages and relationships with counterparts and relevant institutions in China from their base in a foreign country. Moreover it involves regular moving back and forth between China and the destination country in a pattern of ‘*rouxing liudong*’ or flexible mobility. In an earlier section it was shown how Chinese researchers in Australia have very much followed this model. Table 8 shows that there is a vigorous pattern of return visiting and contact with China.

Table 8: Survey of Chinese Researchers in Australia 2006: Linkages with China

	<i>Percent</i>
Visit China at least once a year	64.4
Contact China at least once a week	56.5
Plan to stay permanently in Australia	47.7
Percent with research projects in China	40.2

Source: 2005-06 Survey (N=239)

China's migration relationship with Australia has been described as two way and one of circulation rather than a single south-north permanent flow as is often thought (Hugo, 2007a). The Australia-China movement includes frequent return movement of Chinese permanent residents in Australia as well as an important return migration flow.

Wescott (2005) explains that there are three main Chinese government initiatives for promoting knowledge exchange through diaspora networks:

- Policies – there are a large number of policies at both national province and municipality level. Most liberalise existing regulations to create more friendly living and working environments.
- Concrete programs – Wescott (2005) divides these into fund-based programs, which allocate special funds to facilitate knowledge exchange, and activity-based programs which provide a platform for knowledge exchange by arranging activities. The former includes funding short visits and collaborative activities between China-based and overseas-based researchers. The latter include funding of delegations of overseas Chinese visiting China and funding of conferences.
- Official websites – the development of websites specifically catering for overseas Chinese and web-based methods of contacting, and staying in contact with, overseas Chinese.

Some countries have encouraged expatriate researchers to form their own associations and initiate knowledge exchange activities associated with science and technology (Wescott, 2005). They have included Taiwan, South Korea, China and the Philippines. Chinese professional associations are important in key destination countries like Canada, Japan, United States and Australia. Wescott (2005) reports that the China Science and Technology Association has connections with more than 40 overseas Ethnic Professional Associations in seven countries, half in the USA. These associations often get government support and are often the vehicle through which government initiatives are taken.

Meyer and Brown (1999) argued that the development of 'Intellectual Diaspora Networks' (IDNs) constitute a huge potential of additional resources for developing countries and point out (p. 5) that:

'A crucial advantage of the diaspora option is that it does not rely on a prior infrastructural, massive investment ... the country may have access not only to their individual embodied knowledge but also to the socio-professional networks in which they are inserted overseas.'

They identify 41 expatriate knowledge networks and differentiate between:

- Student/scholarly networks which have limited scope facilitating study abroad.
- Local association of skilled expatriates involving groups of highly skilled professionals who meet regularly on both professional and social levels.

- Transfer of Knowledge Through Expatriate Nations (TOKEN) program of the UNDP.
- Developing intellectual/scientific diaspora networks aimed at making use of the expatriate labour pool to contribute to development of the home country.

They concentrate on the latter type and study 15 such networks in detail and draw the following conclusions (Meyer and Brown, 1999).

- All have been successful in mobilising expatriate resources.
- Sound organisation is a key.
- They need to have adequate resources and backing from the home country.

A book edited by Kuznetsov (2006) offers a range of suggestions to policy makers in developing countries who are developing programs to design effective diaspora networks and Mahroum, Eldridge and Daar (2006) provide a number of policy options for governments wishing to benefit from Diaspora Knowledge Networks. They see government support as being crucial and point to four areas of necessary activity:

- Government should lead and coordinate the considerable effort to connect the diaspora and the scientific community at home.
- Government should extol and recognise the contributions of the diaspora
- Government should make efforts to engage with the diaspora.
- Receiving countries should explore ways in which their immigrant communities can act as mutually beneficial bridges with home countries.

A word of caution is required when examining the impacts of expatriate networks on research capacity in home countries. There is little empirical evidence available in this area and much of the discussion focuses on potential rather than measuring achieved impact. As Ackers (Ackers, 2005) points out:

‘The impact of networks on knowledge flows remains unclear and further research is required to develop our understanding of how these processes operate in difficult cultural and scientific contexts and how they impact upon sending and receiving countries.’

Nevertheless Meyer and Wattiaux (2006) have addressed the critics of Diaspora Knowledge Networks through a systematic internet analysis and demonstrate that such networks are consistent, expanding and effective initiatives of international co-operation.

1.6 CONCLUSION

The world has entered a new era of international population mobility and internationalisation of labour markets which has made it possible for researchers to move freely between nations and identify with and be committed to more than one country. This has created the potential for nations to draw not only on the brain power of citizens residing within national boundaries but also to bring in foreign researchers on a permanent or temporary basis and to draw on the human capital of expatriate researchers living in foreign nations. The extent to which nations can capitalise on all three groups to enhance research, innovation and prosperity however will depend on many things. What does seem clear is that policy has a key role to play.

While the new transnationalism clearly has important implications for national and international research capacity, our knowledge of the phenomenon remains limited. Development of effective policy in this area is dependent upon achieving a greater understanding of international mobility and diaspora. Improvement in data collection and analysis is fundamental but there is also a need for more research into the impacts of intellectual diaspora. The economic, social and cultural dimensions of the phenomenon remain imperfectly understood and greater understanding in these areas is an essential prerequisite for the development of relevant and effective policy.

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OMAN Tourism : An International Perspective on International Tourist Arrivals

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ABSTRACT

This paper attempts to examine the Oman tourism potential in the perspective of other developments world wide. The assumption is made that Oman is closer regionally in terms of cultural identity and social structures to the broad Asia Pacific world region. In examining the countries of Asia Pacific similarities can be identified with several other markets. The conclusion is that for the development of demand for foreign international tourism, it is useful to place the Oman market into a world perspective, and from this position to identify future market size, sustainability and marketing.

Keywords : Oman tourism, tourist arrivals, tourism perspective

INTRODUCTION

World international tourism increased by nearly 5.4% between 2005 and 2006. This level of increase represents a return to a stable growth pattern where it would be expected that growth would range between five and six percent. It also provides a benchmark figure against which to measure growth in larger markets. Total arrivals were about 846 million international tourists in 2006. Table 1 summarises this growth in tourist arrivals.

Table 1 World Regional Tourist Arrivals 1997-2006 (millions)

Region	1997	2000	2005	2006	AAGR (%) 1997-2006	AAGR (%) 2005-2006
World	619.6	686.8	803.0	846.0	3.5	5.4
Africa	23.2	28.2	37.3	40.7	6.4	9.1
Americas	118.9	128.1	133.2	135.9	1.5	2.0
Asia Pacific	92.8	110.5	155.3	167.2	6.8	7.7
Europe	369.8	395.8	438.7	460.8	2.5	5.0
Middle East	14.1	24.2	38.3	41.8	12.8	9.1

The Middle East and Africa have the highest growth but are also smaller in volume. Smaller destinations can have higher rates of growth that result in relatively smaller increases in volume, because they are able to support a higher percentage in terms of resources and impact.

The world's top tourism earners in 2006 are listed in Table 2.

Table 2 Highest World Tourism Foreign Earnings Countries

Rank	Country	International Tourism Expenditure (US\$bn) 2006	% Market Share 2006
1	Germany	74.8	10.2
2	USA	72.0	9.8
3	UK	63.1	8.6
4	France	32.2	4.4
5	Japan	26.9	3.7
6	China (PRC)	24.3	3.3
7	Italy	23.1	3.2
8	Canada	20.5	2.8
9	Russian Federation	18.2	2.6
10	South Korea	18.2	2.5

In 2007 Oman received 515,808 foreign non Gulf country tourists, an increase of 20.37% from 2006. Foreign exchange earnings increased by 32.8% over 2006. This makes Oman a small tourism destination on the world scale, but also one that is growing rapidly and there are expectations of strong growth in the near future.

COMPARISON

Oman may be classified to be part of the Asia Pacific as an extended world region and as such is potentially linked to similar growth patterns and economic impacts as other Asia Pacific countries. Within the Asia Pacific the most comparable countries in terms of size are the Maldives, Pakistan, Nepal, Sri Lanka in South Asia; Myanmar in Southeast Asia; Mongolia in Northeast Asia; and Fiji, New Zealand and Northern Marianas in Oceania. However of these countries many are not comparable for several reasons : Pakistan (civil unrest), Sri Lanka (civil unrest), Myanmar (political unrest), Mongolia (isolation), Fiji (small island state), Northern Marianas (small island state). New Zealand has a larger market but is comparable in population size and potential for tourism, the Maldives is comparable despite being an island state in terms of culture and economic structure. In terms of culture and economic structure

Bhutan is also of some comparable interest although tourist arrival numbers are much smaller into Bhutan. Bhutan until recently was a kingdom and has focussed upon environmental and cultural friendly tourism designed to maintain both the long standing natural and unpolluted environment, and an age old culture sensitive to the impact of western culture. The inbound international tourism has been essentially rationed due to control over developing resources including fundamental infrastructure such as hotels and air capacity by Druk airlines. Bhutan is expected to see rapid growth in arrivals with a shift to a democratic government keen to develop the country and needing resources to do so. As such Bhutan is at a crossroads in tourism development where there is significant pent up international demand particularly at prices lower than has been the case under rationing. Growth is forecast for 2008 to be 24,703, for 2009 to be 27,501 and 2010 to be 30,512.

Table 3 Tourist Arrivals in Comparative Markets Outside the Middle East 2000- 2006

Country	2000	2001	2002	2003	2004	2005	2006	AAGR (%) 00-06
Bhutan	7,559	6,393	5,599	6,261	9,249	13,626	17,342	14.8
Maldives	467,154	461,063	484,680	563,593	616,716	395,320	601,923	4.3
New Zealand	1,789,078	1,909,809	2,044,962	2,106,229	2,347,672	2,382,950	2,421,561	5.2
Oman	209,933	208,830	232,564	294,621	345,546	346,499	428,534	12.6

The Maldives is a specialised island destination more focussed upon water activities and in particular diving. It suffered from the December 2004 Tsunami that reduced arrivals dramatically in 2005, and recovery was slow extending into 2006 and 2007. The market is an open one with no restrictions but more isolated and limited in terms of attractions to Oman. The market is forecast to grow from 601,923 in 2006 to 781,390 in 2008, 871,637 in 2009 and 959,712 in 2010. This gives some perspective to the economically rational growth rate for Oman. Oman has greater resources, higher growth and better source market proximity, so that it could project to over 1.0 million foreign arrivals by 2010, with undue strain on the economy and culture.

New Zealand represents a very different path to growth with unrestrained growth and no concern on cultural impact, but some concern over environmental impact. New Zealand has large arrival numbers but much of this is VFR (visiting Friends and Relatives) tourism from nearby Australia (about 40%). New Zealand has a population of about 4.1 (mil.) and Oman has a population of about 3.2 (mil.) in 2007. New Zealand suffers from geographic isolation but also has a range of tourism attractions similar in scope to Oman. The tourism development has relied heavily upon international marketing in Asia and North America and there is a strong VFR link to the UK. Should Oman want to open its market significantly with less concern for cultural impact the arrivals market could also grow to over 2 million in the medium term. There is no indication that the environmental impact in New Zealand has been excessive in an area of about 269,000 (sq. km.) compared with Oman at about 212,000 (sq. km.). Culturally, it could be argued that the impact on the native Maori culture has been positive in providing employment, and an increased awareness of the depth and significance of the Maori heritage. However, the tourism inflow is reasonably culturally stable with the majority of inbound tourism of a similar background and religion to the native population. Although, there is a strong and growing market growth from Japan that is now stabilising, and more recent growth from South Korea and China (PRC).

