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<u>Reverse Offshoring of Services: The New Wave of Emerging Offshorers</u>

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Abstract

Offshore outsourcing of services accelerated at the end of 1990s in developed countries. In recent years, developing countries have also offshored services, not only to developed countries but also to other developing countries. Yet, to date little attention has been paid to the emergence of this reverse offshoring. The focus of this research is on the determinants of reverse offshoring of services; as such we will investigate what drives these firms from developing countries to offshore services.

Key words: Reverse Offshoring, Offshoring, Services, Empirical.

Introduction

Offshore outsourcing of services began to accelerate in the years leading up to 2000 to address the Y2K problem (Qu and Brocklehurst, 2003). In order to respond to this one-time problem quickly and inexpensively, firms from developed countries such as U.S. and U.K. offshored their services to developing countries such as India and the Philippines because of labor arbitrage and the search for qualified workers (Duke/Booz Allen Hamilton, 2006, Bunyaratavej, Hahn, Doh, 2007). The success of these efforts led firms to continue to offshore services in ever greater quantities in the years after 2000 and now the prevalence of offshoring of services (defined here as the relocation of services provision from developed countries to developing countries) is well-documented. In recent years, the tide has turned and more developing countries have offshored services to not only developed countries but also developing countries. However, to date little attention has been paid to the emergence of reverse offshoring (defined as the relocation of services provision from developing countries to other countries—both developed and developing countries). In this paper, the focus on this research is on the determinants of reverse offshoring of services and as such we will investigate what drives these firms from developing countries to offshore services.

Using a database of offshoring projects, we empirically investigate the projects from developing countries by examining the impact of wages, education (in terms of educationally qualified workers), language difference, and finally the number of pre-existing projects in that particular developing country as potential determinants of reverse offshoring location choices. Our projects are captive offshoring which means firms continue to perform service activities in-house but have relocated them to other countries.

We found that firms from developing countries do not offshore because of labor arbitrage; rather, they offshore to countries that have higher wages. They also offshore to locate a pool of educated workers and to move to countries that speak the same language. We also found the number of pre-existing projects in a host country is a driver for companies from developing countries to offshore in certain sectors, namely shared services centers and headquarters. We draw conclusions that developing country firms appear to be motivated to try to create a global network of service providers in different locations and also in order to be closer to their customers. Nevertheless, some basic macroeconomic drivers remain the same as in conventional offshoring such as of wage/quality considerations, the search for qualified personnel, and the importance of shared languages.

In the next section, we review the FDI literature. This will be followed by the offshoring literature with a particular emphasis on the literature addressing the determinants of offshoring. Based on the review, we develop four hypotheses for empirical examination. We test our hypotheses using a data set of 134 projects using a conditional logit model. Finally, we interpret the results, draw conclusions, and explain the limitations and implications of the research.

Literature Review

Foreign Direct Investment Theory

International business researchers have examined the theories behind the foreign direct investments by multinational companies for decades. The concepts of absolute advantage (Smith, 1776) and comparative advantage (Ricardo, 1817) focus mainly on explaining patterns of trade. In particular, these concepts suggest that countries should

export products in which they have a comparative advantage over other countries stemming from labor efficiency, and that countries should import other products in which they do not. Reverse offshoring of services will also generally be expected to be influenced by the same broad-level concepts such that services will therefore be performed in countries that have a comparative advantage in such activities. More particularly to services offshoring, Dunning (1977, 1988) identified three factors of internationalization in his eclectic theory. These factors are ownership, location, and internalization advantages. The theory uses ownership advantages to explain the reasons firms enter foreign markets. These advantages are for example brand names, economies of scale, or technology which can be transferred abroad. Additionally, location advantages explain where firms should expand. The advantages that host countries may possess could be for example an abundance of natural resources or lower prices of inputs. Lastly, the theory shows how companies can avoid market imperfection through internalization advantages. In terms of reverse offshoring of services, as the definition of offshoring itself means firms could either perform service activities in-house or outsource them, firms that perform activities in-house (i.e., captive offshoring) are likely to possess some ownership advantages. In contrast, firms that outsource service activities are less likely to have less ownership advantages and thus decide not to use internationalization advantages altogether. Among these three factors, location advantages are still important especially in the critical determination of where firms decide to go when they decide to go abroad. Porter (1990) explains that countries develop national competitive advantage by having four components which are factor conditions, demand conditions, supporting industries, and firm strategy, structure, and rivalry. The existence of these factors serves

