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# Are firms from developed markets more international than firms from emerging markets?

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## ABSTRACT

Regionalist supporters' claim that most of the world's largest firms are regional rather than global and that managers should be encouraged to 'think regional, act local and forget global' (Rugman and Moore, 2004, p. 67). We apply the matrix of multinationality proposed by Aggarwal et al. (2011) to a sample of the world's 500 largest corporations, the Fortune Global 500. We show that these firms range from purely domestic to regional, trans-regional and entirely global with most lying in the trans-regional and global categories. Our results imply that global strategies are essential to international trade and management in today's business environment. We compare multinationality results by market type (developed versus emerging market), industry, size and age. We find that firms from more advanced economies tend to be older, larger and more multinational than firms from emerging markets. We find no relationship between multinationality and age or multinationality and size, and conclude that developed market firms are not more multinational as a result of size, age or industrial structure.

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# 1. Introduction

Emerging markets are increasingly becoming the growth drivers of the global economy. Since the early 1990s developing countries have been the fastest-growing markets in the world for most products and services (Khanna et al., 2005). With large populations and increasing incomes, emerging economies provide an ideal market for goods and services. Moreover, with talented manpower and

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0275-5319/\$ - see front matter © 2012 Elsevier B.V. All rights reserved. http://dx.doi.org/10.1016/j.ribaf.2012.04.002 low costs, emerging economies are supplying more goods and services to the world than in the past (Pillania, 2009). According to Bekaert and Harvey (2002), a country is considered *emerging* if its' GDP per capita falls below a certain level. The main presumption is that such countries will ultimately arise or *emerge* from their less developed status to join the group of developed countries. Bruner et al. (2002) note that nearly 150 countries fall below the standard definition of development; however, most international investors focus their attention on approximately 30 of these countries. O'Neill et al. (2005) predict that four of the largest emerging markets (Brazil, Russia, India and China, BRIC) will overtake the G7 countries by 2040. The IMF World Economic Outlook (2011) predicts that growth rates in emerging markets will surpass growth estimates from developed markets for 2011 and 2012 (6.5% versus 2.5%). Regardless of how widely or narrowly emerging markets are defined, they tend to offer distinctive investment opportunities. Emerging economies have become an increasingly important part of the world economy, accounting for 75% of the world's land mass, over 80% of its population, but only 20% of global GNP (IP Frontline, 2011).

There is an increased interest in research related to emerging markets and multinational corporations (MNCs) (see for example: London and Hart, 2004; Meyer, 2004; Ramamurti, 2004; Khanna and Palepu, 2004; Khanna et al., 2005; Accenture, 2008; Pillania, 2009; Aggarwal et al., 2010). According to the United Nations Conference on Trade and Development (UNCTAD, 2005), there are more than 50,000 companies worldwide that qualify as MNCs. The world's largest MNCs represent nearly 25% of the world's GDP and virtually half of total world trade. The Forbes Global 2000 list of the world's largest firms based on assets, sales, profits and market values shows that in 2011, these firms collectively owned US\$138 trillion in assets, earned US\$32 trillion in revenues, gained US\$2.4 trillion in profits, presented a total market value of US\$38 trillion and employed roughly 80 million people worldwide (De Carlo, 2011). Using GDP data from the World Bank and firm-level sales data from the Fortune Global 500 (*FG500*) list,<sup>1</sup> Anderson and Cavanagh (2000) show that of the world's 100 largest economic entities, 51 are MNCs and 49 are countries, indicating the strong influence, not only from an economic perspective, these organisations have on our society.

The objective of this study is to contribute further to the internationalisation literature and in particular to the globalisation versus regionalisation debate by uncovering some characteristics of both developed and emerging market firms. We categorise the *FG500* firms in 2010 using the classification system proposed by Aggarwal et al. (2011). We investigate if firms from developed markets are more international than firms from emerging markets. In doing so, we examine firms' degree of multinationality by applying the matrix of multinationality proposed by Aggarwal et al. (2011) to the *FG500* largest corporations worldwide in 2010. Furthermore, we analyse and compare the percentage of foreign versus domestic sales for all firms and compare the multinationality of firms with different ages, sizes and from different industries.

Our paper makes several contributions to the literature. First, we provide a more in-depth investigation into the multinationality of firms than exists in the literature to date using two measures of multinationality (the matrix of multinationality proposed by Aggarwal et al. (2011) and percentage foreign to total sales) and making comparisons by market type (developed versus emerging), industry, age and size. Second, we contribute to the globalisation versus regionalisation debate in international business (IB). Third, our results have important implications for MNC sample creation. In the past being large was synonymous with being multinational. However, the introduction of new technologies such as the Internet means that achieving economies of scale is no longer a crucial requirement to becoming multinational. The expanding literature on born global firms is a testament to this. Aggarwal et al. (2011) examine 393 papers that have used empirical samples of MNCs published in the fourteen most cited international business and management journals<sup>2</sup> between 1987 and 2007. They find that the

<sup>&</sup>lt;sup>1</sup> The Fortune Global 500 (*FG500*) list is prepared and published annually by Fortune magazine since 1955. It ranks the largest 500 corporations across the world as measured by their revenues in the previous fiscal year.

<sup>&</sup>lt;sup>2</sup> The journals reviewed are: Academy of Management Journal, Academy of Management Perspectives, International Business Review, International Marketing Review, Journal of International Business Studies, Journal of International Management, Journal of International Marketing, Journal of Management, Journal of Management Studies, Journal of Marketing, Journal of Marketing Science, Journal of World Business, Management International Review, and Strategic Management Journal.

most popular datasource used for empirical analysis is the *FG500* list. With this in mind, we investigate how multinational *FG500* firms are.

