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## THE COMPLEX, YET SMALL WORLD OF GLOBAL MULTINATIONALS – INSIGHTS ON SOME APPARENT PARADOXES

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**OGREAN Claudia**

*Lucian Blaga University of Sibiu, Romania*

**HERCIU Mihaela**

*Lucian Blaga University of Sibiu, Romania*

**Abstract:**

*Globalization, as it is today, shapes a complex, networked world – that embeds all the features (both vantages and liabilities) of a complex adaptive system. Being one of the biggest networks that define this world, the system of international business – characterized by diversity, (nondeterministic) interconnectivity and uncertainty – is also characterized by the small-world syndrome. Global multinationals are the best supporting agents in order to dismantle the apparent paradox of the complex, yet small world (and others like it).*

**Key words:** *globalization, complex world, small world, global multinationals*

### **1. A complex, yet small world shaped by globalization**

Into a referential book arguing "The world is flat", Friedman (2003) revealed his well-known – rather optimistic and positive – approach of the *three eras of globalization* as follows: Globalization 1.0 (between 1492 and 1800) – that counted on nation-states and muscles; Globalization 2.0 (between 1800 and 2000) – driven by multinationals and by the technological advancements in hardware industry; Globalization 3.0 (since 2000) – focused on individuals and software industry. More than that, he also emphasized that: "*Globalization 1.0 shrank the world from a size large to a size medium. (...) Globalization 2.0 shrank the world from a size medium to a size small. (...) Globalization 3.0 is shrinking the world from a size small to a size tiny and flattening the playing field at the same time*". (Friedman, 2003).

Friedman's vision – more like the *winner takes it all* perspective, and apparently without realizing that *one size does not fit all* – was based on the assumption that the humankind has evolved to such a configuration that will allow it to transform hierarchical structures into (optimal) horizontal and collaborative ones, where

individuals – no matter where they are placed in space – in front of computers have the maximum decisional and transforming power regarding their competitive and collaborative tasks. Although, Friedman pull an alarm signal *"to all the businesses, institutions, and nation-states that are now facing these inevitable, even predictable, changes but lack the leadership, flexibility, and imagination to adapt – not because they are not smart or aware, but because the speed of change is simply overwhelming them"* (Friedman, 2003).

Five years after Friedman, Smick (2008) has displayed a much more balanced (pessimistic and contradictory) view on globalization (especially related to international finance) into his well known book *"The world is curved"* (named as an over time response to Friedman's one). Smick's thesis was: *"the integration of the world's financial markets during the past quarter-century led to a golden age of wealth creation and poverty reduction never before seen in the history of mankind. That's the good news. (...) The bad news is that today's spectacular global economy is both unstable and unsettling. As jobs and investment move around the world, people lose incomes and pensions. And as these enormous shifts occur, the economic benefits of the system are often unfairly distributed"* (Smick, 2008).

In the light of the (especially financial) global crises the world was facing at that time (crises that made the world not to recover until now), Smick was concluded that, after one quarter-century of evolution on the way of globalization (as he described it), the humankind was still not aware of all the implications – good and bad – that globalization has brought with it, on one hand, and politicians and authorities still have little understanding on the unique nature of the economy as it is today, on the other hand. Nevertheless, the solution Smick offered is likely an optimistic one: given this volatile world there is no other choice but to assume the globalized market and to subtly lead it for the better, while minimizing the negative consequences.

Friedman's book raised a whole plethora of controversies and debates, so Smick's book was not the only response. *Cambridge Journal of Religion, Economy and Society* also dedicated a special issue to it; some of the conclusions were expressed as follows: *"everyone agrees we live in a more 'globalized' world, but views differ as to what this means and whether it is a trend for good or ill. (...) In fact, there is a sizable body of opinion and evidence that globalization is not flattening the world economy but accentuating its unevenness. (...) Is as likely or even more likely that globalization will lead to a more 'spiky' or 'bumpy' world: spiky, in the sense that at various spatial scales the geographical allocation of economic activity is likely to become more uneven and more differentiated. This prediction is not only made at the global level with respect to between-country unevenness but also with respect to inequalities and disparities among city-regions"* (Christopherson et al. 2008).