CULTURE

The argument that western culture does impact on older cultures and older cultural values is possibly somewhat overrated. Western culture does bring technological impact and can impact on entertainment and music, dress and to some extent entrepreneurship, it could impact on family values and the belief system, but when examining other countries there is a strong local cultural resilience. An example is Thailand, a country that receives over 15 million foreign tourists annually and has a significant expatriate resident foreign population. There is an obvious impact in Bangkok in terms of some dress code and entertainment, but very little obvious change to cultural values. One description of the Thai attitude to the west could well be that they take what they want and leave the rest. Thai art, music, religion, traditional dress and social beliefs and customs appear largely intact. Young people do sometimes wear brand clothing and may even colour their hair, but they remain religious, extremely concerned about the family

and their family obligations, place Thai values first and follow traditional beliefs. On the other hand, they are very open to sell goods to foreign buyers, and in particular tourism resources such as beaches and sunshine they actually place less value in themselves. They also enjoy the interest of foreigners in their customs and art. Their strong culture tends to prevail and the foreign work and retirement population of Thailand tends to often value Thai ways above their own western values, with possibly the one exception, westerners tend to continue to place the role of employment and work ahead of family values (Reisinger et al. 2003).

Oman has a sharper interface than Thailand not least of all because of recent isolation from western involvement, with significant contact limited to the past 40 years. Thailand has a much longer history of working with and resisting western cultural influence. It could also be argued that the cultural divide is higher for Oman but this is not clearly evident.

Oman is now facing an important cross-roads in economic and social development, and needs to determine the path ahead in regard to the level of international tourism development. There is no doubt that international tourism is a major earner of direct foreign exchange and at the same time is a labour intensive activity. Tourism is also not an industry in itself, but does involve the full range of domestic industries and hence has high trickle down economic impact. However, arrivals growth cannot be assumed, as demand is volatile and can fluctuate with major shifts in demand from one year to the next along with seasonal variation, and many countries around the world have experienced extreme demand change. Given the current "take-off" position in economic development for tourist arrivals to Oman, a first point is to set targets that are realistic, sustainable and bring the type of tourism market that Oman decides to develop as a community. In determining these issues a major first step is to attempt to forecast arrivals under current conditions, and to set realistic targets.

FORECAST

There are several techniques available to forecast tourist arrivals that can be divided into pure time-series, econometric and mixed models. Time-series forecasts depend solely upon the past series under the assumption that future growth has set parameters defined by past events, and the future series will take time to diverge away from these settings. Econometric models attempt to define the cause of arrival series changes and normally focus upon set economic relationships such as flow volume and price, and a person's capacity to afford the travel. Mixed models can create the mix in several ways such as combining forecasts from several different methods, or in some more limited examples use time series and econometric aspects within the one model.

(Song et al. 2006)

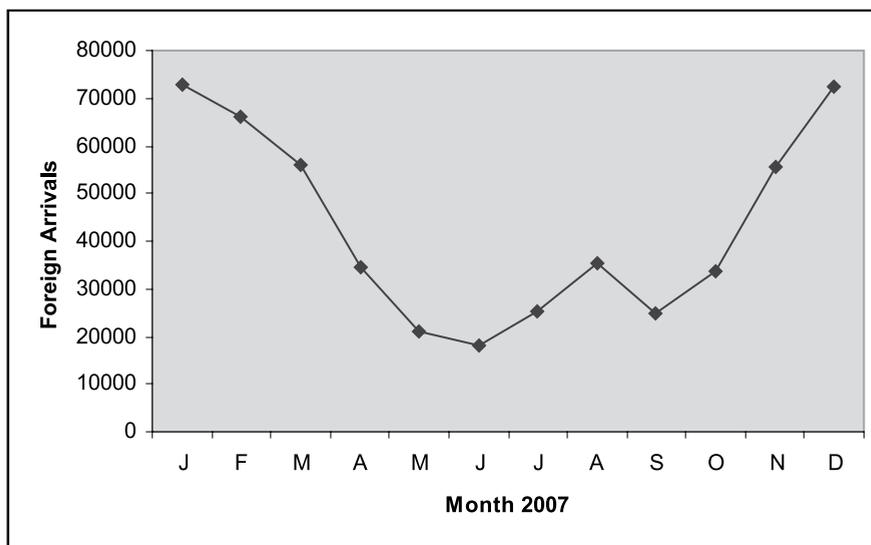
The methodology for the SITEA model used by PATA (Pacific Asia Travel Association) is a mixed model using several time series and econometric models within the one package, and follows the quantitative modelling with an expert opinion phase (Turner et al. 2007). For the purpose of forecasting from the Oman data the model used is a structural model that is limited by a lack of data (1997 to 2007, annual only) and lack of specific source countries. Additionally, no expert opinion is applied to the forecasts. The results are given in Table 4 below.

Table 4 Initial Target forecasts for Oman – International Foreign Tourists

Year	Forecast International Foreign (non GCC)	AAGR (%)
2006 Actual	428,534	
2007 Actual	515,808	
2008	605,752	17.44
2009	724,832	19.66
2010	835,656	15.29
2011	928,644	11.13
2012	1,158,412	24.74
2013	1,352,644	16.77
2014	1,526,270	12.84
2015	1,716,210	12.44
2016	1,886,388	9.92

These forecasts are prospective from the SITEA model and take into account past growth with the recent growth more heavily weighted than past growth, the economic growth of the top 15 source markets and the prospective GDP growth of Oman. However, the model remains relatively crude without any expert opinion and a limited economic input. It is interesting to note that in relative terms the volume targets are close to New Zealand in terms of volume given relative national economic size.

Seasonally, the foreign arrival flow is markedly peaked to the November to March period, with a small peak in August for the Kerala festival. The popularity of Kerala in Oman is a significant seasonal adjustment.

Figure 1 Seasonal Foreign International Tourist Arrivals - 2007

Arrivals are driven by the climate and the peak mild climate season will likely continue to dominate.

SUSTAINABILITY

The main concern with demand growth is that is sustainable. The growth rates indicated above are quite high but also consistently high. This growth in demand would require significant investment in tourism infrastructure and also a set of decisions in regard to the nature of the source market. For New Zealand the marketing has been one of environment and adventure, for Bhutan it is one of culture and environment. The New Zealand theme attracts a large number of young tourists apart from the VFR sector. The focus is upon physical activity, hiking, sports, adventurous pursuits (ballooning, jet boats, para. sailing and so forth).

For Bhutan the cost is higher and the youth market is not the significant sector, it is currently directed to older tourists, usually couples with significant personal resources, who have been many other places and are seeking a special experience. This market is small but then so is the current inbound capacity. As such Bhutan is looking at higher returns per tourist than New Zealand.

Oman has already set in place significant infrastructure spending and now must consider its market segment. Whatever is chosen will not be either unique or monopolistic. There are always alternative destinations and some will offer similar experiences. The first step is to distinguish within the region. New Zealand has Australia as a huge nearby competitor, and establishing the adventure brand distinguished New Zealand very

successfully at a time when Australia was also less environmentally conscious. On a per capita basis New Zealand has been far more successful in its marketing over the past 15 years than Australia.

Therefore, it is evident that Oman will need to distinguish away from its immediate Gulf competitors. This is recognised as needed, and possible already with the potential emphasis upon archaeology, conservation, natural beauty and suitable climate. In marketing there is a need to determine the main source regions that this different tourism experience can exploit. Europe is an obvious market, and also South Asia and the far-East. The market needs to be high yield because it is not likely to be particularly large, directed more to families, young married couples and to older tourist couples. A strong element of resort base is likely to be required, in order to provide for basic accommodation and daily requirements, with extensive day travel to key sites and extended travel to more remote areas. This type of development is more akin to Bhutan than New Zealand. In New Zealand independent travel to small locations is predominant. Also, this type of tourism does not lend itself to the younger more penetrative environmental tourist who tend to be lower yield as well. There is a tendency toward packaging and this would suit both older tourists and tourists from Asian countries.

CONCLUSION

International perspectives are often valuable in broadening the perspective for tourism development. Although the local sectors can have a far better understanding of local culture and tourism impacts they can often miss the relativity of the tourism marketplace on the world scale. Increasingly in the future, travel will likely further shorten the tyranny of distance and people will also be increasingly searching for something different – as the world becomes more alike in each of the attractions.

The development of a viable international foreign market place is a valuable export initiative but unlike staple commodities it is volatile. This suggests that the tourism plan for Oman will likely be advantaged from examining other world developments in terms of size, sustainability and marketing.

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Determinants of Economic Growth: The Experts' View

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ABSTRACT

Over the last two to three decades a wide range of studies has investigated the determinants of economic growth. Using differing conceptual and methodological approaches, these studies have placed emphasis on a number of explanatory parameters and offered various insights to the process of economic growth. The current paper draws on a questionnaire survey addressed to various experts (academics, policy makers and business people), to identify the factors that either support or inhibit growth potential and to assess their degree of significance. A number of points emerge. First, that alongside conventional determinants, it is also the political and institutional aspects of an economy that play an important role in advancing growth dynamics. Second, determinants influence at a different degree each economy depending on the level of development achieved. As such, there are clear indications that policy priorities should be different between developed and developing countries. Third, despite the previous point, there are some basic elements which are deemed important for economic growth independent of the level of development an area exhibits.

Keywords: economic growth, economic dynamism, determinants, survey, experts' views

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1. Introduction

Over the last two decades the determinants of economic growth have attracted increasing attention in both theoretical and applied research. Yet, the process underlying economic performance is inadequately conceptualised and poorly understood, something, which can be partly attributed to the lack of a generalised or unifying theory, and the myopic way conventional economics approach the issue (Artelaris *et al*, 2007).

Despite the lack of a unifying theory, there are several partial theories that discuss the role of various factors in determining economic growth. For instance, the neoclassical perspective, which is based on Solow's growth model, has emphasised the importance of investment and, the more recent, theory of endogenous growth developed by Romer and Lucas has drawn attention to human capital and innovation capacity. Furthermore, important contributions on economic development have been provided by Myrdal's cumulative causation theory, and by the New Economic Geography school. In addition, other explanations have highlighted the significant role non-economic (in the conventional sense) factors play on economic performance. These developments gave rise to a discussion that distinguishes between 'proximate' and 'fundamental' (or 'ultimate') sources of growth. The former takes into account issues such as accumulation of capital, labour and technology while the latter places emphasis on institutional structures, legal and political systems, socio-cultural factors, and so on.

Theoretical developments have been accompanied by a growing number of empirical studies. Initially, research focused on the issue of economic convergence/divergence, since this could provide a test of validity between the main growth theories (i.e. the neoclassical and the endogenous growth theory). Eventually, focus shifted to factors determining economic growth. Seminal studies in this field include those conducted by Kormendi and Meguire (1985), Grier and Tullock (1989) and, especially, Barro (1991). This second 'wave' of empirical studies has been facilitated by the development of larger and richer databases (such as the Penn World Tables - PWT) and more advanced statistical and econometric techniques (mainly cross-sectional and panel-data ones), which have enabled the identification of determinants of economic growth with higher precision and confidence. Finally, it is worth emphasising that due to the lack of a unifying theory on economic growth, a substantial volume of empirical research has multi-theoretical bases. This means that studies draw on several theoretical frameworks and examine factors highlighted by many paradigms. As a result findings are often contradictory and far from conclusive.

This paper draws on a questionnaire survey addressed to various experts worldwide (academics, policy makers and business people), to explore their views on the factors underlying economic dynamism. Economic dynamics refers to the potential an area has for generating and maintaining high rates of economic performance. In particular the research has set the following objectives:

1. to identify dynamic regions in a global scale,
2. to identify the key factors advancing economic dynamism,
3. to identify the main factors that hinder the development process, and, overall,
4. to assess the degree of influence of the various determinants that have been discussed in the literature.

The results of this research are expected to assist assessment of our current knowledgebase, to identify misconceptions and knowledge gaps and to indicate direction for further research on the issue of economic growth and development.

The structure of the paper is as follows. The next section briefly presents the main economic growth theories and summarizes the most important determinants of economic growth that have been identified in the literature. Then, an overview of the employed research method is provided, following a short presentation of the research project that the paper draws on. The fourth section discusses the results of the survey providing answers to the research questions set above, and the final section concludes the paper summarising the key findings.

2. Main theories and determinants of economic growth

2.1 Theoretical perspectives

The starting point of conventional economic growth theorisation is the neoclassical model of Solow (1956). The basic assumptions of the model are: constant returns to scale, diminishing marginal productivity of capital, exogenously determined technical progress and substitutability between capital and labour. As a result the model highlights the savings or investment ratio as important determinant of short-run economic growth. Technological progress, though important in the long-run, is regarded as exogenous to the economic system and therefore it is not adequately explored by this model. Turning to the issue of convergence/divergence, the model predicts convergence in growth rates on the basis that poor economies will grow faster compared to rich ones.