The remainder of this paper is structured as follows. Section 2 reviews the literature on the characteristics of emerging market multinationals and the regional versus global debate. Section 3 describes the data and methodology. Section 4 discusses our empirical results from our analysis of *FG500* companies. Finally, Section 5 summarises our main findings and draws together our conclusions.

### 2. Review of the literature

#### 2.1. Emerging markets and emerging market MNCs (EMNCs)

Recent years have seen the emergence of a growing number of large firms from emerging economies such as Brazil, China, Korea, India, Malaysia, Mexico, Russia, Singapore, Taiwan, and Turkey (Goldstein et al., 2006). Whereas these firms have essentially had humble beginnings, some of them have already become global leaders (Li and Kozhikode, 2008; Guillen and Garcia-Canal, 2009). It is common to associate EMNCs with companies from the BRIC countries. While these economies are home to the majority of the largest emerging market companies featured on lists such as the *FG500*, many other parts of the developing world also breed home grown business leaders. These larger players can be seen as the advance guard of a much bigger next cluster of EMNCs coming from countries as geo-graphically diverse as the Czech Republic, Egypt, Hungary, Indonesia, South Africa, Venezuela and Vietnam. Goldstein (2007) analyses the rise and features of emerging markets have internationalised so intensively in the last decade, the sort of competitive advantages these firms possess and the origins of those advantages.

The United Nations World Investment Report calculates that in 2010 there were approximately 21,500 multinationals based in emerging markets (UNCTAD, 2010). There is an expanding literature investigating the characteristics of EMNCs, although they are not a homogeneous group, since they come from different nations, industries, possess and exploit different competitive advantages, target different markets and follow different internationalisation paths (Wu and Strange, 2000; Buckley et al., 2001; Buckley and Ghauri, 2004; Khanna et al., 2005; Flores and Aguilera, 2007; Kali and Reyes, 2007; Cuervo-Cazurra, 2008; Arregle et al., 2009; Gupta and Wang, 2009). Using bibliometric analysis, Pillania and Fetscherin (2009) review the state of research on multinationals and emerging markets published in the period 1968–2008 collecting the data from the Web of Science database. Their bibliographical search resulted in 1282 articles and 2174 authors who published in 514 journals, with a significant increase in papers published in the last two decades, particularly in 2007, 187 papers as opposed to only 10 papers published in 1991. This increase reveals how emerging markets and MNCs have become a popular topic particularly in the last decade.

MNCs from the triad regions increasingly pursue strategies to overcome the resource deficiencies and other limitations of doing business in developing countries, and firms from developing and emerging economies similarly delineate strategies to compete in their own and developed markets (Aulakh et al., 2000; Hoskisson et al., 2000; Aguiar et al., 2006; Seelos and Mair, 2007). Guillen and Garcia-Canal (2009) reviewed research on the variously labelled new, emerging and unconventional EMNCs and how their rationales, paths and speeds of internationalisation differ from those of the more traditional MNCs. These EMNCs must deal with the disadvantage of being 'latecomers' in addition to the liability of foreignness, but this is offset by specific skills such as project execution, networking and dealing with institutional weakness and political instability (Campa and Guillen, 1999; Aulakh, 2007; Goldstein, 2007; Cuervo-Cazurra and Genc, 2008).

#### 2.2. Regional versus global multinationals debate

The regional versus global debate is characterised by two schools of thoughts. On one side of the debate, scholars claim that MNCs' activities have become increasingly regional. They show that the majority of the world's largest firms are regional rather than global in their strategic focus (Rugman, 2000, 2003, 2005; Rugman and Brain, 2003; Rugman and Moore, 2004; Rugman and Verbeke, 2003a,b,

2004, 2007, 2008; Ghemawat, 2005; Banalieva et al., 2010). They claim that the proximity and familiarity of economies located nearby reduces the costs associated with undertaking business in those economies. Besides, economic incentives such as Regional Trade Agreements encourage companies to operate more regionally than globally. Their findings are drawn from the analysis of the sales distribution of the largest 500 firms in the world, the *FG500* list. Rugman and Verbeke (2004), for example, show that 380 *FG500* firms had over 80% of their sales within the same region where they have their headquarters. Rugman (2005) concludes that 'globalisation and the use of global strategy is a myth. Far from taking place in a single global market, most business activity by large firms takes place within regional blocks. Government regulations and cultural differences segment the world into the broad triad regions of North America, the EU and Asia-Pacific' (p. 2).

On the other side of the debate, scholars emphasise the growing significance of global activities (Bird and Stevens, 2003; Clark and Knowles, 2003; Clark et al., 2004; Stevens and Bird, 2004; Aggarwal et al., 2010). Globalisation scholars contradict the Regionalists' claims by claiming that globalisation goes beyond trade or economic conditions and that even if one focuses only on the economic dimensions of the globalisation process, firms' revenues, which is the main dependent variable used by the Regionalists, do not necessarily capture MNCs' activities worldwide (Clark and Knowles, 2003; Stevens and Bird, 2004). Dunning et al. (2007) suggest that country-level data are necessary to strengthen the validity of Regionalists' conclusions. Moreover, globalists argue that the regional categorisation may be misleading as Rugman and Verbeke's (2004) European region includes in some cases countries that geographically fall into Africa and the Middle East, and their defined Asian region can also include Oceania countries (Stevens and Bird, 2004). Applying the gravity model, Hejazi (2007) concludes that there is a strong national bias and that the regional concentrations in US MNCs are driven by the national dimension. According to his empirical results US MNCs are 'as global as they should be' (Hejazi, 2007, p. 24).

