WP4/23 SEARCH WORKING PAPER

Firms transactions and knowledge flows in the European Union's Neighboring Countries

Maria Chiara Di Guardo, Raffaele Paci

September 2013

Funded under Socio-economic Sciences & Humanities

The research leading to these results has received funding from the European Community's Seventh Framework Programme (FP7/2010-2.2-1) under grant agreement n° 266834

Firms' transactions and knowledge flows in the European Union's Neighboring Countries

Maria Chiara Di Guardo and Raffaele Paci

University of Cagliari, CRENoS

Abstract

The globalization process of production and technological activities has generated an unprecedented increase in the number of international transactions among firms which take the forms of Strategic Alliances, Joint Ventures and Mergers and Acquisitions. These transactions, whatever their nature and motivation are, generate knowledge flow among the companies involved that occur before, during and after the deal. Consequently, firms' transactions represent a valuable proxy for the exchange of knowledge across the geographical areas where companies are located. The aim of the paper is to analyze in details the companies transactions and agreements in the European Neighboring Countries (ENC) over the period 2000-2011 in order to explore the geographical directions and sectoral characteristics of the knowledge flows among firms in those areas and external firms.

Keywords: Knowledge flows, Strategic Alliances, Joint Ventures, Mergers and Acquisitions, European Neighboring Countries.

JEL: G34, L24, F23, O33

Acknowledgments: The research leading to these results has received funding from the European Union's Seventh Framework Program FP7-SSH-2010-2.2-1 (2011-2014), under grant agreement n° 266834 SEARCH project. We like to thank Davide Pinna and Marta Foddi for the excellent work in preparing the database.

Prepared for the Special Issue in *Journal of Social and Economic Geography*
June 2013

1. Introduction

The relationship between the European Union (EU) and its neighboring countries is a crucial issue for the future of Europe. After the last enlargements in 2004 and 2007, the eastern borders of the EU shifted drastically; moreover, the recent turmoil spread across several Arabic countries has increased the instability of the European southern borders. As a consequence, the EU is currently adjacent to countries characterized by extremely different economic, cultural, social and political conditions.

As an alternative to further enlargements the EU has developed an integrated policy towards the non-candidate neighboring countries at both the eastern and the Mediterranean borders. So far sixteen countries belong with different negotiating status to the European Neighboring Countries (ENC) group and are involved in the European Neighborhood Policy (ENP) launched in 2004. The aim of ENP is to create close, peaceful and cooperative relationships with bordering countries generating stronger economic integration and cross border co-operation programs (COM 373, 2004).[1] The core drivers of ENP are investment facilities, technical and financial support and, more generally, the promise of enhanced relations in trade and people mobility. Thus, in addition to institutional and cultural issues, ENP covers a large number of economic themes like markets liberalization, trade, FDI, research, innovation diffusion, education, labor migration, environmental and safety standards.

In this perspective, the international transactions among firms from EU and ENC can have a central and increasing role in the knowledge transfer and integration process. Firms' transactions and agreements may take different forms like Mergers and Acquisitions (M&A) and alliances in the form of strategic alliances (SA) or joint ventures (JV). M&A and alliances are externally oriented corporate development efforts with the goal of achieving economies of scale, scope, market share, prestige, survival, and other outcomes essential to sustained competitive advantage. In general, these transactions, whatever their nature and motivation are, generate potential knowledge flow among the companies involved and consequently between the geographical areas where companies are located (Hussinger, 2010).

This knowledge transfer may happen before, during and after the transaction as a results of several activities: information exchange in the due diligence phase and among managers; access to new technologies and organizational competencies; task and human integration; interaction of different organizational cultures; transfers of capabilities and resource sharing; etc. As some empirical studies show, firms' transactions might act as an important vehicle for learning and organizational renewal, broaden the organizations knowledge base and enhance their ability to react adequately to changing circumstances (Vermeulen & Barkema, 2001). But they also have profound contextual and socio-institutional implications where the geographical dimension plays a relevant role (Rodríguez-Pose & Zademach 2006). M&A and alliances affect not only the firms involved, but also both the locations and environment with which they are associated and the organizational and geographical shape of industries as a whole.