The role of technological progress as a key driver of long-run economic growth has been put in scrutiny by more recent studies, which accept constant and increasing returns to capital. These theories, known as endogenous growth theories, propose that the introduction of new accumulation factors, such as knowledge, innovation, and the like, will induce self-maintained economic growth. Triggered by Romer's (1986)

and Lucas's (1988) seminal studies¹, work within this framework highlighted three significant sources of growth: new knowledge (Romer, 1990, Grossman and Helpman, 1991), innovation (Aghion and Howitt, 1992) and public infrastructure (Barro, 1990)². As a result, and in contrast to the neoclassic counterpart, policies are deemed to play a substantial role in advancing growth on a long-run basis. Turning to the convergence/divergence debate, the endogenous growth models suggest that convergence would not occur at all - mainly due to the fact that there are increasing returns to scale.

Another strand of literature, perhaps less influential, is the growth theory of cumulative causation developed by Myrdal (1957) and Kaldor (1970). Essential to this theory is the argument of 'cumulative causation' in which initial conditions determine economic growth of places in a self-sustained and incremental way. As a result, the emergence of economic inequalities in space is the most possible outcome. Although there are centrifugal effects (positive spillovers) spreading growth from the more to the less advanced economies, they are incapable of bringing the system into a state of balance if market forces alone are left at work. In other words, economic policy has to come into play to correct those imbalances. In contrast to theories mentioned above, theories of cumulative causation have a medium term view and often described as "soft" development theories due to a lack of mathematical rigour (Plummer and Taylor, 2001). However, certain similarities are evident between the cumulative causation approach and the theory of endogenous growth.

Similarly to the cumulative causation theory, the New Economic Geography (NEG) asserts that economic growth tends to be an unbalance process favouring the initially advantaged economies (Krugman, 1991; Fujita *et al*, 1999). However, in contrast to the former, this strand of literature develops a formalised system of explanations which places explicit emphasis on the compound effects of increasing returns to scale, imperfect competition and non-zero transportation costs. Central to this theory is the view that economic activity tends to agglomerate in specific places and to choose locations with a large local demand resulting in a self-reinforcing growth process. The spatial distribution of economic activity can be explained by agglomeration (or centripetal) forces and dispersion (or centrifugal) forces. The former include backward and forward linkages of firms, externalities and scaled economies while the latter include negative externalities, transport costs and intensification of competition. Consequently, NEG is mainly concerned with the location of economic activity, agglomeration and specialization rather than with economic growth *per se*. However, regional growth outcomes can be inferred from its models.

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- 1 Romer (1986) presented a formal model that yields positive, long-run growth rates on the basis of technological progress driven by the role of externalities, arising from learning by doing and knowledge spillover. Lucas (1988) introduced a model in which human capital plays a fundamental role in perpetuating economic growth and preventing diminishing returns to physical capital accumulation.
 - 2 It is important to note that these factors have already been identified in the literature before, but it is the first time that they are formalised and modelled.

From a more macro perspective, other theoretical approaches have emphasised the significant role non-economic factors (at least in the conventional sense) play on economic performance. Thus, institutional economics has underlined the substantial role of institutions (Matthews, 1986; North, 1990; Jutting, 2003), economic sociology has stressed the importance of socio-cultural factors (Granovetter, 1985; Knack and Keefer, 1997), political science has focused its explanation on political determinants (Lipset, 1959; Brunetti, 1997) and others have placed emphasis on role played by geography (Gallup *et al*, 1999) and demographic characteristics (Brander and Dowrick, 1994; Kalemli-Ozcan, 2002).

2.2 *Determinants of economic performance*

A wide range of studies has investigated the factors underlying economic growth. Using differing conceptual and methodological viewpoints, these studies have placed emphasis on a different set of explanatory parameters and offered various insights to the sources of economic growth.

Investment is the most fundamental determinant of economic growth identified by both neoclassical and endogenous growth models. However, in the neoclassical model investment has impact on the transitional period, while the endogenous growth models argue for more permanent effects. The importance attached to investment by these theories has led to an enormous amount of empirical studies examining the relationship between investment and economic growth (see for instance, Kormendi and Meguire, 1985; De Long and Summers, 1991; Levine and Renelt, 1992; Mankiw, 1992; Auerbach *et al*, 1994; Barro and Sala-i-Martin, 1995; Sala-i-Martin, 1997; Easterly, 1997; Bond *et al*, 2001; Podrecca and Carmeci, 2001). Nevertheless, findings are not conclusive.

Human capital is the main source of growth in several endogenous growth models as well as one of the key extensions of the neoclassical model. Since the term 'human capital' refers principally to workers' acquisition of skills and know-how through education and training, the majority of studies have measured the quality of human capital using proxies related to education (e.g. school-enrolment rates, tests of mathematics and scientific skills, etc.). On these grounds, a large number of studies has found evidence that an educated labour force is a key determinant of economic growth (see Barro, 1991; Mankiw *et al*, 1992; Barro and Sala-i-Martin, 1995; Brunetti *et al*, 1998, Hanushek and Kimko, 2000). However, there have been other scholars who have questioned these findings and, consequently, the importance of human capital as substantial determinant of economic growth (e.g. Levine and Renelt, 1992; Benhabib and Spiegel, 1994; Topel, 1999; Krueger and Lindahl, 2001; Pritchett, 2001).

Innovation and R&D activities can play a major role in economic progress increasing productivity and growth. This is due to increasing use of technology that enables introduction of new and superior processes and products. This role has been stressed

by various endogenous growth models, and the strong relation between innovation and/or R&D and economic growth has been empirically affirmed by many studies (see Fagerberg, 1987; Lichtenberg, 1992; Ulku, 2004).

Economic policies and macroeconomic conditions have, also, attracted much attention in terms of its role to economic performance (see Kormendi and Meguire, 1985; Grierand and Tullock, 1989; Barro, 1991, 1997; Fischer, 1993; Easterly and Rebelo, 1993; Barro and Sala-i-Martin, 1995) since they set the framework within which economic growth occurs. The literature has examined a number of economic policies that may affect economic performance, including investments in human capital and infrastructure, improvement of political and legal institutions and so on; however there is no consensus within the scientific community with regard to which policies are more conducive to growth. In turn, sound macroeconomic conditions are seen as necessary, though not sufficient, conditions for economic growth (Fischer, 1993). In particular, a stable macroeconomic environment may favour growth through reduction of uncertainty, whereas macroeconomic instability may have a negative impact on growth through its effects on productivity and investment (i.e. higher risk). Several macroeconomic factors with impact on growth have been identified in the literature, but considerable attention has been placed on inflation, fiscal policy, budget deficits and tax burdens.

Openness to trade is another important determinant of economic performance. There are sound theoretical reasons for arguing that there is a strong and positive link between openness and economic growth: openness facilitates the transfer of technology and the diffusion of knowledge, and, by increasing exposure to competition, contributes to exploitation of comparative advantage. In turn, there is a sizeable and growing empirical literature that has explored this relationship in practice³. Findings, however, are inconclusive. On the one hand, there are many researchers who have found that economies which are open to both trade and capital flows exhibit higher GDP per capita and they grow faster (Dollar, 1992, Sachs and Warner, 1995, Edwards, 1998, Dollar and Kraay, 2000). On the other hand, others have disputed these findings raising concerns about the robustness of the developed models and highlighting the methodological and measurement problems they encounter (see for example, Levine and Renelt, 1992; Rodriguez and Rodrik, 1999; Vamvakidis, 2002).

Foreign Direct Investment (FDI) has recently played a crucial role of internationalising economic activity and it is a primary source of technology transfer and economic

3 Openness is usually measured by the ratio of exports to GDP. However, another measure, maybe more appropriate, is proposed by Sachs and Warner (1995). According to this, an economy is considered to be quite open if it satisfies the following five criteria: (a) average quota and licensing coverage of imports are less than 40%, (b) average tariff rates are below 40%, (c) the black market premium is less than 20%, (d) no extreme controls are imposed on exports, and (e) the country is not under a socialist regime.

growth. This major role is stressed in several models of endogenous growth theory. The empirical literature that examined the impact of FDI on growth has provided more-or-less consistent findings affirming a significant positive link between the two (e.g. Borensztein *et al*, 1998; Hermes and Lensink, 2000; Lensink and Morrissey, 2006).

Another important source of growth highlighted in the literature is the institutional framework. Although the important role institutions⁴ play in shaping economic performance has been acknowledged long time ago (Lewis, 1955, Ayres, 1962), it is not until recently that such factors have been examined empirically in a more consistent way (see Knack and Keefer, 1995; Mauro, 1995; Hall and Jones, 1999; Rodrik, 1999; Acemoglu *et al*, 2002). Rodrik (2000) highlights five key institutional structures (property rights, regulatory institutions, institutions for macroeconomic stabilization, institutions for social insurance and institutions of conflict management), which, he argues, not only exert direct influence on economic growth, but also affect other determinants of growth such as the physical and human capital, the investment decisions and technological developments. It is on these grounds that Easterly (2001) argued that none of the traditional factors would have an impact on economic performance if there were no stable and trustworthy institutional environment to sustain the economy. Measures of institutional quality frequently used in the empirical literature include property rights and contract security, risk of expropriation, level of corruption, legal certainty and level of bureaucracy (Knack and Keefer, 1995).

The relation between political factors and economic growth has come to the fore by the work of Lipset (1959) who examined how economic development affects the political regime. Since then, research on these issues has proliferated making clear that political issues affect to a great extent the economy and its potential for growth (Kormendi and Meguire, 1985; Scully, 1988; Grier and Tullock, 1989; Lensink *et al*, 1999; Lensink, 2001). For example, a highly unstable political regime brings on uncertainty, discouraging investment and, consequently, hindering economic potential. But it is not only the stability of the regime that influences growth dynamics; it is also its type. For instance, the level of democracy is found to be associated with economic growth; though this relation is much more complex. Democracy may both retard and enhance economic growth depending on the various channels that it passes through (Alesina *et al*, 1994). Over the years, there had been employed a number of variables in an effort to measure the quality of the political environment. In turn, Brunetti (1997) has put forward five categories of relevant variables that comprehensively describe the political environment: democracy, government stability, political violence, political volatility and subjective perception of politics.

4 According to North (1990) the term 'institutions' refers to the formal rules, informal constraints and their enforcement characteristics that together shape human interaction.

Recently there has been a growing interest in how various social-cultural factors may affect growth (see Granato *et al.*, 1996; Huntington, 1996; Temple and Johnson, 1998; Landes, 2000; Inglehart and Baker, 2000; Zak and Knack, 2001; Barro and McCleary, 2003). Trust is an important variable that belongs in this category. Trusting economies are expected to have stronger incentives to innovate, to accumulate physical capital and to exhibit richer human resources, all of which are conducive to economic growth (Knack and Keefer, 1997). Ethnic diversity, in turn, may have a negative impact on growth by reducing trust, increasing polarization and promoting the adoption of policies that have neutral or even negative effects in terms of growth (Easterly and Levine, 1997). Several other social-cultural factors have been examined in the literature, such as ethnic composition and fragmentation, diversity in language or in religion, beliefs, attitudes and the like, but their relation to economic growth seems to be indirect and unclear. For instance cultural diversity may have either a negative impact on growth due to emergence of social uncertainty or even to social conflicts, or a positive effect since it may give rise to a pluralistic environment where cooperation can flourish.

The important role of geography on economic growth has been long recognized. Though, over the last years there has been an increased interest on these factors since they have been properly formalised and entered into models (Gallup *et al.*, 1999). Researchers have used numerous variables as proxies for geography including absolute values of latitude, distances from the equator, proportion of land within certain distance from the coast, average temperatures and average rainfall, soil quality and disease ecology (Hall and Jones, 1999, Rodrik *et al.*, 2002, Easterly and Levine, 2003). There have been a number of recent empirical studies (Sachs and Warner, 1997, Bloom and Sachs, 1998; Masters and McMillan, 2001; Armstrong and Read, 2004) affirming that natural resources, climate, topography and 'landlockedness' have a direct impact on economic growth affecting (agricultural) productivity, economic structure, transport costs and competitiveness. However, others (e.g. Rodrik *et al.*, 2002; Easterly and Levine, 2003) found no effect of geography on growth after controlling for institutions.