Berrill and Kearney (2010) note that despite the growth in emerging multinationals, much of the academic research is still based on the observation of firms from the triad regions which excludes many countries (mainly emerging economies). Rugman and his co-authors divide the world into variously defined 'triads' comprising alternative sets of countries from North America, Europe and the Asia-Pacific region, excluding emerging economies from their analysis. Flores and Aguilera (2007) believe that this globalisation–regionalisation controversy is stranded because these two schools of thought use different conceptual frameworks and operationalisations of globalisation, regions and MNC activities. They state that in order to move forward the discussion on whether the foreign location choices of MNCs have changed during the last two decades, an improved definition and operationalisation of MNC activities and regions is needed. In response to this, Aggarwal et al. (2011) propose a classification system for firms including a matrix of multinationality. This system, used in our analysis, is detailed in the following section.

#### 3. Data and methodology

We classify *FG500* firms in 2010. These 500 companies accounted for over US\$23 trillion of total sales across the world in fiscal year 2009. We divide the list of *FG500* firms into two main categories of companies, Emerging Market Firms and Developed Market Firms, using the Financial Times Stock Exchange (FTSE) and the Morgan Stanley Capital International (MSCI) lists of emerging market economies as of May 2011.<sup>3</sup> Data on each firms' type, industry, age, size and location is obtained from Datastream, Bloomberg, company websites and various Internet sources. The Worldscope databank provides a geographical breakdown of firm's sales. We also gather data on the percentage foreign to domestic sales for each firm. This data is taken from company accounts for the year end 31 December 2009 or as close to this date as possible.

<sup>&</sup>lt;sup>3</sup> The MSCI list includes the following 21 countries: Brazil, Chile, China, Colombia, Czech Republic, Egypt, Hungary, India, Indonesia, Malaysia, Mexico, Morocco, Peru, Philippines, Poland, Russia, South Africa, South Korea, Taiwan, Thailand and Turkey. The FTSE list has 22 firms in total, starting with the above 21 countries plus Pakistan and United Arab Emirates minus South Korea. FTSE divides countries into Advanced Emerging Markets (AEM) and Secondary Emerging Markets (SEM). AEM are Brazil, Hungary, Mexico, Poland, South Africa and Taiwan. The remaining 16 countries are SEM.

#### Table 1

#### Country constituents by region.

#### Africa (53)

Algeria, Angola, Benin, Botswana, Burkina, Burundi, Cameroon, Cape, Verde, Central African Republic, Chad, Comoros, Congo, Congo (Dem. Rep.), Djibouti, Egypt, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Ivory, Coast, Kenya, Lesotho, Liberia, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao, Tome and Principe, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, Sudan, Swaziland, Tanzania, Togo, Tunisia, Uganda, Zambia, Zimbabwe **Asia** (44)

Afghanistan, Bahrain, Bangladesh, Bhutan, Brunei, Burma, Cambodia, China, East, Timor, India, Indonesia, Iran, Iraq, Israel, Japan, Jordan, Kazakhstan, Korea, (north), Korea, (south), Kuwait, Kyrgyzstan, Laos, Lebanon, Malaysia, Maldives, Mongolia, Nepal, Oman, Pakistan, Philippines, Qatar, Russian Federation, Saudi Arabia, Singapore, Sri Lanka, Syria, Tajikistan, Thailand, Turkey, Turkmenistan, United Arab Emirates, Uzbekistan, Vietnam, Yemen **Europe** (47)

Albania, Andorra, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Malta, Moldova, Monaco, Montenegro, Netherlands, Norway, Poland, Portugal, Romania, San Marino, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Ukraine, United Kingdom, Vatican City

#### North and Central America (23)

Antigua, and, Barbuda, Bahamas, Barbados, Belize, Canada, Costa Rica, Cuba, Dominica, Dominican Rep., El Salvador, Grenada, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, St. Kitts & Nevis, St. Lucia, St. Vincent & the Grenadines, Trinidad & Tobago, United States

#### Oceania (14)

Australia, Fiji, Kiribati, Marshall Islands, Micronesia, Nauru, New Zealand, Palau, Papua, New, Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu

#### South America (12)

Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru, Suriname, Uruguay, Venezuela

#### Source: Aggarwal et al. (2011).

*Notes*: This table places 193 countries throughout the world into six inclusive regions delineated as the inhabited continents. The list includes all countries that are recognised by the United Nations, excluding dependencies and/or territories.

We categorise firms using the classification system of Aggarwal et al. (2011). They construct a complete taxonomic classification of firms, using six high-level categories to describe the characteristics of any firm. These are as follows (with a suggested measure or nomenclature in brackets): Type (public, private listed, private unlisted). Industry (ICB system). Age (date of incorporation). Size (assets, employees, revenue, sales). Location (country of headquarters). Multinationality (operations across countries and regions).

This classification system uses two dimensions of multinationality: *breadth* and *depth*. To implement the breadth dimension of multinationality, the world is divided into six regions, based on the inhabited continents: Africa, Asia, Europe, North America, Oceania and South America. Table 1 details the countries in each of our 6 regions. The breadth of multinationality is measured as the extent of geographical spread across the world using four broad categories: domestic, regional, trans-regional and global. An activity associated with a corporation that takes place entirely within the home country is referred to as domestic (D). An activity that takes place within the region in which the firm is headquartered is referred to as regional (R). The system further delineates R into three categories, R1 (less than one-third of the countries in a region), R2 (between one-third and two-thirds of the countries in a region) and R3 (more than two-thirds of the countries in a region). For example, an American firm headquartered in the US that sells its products in one or two countries in North and Central America would be classified as R1, but if it operates in all countries in the continent (and nowhere else), it would be classified as R3. An activity associated with a firm that takes place in more than one region (but not fully global) is defined as trans-regional (T), and this category is further subdivided into T2 (two regions), T3 (three regions), T4 (four regions) and T5 (five regions). Finally, an activity that takes place in all six regions of the world is classified as 'global' (G). We assign a number from 1 to 9 representing the level of multinationality from domestic to global for each firm where 1 is the lowest score given to domestic firms and 9 is the highest score given to fully global companies (the nine categories are D, R1, R2, R3, T2, T3, T4, T5 and G). The depth of multinationality is measured using two broad categories of depth: trading and investments. Trading involves sales and purchases made by the firm. Following