Therefore, firms' transactions, exploiting the interregional complementarities, represent a valuable proxy for the exchange of knowledge across countries and regions and thus offer the opportunity to dig into the knowledge flows between the EU and the ENC.[2] So far the literature has mainly focused on the governance perspective of the European neighborhood integration policy and on the movements of tangible elements like goods (trade), capital (FDI) and people (migration) while we know surprisingly little about the various forms of transactions that involve firms located in the ENC and generate important flow of knowledge and innovation. The relevance of the phenomenon is clear at least from a theoretical point of view. For the ENC, in fact, firms' transactions could be a

[1] For a comprehensive overview of ENP see Whitman and Wolff (2010), Whitman and Juncos (2011) and Wesselink and Boschma (2013).

[2] Firms transactions represent just one of the numerous indicators of knowledge diffusion which are worth considering like co-inventorship, patent citations and research networks and technological alliances (see Autant-Bernard et al. 2013).

fast way to activate knowledge transfer processes and to generate an important innovation pressure. Innovation considerations are, indeed, central to merger and alliances policy because dynamic efficiency is critical to successful economic performance and innovation itself is a key dimension of market performance, which is potentially affected by a merger or an alliance.
The aim of the paper is to investigate in details the transactions and agreements performed by firms located in the ENC in order to explore the knowledge flows between companies in those areas and external firms. More specifically, we focus on the geographical directions of the transactions to appraise the role of spatial and cultural proximity among EU and ENC. Moreover, we examine the sectorial scope of the deals to assess the degree of industrial and technological relatedness of the transactions.
Data on M&A, SA and JV was retrieved from the SDC Platinum database (Thomson Financial) considering transactions between January 1st 2000 and December 31st 2011 for which the target or acquirer companies are based in one of the sixteen ENC. We analyze each ENC distinguishing between two macro groups: the ENC- East (Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine) and ENC-South (Algeria, Egypt, Israel, Jordan, Lebanon, Libya, Morocco, Syria, Tunisia, Palestinian Territory).[3] We selected large, medium-sized, and small takeover transactions, because following Moeller et al. (2004), we believe that a focus only on large takeovers may give an incomplete picture of the impact of acquisitions on the ENC. Similarly we consider the totality of SA and JV in which firms from ENC are involved. As a whole, we are considering 10140 M&A, 576 SA and 415 JV involving at least a company located in the ENC.
The paper is organized as follows. In section 2 we present a literature review. Then, in section 3 we describe the general dimension of the phenomenon; in section 4 we evaluate the geographical dimension of the transactions while in section 5 we analyze their sectoral scope. Some concluding remarks are presented in section 6.

2. M&A and alliances as a mean to combine resources and knowledge

In general, two or more firms carry out an agreement when they combine resources to form a new, mutually advantageous business arrangement in order to achieve predetermined objectives. We consider three kinds of agreements among firms located in the ENC, which contribute to generate knowledge flow: M&A, SA and JV. More specifically, *merger* means any transaction that forms one economic unit out of two or more previous ones. *Acquisition* indicates that a company buys a part of another company sufficient to acquire its control. *Strategic alliance* refers to "agreements characterized by the commitment of two or more firms to reach a common goal entailing the pooling of their resources and activities" (Teece, 1992, p. 19), which does not create an independent business entity. Finally, a *joint venture* is defined as a cooperative business activity, formed by two or more organizations which creates an independent business entity and allocates ownership, operational responsibilities and financial risks and rewards to each member, while preserving their separate identity.
Firms' agreements are motivated by a range of factors such as growth by market expansion, acquisition of special resources, achievement of scale economies, geographical expansion and domestic and international diversification (Scherer & Ross, 1990). From the point of view of our analysis it is important to remark that M&A and alliances influence firms knowledge base by altering firms' *resources and capabilities* in terms of technological know-how or complementary assets. M&A and alliances may raise and enlarge technological know-how which is often tacit and can therefore not be easily transmitted from one firm to another (Nelson & Winter, 1982). In order to avoid high transaction costs, firms may be inclined to engage in an acquisition or in alliances in order to solve problems related to the transmission of tacit knowledge. Moreover, the production of knowledge exhibits important economies of scale and M&A and alliances can facilitate their

[3] In the empirical analysis Palestinian Territory is not included since it never results as partner in M&A deals or in other agreements.

realization. By increasing the size of the organization, M&A allow partners to spread the fixed costs of knowledge activities over a larger output exploiting the economies of scale. Moreover, some authors have highlighted the relevance of economies of scope in M&A which, combining complementary resources, enhance partners' efficiency (Cockburn & Henderson, 2001).