Mayrhofer and Urban (2011) argue that *globalization* as it is today is a process of *rapid international integration toward a geo-economy of complexity*. Its complexity is given by at least three main sources / characteristics: (1). the fact that *globalization envisages all the entities* – it is a process of interconnections and interdependencies between a growing number of the globe's actors: production companies, consumers,

citizens, unions, NGOs, public institutions, financial companies, political or cultural organizations, etc.; (2). than, *the interconnections between all the entities may have very different forms*: tangible/material or intangible/immaterial, financial or juridical, depending on the rules that govern the corresponding social systems which formally (through constitutions, laws, force) and informally (by consensus) define any actor's role and, by this, the number and quality of the relations it has with all the other actors; (3). and finally, *uncertainty* is the third source of the complexity: misinformation (partial or inexistent or lack of information), bad appreciation of actor behaviors: cheaters and fraudsters who do not respect any rules, corrupt agents that distort the market's laws, tricks which are distorting the logic of the rules of the game and, by this, the characteristics of the interdependence bonds (Mayrhofer and Urban, 2011).

Many other opinions converge (one way or another) with Mayrhofer and Urban's standpoint on *complexity – and networks* that define (geo-economic) globalization nowadays; more than that, they do not come from theorists in the fields of economic sciences exclusively. For instance: Homer-Dixon (2011) argues that *“now, increasingly, we live in a world of complex systems, and we have to cope with the vicissitudes of these systems all the time. (...) Our economy, especially the global economy, is a complex system”*; on the other hand, Barabasi and Frangos (2002) *“view the economy as a complex network, whose nodes are companies and whose links represent the various economic and financial ties connecting them”*.

On the other hand, renowned specialists in the field of international business claimed that complexity does not have to be complicate to manage, because *“a lot of what is described as ‘complexity’ is often just confusion. (...) ‘The global economy is a dynamic self-organizing system based on co-evolving institutions’ seems to be a profound statement, even though it says little more than that the global economy is undergoing change. (...) Complexity can be addressed perfectly adequately using existing concepts derived from the rational action approach”* (Rugman, 2009).

*Within this framework of complexity, yet we can say the world is small – not exactly in the sense that Friedman defined it, but in the sense that “many complex networks have a small-world topology characterized by dense local clustering or cliquishness of connections between neighboring nodes yet a short path length between any (distant) pair of nodes due to the existence of relatively few long-range connections”* (Basset and Bullmore, 2006); or, as Amaral and Ottino (2004) have expressed this apparent paradox, *“real networks are both clustered (high degree of local connectivity) and small-worlds (it takes only a small number of steps to connect any two nodes). (...) The small-world phenomenon (...) is defined by the co-existence of two apparently incompatible conditions, (i) the number of intermediaries between any pair of nodes in the network is quite small – typically referred to as the six-degrees of separation phenomenon – and (ii) the large local “cliquishness” or redundancy of the network – i.e., the large overlap of the circles of neighbors of two network neighbors”* (Amaral and Ottino, 2004).

So, *“today we increasingly recognize that nothing happens in isolation. Most events and phenomena are connected, caused by, and interacting with a huge number*

*of other pieces of a complex universal puzzle. We have come to see that we live in a small world, where everything is linked to everything else” (Barabasi and Frangos, 2002). In the same idea, Sirkin et al. (2008), under the process of fast growing of the emerging markets and transition economies (and of the multinationals originated within them) on the global arena, are announcing a new phase of globalization called *globality* – which “is not a new and different term for globalization, it’s the name for a new and different global reality in which we’ll all be competing with everyone, from everywhere, for everything. (...That’s because...) Today we look forward and see a new era emerging. We call it *globality*, a different kind of environment, in which business flows in every direction. Companies have no centers. The idea of foreignness is foreign. Commerce swirls and market dominance shifts. Western business orthodoxy entwines with eastern business philosophy and creates a whole new mind-set that embraces profit and competition as well as sustainability and collaboration” (Sirkin et al., 2008).*

Thought all these rather signal the success of – good and/or bad, positive and/or negative – clusters and clustering, and not at all leveling. The paradoxes of global versus local, competing versus cooperation, unprecedented development versus deepest poverty, and so on are still very present, and, under the above mentioned features that define globalization today, do not seem to disappear any time soon.