**Table 2** *FG500* firms by country.

	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000
Australia	8	9	8	8	8	9	9	7	6	6	7
Austria	3	2	2	1	1						
Belgium	6	5	5	5	4	3	3	3	3	3	3
Belgium/Netherlands			1	1	1	1	2	1	1	1	1
Brazil	7	6	5	5	4	3	3	3	4	4	3
Britain	30	26	34	33	38	35	35	35	34	33	33
Britain/Netherlands		1	1	1	1	2	2	2	2	2	2
Canada	11	14	14	16	14	13	13	13	14	16	15
China	46	37	29	24	20	16	16	15	11	11	12
Denmark	2	2	2	2	2	2	2	2		1	
Finland	1	2	2	3	2	3	4	4	3	2	2
France	39	40	39	38	38	39	39	37	40	37	37
Germany	37	39	37	37	35	37	36	34	35	35	34
Hungary		1									
India	8	7	7	6	6	5	4	4	1	1	1
Ireland	2	1	2	2	1	1	1	1			
Israel		1									
Italy	11	10	10	10	10	8	8	8	9	8	8
Japan	71	68	64	67	70	81	82	82	88	88	104
Luxembourg	1	1	1		1	1	1	1	1	2	1
Malaysia	1	1	1	1	1	1	1	1	1	1	1
Mexico	2	4	5	5	5	2	1	1	2	2	2
Netherlands	13	12	13	14	14	14	12	12	11	9	9
Norway	1	1	2	2	2	2	2	2	2	2	2
Poland	1	1	1	1							
Portugal		2	1								
Russia	6	8	5	4	5	3	3	3	3	2	2
Saudi Arabia	1	1	1	1	1	1					
Singapore	2	2	1	1	1	1	1	1	1	1	1
South Africa											1
South Korea	10	14	15	14	12	11	11	11	13	12	11
Spain	10	12	11	9	9	8	7	7	5	5	6
Sweden	5	6	6	6	6	7	6	6	6	5	5
Switzerland	14	15	14	13	12	11	12	12	11	11	11
Taiwan	8	6	6	6	3	2	1	1	1	2	
Thailand	1	1	1	1	1	1	1	1	•	-	
Turkey	1	1	1	1	1	1					
US	140	140	153	162	170	176	181	189	192	197	185
Venezuela	140	1		102	1/0	170	101	105	152	137	105
Total	500	500	500	500	500	500	500	500	500	500	500
No. of countries	33	37	35	33	34	32	31	31	27	29	28
		5,			51	52	51		27	23	20

Notes. This table lists the FG500 firms by country for each year from 2000–2010.

Rugman and Verbeke (2004), we focus on this dimension of multinationality. A complete description of this classification system can be found in Aggarwal et al. (2011).

## 4. Results

#### 4.1. FG500 characteristics

We begin by describing the *FG500* firms using our classification system. The first characteristic is firm type. 410 firms (82%) are publically listed, 30 firms (6%) are privately owned and 60 firms (12%) are state owned. *FG500* firms' are headquartered in 33 countries worldwide in five of our six geographical regions: Europe (182), North America (153), Asia (149), Oceania (8) and South America (8). The majority of firms are in Europe, North America and Asia, lending some support to the use of

Industry	Count	Percent	Average age	Average size
Oil and Gas	48	10	67	66,286
Basic Materials	33	7	83	33,555
Industrials	86	17	114	37,800
Consumer Goods	69	14	99	51,151
Health care	27	5	128	43,962
Consumer Services	51	10	80	39,511
Telecommunications	20	4	76	49,710
Utilities	23	5	61	49,254
Financials	117	23	138	49,013
Technology	26	5	63	36,621
Total	500	100	102	45,686

**Table 3***FG500* firms by industry and age.

*Notes*: This table shows the distribution of FG500 companies by industry according to the ICB classification system along with the average age (measured in years) and average size (measured in US\$ millions).

Triad regions. Table 2 lists the number of FG500 firms from each country from 2000 to 2010.<sup>4</sup> It shows a trend for more countries to be represented in the FG500 list over time – FG500 firms came from a low of 27 countries in 2002 to a maximum of 37 countries in 2009 (this fell to 33 in 2010). In all years, the largest number of firms comes from the US, although this number has declined from 185 in 2000 to 140 in 2010. Japan, which has the second largest number of firms, has also seen a fall from 104 firms in 2000 to 71 firms in 2010. Other countries, most notably China and India, have seen their numbers of FG500 firms increase over the time period.

We categorise all firms into 10 industries using the Industrial Classification Benchmark (ICB) system.<sup>5</sup> Results are presented in Table 3. Most firms fall into the Financial industry (117 firms – 23%), followed by Industrials (86 firms – 17%) and Consumer Goods (69 firms – 14%). *FG500* firms are on average quite old, with a mean foundation date of 1909 and an average age of 102 years. Companies from the financial industry are the oldest (138 years on average) whereas other sectors such as utilities and technology are much younger (just over 60 years on average). The oldest firm is Anheuser-Busch InBev dating back to 1366 and the youngest is Enterprise GP Holdings founded in 2005. The average size in terms of sales for the 500 firms is US\$45,686 million. Firms from the Oil and Gas industry are, on average, the largest while firms from the Basic Materials sector are, on average, the smallest. The largest firm is the American retailer Wal-Mart Stores with an annual turnover of US\$408 billion and 2.1 million employees, and the smallest is the Japanese printing company Dai Nippon Printing with US\$17 billion sales and 40,317 employees.