On the same line of reasoning, the strategic management literature acknowledges that alliances are means of extending knowledge boundaries of firms, and acquiring capabilities, especially in the case of technology-related ventures (e.g. Rothaermel & Deeds, 2006). Researchers have emphasized how alliances represent an important way in accessing the knowledge resources of other firms. Alliances enable partner firms to pool their resources and capabilities to widen the technological capabilities that they cannot develop on their own due to direct costs and risks (e.g., Tallman & Chacar, 2011; Tjemkes et al., 2012).

Furthermore, the management literature stresses how in agreement between firms, such as M&A and alliances, there is greater potential to learn from combinations of a complementary nature. Organizational learning allows a firm to acquire and develop cognitive and behavioral skills, which can lead to profound, lasting modifications in terms of how the firm operates. Complementarities in firms' resources can create opportunities for synergies in organizational learning through "economies of fitness" (Larsson & Finkelstein, 1999). Inside the organization, in addition to the well-known importance of economies of scope, knowledge complementarities have a positive influence on dynamic knowledge accumulation in response to changing environment conditions (Helfat, 1997). Moreover, in organizational linkages, knowledge and technology complementarity of participants has been shown to enhance learning and outcomes in R&D consortia, strategic alliances, and technological agreements (Sivadas & Dwyer, 2000). Exceptional gains from trade, exchange or combination of knowledge bases among firms thus stem from the existence of complementarity between the bases themselves. However, it is important to consider that when melting different knowledge bases, some knowledge relatedness is needed in order to benefit from absorptive capacity, but also that if knowledge bases are too similar as well as too different, then there is little room for valuable external contributions to innovation (Velentini & Di Guardo, 2012).

At the same time, M&A and alliances may affect firms' *incentives* to invest in knowledge and innovation due to strategic interdependence in the presence of technological spillovers, patent races or other externalities. Competitive pressure shapes differently the incentives to invest for example in product and process innovation, both at the firm and at the industry level. The industry life cycle plays an important role in determining why M&A and alliances are pursued and how they can shape the market. In a market still characterized by the introduction and first exploitation of new products, new or small firms will be the target of related or conglomerate M&A initiated by larger firms that operate in mature or declining industries or economies. Through the M&A, the latter firms will provide managerial and financial resources to the target company. In turn, the acquiring firms may obtain access to new promising technologies and associated technological capabilities. It is argued that since the industry (or the geographical area) is growing at a high rate, there will be few firms in the same industry that are strategically motivated for a merger to provide such resources. Horizontal and related M&A will more probably be undertaken in the maturity stage to match the low cost and price performance of other firms by achieving economies of scale in research, in marketing and in production. In the decline stage, horizontal mergers occur to ensure survival (Hitt et al., 2001).

Alliances change incentives too, since they push partner firms to promote innovation. Firms are pressed to form alliances with foreign partners as a means of acquiring the resources to compete more effectively at home and abroad, and governments may also encourage local firms to collaborate with foreign firms, particularly those from technologically developed countries, as an efficient way to enhance technology inflow through foreign direct investment and become more technologically adept. The formation of an alliance with a foreign partner enables the local company to gain access to technologies and knowledge that may be scarce or even unavailable in its home country (Lamin & Dunlap, 2011). Such access can facilitate improvements to existing

products or lead to the development of new products, thus enhancing the local competitiveness and markets (Li et al., 2012).
Finally literature has recently emphasized that past M&A or alliances learning and experience affect present learning, organizational structure, and the probability of new M&A or alliance. Specifically, the intensity of exposure to a certain host country environment leads to host-country specific experience (Luo & Peng, 1999) and can represent a significant proxy of effective contaminations and knowledge transfer between different environments.

3 The general dimension of the phenomenon

The literature review has showed how M&A and alliances, changing resources and incentive, can affect the knowledge base and the competitiveness of the firms involved. Accordingly, firms transactions and agreements that involved firms from the ENC represent an interesting proxy for the exchange of knowledge across countries and regions and thus offer the opportunity to understand better the market changes in those areas. In this perspective, we examine the evolution of the ENC transactions between 2000 and 2011 looking at those deals involving at least a firm located in one of the ENC. Data are retrieved from the SDC Platinum which contains information on M&A, SA and JV updated daily through over 200 English and foreign language news sources, SEC filings and their international counterparts, trade publications, wires and proprietary surveys of investment banks, law firms and other advisors. It includes all corporate transactions of any value and both public and private transactions are covered.
In the remaining of the section we analyze the main features of the different transactions performed by the ENC considering that firms decision are affected by the economic, political and social events, which are taking place in the various countries.