## **2. Global multinationals – players of the leading roles on the global arena**

Multinational enterprises (MNEs) now represent defining entities of the global economic system, and the last half of century revealed their ability to become leading actors of the globalization process. This is for sure (looking at global statistics), no matter how the academic literature, as well as international institutions defined them and their evolution paths within the international business world.

OECD (2011) for instance, when established the most recent *Guidelines for Multinational Enterprises*, does not exactly defined them, but rather described them, in order to differentiate them from other entities: *“these enterprises operate in all sectors of the economy. They usually comprise companies or other entities established in more than one country and so linked that they may coordinate their operations in various ways. While one or more of these entities may be able to exercise a significant influence over the activities of others, their degree of autonomy within the enterprise may vary widely from one multinational enterprise to another. Ownership may be private, State or mixed” (OECD, 2011).*

Cavusgil and colleagues (2008) have the same kind of description-approach when defined MNEs: *“a multinational enterprise is a large company with substantial resources that performs various business activities through a network of subsidiaries and affiliates located in multiple countries. One of the hallmarks of MNEs is that they tend to carry out R&D, procurement, manufacturing, and marketing activities wherever in the world it makes most economic sense. In addition to a home office or*

headquarters, the typical MNE owns a worldwide network of subsidiaries. It collaborates with numerous suppliers and independent business partners abroad (sometimes termed affiliates)" (Cavusgil et al., 2008).

The *global multinational*, on the other hand, is a particular type of MNE. At its turn, the concept of the global multinational has many different approaches – some emphasize on the evolutionary approach of firms, while others talk about the born global firms (as a contradiction to the stage approach): *"Born globals are companies that conduct international business at or near the founding of the firm. Despite the limited resources that usually characterize new businesses, born globals achieve substantial international sales from an early stage in their development, and are emerging in substantial numbers worldwide. The period from the firm's founding in its home country to initial foreign market entry is often three or fewer years"* (Knight, 2010). There is a bridge between the two different approaches, as the promoters of born global firms admit themselves that *"nevertheless, it is obvious that there are born globals whose degree of 'globality' varies"* (Gabrielsson and Kirpalani, 2012).

The *Organization theory perspective* defines *"four stages of international evolution"* (Table 1), arguing that: *"although few companies are genuinely fully global, (...) truly global companies no longer think of themselves as having a single home country and, indeed, have been called stateless corporations"* (Daft, Murphy and Willmott, 2010).

*Table 1: Four Stages of International Evolution*

	<b>I. Domestic</b>	<b>II. International</b>	<b>III. Multinational</b>	<b>IV. Global</b>
<b>Strategic orientation</b>	Domestically oriented	Export-oriented multidomestic	Multinational	Global
<b>Stage of development</b>	Initial foreign involvement	Competitive positioning	Explosion	Global
<b>Structure</b>	Domestic structure, plus export department	Domestic structure, plus international division	Worldwide geographical, product	Matrix, trans-national
<b>Market potential</b>	Moderate, mostly domestic	Large, multi-domestic	Very large, multi-national	Whole world

(Source: Daft, Murphy and Willmott, 2010)

From a *Strategic management and International business* perspective, Alan Rugman classifies the multinational enterprise in *four categories/types* in terms of spreading of their sales: *home region oriented MNEs*: firms with at least 50% of their sales in their home region of the triad; *bi-regional MNEs*: firms with at least 20% of their sales in each of two regions, but less than 50% in any one region; *host region oriented MNEs*: firms with more than 50% of their sales in a triad market other than their home region; *global MNEs*: firms with sales of 20% or more in each of the three parts of the triad, but less than 50% in any one region of the triad (Rugman and Verbeke, 2004; Rugman, 2005)

A more complex *International business* perspective revealed Aggarwal and colleagues (2010), who developed a matrix helping them classifying firms by their multinationality into 16 types (Table 2) – considering: (1). “*breadth – the extent of geographic spread using four broad categories: domestic, regional, transregional and global. To calibrate this, (they) divide the world into six regions based on the inhabited continents: Africa, Asia, Europe, North and Central America, Oceania, and South America;* (2). *the depth of market engagement (measured) on the basis of the commitments and contractual arrangements that firms engage in, and the resulting levels of control they obtain together with the risks they face. Depth ranges from the ‘shallow’ engagement with international markets associated with exports and imports, to licensing and franchising, operating foreign offices, forming alliances and joint ventures, through to the commitment of FDI – which generally involves a deeper engagement with foreign markets and higher exposures to foreign business, economic and political risks than say exporting or licensing*” (Aggarwal et al., 2010).