The relationship between demographic trends and economic growth has attracted a lot of interest particularly over the last years, yet many demographic aspects remain today unexplored. Of those examined, population growth, population density, migration and age distribution, seem to play the major role in economic growth (Kormendi and Meguire, 1985; Dowrick, 1994; Kelley and Schmidt, 1995; Barro, 1997; Bloom and Williamson, 1998; Kelley and Schimdt, 2000). High population growth, for example, could have a negative impact on economic growth influencing the dependency ratio, investment and saving behaviour and quality of human capital. The composition of the population has also important implications for growth. Large working-age populations are deemed to be conducive to growth, in contrast to populations with many young and elderly dependents. Population density, in turn, may be positively linked with economic growth as a result of increased specialization, knowledge diffusion and so on. Despite these growing findings, however, conclusions are not definite, since there have been studies reporting no (strong) correlation between economic growth and demographic variables (e.g. Grierand and Tullock, 1989; Pritchett, 2001).

3. Instrument design and survey characteristics

3.1 *The DynReg project*

The research from which this paper emanates is part of a wider research project funded by the Sixth Framework Programme set up by the European Union. The project is known with the acronym *DYNREG*⁵ and its aim is to identify economically dynamic regions in a worldscale and to specify the factors that determine growth potential. The *DYNREG* project brings together ten academic institutions from nine countries. These are: the Economic and Social Research Institute (Ireland), the Free University of Amsterdam (The Netherlands), the Free University of Brussels (Belgium), the London School of Economics (UK), the “Luigi Bocconi” University (Italy), the University of Bonn (Germany), the University of Cambridge (UK), the University of Economics and Business Administration (Austria), the University of Ljubljana (Slovenia), and the University of Thessaly (Greece).

3.2 *The survey structure*

The current paper draws on a questionnaire survey addressed to various experts worldwide (academics, policy makers and business people), to explore their views on the factors underlying economic dynamism. Economic dynamics refers to the potential an area has for generating and maintaining high rates of economic performance.

Survey questions were pre-tested in a pilot study conducted in the University of Thessaly, Department of Planning and Regional Development, enabling fine-tuning of the instrument. The final questionnaire consists of five parts. The first part provides instructions and definitions; while the second part asks respondents to identify five wider regions in the world (from the twenty specified⁶) that are expected to exhibit economic dynamism in the next fifteen years. The third part assesses which factors are regarded as important for economic dynamism utilising Likert type questions. Of particular importance is the last of four questions, which attempts to explore, which combination of opposite characteristics promotes economic dynamism. The fourth part evaluates the available theoretical backgrounds and research methods in terms of their ability to adequately explain economic dynamism at any spatial level, while the final part of the questionnaire gathers socioeconomic information of the respondents, such as age, gender, education and country of residence.

5 Its full title is ‘Dynamic Regions in a Knowledge – Driven Global Economy: Lessons and Policy Implications for the E.U.

6 These are: North America, Central America, South America, European core, European Union South, European Union New Member States, Eastern and South-Eastern Europe, Russia, North Africa, West Africa, Central Africa, East Africa, South Africa, Middle East, Central Asia, India, China, Japan, South-East Asia and Oceania.

Surveys were held during the second half of 2006. Questionnaires were distributed by each *DYNREG* project partner to 30 'knowledgeable' individuals in their country, 10 academics, 10 highly ranked officials of the public sector, and 10 highly ranked business people. Due to their position, these individuals were able to have an 'informed' perspective or to represent different viewpoints concerning regional economic dynamism. Moreover, additional questionnaires were collected from the participants of the 46th Congress of the European Regional Science Association (ERSA) held in Volos between 30 August and 3 September 2006. All responses were validated and double-checked by both the *DYNREG* project partners and the authors. Then they were coded and analysed using mainly descriptive statistics.

4. Analysis and findings

4.1 Response rate and composition of respondents

A total of more than 500 distributed questionnaires yielded 313 properly completed responses; a response rate of about 63%. The respondents were mainly males (72%), reaffirming the low penetration women have on highly ranked positions (see Table 1). The average age of the sample was about 39 years old. Most respondents (37%) have completed a doctorate, while 35% hold a postgraduate degree. The sample was about evenly divided between those working in the academia, (33%), in the private sector (33%) and in the public sector (30%).

Table 1: Sample characteristics

Average Age	39
Gender	
Male	226
Female	81
N/A	6
Education	
Less than 12 years	1
High school	12
University/College	71
Postgraduate degree	109
Doctorate	115
N/A	5
Occupation	
Public sector	91
Private sector	104
Academia	104
N/A	14

4.2 Regions with potential for economic dynamism

The vast majority of the respondents (86%) opine that China is by far the place with the highest potential for economic growth in the next fifteen years, followed by India (71%). Third comes the EU New Member States voted by only 49% of the people surveyed. Interestingly the European Core comes seventh in the rank whereas the South EU countries are ranked thirteenth just above Central America and below the Middle East area. As expected, African countries are at the bottom of the rank (Table 2).

Table 2: Areas expected to exhibit economic dynamism (next 15 year)

<i>Rank</i>	<i>Countries/ Regions</i>	<i>%</i>
1	China	86,26
2	India	71,25
3	European Union New Member States	48,56
4	South-East Asia	37,06
5	North America	36,42
6	Russia	35,14
7	European Core	31,63
8	Eastern and South-Eastern Europe	28,75
9	South America	22,04
10	Japan	15,65
11	Middle East	8,63
12	Central Asia	8,31
13	European Union South	7,03
14	Central America	6,71
15	South Africa	6,07
16	North Africa	5,11
17	Oceania	4,79
18	East Africa	2,24
19	West Africa	1,28
20	Central Africa	0,96

4.3 Factors affecting economic dynamism

The two factors that people regarded as the most important in terms of their role to economic growth are high quality of human capital (54% of respondents) and high technology, innovation and R&D (50% of respondents). Following these two, the top ten places, out of the twenty specified factors in the questionnaire, are taken up by the following: stable political environment (41%), high degree of openness (39%), secure

formal institutions (legal system, property rights, tax system, finance system) (37%), good infrastructure (33%), capacity for adjustment (32%), specialization in knowledge and capital intensive sectors (30%), significant FDI (23%), and free market economy (i.e. low state intervention) (22%). Interestingly, natural resources, geography, demography and urbanisation are not qualified in the top-ten factors (Table 3).

Table 3: Factors advancing economic dynamism

<i>Rank</i>	<i>FACTORS</i>	<i>%</i>
1	High quality of human capital	53,67
2	High technology, innovation, R&D	50,16
3	Stable political environment	40,58
4	High degree of openness (networks, links)	38,98
5	Secure formal institutions (legal system, property rights, tax system, finance system)	36,74
6	Good infrastructure	32,91
7	Capacity for adjustment (flexibility)	31,63
8	Specialization in knowledge and capital intensive sectors	29,71
9	Significant Foreign Direct Investment	23,32
10	Free market economy (low state intervention)	22,36
11	Rich natural recourses	22,04
12	Robust macroeconomic management	21,73
13	Low levels of public bureaucracy	18,21
14	Favourable demographic conditions (population size, synthesis and growth)	18,21
15	Favourable geography (location, climate)	13,10
16	Strong informal institutions (culture, social relations, ethics, religion)	12,46
17	Significant urban agglomerations (population and economic activities)	11,82
18	Capacity for collective action (political pluralism and participation, decentralization)	8,31
19	Random factors (unpredictable shocks)	4,79
20	Others	2,56

Similarly, the two main obstacles to economic dynamism, as voted by more than half of the people surveyed, are unstable political environment (57%) and the low quality of human capital (51%) (Table 4). Following them, the rest of the top-ten factors viewed as obstacles are: insecure formal institutions (i.e. legal system, property rights, tax system, finance system) (48%), high levels of public bureaucracy (42%), low technology, innovation, R&D (38%), low degree of openness (36%), inadequate infrastructure (35%), poor macroeconomic management (31%), high degree of state intervention (24%), and low FDI (18%).

Table 4: Factors hindering economic dynamism

<i>Rank</i>	<i>FACTORS</i>	<i>%</i>
1	Unstable political environment	57,19
2	Low quality of human capital	51,12
3	Insecure formal institutions (legal system, property rights, tax system, finance system)	48,24
4	High levels of public bureaucracy	42,49
5	Low technology, innovation, R&D	37,70
6	Low degree of openness (fewer networks and links)	35,78
7	Inadequate infrastructure	34,82
8	Poor macroeconomic management	30,99
9	High degree of state intervention	23,96
10	Low Foreign Direct Investment	17,57
11	Rigid formal and informal institutions	16,61
12	Unfavourable geography (location, climate)	14,70
13	Specialization in labour intensive sectors	12,46
14	Lack of natural recourses	12,14
15	Weak informal institutions (culture, social relations, ethics, religion)	11,50
16	Unfavourable demographic conditions (population size, synthesis and growth)	10,22
17	Lack of urban agglomerations (population and economic activities)	9,90
18	Inability for collective action (no political pluralism, centralization)	9,27
19	Random factors (unpredictable shocks)	5,75
20	Others	0,64

The respondents who selected China as the most dynamic region worldwide, deemed that the five most important factors which would support its potential are: high quality human capital, high technology, innovation and R&D, stable political environment, secure formal institutions, and high degree of openness (see Table 5). In turn those factors that could hinder its dynamism are regarded to be instability in the political environment, inadequate quality of human capital, insecure formal institutions, high levels of public bureaucracy and low innovation capacity (see Table 6)

TABLE 5: FACTORS ADVANCING ECONOMIC DYNAMISM IN CHINA

<i>Rank</i>	<i>FACTORS</i>	<i>%</i>
1	High quality of human capital	54,95
2	High technology, innovation, R&D	49,82
3	Stable political environment	41,39
4	Secure formal institutions (legal system, property rights, tax system, finance system)	39,19
5	High degree of openness (networks, links)	38,10

TABLE 6: FACTORS HINDERING ECONOMIC DYNAMISM IN CHINA

<i>Rank</i>	<i>FACTORS</i>	<i>%</i>
1	Unstable political environment	58,24
2	Low quality of human capital	54,21
3	Insecure formal institutions (legal system, property rights, tax system, finance system)	49,45
4	High levels of public bureaucracy	42,49
5	Low technology, innovation, R&D	37,36

In turn, conducive factors for economic dynamism in the European Core region are regarded to be (see Table 7): high technology, innovation and R&D, high quality human capital, high degrees of openness, secure formal institutions, and specialization in knowledge and capital intensive sectors. Factors that may retard growth in this area are related to insecure (formal) institutions, unstable political environment, decreased quality of human capital, increased public bureaucracy and low levels of technology, innovation and R&D (Table 8).

TABLE 7: FACTORS ADVANCING ECONOMIC DYNAMISM IN THE EUROPEAN CORE

<i>Rank</i>	<i>FACTORS</i>	<i>%</i>
1	High technology, innovation, R&D	58,76
2	High quality of human capital	57,73
3	High degree of openness (networks, links)	43,30
4	Secure formal institutions (legal system, property rights, tax system, finance system)	40,21
5	Specialization in knowledge and capital intensive sectors	38,14

TABLE 8: FACTORS HINDERING ECONOMIC DYNAMISM IN THE EUROPEAN CORE

<i>Rank</i>	<i>FACTORS</i>	<i>%</i>
1	Insecure formal institutions (legal system, property rights, tax system, finance system)	56,70
2	Unstable political environment	54,64
3	Low quality of human capital	51,55
4	High levels of public bureaucracy	45,36
5	Low technology, innovation, R&D	43,30

4.4 The degree of influence of specific factors on the economic dynamism of regions

Respondents deemed that each factor influences at a different degree the economic dynamism of places depending on whether they belong to the developed or the developing group of countries. The factors that are regarded as the most influential for the developed countries are ranked as follows⁷ (see Table 9): high technology, innovation and R&D (7,9), high quality of human capital (7,8), specialization in knowledge and capital intensive sectors (7,4), good infrastructure (7,1), high degree of openness (7,1), secure formal institutions (i.e. legal system, property rights, tax system, finance system) (7,0), capacity for adjustment (6,7), stable political environment (6,6), free market economy (i.e. low state intervention) (6,4), robust macroeconomic management (6,2), low levels of public bureaucracy (6,1), capacity for collective action (5,7), significant urban agglomerations (5,7), strong informal (i.e. socio-cultural) institutions (5,5), favourable demographic conditions (5,3), significant FDI (5,3), rich natural resources (4,1), favourable geography (4,0), and random factors such as unpredictable shocks (3,8).