3.1 Mergers and Acquisitions

Table 1 shows data on M&A activities sorted by country and status of the transaction for the period 2000-2011. We consider 6299 announced M&A deals in which the target company is based in one of the ENC, and 3816 announced M&A deals in which the acquirer company is based in one of the ENC. In our sample the most active M&A markets are Ukraine (2425 deals announced as target and 1093 deals announced as acquirer) and Israel (1588 deals announced as target and 1559 as acquirer). Egypt and Jordan follow closely with a considerable number of transactions. The remaining of the ENC accounts for less than 18 per cent of the total number of announced deals and 20 per cent of completed deals both as target and bidder. Thus, excluding Ukraine and Israel, the number of deals involving ENC is extremely low, especially when the ENC act as acquirer.
Among the ENC-East group, Ukraine is the "new star" in attracting investments (Price WaterHouseCoupers, 2006) and it represents one of the most important target countries. Moreover, Ukraine borders to both the EU and Russia and is characterized by a strong co-operation willingness with an asymmetric interdependence with the EU (Melnykovska and Schweickert, 2008). Among the ENC-South group, Israel represents the most important target nation in terms of number of M&A. Despite its geographical collocation, Israel is part of the west economy with an important GDP comparable with that of the richest EU countries and with a R&D average expenditure accounting 4.5 per cent of GDP, higher than Italy or Germany.
There are no great differences among the ENC-East and ENC-South groups in the magnitude of the transactions since each area represents almost 50 per cent of the deals announced and completed, despite the fact that, in terms of aggregate GDP, ENC-East is almost five times smaller than ENC-South, and that in 2008 the population of ENC-East is of 75 million against 197 million of ENC-South. Table 1 also shows some similarities across countries. For example, looking at the ENC as target, M&A deals volumes in Morocco and Belarus are similar, although their governance regime is quite different. On the contrary, the numbers are totally different when we look at these two regions as acquirers (24 transaction for Belarus, against 112 transactions for Morocco).

If we weight, by taking their ratio, the number of M&A in which the ENC is target with the GDP (constant value of the year 2005, in euros), Jordan (4%) is the most active in M&A, followed by Moldova (3.7%) and Ukraine (3.7%). When we use the number of M&A in which the ENC is acquirer, Jordan firms are still the most active in the M&A process, followed by Israel (1.2%) and Ukraine (1.3%). This result is only partially consistent with prior research that has established a link between the legal environment and its effect on the ability of the country to attract and sustain M&A activity (Li et al., 2012).

An interesting aspect of M&A transactions is how many announced deals are actually completed and if significant differences among countries in the completion rate exist. From Table 1 we can see that on average 64.9 per cent of announced M&A deals get completed when the ENC are involved as target, and on average 71.2 per cent of announced M&A deals get completed when the ENC are involved as acquirers. The highest percentage of completed deals as acquirer is found in Moldova (89%), Azerbaijan (87%) and Jordan (88%) while, in Jordan (83%) and Morocco (81%) we record the highest percentages as target countries. At the other end of the list we find Libya and Egypt and Azerbaijan and Belarus that, as target nations, see respectively only 60 and 50 per cent of completed transactions. This may signal a situation of uncertainty in these countries linked to the political situation, which makes more difficult the completion of the acquisitions.

If completion upon announcement as acquirer happens more often in ENC-East than in ENC-South, we find a different situation when the ENC is the target. Moreover, international and domestic deals do not have the similar likelihood of completion. This data could indicate for these countries some kind of resistance to international integration linked to political and institutional issues. Many developing countries in this area, for cultural, religious reasons or simply for fear of giving too much control to foreign multinationals, are hostile to incoming foreign direct investment especially to the hegemonic powers of the west in the form of the USA and the EU. As a result, some developing countries have pursued an active policy of restricting incoming M&A. At the same time these data could be related with peculiar economic situation characterized by a high corruption and low indexes in easiness of doing business (World Bank Database, 2008-2009) which have direct effect on the M&A process. For instance, in Algeria, 65 per cent of the firms pay the cost of corruption, through informal payments to public officials, in Egypt this figure increases to 98 percent (World Bank Database, 2010).