Table 2: Classifying firms by multinationality: 16 firm types

Category	Description
Purely domestic firms	
1	Domestic sales and subsidiaries
Regional firms	
2	Regional sales, domestic subsidiaries
3	Domestic sales, regional subsidiaries
4	Regional sales and subsidiaries
Trans-regional firms	
5	Trans-regional sales, domestic subsidiaries
6	Trans-regional sales, regional subsidiaries
7	Domestic sales, trans-regional subsidiaries
8	Regional sales, trans-regional subsidiaries
9	Trans-regional sales and subsidiaries
Global firms	
10	Global sales, domestic subsidiaries
11	Global sales, regional subsidiaries
12	Global sales, trans-regional subsidiaries
13	Domestic sales, global subsidiaries
14	Regional sales, global subsidiaries
15	Trans-regional sales, global subsidiaries
16	Global sales and investments

(Source: Aggarwal et al., 2010).

The reality is that “*there is a much greater diversity in the stock of multinational corporations than formerly. At the same time multinational corporation have become more integrated. Thus, although in many ways multinational corporations now represent a larger, more coherent economic bloc, it is a bloc which is cross-cut by many more fractures and fissures*” (Taylor and Thrift, 2013).

### 3. Some empirical evidences on global multinationals

Vitali and colleagues (2011) published the first exhaustive empirical study aiming to design “*The Network of Global Corporate Control*” (Vitali et al., 2011). Observing for start that “*a common intuition among scholars and in the media sees the global economy as being dominated by a handful of powerful transnational corporations (TNCs). However, this has not been confirmed or rejected with explicit numbers*”, the authors formulated three working hypothesis on “*how TNCs globally connect to each other. (...) TNCs may remain isolated, cluster in separated coalitions, or form a giant connected component, possibly with a core-periphery structure*” (Vitali et al., 2011).

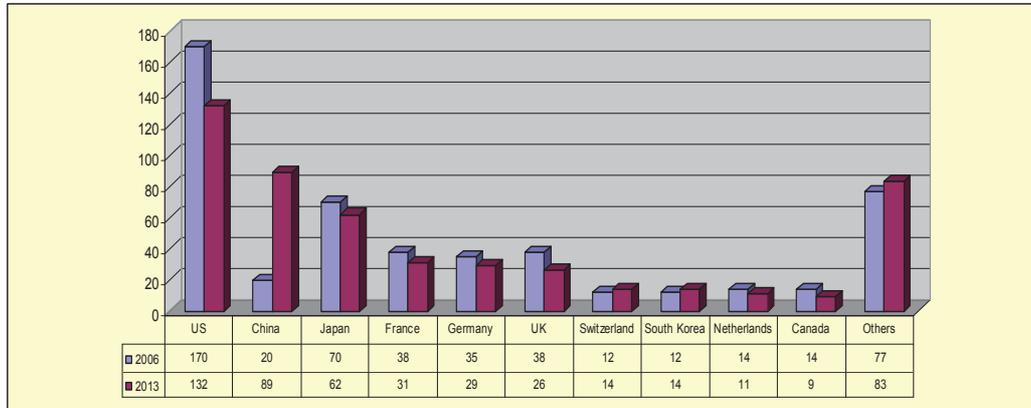
In order to do their research, they started “*from a list of 43060 TNCs (located in 116 different countries, with 5675 TNCs quoted in stock markets) identified according to the OECD definition, taken from a sample of about 30 million economic actors contained in the Orbis 2007 database*”. Through a recursive search it singles out (...) *the network of all the ownership pathways originating from and pointing to TNCs. The resulting TNC network includes 600508 nodes (economic entities) and 1006987 ownership ties (corporate relations)*” (Vitali et al., 2011).