Table 9: The degree of influence of each specific factor on the economic dynamism

<i>Factors</i>	Developed	Developing
	countries	countries
	<i>Average Score</i>	
Favourable geography (location, climate)	4,00	6,07
Rich natural resources	4,13	6,52
Robust macroeconomic management	6,22	6,06
High degree of openness (networks, links)	7,09	6,31
Specialization in knowledge and capital intensive sectors	7,37	4,81
Free market economy (low state intervention)	6,38	5,42
Low levels of public bureaucracy	6,12	5,96
Stable political environment	6,61	7,02
Capacity for collective action (political pluralism, participation, decentralization)	5,71	5,12
High quality of human capital	7,78	5,91
Good infrastructure	7,13	6,28
Significant Foreign Direct Investment	5,28	6,90
Secure formal institutions (legal system, property rights, tax and finance systems)	6,97	6,71
Strong informal institutions (culture, social relations, ethics, religion)	5,47	5,58
Capacity for adjustment (flexibility)	6,70	5,98
Significant urban agglomerations (population and economic activities)	5,71	5,77
Favourable demographic conditions (population size, synthesis and growth)	5,35	5,93
High technology, innovation, R&D	7,89	5,31
Random factors (unpredictable shocks)	3,80	4,75

In turn, the factors that are regarded as the most influential for the developing countries are ranked as follows: stable political environment (7,0), significant FDI (6,9), secure formal institutions (such as legal system, property rights, etc.) (6,7), rich natural

⁷ The numbers in the parentheses indicate their score out of ten maximum.

recourses (6,5), high degree of openness (6,3), good infrastructure (6,3), favourable geography (6,1), robust macroeconomic management (6,1), capacity for adjustment (6,0), low levels of public bureaucracy (6,0), favourable demographic conditions (5,9), high quality of human capital (5,9), significant urban agglomerations (5,8), strong informal (socio-cultural) institutions (5,6), free market economy (5,4), high technology, innovation and R&D (5,3), capacity for collective action (5,1), specialisation in knowledge and capital intensive sectors (4,8), and random factors (i.e. unpredictable shocks) (4,8) (Table 9).

What becomes apparent from the above exposition is that each factor affects economies to a different degree depending on the level of economic development achieved. This becomes clear in Tables 10 and 11 below. In particular the fourth column in Table 10 presents the difference in the degree of influence each factor exerts on economic dynamism (depending on whether the country is developed or developing).

A positive value indicates that the specific factor is more important for developed countries than for developing. In turn, negative values point at factors which are deemed to be more influential in developing economies. Thus, it becomes evident that the factors which are deemed important for the economic dynamism of developed countries do not coincide with those of the developing countries. In particular for the former group of countries most significant elements are those related to high technology, innovation and R&D, to specialization in knowledge and capital intensive sectors and to the quality of their human capital. In turn, important determinants of economic dynamism for the developing countries are those related to their natural resources and their geography.

Table 10: Factors affecting economic dynamism and the state of economic development

<i>Factors</i>	<i>Developed</i>	<i>Developing</i>	<i>Difference</i>
	<i>countries</i>	<i>countries</i>	
	<i>Average Score</i>		
High technology, innovation, R&D	7,89	5,31	2,58
High quality of human capital	7,78	5,91	1,87
Specialization in knowledge and capital intensive sectors	7,37	4,81	2,56
Good infrastructure	7,13	6,28	0,85
High degree of openness	7,09	6,31	0,78
Secure formal institutions	6,97	6,71	0,26
Capacity for adjustment	6,70	5,98	0,72
Stable political environment	6,61	7,02	-0,41
Free market economy	6,38	5,42	0,96
Robust macroeconomic management	6,22	6,06	0,16
Low levels of public bureaucracy	6,12	5,96	0,16
Significant urban agglomerations	5,71	5,77	-0,06
Capacity for collective action	5,71	5,12	0,59
Strong informal institutions	5,47	5,58	-0,11
Favourable demographic conditions	5,35	5,93	-0,58
Significant Foreign Direct Investment	5,28	6,90	-1,62
Rich natural recourses	4,13	6,52	-2,39
Favourable geography	4,00	6,07	-2,07
Random factors	3,80	4,75	-0,95

A similar picture emerges in Table 11, which ranks the ten most important factors of economic dynamism for the two levels of development. Interestingly, the three most important factors for the economic dynamism of developed countries do not appear in the list of the top-ten factors advancing economic dynamism in the developing countries. There are however, some elements which are deemed important independently of the development state of the country. These are marked in bold letters and are the following: good infrastructure, high degree of openness, secure formal institutions, stable political environment, capacity for adjustment and robust macroeconomic management.

Table 11: Top-ten factors advancing economic dynamism for each state of development

<i>Rank</i>	<i>Developed Countries</i>	<i>score</i>	<i>Developing Countries</i>	<i>score</i>
1	High technology, innovation, R&D	7,89	Stable political environment	7,02
2	High quality of human capital	7,78	Significant Foreign Direct Investment	6,90
3	Specialization in knowledge and capital intensive sectors	7,37	Secure formal institutions	6,71
4	Good infrastructure	7,13	Rich natural resources	6,52
5	High degree of openness	7,09	High degree of openness	6,31
6	Secure formal institutions	6,97	Good infrastructure	6,28
7	Capacity for adjustment	6,70	Favourable geography	6,07
8	Stable political environment	6,61	Robust macroeconomic management	6,06
9	Free market economy	6,38	Capacity for adjustment	5,98
10	Robust macroeconomic management	6,22	Low levels of public bureaucracy	5,96

5. Conclusions

This paper draws on a questionnaire survey to explore experts' views on the factors underlying economic growth. The results of the survey provide empirical support to a number of important research hypotheses, contributing in this way to existing literature. Three particular points need to be emphasized.

First, the areas that experts expect to exhibit the greatest economic dynamism in the near future are China and India, followed by European Union new member states. The rest of the Europe, as well as some highly developed countries (such as Japan) or areas with rich natural resources (such as Middle East), receive a much lower score. As expected, the last positions in the rank are occupied by Africa, indicating that these countries will probably continue to experience low economic performance in the near future.

Second, the survey identified a number of important determinants of economic dynamism at the global scale. These determinants are consistent with the relevant

mainstream literature (human capital, innovation, openness, FDI, infrastructure), but also with its most recent developments, highlighting the increasing importance of political and institutional factors.

Third, it was found that the determinants of economic dynamism do not have the same influence in the advanced and the less advanced countries (or regions). Therefore, there are clear indications that the priorities in terms of policies for economic dynamism should be quite different between countries of different state of development. For the former group, aspects related to innovation, knowledge, technology and human capital seems to be much more important, whereas for the less developed countries, aspects that are deemed paramount are related to the socio-political framework, the institutional environment and the amount of foreign direct investments. It is worth noticing that a high degree of openness, capacity for flexible adjustment and the quality of provided infrastructure are some basic preconditions for economic dynamism independent of the level of development an area exhibits.

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Efforts to Modernize Public Administration: The Greek Case

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ABSTRACT

The notion of constant transformation, recently, is so frequently invoked, and organizational change in the public sector is gaining increased attention. Public organizations face the challenge of rapid and discontinuous change that has come to undermine the relevance of traditional approaches on how a public organization should be managed. This paper aims to explore first the challenges that European countries face in order to move towards the modernization of their public administration, the shift from Traditional to New Public Management (NPM) that lead to the operational change of public organizations and administration and then to debate on new managerial practices. Finally, we present a descriptive case study of the operation of "Centers for Citizen Service" in Greece as it constitutes, an innovative change effort for the Greek Public administration and formulates an excellent example of applying new managerial practices in the Greek public administration. It tries to introduce new managerial and administrative practices and issues that are harmonized to the European Union directives.

Keywords: organizational change; new managerial practices; Greek public administration; innovative change effort

1. Introduction

The growth of the public sector in the 1970s and early 1980s set the scene for subsequent pressures for reforms. Therefore, governments worldwide, engaged in ongoing high-profile and comprehensive reform plans. For example, in the late 90's OECD has developed a report that addresses reform plans in different countries along the world. *Mexico* launched a "Program to Modernize the Public Administration 1995-2000" (announced in 1996); *Denmark* with its "New Views of the Public Sector" (announced in 1993), followed by "Welfare for Citizens" (1995); The *United Kingdom* with its "Continuity and Changes" (announced in 1994) and with later initiatives; The *USA* with its National Performance Review Principles that includes: a) putting customers first, b) empowering employees to get results, c) cutting red tape, and d) and cutting back to basis; *Canada* with its "Getting Government Right" (announced in 1996) which identifies four objectives: a) to clarify federal roles responsibilities, b) to devote resources to the highest priorities, c) to respond to the public demand for better and more accessible government, d) to achieve more affordable government by reducing the deficit and debt pressures; *France* with its current plans to modernize the state (begun in 1995); *Ireland* with its "Delivering Better Government" (announced in 1996) which has as its central theme the delivery of quality services including policy advice to the government and the public; and *Germany* with its "Lean State" reforms (1995-1997).

A privileged field of administrative reforms is that of the relationships between state and society or between public services and citizens. From Mexico to Canada and from Germany to Greece, reform policies have been put on the map in order to transform public management. According to the survey of OECD (2001-C) about regulatory reform in Greece, the Greek government in the early 1980s introduced structural changes to reduce state control that affected the public administration, the labour market, and consequently the private sector. More genuine reforms were launched in the 1990s with important changes to financial and labour market regulations, some product market liberalization, and initial steps in state reform. Between 1990 and 1993, a start was made in reorganizing the public sector to also reduce state control over the economy and improve finances (OECD, 2001-C). Some publicly owned companies were privatized and non-viable firms owned by state banks or other state entities were liquidated. However, implementation was slow as the commercial value of many companies was low, the stock market climate was unfavourable, and privatization procedures were cumbersome and unclear. There was also a considerable reluctance and opposition within state agencies to relinquish control of companies, and strong opposition by workers.

The paper is organized as follows: In the following section we discuss the challenges that governments within the European Union face and how important is from a traditional management approach, governments, to move towards a more flexible and efficient approaches, by adapting new managerial practices and transform their services.

Then, we make the assumption that Greek public administration operates with a traditional way of management, we provide the description of a Greek change effort the "Centers for Citizen Service" that constitutes a first significant change in the operation of the Greek public administration and we prove the use of new managerial practices.

2. Public Sector Challenges within Europe

Nowadays, public policies are compared internationally and citizens, lobby groups private firms and NGOs put strong, put often-contradictory pressures on governments to follow or not international models and policies (PUMA/HRM, 2001). At the same time, private firms are producing a greater share of goods and services that directly compete with the public sector for the delivery, e.g., education, healthcare, security and basic scientific research.

There is a consensus in research and policy references alike that two heavy tendencies in Europe are dominating the need for change: the *demographic challenge* and the *breakdown of government monopolies* (PUMA/HRM, 2001).

Looking at the demographical numbers of most European countries it is obvious that the public sector organizations will see a relatively large number of employees retire within the next five to ten years. Thus, this will make recruitment and retention extremely important in every government institution and will determine the recruitment and retention policies in order to attract the young generation by creating a clear mission, a strong leadership and a modern approach to management. Governments have to face the challenge of creating more interesting jobs and delegating more responsibility, and also to increase mobility, which require professional knowledge management systems to compensate for the loss of civil servants with 30 years of experience, who would incarnate the institutional memory.