We segregate firms into those from emerging and developed markets using the *FTSE* and *MSCI* classification criteria. The *FTSE* classification further categories countries as *advanced emerging* and *secondary emerging*. The former includes the upper middle gross national income (GNI) countries with advanced market infrastructures or high income GNI countries with lesser developed market infrastructures (Brazil, Hungary, Mexico, Poland, South Africa and Taiwan have *FG500* firms). The latter include upper middle, lower middle and low income GNI countries with reasonable market infrastructures and significant size, and upper middle income GNI countries with lesser developed market infrastructures (China, India, Malaysia, Russia, Thailand and Turkey have *FG500* firms). Results are presented in Panel A of Table 4.

Using the *FTSE* classification, 419 firms (83%) are located in developed markets (DM) while 81 firms (17%) are headquartered in emerging markets (EM) – 18 firms (4%) are based in advanced emerging markets (AEMs) and 63 firms (13%) in secondary emerging markets (SEMs) in 2010.<sup>6</sup> Results in Table 4

<sup>&</sup>lt;sup>4</sup> This Table is an updated version of a Table first presented in Berrill and Kearney (2010).

<sup>&</sup>lt;sup>5</sup> The ICB is a company classification system developed by Dow Jones and FTSE, often used to catalogue markets into industries and sectors within the economy. The ICB uses a system of 10 industries that are divided into 19 super-sectors which are further subdivided into 41 sectors that contain 114 subsectors.

<sup>&</sup>lt;sup>6</sup> The distribution changes slightly although the trend remains the same when the MSCI criterion is applied: 91 (18%) are headquartered in emerging markets and 409 (82%) in developed markets (DM).

Table 4
FG500 firms by location.

Year	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000
Panel A: Fortune 500 firms from developed and emerging markets											
Developed markets	419	427	439	446	454	466	470	471	477	477	478
Emerging markets	81	73	61	54	46	34	30	29	23	23	22
Total	500	500	500	500	500	500	500	500	500	500	500
Advanced emerging	18	18	17	17	12	7	5	5	7	8	6
Secondary emerging	63	55	44	37	34	27	25	24	16	15	16
Total	81	73	61	54	46	34	30	29	23	23	22
Panel B: Fortune 500 fir	ms from t	riad and 1	10n-triad	regions							
Triad	443	437	443	446	451	457	458	460	460	460	462
Non-Triad	57	63	57	54	49	43	42	40	40	40	38
Total	500	500	500	500	500	500	500	500	500	500	500

*Notes*: Panel A lists the number of *FG500* firms from developed and emerging markets each year from 2000 to 2010. It further segregates the emerging market firms into advanced emerging and secondary emerging markets as defined by FTSE. Panel B shows the number of *FG500* firms from Triad and non-Triad regions in each year from 2000 to 2010.

also detail the number of *FG500* firms from emerging and developed markets each year over the last decade. The number of firms from emerging markets included in the *FG500* list has increased significantly from 22 firms (4%) in 2000 to 81 (16%) in 2010. At the same time the number of *FG500* firms from both AEM and SEM has tripled in the last 10 years. Moreover, the table shows how firms from SEM have significantly increased from 16 in 2000 to 63 in 2010. AEM firms maintain the same proportion with only one new company added to the list since 2007 (18 firms). Panel B of Table 4 shows that the number of *FG500* firms from Triad regions (North America, Europe and Asia) declined from 2000 to 2009 but increased slightly from 437 to 443 between 2009 and 2010. Although the triad regions still have a dominant role, they will become less influential in future years if this trend persists. These results are consistent with the view that emerging markets have an increasingly important role to play in today's international business world.

Table 5 details the industry, age and size of firms from AEM, SEM and developed markets. Developed market firms are spread across all 10 industries, with most firms in Financials, Industrials and Consumers Goods. AEM firms are spread across six industries with SEM across eight industries. The majority of AEM firms are in Oil and Gas (6 firms), followed by Technology (5 firms) and Financials (4 firms). The majority of SEM firms are in Oil and Gas (14 firms), Industrials (13 firms) and Financials (10 firms). Developed market firms tend to be larger and older than emerging market firms. AEM firms tend to be smaller and younger than SEM firms. These results suggest that firms from more advanced economies tend to be older and larger.

## 4.2. Multinationality

We collect financial data on the geographic sales breakdown as well as the domestic versus foreign sales for each firm. Both sets of data are available for 411 (74%) companies. These 411 companies account for 85% (US\$19.5 trillion) of the total revenues of all the *FG500* firms. We classify the 411 firms with financial data available using the matrix of multinationality proposed by Aggarwal et al. (2011). We analyse the breadth dimension along with the domestic versus foreign sales split first by market type and then by industry.

The sample data of 411 firms reveals that 359(87%) of firm's headquarters are located in developed markets while 12(3%) come from Advanced Emerging Markets and 40(10%) from secondary emerging markets (using FTSE classification).<sup>7</sup> Table 6 shows the number of firms in each category of multinationality. Approximately 74% of the *FG500* firms are trans-regional and 7% are global (including such firms as General Electric, BNP Paribas and Nestlé). Regional firms represent only 3% (R2 companies do

<sup>&</sup>lt;sup>7</sup> According to the MSCI classification, 351 (85%) firms are located in a developed country while 60 (15%) are headquartered in an emerging market.