as an attractant for foreign firms seeking to expand abroad. In the case of offshoring, sophisticated consumers under the demand condition do not seem to come from within a home country; instead demand for the ultimate outputs of offshoring comes from abroad (Doh, 2005). However, in the case of reverse offshoring of services, demand could stem from within a country if firms perform reverse offshoring of services to be closer to their foreign customers.

Offshoring of Services

In recent years, the amount of academic literature on offshoring of services has dramatically increased in response to the surge in offshoring of services activities commencing at the beginning of the decade. Some researchers have tried to explain the overall precipitants of the phenomenon (Kedia and Mukherjee, 2009; Lewin, Massini, and Peeters, 2009). Other researchers have focused on the management level and the innumerable managerial issues, benefits and concerns generated by the shift towards services of offshoring (Grover, Cheon, and Teng, 1996; Ellram, Tate, and Billington, 2008). Despite the large amount of offshoring research which has appeared, our review found scant academic research on reverse offshoring, with empirical research on the phenomenon being particularly underrepresented. Hence, for the purposes of this paper, we focus our review on the drivers of offshoring so as to build theory regarding reverse offshoring by comparison.

One major driver of services offshoring that was mentioned especially frequently at the earlier stage of the global offshoring wave was cost reduction (Smith, Mitra, and

Narasimhan, 1998; Duke University CIBER / Archstone Consulting, 2005; Lewin and Couto, 2006; Ellram, Tate, and Billington, 2008). Farrell (2005) explained US firms save $0.58 for every dollar they spend on jobs offshored to India. Similarly, German firms save €0.52 for every euro offshored. Hence, early research tended to formulate offshoring as a race to the bottom where lower wages trumped all other considerations. Nevertheless, using a parity perspective, Bunyaratavej, Hahn, and Doh (2007) argued that firms do not try to race to the bottom in terms of wages; in contrast, they chose to offshore to countries that pay higher wages to attract high-talent individuals as long as wages are still lower than what they pay at home. The essence of this research is that quality in services matters greatly but that firms offshore to try to obtain quality at a discount to its cost at home. Subsequently, the notion of service quality has become a recurrent theme in the offshoring literature (Lewin et al, 2009; Ellram et al 2008).

Hence, we advance the notion that service quality is a paramount consideration for reverse offshoring of services. Since almost by definition wages in developing countries are lower than those in developed countries, the search for a discount on home-country quality is likely to be especially difficult in reverse offshoring. Rather, we suggest that reverse offshoring of services may in many cases require firms to pay more for services abroad than they would at home. This may result from the fact that the services available abroad are of a higher quality or are otherwise unavailable in the home country. Thus part of the service quality calculation for firms in developing countries may involve a search for skills that are difficult to obtain at home. While the precise measurement of service quality may be both difficult and highly industry-specific, we subscribe to the basic economic premise that higher quality commands higher market

prices. Hence, contrary to a race-to-the-bottom perspective but consistent with the parity perspective, we propose the following hypothesis:

Hypothesis 1: The higher the wage in a given host country, the greater the services investment from developing countries (as measured by the number of projects) in a given host country.