Moreover, the number of uncompleted M&A is sector-specific. Politically, sensitive sectors of the economy, those of strategic importance for the government, are characterized by a high degree of political control (Keeler, 1993). Therefore, it would be logical to think that firms involved in M&As in politically sensitive areas are less likely to complete the deal without problems. In countries like Ukraine and Moldova, natural resources are a politically sensitive sector of the economy compared to services, for example. Moreover, empirical literature finds that regulation of the local market has a significant impact on mergers. A high degree of regulation in the target countries tends to prevent foreign firms from acquiring local players, while deregulation and privatization often leads to increasing M&A activities (Buch & DeLong, 2004). Interesting is the case of Israel characterized by a lower level of completed M&A over announced both as acquirer (63.3 %) or target (59.4 %). We can speculate that this results is linked with the peculiar political situation of Israel where the enduring conflict and the religious tensions may have played a decisive role in limiting the rate of completion.

In the last columns of Table 1 we report the completed M&A when ENC is the target country and we distinguish among domestic and international M&A. A domestic acquisition is defined as an acquisition in which the headquarters of the acquirer and the acquired firms are in the same country. An international acquisition is defined as an acquisition in which the headquarters of the acquirer and the acquired firms are located in different countries (Hitt et al., 2001). Generally speaking, if compared to the USA or the EU, few transactions occur among domestic firms: 47 per cent on average but with Armenia, Belarus and Algeria positioned on less than 10 per cent. On the other hand 53 per cent of the M&As are cross-border and this share increases to 59 per cent if we observe

only the ENC-East group. Looking at the two sub-periods we notice a general trend of increasing the share of domestic deals (from 43% to 48%) signaling the strength of the local firms.
Interesting and in countertrend with respect to the other ENC, is the case of Jordan with a more that 77 per cent of domestic M&As. This important rate of domestic M&As together with the increasing number of deals after the 2005 reveals an economy that is transforming and modernizing with a natural process of national concentration. Moreover, this important percentage of domestic deals could explain why Jordan is characterized by one of the highest rate of completed M&As after the announcement (83% as target and 89% as acquirer) confirming the hypothesis that domestic deals have got a higher probability to be completed given the higher homogeneity between partners.
Other interesting elements on M&A flows can be drawn by looking at the net acquirer rate for each country *i*, computed on completed deals, defined as:

$$(A_i - T_i) / (A_i + T_i)$$

where *A* and *T* are the deals when country *i* is respectively the acquirer and the target. The index goes from -1 when the country does not perform any acquisition to +1 when it has only acquisitions; the value is equal to 0 when the two flows are equal. From Figure 1 we can see that only three countries are net acquirer: Lybia and Lebanon (with a low number of total deals) and also Israel which is however characterized by a very high number of transactions. All other countries show a negative index since the number of target deals is higher than acquisition deals.
Since we are interested in analyzing the deals which have been effectively implemented in the rest of the article we limit our attention to the completed M&A where the ENC is the target investigating in details their geographical and sectorial dimensions.
In Figure 2 we report the evolution over the period 2000-2011 of the number of completed M&A deals in the ENC as target. The overall distribution of deals by year shows that, after a decline in the period 2000-2002, the market of M&A has grown very quickly from the year 2005 especially in the eastern ENC. At the same time we can notice a tendency to decrease in the last two years due specifically to the sharp reduction shown by Ukraine, due to the international economic crisis. In the South area, we note that for countries like Libya or Syria the number of M&A deals is almost constant across the years, while in Jordan we observe an incredible and constant increase in the level of M&A deals especially after 2005.
It is interesting to link our findings with the international diffusion of the M&As to remark some significant processes. Literature has emphasized that M&As generally occur in waves and cycles (Fauli-Oller, 2000). The so-called "Fifth Wave" between 1993-2000 was characterized by cross border M&As, and mega mergers, and was particularly remarkable compared to its predecessors. For the first time, continental European firms were as eager to participate in takeovers as their US and UK counterparts, and M&A activity in Europe hit levels similar to those experienced in the US. The "Sixth Wave" invests the period between the years 2003 – 2008 with a sharp increase of M&A activities in 2006 both in terms of numbers and value. This wave is characterized by the globalization process, private equity pressure, and shareholder activism. Since the start of globalization, multinational companies have been engaging more heavily on cross-border trade and investments, which has heightened economic interdependence among national markets. Finally, from 2008 to 2011, M&A activity sank to its lowest levels since 2004, due to the economic downturn.
As Figure 2 show, while Israel's M&A time flow seems consistent with the international M&A waves approach, the data for countries like Ukraine and, more generally, for all ENC-East group, are inconsistent with the international pattern. In fact, we do not observe a decreasing level of M&A after 2008, but a constant and relevant increase, and this process does not start in 2004 but only after 2006. These peculiar "waves" are probably related to the political and economic environment that characterized this area. All countries, to a greater or lesser extent, have had imperfect 'transitions' to capitalism and democracy. In many of them since 1998, 'colored' revolutions have occurred - Belarus (2001 and 2006), Georgia (2003), Ukraine (2004) and Azerbaijan (2005) - and

only in more recent years the political stabilization has allowed to open the economy to the international markets. For Belarus, for example, the increase of M&As observed lately and in countertrend with the international waves, might be explained with the 2009 paradigm shift that has taken place in the EU's policy promoting functional co-operation.