# Table 5Classification of firms by market type and industry.

Market type	Industry	No. of firms	Percent	Average revenues (\$ millions)	Average age
AEM	Oil and Gas	6	1%	41,985	65
	Basic Materials	1	0%	23,311	69
	Consumer Services	1	0%	17,161	58
	Telecommunications	1	0%	29,233	64
	Financials	4	1%	46,476	92
	Technology	5	1%	28,211	28
Total AEM		18	4%	36,032	61
SEM	Oil and Gas	14	3%	52,195	43
	Basic Materials	9	2%	41,600	44
	Industrials	13	3%	30,263	63
	Consumer Goods	6	1%	29,604	48
	Telecommunications	5	1%	36,541	27
	Utilities	5	1%	59,116	12
	Financials	10	2%	41,600	87
	Technology	1	0%	21,821	23
Total SEM		63	13%	41,147	51
DM	Oil and Gas	28	6%	78,539	80
	Basic Materials	23	5%	30,852	99
	Industrials	73	15%	39,142	123
	Consumer Goods	63	13%	53,204	104
	Health care	27	5%	43,962	128
	Consumer Services	50	10%	39,958	80
	Telecommunications	14	3%	55,876	95
	Utilities	18	4%	46,514	75
	Financials	103	21%	49,831	145
	Technology	20	4%	39,464	73
Total DM		419	84%	47,361	111
Total DM and EM		500	100%	45,686	102

*Notes*: This table shows the distribution of *FG500* companies according to the FTSE criteria and ICB classification system along with the average years of business and size for the entire sample of FG 500 companies.

not appear in the sample) and domestic firms constitute 16% of the total number of firms for which financial data is available. Our results are similar to those of Aggarwal et al. (2011). They analyse the breadth and depth of two samples in 2005 – the *FG500* firms and a sample of 1,289 firms from the G7 countries which comprises all constituent firms of these countries' main stock indexes. They find

# Table 6

Multinational classification of firms.

Multinationality type	All firms	DM	AEM	SEM	Total EM
D	67 (16)	47 (13)	3 (25)	17 (43)	20 (38)
R1	7(2)	6(2)	-	1 (3)	1(2)
R2	_	_	-	_	
R3	3(1)	2(1)	1 (8)	-	1(2)
Total R	10(3)	8 (3)	1 (8)	1 (3)	2 (4)
T2	95 (23)	71 (20)	7 (58)	17 (43)	24 (46)
Т3	59(14)	55 (15)	1 (8)	3 (8)	4(8)
T4	82 (20)	81 (23)	_	1 (3)	1(2)
T5	69(17)	68 (19)	-	1(3)	1(2)
Total T	305 (74)	275 (77)	8 (66)	22 (57)	30 (58)
G	29(7)	29(8)	-	-	
Total	411	359	12	40	52

*Notes*: This table shows the distribution of *FG500* companies by market type and degree of multinationality. It categorises 411 firms with multinationality data available. Figures in parentheses are percentages.

that the majority of firms are trans-regional and show that 84% of *FG500* companies belong to the trans-regional or global category.

When firms are categorised into developed and emerging market firms, similar results are obtained for developed market firms – 13% are classified as domestic, 3% as regional, 77% as trans-regional and 8% as global. Firms from emerging markets tend to be less diversified internationally. The majority of firms from emerging markets are classified as trans-regional – 58%. However, as Table 6 illustrates, most firms are categorised as T2 and T3 (46 and 8% respectively) rather than T3 and T4 (2% in each category). Emerging markets also have more firms classified as domestic (38%) than developed markets. Moreover, no emerging market firms are classified as global while their developed market counterparts have 29 firms (8%) in this category. 43% of firms with their headquarters in a SEM are classified as domestic, 25% for AEM and only 13% for DM, as evidenced in Table 6. This suggests that as the country of origin becomes more advanced, firms become more multinational. The figures on transnational firms confirm this trend as the more developed the market, the greater the percentage of trans-regional firms that exist in that market.

A compelling feature of the sample is that there is little evidence of firm level regionality for developed market firms, being an interesting counterpoint to Rugman and his co-authors' claim that FG500 firms are regional entities (Rugman, 2000, 2003, 2005; Rugman and Brain, 2003; Rugman and Girod, 2003; Rugman and Hodgetts, 2001; Rugman and Verbeke, 2003a,b, 2004, 2007, 2008). Rugman and Brain (2003), for example, claim that very few companies are global, with a global strategy defined as the ability to sell the same product and or service around the world. The authors base their conclusions on a smaller sample of 246 companies from the FG500 list in 2001 and state that the majority of these companies' sales are intra-regional. Rugman and Verbeke (2004) work with a larger sample size of 380 companies selected from FG500 largest corporations in 2001, and arrive at the same conclusion: 'the world's largest firms are not global but regionally based, in terms of breath and depth of market coverage' (p. 3). They affirm that these companies have an average of 80.3% of their total sales in their home region of the triad and only nine firms are categorised as global, with at least 20% of their sales in all three regions of the triad but less than 50% in any one region. However, Rugman's analysis of FG500 companies misses some of these peculiarities of firm-level geographical dispersion, as his system is based on the triad regions and does not include emerging markets. Therefore, by using Rugman's system, it is impossible to make any distinction between developed and emerging market firms.