As opposed to manufacturing which may require massive investment in physical capital such as refineries and production lines, many services can be rendered with considerably less physical investment by providing knowledgeable workers with relatively standard levels of information technology. In such services industries, firms can capitalize on an educated workforce to better provide real-time problem solving (e.g., technical support), or to better interface with customers (e.g., call centers). Due to the fact that each customer may be different and require a uniquely tailored service in response, it is critical to have a workforce that has the knowledge background to handle such a dynamic environment. Hence, service-providing firms will have an incentive to look for larger pools of qualified personnel in order to gain access to talent. This is especially true as offshoring has matured since more recently services that are offshored tend to be more advanced. This includes innovation and knowledge services such as R&D or engineering (Duke University Offshoring Research Network & Booz & Co., 2007). Recent research such as Lewin et al (2009) has documented that firms try to offshore to access qualified personnel due to a lower number of high-skilled personnel in the U.S. The need for educationally qualified workers will be the same in the context of

reverse offshoring of services (from developing countries) as it is in the context of standard offshoring of services (from developed countries). Hence we propose the following hypothesis:

Hypothesis 2: The greater the number of educated workers in a given host country, the greater the services investment from developing countries (as measured by the number of projects) in a given host country.

Firms that do not have experience in entering foreign markets tend to invest in countries that have a small psychic distance which involves similarities in dimensions such as language, culture, political, legal and educational systems (Johanson & Vahlne, 1977). Among these dimensions, having the same language will help facilitate services transactions and lower costs (Doh, Bunyaratavej & Hahn, 2009) as services need to be communicated to customers. We observe that in the offshoring literature Doh et al (2009) found that host countries that speak English tend to attract more offshoring projects from English speaking countries. Reverse offshoring of services should also be bound by this fundamental consideration. Sharing a common language with a host country also helps address the issues of service quality and education mentioned previously as the presence of shared language helps enhance service quality and it also makes the search for educationally qualified employees much less onerous. Accordingly, we formulate the following hypothesis:

Hypothesis 3: Host countries which share the same language as home countries

will attract greater services investment from developing countries (as measured by the number of projects).

In the early stages of the offshoring wave, one of the dominant discussions in the mass media and popular press was job loss in developed countries. When white-collar service work began to be increasingly relocated offshore, the employment opportunities formerly enjoyed by individuals in these economic sectors began to disappear. For the large number of individuals affected by this process, this was a painful transition. Economic theory predicts that increased trade will, over time, lead to greater levels of economic benefits accruing to both trading partners. Indeed Gregory Mankiw, the then-White House Economic Advisor to President Bush, remarked in February 2004 that offshoring was "just a new way of doing international trade" and "a plus for the economy in the long run" (Flanigan, 2004). His comments ignited a firestorm of controversy and comment, putting the Administration in a difficult position, due to clamor from those who had lost jobs. Hence one of the more interesting questions associated with reverse offshoring is whether the expected patterns of benefits will appear, and to our knowledge this remains an open empirical question. There are a number of reasons why we would expect developing country offshorers to be especially likely to invest in the developed countries from which much past investment has come. In particular, although offshoring of services depends much on the technology to transmit the service outcomes, locating investment and development nearby the original customers would give both advantages to both sides of a business partnership - the developing country side and the developed country side. It would allow firms on both sides to have better communications and

control and ultimately lower the risk of offshoring failure. Researchers such as Kiesler and Cummings (2002) emphasize the important of proximity. Another reason is that developing country wages will not remain constant but should rise with increasing affluence. This implies that the cost differential will narrow over time. Rapid wage inflation has already been observed. For example, 2006 wages in India increased by 22% over the year before, breaking a previous trend of 12% annual wage inflation (Economist, 2006). The pace has been forecasted to continue as Indian companies are expected to keep raising wages 15% annually until 2011 (Minder, 2008). Accordingly we formulate the following hypothesis:

Hypothesis 4a: In the aggregate, the more service FDI that currently exists in a home (developing) country that has originated from a host (developed) country, the more likely it will be that a developing country' services investment will be located in (i.e., reverse back to) that corresponding host (developed) country.

While economic theory would predict that the abovementioned relationship would hold in the aggregate, there may be service sectors in which this relationship is more pronounced, and others where it is less so or even absent. We adopt an exploratory approach here and investigate this concept here by examining different service sectors and seeing whether these relationships hold.

Hypothesis 4b: In the call center sector, the more aggregate service FDI that currently exists in a home (developing) country that has originated from a host

(developed) country, the more likely it will be that a developing country' services investment will be located in (i.e., reverse back to) that corresponding host (developed) country.