Concerning the second trend, the authority of European governments has often been based on a monopoly of production and knowledge. In recent years though, a number of public monopolies have been opened to competition, notably in the infrastructure and utility sectors. However, recently scholars have begun to believe that the most significant breakdown of monopoly is going to be the "Virtual", with increased competition from globalized institutions such as hospitals, schools and universities. The government's challenge is to make the most of opportunities to communicate one-on-one with the constituents through new technologies and new means of communication (internet, cable television, etc). The use of information technology can provide powerful additions to the communication infrastructure of an organization (Huber, 1990) and also generate information efficiencies and information synergies (Dewett & Jones, 2001). Therefore, governments are racing to harmonize their policies and create supranational structures to shape future programs in order to provide a more efficient and accountable public sector.

3. Meeting the Challenges: From Traditional to New Public Management

Under this vein, challenges exist and put pressures on government's policies to change. Here we review the traditional management that exist within public organizations towards to a more flexible and accountable management that focuses more on customers needs.

3.3.1 *Traditional Management*

The traditional type of management can be characterized as a management that involves bureaucratic structures. Its characteristics are highly specialized routine operating tasks, very formalized in the operating core, proliferation of rules, regulations and elaborate administrative structure with a sharp distinction between line and staff (Mintzberg, 1983). Bureaucracy was first described by Max Weber as "a system of administration carried out on a continuous basis by trained professionals according to prescribed rules" (Beetham, 1987), with "standardized responsibilities, qualifications, communication channels and work rules, as well as a clearly defined hierarchy of authority" (Mintzberg, 1983).

Under the same line of reasoning, research has shown that because public organizations follow a traditional type of management, the implementation of change and innovation is of greater difficulty, as authority is concentrated in top managers who interact less directly with the environment. In large public bureaucracies, where rigid hierarchy and intrusion of different political power groups exist, it is almost impossible to implement change without strong opposition. Circumstances today often change too rapidly for management to be able to rely upon a bureaucratic mechanism of programs, plans and referral of exceptions for top-level decision (Child, 1993). These traditional bureaucratic decision and planning mechanisms are likely to be slow and inflexible, due to the formal prescriptions of roles and the centralization of power. A bureaucratic organization does not leave individuals much room for initiative and discretion (Mouzelis, 1967), and is more appropriate where employees do not have high expectations of choice and autonomy and where there is a high degree of stability and certainty in the technology and environment, as in monopolies and oligopolies with long life-cycles (Dawson, 1986).

3.3.2 *New Public Management Model*

Public management reform is a deliberate change to the traditional way of management and the bureaucratic structures and the processes of public organizations with the objective of getting them to run more efficiently (Pollitt & Bouckaert, 2004). Change may include the redesign of key procedures for serving the citizens, the setting of quality standards for health and education or change of the system by which public servants are recruited, trained, appraised and promoted.

The relevant literature provides a number of analytical or synoptic definitions of what New Public Management (NPM) is. According to Pollitt and Bouckaert (2004), there are at least two components that any definition of NPM must consider: the notion of "public management" and the notion of "reform". In some countries the NPM movement has been called reinventing or changing government, while in other countries it is referred to as building state capacity or modernization of the state. It is not a uniformly received body of thought but its dissemination always takes place within politico-administrative settings that have their own specific challenges and their own specific values, norms, routines and arrangements (Hood, 1991). Each time, depending on the context in which they appear the changes that NPM suggest will have different meanings, accents and elements added to them.

Therefore, the "new public management" school of thought has broadly influenced public management reform and introduced new managerial practices that put more emphasis on the market and transform the bureaucratic structures of public organizations. NPM is an effort that integrates approaches from the business world with the purpose of changing the bureaucratic functioning of public organizations. Accordingly, business management approaches can be transferred to public sector organizations only if first public managers acknowledge the operation of their organization and the regulatory framework they are operating in, but also have in mind what exactly they want to change, by making long term planning. The literature and experience has shown us that you cannot apply business models to the public organizations as they are, but one must consider the different and difficult conditions that exist within public organizations. Those key differences are:

- Lack of flexibility
- Bureaucracy
- Inertia of the system
- Lack of continuity

3.2 Applying NPM with Precaution

There is a wide range of literature debating the extent to which NPM is, or should be, recognised as the predominant guiding force in public sector reform. Table 1 below outlines just a few of the different arguments both for and against this proposition and groups the most prominent arguments into two opposing camps, the convergence and divergence theorists.

Convergence theorists argue that NPM is an international phenomenon, with similar changes being adopted widely in a range of countries (Hughes, 2003). NPM is a new paradigm, different from the outdated and obsolete concepts of traditional public administration, and it is here to stay in the long term. Hughes, for example, argues that the similarity of theoretical and policy instruments (used by different governments

across the globe) is the crucial point. He concludes by stating that governments will try solutions from the NPM toolbox and if these do not work they will look to the same source for something else to try and according to Hughes (2003) it is this above all else which exemplifies the paradigm shift.

Divergence theorists (Considine & Lewis, 1999; Kooiman & Eliassen, 1987; Mintzberg, 1996; Pollitt & Bouckaert, 2004), on the other hand, argue that NPM is not an international phenomenon, with at best similar changes occurring in a small number of 'core' countries (Pollitt & Bouckaert, 2004) with other countries experiencing different trajectories while it is considered that NPM is not a new paradigm. Rather different countries have adopted some elements of public sector reform whilst retaining traditional modes of public administration. NPM has even declined in some countries (Noordhoek & Saner, 2005) and in others different theories of public administration (networks for example) have emerged. Practically, these arguments 'frame' any attempt at a comparative analysis of public sector reform (the what, how and why of public sector reform).

Table 4: Convergence vs Divergence

CONVERGENCE	DIVERGENCE
<p>Hughes (2003)</p> <ol style="list-style-type: none"> 1. NPM has been <i>adopted widely</i> and is an <i>international phenomenon</i>, with similar changes occurring in a range of countries. 2. NPM is a <i>new paradigm</i>. 3. NPM is <i>very different</i>, and has different theoretical bases than traditional public administration. 4. Formal bureaucracy and the traditional model of public administration are <i>obsolete</i>. 5. There is <i>no reason</i> to assume that NPM (as a model) will be dropped. 6. If there are problems with the NPM model, the response will be further changes in the <i>managerial direction</i>. <p>Perry and Kraemer (1983) in Kooiman and Eliassen</p> <ul style="list-style-type: none"> ▪ NPM is a <i>new paradigm</i>. ▪ NPM combines relevant insights from <i>traditional public administration</i> and <i>management is generic</i> schools. ▪ <i>Policy Formulation</i> and <i>Management</i> are separate spheres. <p>Michael Murray (1975) in Kooiman and Eliassen</p> <ul style="list-style-type: none"> ▪ There is now a <i>continuum</i> of types of organisations rather than a simple polarisation of public vs. private. 	<p>Kooiman and Eliassen (1987)</p> <ul style="list-style-type: none"> ▪ NPM is not an <i>international phenomenon</i>; it is at best a description of what has been happening in the <i>United States</i>. ▪ NPM is <i>not a new paradigm</i>. <p>Pollitt and Bouckaert (2004)</p> <ul style="list-style-type: none"> ▪ NPM has not been <i>applied equally</i> across continents or countries. Continental European states exhibit a <i>distinctive</i> reform model: "Striking... in comparison with the <i>underlying assumptions</i> of a positive state, a distinctive public service, and a particular legal order survived as the foundations beneath reforms". <p>Noordhoek and Saner (2005)</p> <ul style="list-style-type: none"> ▪ The NPM is <i>in decline</i> and has been explicitly rejected by some states, such as Switzerland and the Netherlands. <p>Mintzberg (1996)</p> <ul style="list-style-type: none"> ▪ There is no <i>magic envelope</i> with the right answer... no <i>one-best way</i>. <i>Customer, Client, Citizen and Subject</i>: these are the four hats we all wear in society. <p>Considine and Lewis (1999)</p> <ul style="list-style-type: none"> ▪ In addition to the traditional public administration model and the NPM model, an emerging model of <i>networks</i> can also be identified.

In conclusion, we propose that NPM is an evolutionary force impacting change in the public sector, but that in line with Mitzberg (1996), no "magic envelope- solution" exists and therefore each country has to apply those managerial practices that are suitable to their public context. We share the view that the traditional context of public organization is very difficult to change. Part of the difficulty in understanding public organizations is their pervasiveness and diversity (Van de Ven & Hargrave, 2004).

4. The Greek Case

The fulfilment of the Maastricht criteria in the Greek economy as a requirement for entry into the European Monetary Union (EMU) became the most important strategic directive for the country, driving a wave of modernizations in the state machinery as a whole.

The NPM practices are driving governments towards "marketizing" and "privatizing" public service and public facilities, which have got additional momentum through recent policy measures pursued by the European Union. As the deregulation market-liberalization policy of the EU essentially aims at introducing and enforcing the free market competition for the provision of services in "a single (European) space without internal boundaries" and thus at doing away with all regulations and practices which stand in way of such "unbounded" competition within the members states (Wollmann, 2002), it is obvious that Greeks traditional type of management of public organizations, particularly with traditional sector of public services and public facilities must change and become more efficient as this is the prime target of EU deregulation and liberalization policies.

Therefore, Greek government has to overcome all the difficulties of long structural traditions of state intervention political clientelism, and economic protection. These reasons have led to reforms being slow as well as entailing considerable political costs (OECD 2001). The deregulation market-liberalization policy of the EU is challenging the traditional structures of Greek public organizations, driving the development of new managerial practices as a framework for rapidly modifying organizational policies, work procedures and hierarchical structures (Ferlie *et al.* 1996). Applying NPM in the Greek public sector is not a uniformly received body of thought but its dissemination always takes place within politico-administrative settings that have their own specific challenges and their own specific values, norms, routines and arrangements (Hood 1991). Depending on the context in which they appear, each time they appear, the changes that NPM suggest will comprise different meanings, accents and additional elements.

4.1 "Centers for Citizen Service"

The implementation of a new public service in the shape of "Centers for Citizen Service" was a challenge of applying new managerial practices to the Greek public sector. The main purpose of this reform is the progressive simplification of administrative

processes and their integration into a system of transactions, which is shared among public administrations with as interface for the citizens the “Centers for Citizen Service” Offices. From the citizen’s point of view, the new system provides a significant advantage in terms of accessibility and reliability of public service. Compared to the previous situation, people no longer have to interact with several administrations, both local and central, and with sometimes-unclear boundaries of intervention and responsibility, to obtain information, authorisations or other services. The implementation of the “Centers for Citizen Service” is strongly underpinned by Information and Communication Technologies and supported by extensive training of public agents. The development of the “Centers for Citizen Service” is organised by the Ministry of Internal, Public Administration and Decentralisation (M.I.P.A & D) in cooperation with all the Municipalities, the Regions and the Prefectures of the country.

The “Centers for Citizen Service” are offices located centrally in all major towns and communities with the objective of serving citizens in a one-stop-shop mode, hence radically facilitating the process of obtaining certificates, information and submit diverse applications and requests. The implementation of the “Centers for Citizen Service” takes place within the framework of a larger change program in the Greek public sector, inspired by new Public Management principles (Hood, 1991), which presents an immense challenge both at the organizational and political levels.

4.2 Methodology

The implementation of “Centers for Citizen Service” as a change effort provides an excellent case study because of the significant changes of the procedures that the Greek Public Sector had undergone.

The research relies primarily on in-depth, semi-structured interviews complemented with direct observation and extensive documentary analysis. Data was collected from 2004-2005. A large number of interviews were accomplished with different key actors. All interviews were fully transcribed and sent back to the interviewees for review and comment, following a predefined interview protocols. In general the interviews took the form of guided conversations. This enabled us to discover what was “in” and “on” their mind and how they considered change. Although most of the executives were willing to be interviewed, some issues were discussed off the record (i.e., without transcription). The documentary analyses comprised mission statements, consultants’ reports, official documents and an important volume of press articles that have been devoted to the installation of the “Centers for Citizen Service”.