#### 4.3. Industrial analysis

The ICB breakdown for the 411 MNCs shows a similar distribution as for the entire sample of FG500 firms. All sectors are represented with the majority of firms in the Financials (85 firms – 21%), Industrials (70 firms – 17%) and Consumer Goods (66 firms – 16%) sectors. Table 7 details the characteristics of firms in each industry. The spread by industry is consistent with the analysis performed for the entire list of FG500 MNCs; similarly the Financial industry is the oldest sector from all categories (143 years old on average) while Technology maintains the youngest position (64 years old on average).

We assign a number from 1 to 9 representing the level of multinationality of firms from domestic to global, where 1 is the lowest score given to domestic firms and 9 is the highest score given to fully global companies. Results in column 4 of Table 7 show that firms in the Technology sector are the most multinational with an average score of 6.64. This is followed by firms in the Industrials and Consumer Goods sectors, scoring 6.34 and 6.33 respectively. The Utilities sector is the least multinational scoring 4.57. Columns 5 and 6 in Table 7 show the average percentage domestic and foreign sales for firms in each industry. On average, firms have 60% domestic and 40% foreign sales. The ranking of industries based on foreign sales percentages are broadly in line with those from the Aggarwal et al. (2011) classification system although some discrepancies exist with less multinational industries. Utilities and Oil and Gas, for example, are ranked seventh and eighth using foreign sales percentages but ranked tenth and ninth using the matrix of multinationality. Consumer Services and Telecommunications are ranked seventh and eighth using the matrix of multinationality but ranked ninth and tenth using foreign sales percentages. Other rankings are broadly similar. The Technology sector is the most multinational using both methodologies.

Percent	Average MN	Average percent DS	Average percent FS	Average revenue	Average age
9%	4.59 (9)	71%	29% (8)	69,668	68
7%	5.86(4)	56%	44% (3)	34,827	89
17%	6.34(2)	57%	43% (4)	36,105	115

51%(2)

42% (5)

29% (8)

52,054

45,398

43,004

101

131

75

Table 7Industrial classification of firms.

Count

39

29

70

66

25

41

16%

10%

6%

6.33(3)

5.20(6)

4.68(7)

Industry

Oil and Gas Basic Materials

Industrials

Health care

Consumer Goods

Consumer Services

Telecommunications	17	4%	4.65 (8)	72%	28% (10)	49,990	82		
Utilities	14	3%	4.57 (10)	70%	30% (7)	50,508	74		
Financials	85	21%	5.49(5)	66%	34% (6)	52,860	143		
Technology	25	6%	6.64(1)	43%	57%(1)	37,213	64		
Total	411	100%	5.62	60%	40%	47,612	103		
Notes: This table shows the distribution of <i>FG500</i> companies by industry according to the ICB classification system. It first lists the number and percentage of firms in each industry. It then lists the average degree of multinationality, with the ranking of									
Constant in the stand of the stand									

49%

58%

71%

*Notes*: This table shows the distribution of *FG500* companies by industry according to the ICB classification system. It first lists the number and percentage of firms in each industry. It then lists the average degree of multinationality, with the ranking of firms in brackets. It then shows the average percentage of domestic and foreign sales respectively, with the ranking of firms in brackets. It next lists the average size measured by sales in US\$ millions and the average number of years the firm is in business since its date of foundation.

Rugman and Brain (2003) perform a similar analysis on 246 *FG500* firms. They use the Templeton Global Performance Index (TGPI) and categorise firms into the following industries: Banking, Chemicals, Computers, Electronics, Motor Vehicles, Petroleum Refinering, Pharmaceutical and Retailing. They calculate the ratio of foreign to total (F/T) sales but arrive at a different conclusion to our analysis. They find that the banking and retail sectors present the lowest F/T ratio, as opposed to Utilities, the industry with lowest percentage of foreign sales revealed in this analysis. In addition, the authors assert the highest F/T ratio coincides with a broad category they call "manufacturing sectors", a group of companies formed by pharmaceutical, motor vehicles, computers and chemicals. The different approaches used to define industries hinders a more thorough comparison of both sets of results. We believe the ICB classification system used in this analysis provides a more robust categorisation of industries that allows for future comparisons.

Column 7 in Table 7 shows the average size of each industry, measured by sales in millions of US dollars. The largest sector is Oil and Gas (\$69,668 million), followed by Financials (\$52,860 million) and Consumer Goods (\$52,054 million). The smallest industry is Basic Materials (\$34,827 million). These results suggest no relationship between multinationality and size. This is a surprising result given that much of the international business and international finance literature uses the *FG500* list as a benchmark for compiling MNC samples. It emphasises the same point made by Aggarwal et al. (2011) and suggests that scholars need to be more discerning in their choice of MNC samples for empirical research. Column 8 in Table 7 details the average age of firms in each industry. Besides the Technology industry which is the youngest sector with the highest level of multinationality, it does not appear that the age of the industry is related to its multinationality score. In fact, Oil and Gas is the second youngest industry though it presents the second lowest multinationality score after Utilities. At the same time the second oldest industry, Consumer Goods, with an average age of 101 years, ranks second by its multinationality score. The results, therefore, do not highlight any evident relationship between age and multinationality at the industry level.