Hypothesis 4c: In the service center sector, the more aggregate service FDI that currently exists in a home (developing) country that has originated from a host (developed) country, the more likely it will be that a developing country' services investment will be located in (i.e., reverse back to) that corresponding host (developed) country.

Hypothesis 4d: In the information technology sector, the more aggregate service FDI that currently exists in a home (developing) country that has originated from a host (developed) country, the more likely it will be that a developing country' services investment will be located in (i.e., reverse back to) that corresponding host (developed) country.

Hypothesis 4e: In the headquarters sector, the more aggregate service FDI that currently exists in a home (developing) country that has originated from a host (developed) country, the more likely it will be that a developing country' services investment will be located in (i.e., reverse back to) that corresponding host (developed) country.
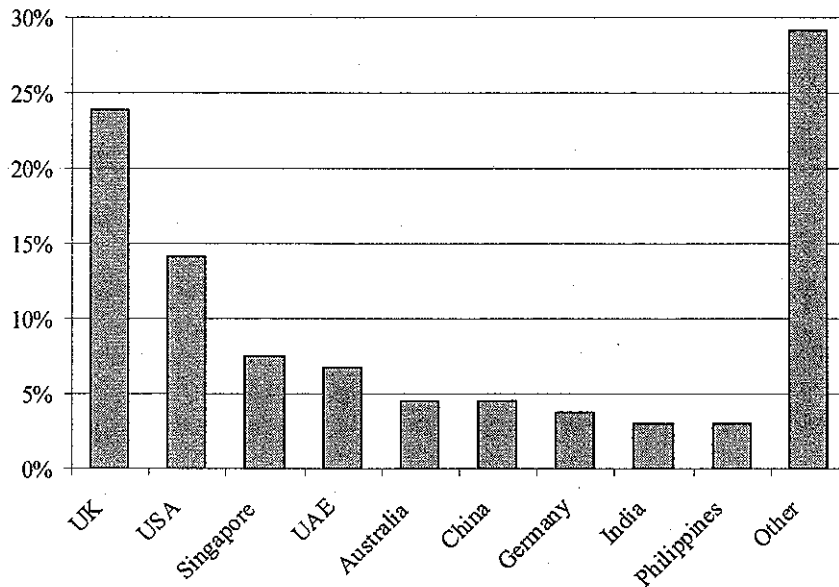
Data and Methods

Data

We used five data sources to conduct our analyses. For the dependent variable of counts of services offshoring projects, we obtained data from the fDi Markets global database of FDI projects compiled by the Financial Times. The project information captured in the database is collected using search string inquiries on nearly 9,000 global media sources. We retained FDI projects in the four services sectors of customer support call centers (front office support), shared services centers (back office support), IT technical support centers (including software development), and firm regional headquarters, as these sectors have been identified as the main categories of services offshoring (UNCTAD, 2004).

We use data involving greenfield and expansion FDI projects originating from firms located in the following emerging markets: China, Colombia, India, Malaysia, Mexico, Philippines, Russia, South Africa, Thailand, Turkey, and Venezuela. The sample size was 134 projects in the 2001-2007 time period. There were 29 host countries in the final sample[1]. Figure 1 provides a graphical summary of the top 10 destinations for offshoring projects originating from firms in these emerging markets.

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[1] These host countries were: Argentina, Australia, Bahrain, Canada, China, Czech Republic, Denmark, Finland, France, Germany, Greece, Hong Kong, Hungary, India, Indonesia, Ireland, Luxembourg, Malaysia, Mexico, Netherlands, Philippines, Poland, Singapore, Spain, Sweden, Switzerland, UAE, UK, and USA.

Figure 1-Top 10 Project Destinations

Independent Variables

Our independent variables are also drawn from the fDi Markets database. The first variable is a count of the total number of previous FDI projects that firms in the *host* (typically developed) country has located in the *home* (emerging market) country. Specifically, it is the total number of projects from the host that have occurred previous to the calendar date of the announcement of the offshore FDI project of the firm in the home country. This variable is called *ExistingProjects*. We also examine whether the nature of the host's investment into the home provides a different incentive level for return investment from the home to the host. We therefore calculated the total number of projects by sector (customer support call centers, shared services centers, IT technical support centers, and firm regional headquarters). With this information we formulated the variables *ExistingCC*, *ExistingSC*, *ExistingIT*, and *ExistingHQ* accordingly.