Interview transcripts, observation notes and documentation were analyzed with respect to issues related to the NPM principles adoption and the unfolding of the change effort. We then re-examined the data, giving particular attention to the key issues under investigation. Key actors reviewed interview transcripts and analysis protocols, in order to ensure the reliability and validity of the coding procedure.

4.3 Findings

To get a basic understanding of the factors leading to the definition and launch of the "Centers for Citizen Service" change effort a short retrospective is needed. According to our data, a series of radical changes were initiated in the Greek State during the 1990s. Reforms concerning delivery of more effective citizen services and the development of customer database systems that had been applied from the 1960s in many European Union Countries, arrived relatively late in Greece. As a result, Greece had to obtain an equal place with the rest of European Union countries and movements towards this action were mainly initiated by the end of 1990s. According to a key player statement *"One of the basic reforms that were implemented during the 1990's was the decentralization of 6,500 administrative processes that were transferred to the regions and to the administration. These reforms were of high importance as they created the starting point of breaking down the bureaucratic model and introducing a more managerial approach."*

At the point of achievement of these important modernization efforts, new waves of environmental change attained the Greek public sector. According to the same key player *"The technological explosion that leads to greater potential for innovation in public services, the financial debts and the high expectations that citizens have towards the state, were the basic factors that directed all European Community Members to develop action plans for further transformations in the public sector. Under the EU directives that were defined in the Lisbon Conference in 2001 and according to the needs of the Greek society, the government was driven to the one-stop-shop concept."*

Furthermore, another key player said that *"The main driving forces that leads Greek Public Organizations to implement changes, is the technological innovations that helps us to adopt more business-like approaches. Also, citizens are becoming more demanding towards the public organizations even if they don't want to pay more to get more efficient services. This is a reason that we have to plan changes that are effective, strategic oriented and that cost less."*

The factors highlighted as determining for the shaping of the idea of the "Centers for Citizen Service" are examples of different types of *variations* in the environment of the responsible ministry: More rapid accomplishments of reforms in other EU countries, EU directives imposed on Greece as a member state, challenges of the bureaucratic management model, informatization, productivity focus and citizen service.

The development of the "Centers for Citizen Service" in Greece unfolded through four distinctive phases:

1. Initiation: In 1998 the Ministry of the Aegean (which is the region of the Aegean sea islands) formulated the need to create one-stop-offices in the municipalities of the remote islands in the area in order to deliver services to citizens that faced serious difficulties in accessing public administrations. After thorough analysis and public debate

the Ministry of Aegean proceeded to the creation of a program named “ASTERIAS”. The one-stop public service offices that were established in remote islands under this program gained an immediate success in terms of citizen’s satisfaction, as citizens had the opportunity to interact with public organizations from their place of living.

2. Operational and Technological Support: After the successful operation of the “ASTERIAS” initiative, the M.I.P.A & D launched in 1999 a national technology development program, “ARIADNI”, aiming at establishing the technological infrastructure needed to support a possible launch throughout Greece of one-stop offices under the name of “K.E.II” (Law 3013/2002). The “ARIADNI” program is materialised under the frame of an Operational Program named “Information Society” that is functioning under funding of the Third Community Framework Program of the European Union for the period of 2000-2006. The main objective of the ARIADNI program is the “Development and the Operation of a Central System of Technological Information that Supports the Interconnection between “Centers for Citizen Service””.

It was obvious that there was also a need for supporting the back office operations, in particular to improve the diffusion of information between the public organizations. This led to the launch of a second development programme named “SIZEYXIS” with the objective to define, develop and implement the technological infrastructure enabling effective interconnection between the public organizations.

Simultaneously, a framework program for the entire public sector was launched at the national level – the POLITIA program. This top-down program, had as major objective to improve services offered to the public through a coordination of change efforts and promotion of structural reforms concerning organization, processes and activities of all public administrations. The bottom-up initiatives of the “Centers for Citizen Service” and the related support programs corresponded perfectly to the aims of POLITIA, an alignment considered essential by the responsible politicians and public managers for the successful implementation of the one-stop offices operation.

3. Implementation: In 2002 five pilot one-stop-offices started their operation, three in the Athens region, one in Crete and one in Thessalonica. Their success was immediate measured by the number of applications that were accomplished each day.

4. Expansion: From the five pilot one-stop-offices operating by mid 2002, there are today (December 2007) almost one thousand are in operation throughout the country with a large number of processes included to the system.

The “Centers for Citizen Service” change effort is an important innovation in changing the traditional structure of public organizations towards new managerial practices. This effort has as an objective to integrate all administrative procedures gradually into the dispatch system (the system which prepares, classifies and dispatches official paperwork), and tries to operate by using up to date information and communication

technology. A key player noticed that "The operation of this new entity functioning under new managerial practices unknown to public servants and most importantly without decentralizing the existing public organizations, brings something new to the traditional way of management."

Another, basic innovative objective of the "Centers for Citizen Service" was the co-ordination between the "Centers for Citizen Service" entity and the ministries and the successfully accomplishments of their request. "Initially this was the main obstacle as the ministries that until recently were working completely with traditional management practices had to react quickly to the "Centers for Citizen Service" requests" a key player said. According to the same key player "More or less KEP is a change on the bureaucratic way of operation of the Greek public organizations in order to get ready to face the challenge of technology that has a great impact on the society and the citizens, with the primary aim to improve services offered to the public. Under this vein, the bureaucratic functioning of public administration in combination with the public servants inertia creates obstacles in the adoption of anything new. "The need for improving public sector services and making them more efficient was significant and "Centers for Citizen Service" brings a change in the organizational conditions of the public organizations such as bureaucracy, culture, simplification of legislation etc. and "Centers for Citizen Service" initiative has been designed in accordance to new managerial practices" a key player said.

New public management (NPM), as a set of ideas with regard to changing public management practice, has had impact on the design of "Centers for Citizen Service" effort and as a result to the operation of public organisations. NPM focuses on economic criteria such as outputs, performance indicators and parsimony while assuming that traditional administrative values such as legal security, equality before the law and predictability remain intact. Based on our analysis "Centers for Citizen Service" change effort was inspired by new managerial practices and its innovation is to break through the traditional structures and management practices of the old public organizations.

5. Conclusions

This paper has attempted to highlight the importance of moving away from traditional structures and management practices and move towards a more efficient and accountable management.

Guided by managerial principles and taking a primarily *intra-organisational* view, the new managerial practices by the establishment of "Centers for Citizen Service" change effort, is targeted at overcoming the traditional "top down" hierarchy of public administration by introducing intra-organisational decentralisation and autonomy of resource management and responsibility. Under the same way of thinking "Centers for Citizen Service" aims at reducing the traditional managerial practices of public administration by introducing new managerial practices. It has been identified by the

Greek government, that «marketization», «outsourcing» and «privatization» as well as reaching the goal of transforming the traditional hierarchical organizations, should guide the delivery and provision of public services and facilities. Therefore, the implementation of “Centers for Citizen Service” change effort was a change effort that brought a great revolution of the way public organizations were operated till now.

Greek government has undergone changes during the past 10 years or so. In the internal organisation of local administration the NPM-guided concepts and instruments of “performance management”, premised on “economic rationality” and aiming at “administrative efficiency” (Wollman, 2002), have been introduced in an administrative world in which, in the past, the legal regulation and legal correction of administrative activities was writ large. The operation of “Centers for Citizen Service” entity is one of the most important innovative achievements of the Greek public administration. Finally, we have to add that even that some new managerial practices extracted from the NPM literature has been applied properly in the Greek case, each government must be sceptically on the absorption of these practices as each case is different.

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DOCTORAL DISSERTATIONS

CRITICAL FACTORS FOR DEVELOPING A SUSTAINABLE KNOWLEDGE ECONOMY IN OMAN

An abstract of Doctor of Business Administration (DBA) thesis

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2007

Abstract

The Sultanate of Oman is a country of some 309,000 km² which occupies the southeastern part of the Arabian Peninsula with a population of about 2.5 as of 2005. It is a small oil producing country with a production capability of about 775,000 barrel per day. Like many countries in the MENA region (Middle East and North Africa), Oman is heavily dependant on its oil revenues which represent about 87.1 per cent of its budgetary revenue and 42.1 per cent of its GDP (Ministry of National Economy, 2006).

In recent years, this heavy dependence on oil and other natural resources has come under pressure. The main catalysts for this have been the gradual decline of production and depletion of oil reserves, oil prices fluctuations, increase in population, accession to WTO and recommendations from the World Bank and the International Monetary Fund (IMF) to introduce new strategies and policies in order to face upcoming challenges. AS a result, the government has initiated economic strategies with the aim of diversifying Oman's economy. These strategies include: gradual privatization of public companies, favorable foreign direct investment laws, development of human resources, broadening private sector participation, and development of gas and tourism industries (Ministry of National Economy, 1996).

The economic diversification initiatives have been welcomed by International and local concerned institutions and parties; however, further work must be done to counter future economic uncertainties (McBrierty and Al Zubaire, 2004). One of the most promising and appealing alternatives at this critical stage is the enhancement of the knowledge economy. The OECD (1996), APEC (2003) and the World Bank

(2004) point out that knowledge is fuelling economic growth and social development in every region of the world. In fact, recent studies suggest that there is a positive relationship between development of knowledge economy main pillars and sustainable economic growth (OECD, 1996, Neef, 1998; Drucker, 1999, Grewal et al, 2002). Such development include enhancement of government institutions and economic incentives, education and training, information and communication technologies, and research and development.

Despite this attention being paid to the promotion of the knowledge economy as a potential economic development alternative, there is no solid conceptual framework from which an appropriate strategy can be developed to guide policy makers particularly in developing countries. While there is considerable experience accumulated in the field from developed economics perspective, much of this is not directly applicable to developing countries because of their socio-economic development levels and the nature of the challenges they are facing (World Bank, 2004).

As a result, most of the knowledge economy development studies have utilized input and output indicators depending on the degree of socio-economic development of countries to gauge their knowledge economy readiness. The usefulness of these indicators in capturing the essence of the knowledge economy development particularly in the developing countries is still debatable. However, recent results of empirical studies at the OECD have provided some preliminary promising insights on the proper choice of knowledge economy indicators. Relying on such empirical validity according to the World Bank (2004) and the European Commission (2004) is more appealing and convincing to policy markers.

In this context, it is the aim of this research to explore and identify the possibilities for developing knowledge economy policies in Oman to assist in achieving a sustainable economic development. The question that are explored include:

- What are the characteristics or factors of the knowledge economy in a developing country such as Oman?
- What are the main gaps in Oman's readiness for the knowledge economy?
- How should Oman develop an integrated framework for its strategic initiatives for developing the knowledge economy?
- What is the role of the government in promoting the knowledge economy?

In tackling this research problem and to overcome knowledge economy measurement limitations and to incorporate a wider range of literature inputs and stakeholders' feedbacks, three data collection methods were utilized: a benchmarking process that identifies Oman's knowledge economy readiness which was compared against relevant countries and MENA and world average. Knowledge economy literature as well as international bodies' database were extensively explored to establish relevant and reliable

indicators that represent Oman's socio-economic and knowledge economy development levels. A qualitative approach has been used where relevant senior government officials were interviewed to gain insight on the issues under investigation. Finally, a non-parametric quantitative approach was also used on a data set collected through a survey targeting the main service companies in Oman.

The result of this research reveals that there is no clear knowledge economy strategy that tackles precisely knowledge economy pillars. Although the government has been very active recently in promoting separate knowledge economy drivers, the lack of integrative and comprehensive approach in promoting these pillars collectively seems to hamper intended utilization of knowledge economy potentials. This result shows that the country needs to enhance the access, diffusion, and usage of knowledge economy drives if it is to take maximum advantage of the opportunities available.

This research is a first attempt to delineate factors that may assist the government of Oman in identifying the areas to initiate knowledge economy policies. Only input knowledge economy indicators were explored and major service companies were used as the laboratory to test the hypotheses. It is hoped that this study will provide a foundation for future studies on specific industries. Such studies will not only substantiate this research but also offer new insights into understanding thoroughly economy policies and further contribute to knowledge in this area especially from developing countries.