As Coghlan and MacKenzie (2011) have noted, “*the work (...) revealed a core of 1318 companies with interlocking ownerships. Each of the 1318 had ties to two or more other companies, and on average they were connected to 20. (...) When the team further untangled the web of ownership, it found much of it tracked back to a “super-entity” of 147 even more tightly knit companies - all of their ownership was held by other members of the super-entity - that controlled 40 per cent of the total wealth in the network*” (Coghlan and MacKenzie, 2011).

A more recent study was conducted by Mikler (2013) into “*The Handbook of Global Companies*”; Mikler’s conclusions were very similar to those of Vitali and colleagues: “*the reality is that the global economy is highly concentrated and oligopolistic. All the world’s major industrialized sectors are now controlled by five multinational corporations (MNCs) at most, while 28% have one corporation that accounts for more than 40% of global sales. (...) Global companies are therefore vast conglomerates that underpin not just whole national economies, but the world economy*”. (Mikler, 2013).

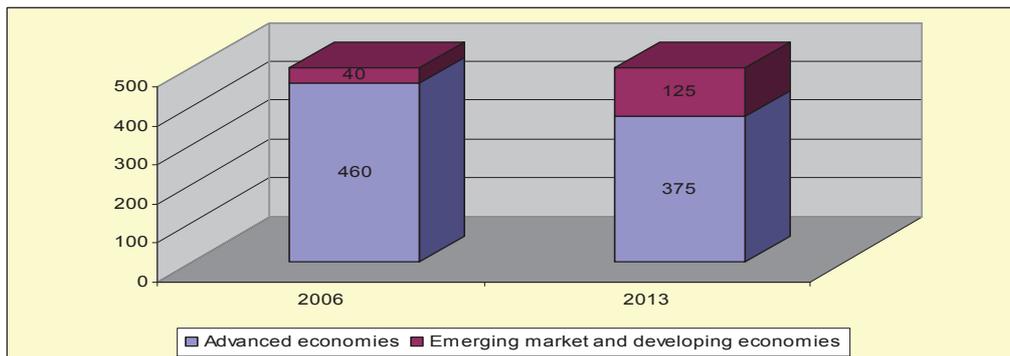
But *who are these dominating global multinationals?* There are two generally accepted (by the international business and international management literature as well – see Rugman, 2005; Amelon and Cardebat, 2010; Mikler, 2013) benchmarks: *Fortune Global 500* – that annually reunites, since 2006, the largest companies in the world ranked by their revenues (<http://money.cnn.com/magazines/fortune/global500>) and *The world’s top 100 non-financial TNCs ranked by foreign assets* – periodically conducted ranking by UNCTAD, considering the *transnationality index*, which is “*calculated as the average of the following three ratios: foreign assets to total assets, foreign sales to total sales and foreign employment to total employment*” (<http://unctad.org>).

**Figure 1: Number of TNCs in Fortune Global 500 – by countries (2013 comparative to 2006)**



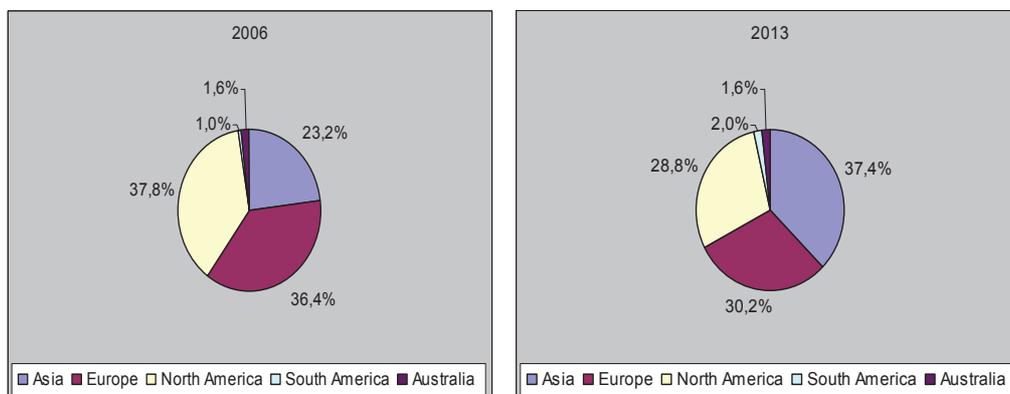
(Source: Fortune Global 500, <http://money.cnn.com/magazines/fortune/global500>)