Control Variables

We controlled for host-country differences with regard to wages, education and language. To do so we used 2000, 2003 and 2005 country-specific wage data in country - specific major metropolitan areas (UBS, 2000, 2003, 2005). For home and host wages involving white-collar work such as services provision, major metropolitan area wage data is seen to be more pertinent than would be average country specific wage data since average national wages are depressed by rural and agricultural wages which are irrelevant to a services-based MNE. To capture the relative increase or decrease in wages from the home to the host country, we formed a ratio of the host country wage divided by the home country wage. This has the immediate business interpretation of a wage multiplier vis-à-vis the host country's intrinsic wage. We subsequently took the logarithm of this ratio in order to transform the variable to the real line so as to better satisfy the traditional regression model formulation.

For education, due to the importance of advanced skills in services provision, we expect host countries with larger pools of educated workers to have an advantage over countries without this asset ceteris paribus. Thus, we collected data on the number of students enrolled in secondary education in both public and private schools as an indicator for education. This data was collated from the World Development Indicator database (World Bank, 2006) and Global Education Digest 2006 (UIS, 2006). While this data set was over 95% complete, there were sporadic missing data points. In order to retain these observations given our relatively small sample, we estimated the missing values using the growth equation

$$educ_t = educ_{t-1}\left(1 + \frac{educ_{t-1} - educ_{t-2}}{educ_{t-2}}\right)$$

with t indexing the year. Inspection of the estimations showed this exponential growth approach produced results that were much more consistent with the actual data than did a simple linear approach. After completing the data set, we calculated the log ratio of the formulation with respect to the corresponding number of students in the U.S. as was done previously for wage.

For language, the Central Intelligence Agency (CIA)'s *The World Factbook* was utilized for identification of official languages spoken in a given country. We compared the top three languages that people in the countries speak. A dummy variable for language was created such that the variable took the value 1 if the host and home countries shared a language, and took the value 0 otherwise.

For existing projects, we counted the number of existing projects in a home (developing) country prior to when a particular reverse offshoring project occurred. We examined this variable as a whole and also separated by sector.

Methods

For our analyses we utilized conditional logit models (McFadden, 1974). Conditional logit models are also known as discrete-choice models and they are regularly used in economics and a number of management disciplines where it is of interest to examine how an entity selects from an array of choices. While this model has many similarities with the standard binary logit model that is commonly used in management research, one important difference is that each variable is actually a matrix such that one

column is required for each member of the choice set. In the current study, there are 29 members of the choice set. Hence each variable is in actuality a matrix with 29 columns (29 being the number of host countries in our sample) and 134 rows (134 being the number of projects under consideration). While it is traditional to report summary statistics for management research such as a correlation matrix and also means and standard deviations, in the current study with eight variables overall such a table would require well over 200 columns. Accordingly this information is omitted.

Results

Table 1. Parameter Estimates and Results for Overall Models

	Model 1			Model 2			Model 3		
Variable	Coeff-icient	t	p-value	Coeff-icient	t	p-value	Coeff-icient	t	p-value
Wage	0.5047	5.10	<.0001	0.4563	4.29	<.0001	0.3746	3.20	0.0014
Education	0.3184	6.05	<.0001	0.2872	4.94	<.0001	0.2619	3.97	<.0001
Language	1.2509	5.66	<.0001	1.2198	5.45	<.0001	1.2160	4.98	<.0001
ExistingProjects				0.0105	1.28	0.2006			
ExistingCC							-0.093	-1.69	0.0919
ExistingSC							0.1303	3.68	0.0002
ExistingIT							-0.2126	-3.43	0.0006
ExistingHQ							0.0674	4.83	<.0001

$N = 134$.