ECONOMIC DEVELOPMENT AND REFORMS OF SKILL FORMATION IN RELATION TO VET: THE CASE OF SULTANATE OF OMAN

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2007

Abstract

This study is the first of its kind in the Sultanate of Oman to examine skill formation and Omanisation processes using qualitative methods. This study focuses on the relationship between education, skill formation and economic development in Oman. In particular, it examines the government 'Vision 2020' strategy on the development of human capital to deliver economic growth, especially through the expanding private sector. The upgrading of human capital is believed to be central to the process of Omanisation, that is, a plan to replace expatriate workers with Omani nationals. The main interest of this study is the perceptions and reactions of three stakeholders; policy makers, college managers and private sector employers. An aim of this study was to contribute to a greater understanding of Oman's economic development, skill information and Omanisation process and identify barriers to the implementation of Omanisation in the private sector.

Empirical data was gathered from interviews of policy makers, college managers and employers in the private sector in the Sultanate of Oman. Secondary sources of information included books, articles, newspapers, magazines, journals, working papers, conference papers, reports, internet, minutes of meetings and Royal speeches. The study contributes to contemporary theoretical arguments concerning the relationship between supply and demand in national skills formation. Therefore, a conceptual framework was developed capable of examining the linkage between supply and demand for skilled labour in Oman. This theoretical approach was used to contextualise an examination of vocational education and training (VET) which was central to 'Vision 2020'. Three case studies were used to provide insights of the key informants (stakeholders), enabling an assessment of current VET and changes need to deliver the future requirement of the Oman labour market.

This study concluded with a discussion of the major findings and suggests some useful steps towards Omanisation. Among the main findings in this study is the limited articulation between government organisations, training providers and employers in the private sector, and too many government bodies responsible for different aspects of education and training.

Promoting Small-Scale Fisheries on the Batinah Coast, the Sultanate of Oman: a Supply Chain Strategy and Management Approach

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2008

Abstract

Small-scale fisheries support about one quarter of the Omani population. Small-scale fishing enterprises in Oman's Batinah coast contribute about 20 per cent of the national catch but they are characterised by poor uptake of improved fishing technologies and practices, weak management, inefficiency and ineffective marketing. Consequently, Batinah's fishermen earn the lowest incomes of all fishermen in Oman.

The Oman Ministry of Fisheries, formed in September 2007, intends to increase the competitiveness of the small-scale fisheries sector in general, and thus its contribution to GDP. It plans to achieve this by developing policies that address recent sharp declines in landings and consumer complaints of low supply, and the overfishing and under management of marine resources.

This research broadly aims to investigate problems associated with the poor competitiveness of the small-scale fisheries sector, using the Batinah coast as a case study. In particular, it examines supply chain management (SCM) as a possible strategy to improve competitiveness of the small-scale fishing enterprises on the Batinah coast, perhaps leading to sector-wide improvement possibilities. SCM has been shown to be an enterprise-level, customer-focused strategy that can lead to long term improvements in competitiveness.

The primary goal is to examine for evidence of presently-practised SCM principles and to determine whether these practices improve fishermen's incomes generally and can contribute to sector-wide improvements. Almost no research has been reported on SCM in small-scale fishing enterprises in developing countries, and none has been carried out in Oman.

Based on considerable literature stressing the central importance of building and maintaining relationships in SCM, this research focuses on relationships between fishermen and their buyer as an indicator of SCM, or of potential for SCM to be practised. Factors such as information-exchange level, frequency of interaction, knowledge of market requirements, satisfaction with product quality and quantity, and elements of trust and commitment are used to identify buyer/supplier interactions that could be classified as relationship-based.

Using a mixed quantitative/qualitative methodology, a total of 510 fishermen drawn from 65 villages across eight local regions were interviewed face-to-face using a pre-tested semi-structured questionnaire. Useable responses totalled 79.6%.

A logistic regression model was able to explain 76.4% of the variance in income level between fishermen with high and low incomes. Variables in the model explained the relative contribution to income of operation and technical factors, socioeconomic and demographic characteristics, and fishermen's relationships with government extension services. Regression analysis of variables on the relationship between fishermen and supply chain management practices was able to explain 77.3% (R^2) of the unexplained variance of the logistic regression analysis on fishermen's income levels.

In general, results showed that some SCM practices did exist among Batinah's fishermen and where they did occur, fishermen's incomes were higher than where they did not occur. Having a relationship with a buyer was a major contributor to increasing fishermen's income, and it was typically associated with adoption of other SCM practices such as adding value and maintaining quality by using cool storage, and meeting buyers' needs for product quality, quantity and variety.

Specifically, results show that maintaining good relationships, displaying trust and honesty in dealings, sharing information, sharing profits fairly, adding and sharing value, getting feedback and focusing on customers' needs and having adequate storage and transportation, i.e. the basic SCM practices, collectively contribute about 18% to fishermen's incomes. Having a relationship with fisheries extension services also positively affects fishermen's incomes by approximately 10%. These findings together emphasise the importance of positive relationships in improving the performance of small-scale fishing enterprises in this case. On the other hand, operational and technical variables explained 43.2% of fishermen's income levels and socio-economic and demographic predictors explained 13.3%.

This research recommends sector-wide improvement possibilities through strengthening relationships between supply chain members; improving the performance of fish markets through better infrastructure, facilities and management; enforcing market regulations regarding safety and hygiene standards; and strengthening applied research in SCM in this sector. It also recommends that socioeconomic and demographic differences from region to region are considered when planning development activities; qualification and training of fisheries extension agents is improved; public awareness is raised regarding seafood health benefits and the risks associated with poor fish handling; and more collaboration is achieved between government agencies involved directly or indirectly in the sector.

al-Jabri, Omar

Promoting Small-Scale Fisheries on the Batinah Coast, the Sultanate of Oman: a
Supply Chain Strategy and Management Approach

CONFERENCES & SYMPOSIUMS

Bridging the Gulf: Learning across Organizations, Sectors, & Cultures

A forum by the Gulf SoL (Society for Organizational Learning) Co-hosted with the Ministry of Higher Education

The Purpose of education is to prepare people for learning throughout their life, is an important statement made by Her Excellency the Minister of Higher Education in her welcoming address to the Society of Learning Global Forum that took place in Muscat on April 17-18, 2008 at the .

This event was co-hosted by with the Ministry of Higher Education with the Gulf SoL in the Sultanate, and brought together representatives from 47 countries with the local business, government, and community leaders from the Gulf Region in a unique exchange of perspectives.

The motto is that we are not what we know but what we are willing to learn, commented Catherine Bateson a well-known anthropologist and visiting professor at the Harvard Graduate School of Education in USA. That sets the tone for the importance of learning and sustaining it.

Peter M. Senge popularly known for his best-selling work the Fifth Discipline had given the analogy of the time delay of nearly 30 years between the first powered flight (Kitty Hawk 1903), till the first commercial flight (DC-3 in 1935) to that of the evolution of the concept of a learning organization.

He had pointed out in his work in 1990 that the learning organizations will be a thing of the future and just like how it required the development of various technologies like that of the Landing gears, Wing flaps, Propellers, Air-cooled engines, light-metal body, for a commercial aircraft to have become viable, the learning organizations will become a reality, subject to the development of the five core disciplines like Personal Mastery, Mental Models, Shared Vision, Team Learning and the fifth the Systems thinking distilled from works of centuries of learning embedded in different cultures he highlights as the "Fifth Discipline".

His works have culminated into best practices for companies around the world and has got reflected in to divergent fields ranging from the education sector to defence, to Government to Private sector companies from all industries, from Shell Corporation to

People Express etc.,. This evolving body of knowledge has had an apt forum called the Society of Organizational Learning (SOL) around the world and the Gulf Chapter is sponsored mainly by Aramco.

The Gulf SOL's conference murals depicted an idea of the contribution to deeper learning experiences that were intended. With all the senior management of the Ministry of Higher Education and all the important dignitaries attending the conference, it was a big takeaway for Oman.

Speakers as varied as Karen Delvin who works on diverse projects ranging from Change management to Personal Transformation to the Turtles Management with the Mapoons Community in Cape Ed to the Nobel laureate Prof Mohammed Yunus were all part of the event. The social dimensions of leadership learning experiences like Institutional Learning in Society with a Cultural Theory perspective of the Farmers perceptions of the waters resources management, were emerging areas in the context of Oman.

Further Readings:

1. The Reflections Journal on Learning Organizations [http:// www.reflections.solonline.org](http://www.reflections.solonline.org)
2. The Fifth Discipline, (1990) Senge Peter, Double Day
3. Water, Sanitation and Human Settlements: Crisis, Opportunity or Management?- Dipak Giyawla
4. An Exploration of Profound Change <http://www.presence.net>
5. The Turtles to the Personal Transformation in Mapoons Community <http://www.buildingbridges.com.au/about/karen.htm>

The Oman Quality Network National Conference

Quality Management & Enhancement in Higher Education was a theme of the Conference under the Patronage of the Minister of Higher Education

The Oman Quality Network (OQN) held its first National Conference on Quality Management & Enhancement in Higher Education. This is an initiative for the higher education sector in line with their mission of supporting and developing capability & capacity in Omani Higher Education sector through training, sharing and sector driven collaborative activities.

The conference held at Muscat Holiday Hotel from October 28-29, 2008 was a resounding success with overwhelming participation from the members of the fraternity from higher education and the Oman Quality Network.

One of the important observations made by a team of researchers presented in an International conference pointed out very clearly the evolving scenario i.e. the number of qualified graduates available will soon outnumber the number of jobs available in the market, considering the trend of very high enrolments in the Higher Education Institutions in Oman.

Hence the seeking of the graduates to work in other GCC countries will rise, leading to, the graduates themselves demanding a higher quality from the educational institutions to be competitive in the open market.

Need of the hour, for Oman which is oil dependent economy is to shift to being a knowledge economy. Hence there is a need to fill the requirements for skilled manpower, requirements for basic and applied researches. The satisfaction of these needs being the prime role of Higher education, the Government's strategy that has extended from more than establishing institutions of Higher Education, is evolving in to the keepers of Quality in the best interest of the stakeholders.

This objective of higher quality being implemented by the Ministry of Higher Education has had a multi-pronged approach. The first is the establishment of the Oman Accreditation Council with the status of an Independent council. To further the interest in enhancing quality, there was a need for a forum for the educators to healthily debate and arrive at consensus on core issues, The Ministry of Higher Education and Oman Accreditation Council have patronized and supported the Oman Quality Network (OQN).

The conference was organized under two main themes of Quality Management and Quality Enhancement in Higher Education had papers under sub themes that ranging

from Quality Management Systems, Licensing and Accreditation, Promoting Student Participation, Role of Stake holders, Teaching and Learning, Feedback mechanism and improvement, performance indicators etc.,

More than thirty presentations spread over two days meant a lot of organizing and the workshops and Invited speakers were all the important contributions to the sector. The full-house attendance was proof enough of the participation from the stakeholders.

As highlighted in one of the plenary sessions, the experience of a paradigm shift from being critics to custodians of quality was clearly evident of happening in Oman from the overwhelming participation from the Higher Education Sector.

Further Readings:

1. The New website of OQN has loads of information updated recently with photos session-wise <http://www.oac.gov.om/oqn>
2. Resolving the tension between access and profit: Private higher education Oman <http://www.international.ac.uk/resources/tension.pdf>
3. Arab Network for quality assurance in Higher Education http://english.anqahe.org/cms.php?id=news_details&news_id=7
4. Learning Mathematics in a General Foundation Programs, Kerbal Sebti(Chairperson of MWG)Department of Mathematics and Statistics Sultan Qaboos University <http://math.arizona.edu/~atp-mena/conference/presentations/Sebti-Kerbal-presentation.pdf>

- **Issues and Options for Enhancing the International Mobility of Researchers**
- **Oman Tourism : An International Perspective on International Tourist Arrivals**
- **Determinants of Economic Growth: the Experts' View**
- **Efforts to Modernize Public Administration: The Greek Case**