**Figure 2: Distribution of TNCs between Advanced economies and Emerging market and developing countries – number of TNCs (2013 comparative to 2006)**



(Source: Fortune Global 500, <http://money.cnn.com/magazines/fortune/global500>)

**Figure 3: Distribution of TNCs in Fortune Global 500 – by continents (number of MNCs in 2013 comparative to 2006)**



(Source: Fortune Global 500, <http://money.cnn.com/magazines/fortune/global500>)

*Table 3: Number of TNCs per country in Top 100 FG500*

Rank	Country / countries	Number of TNCs
I	US	32
II	China	12
III	Japan	10
IV	Germany	9
V	France	8
VI	UK	5
VII	Italy	4
VIII	Russia	3
IX	Netherlands, Switzerland, South Korea, Spain	2 x 4
X	Brazil, Taiwan, Mexico, Venezuela, Norway, Malaysia, Thailand, India, Luxembourg	1 x 9
Total	21 countries	100 TNCs

(Source: Fortune Global 500, <http://money.cnn.com/magazines/fortune/global500>)

Looking at the *Fortune Global 500* (FG500) 2013 comparative to 2006 (Figures 1-3 and table 3), there are some major shifts that took place in less than a decade since FG500 is drawn:

- The number of countries that are present in FG500 grew from 33 (in 2006) to 37 (in 2013); the new entrants (with one TNC per each country) are Colombia, Hungary, Poland, Indonesia, UAE – all of them being placed by IMF into the *Emerging market and transition economies* broad development category;
- Top 10 countries – according to the number of TNCs in FG500 in 2013 is represented by: US, China, Japan, France, Germany, UK, Switzerland, South Korea, Netherlands and Canada. These countries count for 84,6% from the total number of TNCs present in FG500. Comparative to 2006, these countries have registered very interesting dynamics: while US experienced the most significant decline: from 170 TNCs to 132, China registered the strongest increase: from 20 TNCs to 89;
- The gaining momentum of the emerging market and developing economies is obvious, while the number of TNCs from these countries has increased from 8% (in 2006) to 25% (in 2013);
- The distribution of TNCs by continents reveals: a doubling of the number of TNCs from South America (10 in 2013 comparative to 5 in 2006); a stronger presence of the Asian TNCs (187 in 2013 comparative to 116 in 2006); a significant setback of the North American TNCs (144 in 2013 comparative to 189 in 2006); a decline in the number of European TNCs (151 in 2013 comparative to 182 in 2006); and a constancy regarding Australia's number of TNCs in FG500 (8);
- When looking at Top 100 of the FG500, the distribution is a little bit different (although we mostly are talking about the same countries): US is represented by 32 TNCs in Top 100 – even though US TNCs represent just 26,4% from the total



Table 4: Distribution of TNCs in World's Top 100 non-financial TNCs – by countries

Rank	Country / Countries	Number of TNCs
I	US	22
II	France United Kingdom	14 x 2
III	Germany	10
IV	Japan	8
V	Switzerland	5
VI	Italy, Spain, Sweden	3 x 3
VII	China, Mexico	2 x 2
VIII	Belgium, Luxembourg, Hong Kong, Norway, Taiwan, Australia, Denmark, Brazil, Canada, Malaysia, Israel, Netherlands, Russia, Austria	1 x 14
Total	25 countries	100 MNCs

(Source: UNCTAD, 2013, <http://unctad.org>)

Referring to UNCTAD's figures in terms of transnationality index (TNI), Mikler (2013) concludes: "The average TNI for the world's top 100 MNCs grew from 52 to 59 between 1993 and 2008, so that at this rate it will be another 30 to 40 years before their average TNI reaches 75%. (...But) such global trends mask national specificities. For example, the average TNIs of US, German, and Japanese firms in the top 100 MNCs are just 51, 55 and 52 respectively (UNCTAD 2011), so that on average the largest corporations headquartered in the world's major industrialized nations retain half their sales, assets, and employment at home. (...On the other hand), it is by no means certain that the gradual long-term trend towards greater corporate transnationality is irreversible" (Mikler, 2013).

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