We adopt a sequential modeling approach wherein we first estimate our principal main effects and then examine potential industry sector-specific effects. Table 1 shows the results for all three models. Model 1 contains only the principal main effects associated with Hypotheses 1 through 3. The coefficients for Wage, Education and Language are positive and significant, supporting Hypotheses 1-3 respectively. In Model

2, we enter the ExistingProjects variable which aggregates existing projects across all industry sectors. We find that the number of existing projects in a given host does not have a significant effect in driving subsequent location of projects in that host country. Thus, Hypothesis 4a is not supported.

Model 3 disaggregates the four sectors and examines the individual impact of a given sector in terms of attracting subsequent projects to the host. Model 3 reveals that sector type plays an important role in the attraction of reverse offshoring projects to a host. The coefficient for ExistingCC is non-significant, indicating that Hypothesis 4b is not supported. The coefficient for ExistingSC is positive and significant, indicating that the number of existing service centers is positively related to the choice of making an investment. Hence, the presences of service centers in a given host country starts a snowballing effect of increased subsequent reverse offshoring investment, supporting Hypothesis 4c. A similar snowballing effect is found for headquarters, as is evidenced by the positive and significant coefficient of ExistingHQ. Thus, Hypothesis 4e is supported. By contrast, the more pre-existing IT projects there are in a host country, the less likely it will be chosen for subsequent investment. This implies that reverse offshorers may find the saturation point of services IT offshoring occurs relatively quickly, at least more quickly than for the other service sector categories. Accordingly, Hypothesis 4d is not supported.

Discussion

Developing countries were found to tend to offshore their services to countries which have higher wages. This positive relationship is the same as in conventional (developed country) offshoring (Bunyaratavej et al. 2007). Although both offshoring and

reverse offshoring move in the same direction in terms of wage, the reasons behind it are nonetheless different. As stated before, for offshoring, U.S. firms seek internationally for qualified workers in part due to reasons including a shortage in engineers and scientists from the new limited quota of H1B visa following 9/11 (Lewin et al (2009). However, their motivation is often to obtain quality at a discount. For reverse offshoring which happens in a later stage, the motivation appears to be different and more complex. While some developing country offshoring may also involve the search for quality at a discount, there may be other reason such as access to talent unavailable at home or to be proximal to corporate clients. Wages in countries such as India continue to rise due to the boom in the service offshoring sector, leading some (Lamont and Leahy, 2010) to argue the traditional cost advantage between U.S. and India is disappearing. It is not surprising to see many developing countries offshore services to developed countries. Firms not only take advantage of the wage discount but also the closer distance to their customers especially true in the case of shared services center and headquarters.

In terms of education, offshoring of services from developed countries started out with a search for high-educated workers in other countries. This search seems to continue as firms from developing countries also do the same. The search for the qualified workers will become more intense as the services that are offshored become more sophisticated (Duke University Offshoring Research Network & Booz & Co., 2007). Continued developments in this area may lead to global "talent wars" in the future as more and more firms in more and more countries seek to attract particular labor pools.

According to Dunning (1977, 1988), companies invest in other countries because they would like to take advantage of OLI. The more they expand, the more advantage

they can utilize through economies of scale. This is especially true in the case of reverse offshoring as firms from developing countries which have developed service offshoring services industry have a comparative advantage over firms in other countries. They know how to do their service offshoring work well and how to perform it efficiently. As a result they expand abroad. Offshoring services to countries that use a different language presents roadblocks however as such expansions would not only cost firms more but also the advantages that firms have might be lost.

Lastly firms in some sectors tend to move back closer to where their customers are. This will help create a global network of offshoring firms around the world. Developed countries such as those in Europe and North America should seek to understand these developments with a particular eye toward the snowballing service sectors identified in this paper. These snowballing sectors provide evidence of a cycle of internalization where jobs that have at one point been destroyed through offshoring are later reborn through developing country investment. Developed countries are likely to welcome the growth of developing countries much more avidly when such growth directly adds jobs to their economies. While the exact reasons why only certain service sectors lead to a snowballing trend in reverse offshoring are currently unknown, the determinants of such effects would likely be a future research area that holds great interest for academics, policy makers and business leaders alike.

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