#### 4.4. Multinationality by market type

Table 8 classifies firms into AEM, SEM and DM firms. When firms are classified using the matrix of multinationality, results show that firms from DM are the most multinational (with a score of 5.92). AEM firms are more multinational than firms from SEM (a score of 4.00 versus 3.43). The foreign sales figures support this finding with firms from DM having the highest percentage foreign sales (42%), followed by firms from AEM (30%) and SEM (18%). DM firms possess a higher multinational score along with a more diversified source of revenues. DM firms are also the largest and oldest (see

# Table 8Categorisation of firms by market type and industry.

Industry	Count	Percent	Average MN	Average percent DS	Average percent FS	Average revenue	Average age
Advanced emerging mai	rkets						
Oil and Gas	4	33%	2.75	84%	16%	53,398	63
Telecommunications	1	8%	5.00	40%	60%	29,233	64
Financials	2	17%	3.00	99%	1%	49,865	136
Technology	5	42%	5.20	55%	45%	28,211	29
Total AEM	12	100%	4.00	70%	30%	40,301	61
Secondary emerging ma	rkets						
Oil and Gas	10	25%	3.20	76%	24%	47,239	34
Basic Materials	6	15%	2.33	86%	14%	50,062	52
Industrials	7	18%	4.43	64%	36%	29,618	74
Consumer Goods	4	10%	3.50	84%	16%	27,366	59
Telecommunications	3	8%	3.67	92%	8%	25,133	22
Utilities	2	5%	1.50	93%	7%	23,740	16
Financials	8	20%	4.00	93%	7%	41,956	98
Total SEM	40	100%	3.43	82%	18%	38,702	57
Developed markets							
Oil and Gas	25	7%	5.44	67%	33%	81,243	82
Basic Materials	23	6%	6.78	48%	52%	30,852	99
Industrials	63	18%	6.56	56%	44%	36,826	119
Consumer Goods	62	17%	6.52	47%	53%	53,647	105
Health care	25	7%	5.20	58%	42%	45,398	131
Consumer Services	41	11%	4.68	71%	29%	43,004	75
Telecommunications	13	4%	4.85	70%	30%	57,322	98
Utilities	12	3%	5.08	66%	34%	54,969	84
Financials	75	21%	5.72	62%	38%	54,103	148
Technology	20	6%	7.00	40%	60%	39,464	73
Total DM	359	100%	5.92	58%	42%	48,849	110

*Notes:* This table shows the distribution of *FG500* companies by market type and industry. It first lists the number and percentage of firms in each industry. It then lists the average degree of multinationality. It then shows the average percentage of domestic and foreign sales respectively. It next lists the average size measured by sales in US\$ millions and the average number of years the firm is in business since its date of foundation.

Table 8), followed by firms from AEM and SEM. These findings suggest that firms from more advanced economies tend to be older, larger and more multinational.

We consider if the differences in multinationality between emerging and developed markets are due to different industrial structures between countries, whereby some industries are more multinational than others. Looking industry by industry it is clear that firms from developed markets are more multinational on a single case by case basis and not only for the overall average. The distribution by industry shows some disparities. AEM firms (12 firms) are represented in only four industries (Oil and Gas, Telecommunications, Financials, Technology). SEM firms (40 firms) are present in seven industries (Oil and Gas, Basic Materials, Industrials, Consumer Goods, Telecommunications, Financials, Utilities). SEMs do not have any firms in the most multinational industry (Technology) but do have firms located in the least multinational sector (Utilities). In the DM group (359 firms), all industries are represented by several firms. Technology remains in pole position (with a score of 7), while Consumer Services is the least multinational industry (with a score of 4.68). If only industries common in at least one of the other two market categories are considered, Utilities remains as the least multinational industry (with a score of 5.08).

Similar results are obtained when firms are categorised using MSCI classification criteria. Firms from developed markets have a higher multinationality score of 5.91 compared to 3.88 for firms from emerging markets. The technology sector scores highest in terms of multinationality, for both developed and emerging market firms, while Utilities is the least multinational. This indicates that within the market groups some coherence exists in the multinationality scores by industry sector. The results obtained are also consistent with the results obtained by Berrill and Kearney (2010). Using a

sample of *FG500* firms in 2009, they find that DM firms have a higher multinationality score (5.91) than EM firms (3.33).

Although total averages indicate DM firms are larger and more multinational than EM firms, a joint analysis by type of market and industry reveals some peculiarities worth mentioning. A comparison of the firms' average size by sector reflects disparities in the outcome as not all industries in DM are larger than industries from EM. The Basic Materials is larger for SEM than DM, with average revenues of \$50,062 million versus \$30,852 million respectively. The joint analysis also highlights how some sectors have large differences between both DM and EM indicating heterogeneity at industry level. The Telecommunications DM firms for example have average sales of \$57,322 million versus AEMs sales \$29,233 million and SEM sales \$25,133 million. In the Oil and Gas sector, DM firms sales are \$81,243 million versus AEMs sales \$53,398 million and SEM sales \$47,239.

#### 5. Conclusions

We analyse the *FG500* list of the largest firms in the world in 2010. We apply the system proposed by Aggarwal et al. (2011) to classify the multinationality of these corporations. Diversely from the Regionalist supporters' claim that most *FG500* firms are regional rather than global, we find that the sample includes a broad variety of firms ranging from purely domestic corporations to entirely global MNCs, with most being classified as trans-regional.

We also find that there are relatively few regional firms. There are no firms with sales classified as R2, and very few firms with regional sales (R1 and R3). Home region penetration from sales perspective thus appears to be very limited. We show that firms from advanced economies tend to be more multinational than firms from emerging economies. Firms from developed economies also tend to be older and larger than firms from emerging markets. However, we find no relationship between multinationality and age or multinationality and size. We therefore conclude that DM firms are not more multinational as a result of size, age or industrial structure.

We further suggest that regional geographical categorisations are inappropriate given the existing trends towards a more globalised economy. This is particularly true for emerging markets that are, by definition, on a transformation track. In the past few years the academic literature has analysed EMNCs, detailing how they differ from developed market MNCs (Khanna et al., 2005; Goldstein, 2007; Cuervo-Cazurra and Genc, 2008; Pillania, 2009; Berrill and Kearney, 2010). Future research could investigate if the differences between developed and emerging market firms found in this study continue to exist over time, as well as the potential changes and trends over time.

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