3.2 JV and SA agreements

The total number of SA and JV agreements considered amounts to 991, involving 1575 different firms; since each company may take part in more than one agreement we end up with a total number of 2157 participations. It is important to remark that we have preferred to base our analysis on the announced agreements due to a lack of information on the subsequent outcome of the deal. In general, it is difficult to have complete information on the whole procedure leading to the conclusion of the agreement and therefore we are not able to distinguish between closed or pending transactions.

Table 2 presents the total number of agreements by typology and geographical area distinguishing also between "intranational" agreements if all the participants involved belong to the same country and "international" agreements if at least one firm is located abroad.

Looking at the total set of 991 alliances, that compared with the numbers of M&A are really few, we can observe that almost all agreements (923 equal to 93% of the total) are international, as they include participants located in different countries, and are carried out in the Southern ENC area (840). Considering the typology, it can be noticed that 58% of total agreements are SA. Moreover, notable differences emerge at the geographical level: in the case of ENC-East, most part of agreements are classified as international JV (62%) while, in the case of ENC-South, the largest share is represented by international SA (58%). In Figure 3 we present the share of agreements by typology, macro area and internationalization level. The visual representation makes evident that if we consider the whole sample and the ENC-South area, most part of deals are classified as international SA, while for the eastern ENC the largest component is represented by international JV. It also appears that for ENC-East the share of domestic agreements, both SA and JV, is particularly small.

Looking at the breakdown of the agreements by country, among the ENC-East countries, Ukraine shows the highest number of deals (71 out of 151) followed by Azerbaijan and Belarus (respectively 37 and 28). In the group of ENC-South the leader country is, as expected, Israel with more than 60% of total agreements in the area (540 out of 840) followed by Egypt (117 agreements). Notice that for both JV and SA the international agreements are the most important component in all countries.

As we have seen before, firms are willing to carry out external agreements in order to pursue their strategic goals, which may involve various activities within their business. In Table 3 we split the agreements by their specific subject considering seven activities: Manufacturing agreements, Supply agreements, R&D agreements, Technology Transfers, Marketing agreements and Licensing Agreements. It is important to remark that each agreement may embrace more than one activity; moreover, in many cases the detailed information on the specific content of the deal is not available. Overall, we have information only for 481 deals. Considering the whole sample, we can see that the most common activity is the Manufacturing agreement (202) followed by the Marketing activity (160). However we can notice that the content of the deals varies significantly according to the typology chosen. The preferred typology for firms interested in sharing production activities is the creation of a JV (74% of total deals for this activity) while for more "immaterial" activities like marketing, licensing, R&D agreement and technology transfer the less structured form of SA is largely preferred.

Moreover, most transactions dealing with technological transfer and R&D agreements involve a transfer of knowledge from the external firms toward the companies located in the ENC. The only notable exceptions are found for the case of Israel where the local companies are often involved in transactions, which are expected to generate a knowledge outflow from Israel to the partner countries.

4. The geographical dimension

In this section, we devote specific attention to the geographical dimensions of the transactions to investigate whether spatial and cultural proximity play a relevant role in influencing firms' decisions. As we already discussed, M&A and alliances can change resources and incentives of the firms involved and can lead knowledge transfer. However, the effectiveness of these processes is greatly mediated by proximity between companies in terms of geographical and cultural elements. In other words it is more likely, all other factors held constant, to observe more transactions between countries, which are closed in the geographical space or which are linked by historical and cultural elements.

In Table 4, focusing on cross-borders M&A, we give an overview of the top five acquirer nations for each ENC. We observe, as expected, that strong historical, cultural, political, economic and geographical links among EU and neighborhood regions explain the presence between the top acquires of EU countries: France in Algeria, France and Spain in Morocco, United Kingdom in Azerbaijan. From the viewpoint of the EU a cross-border M&A represents an important opportunity to gain competitive advantage. The literature, in fact, has emphasized that while announcements of foreign acquisitions on average have insignificant (Kiymaz, 2004) or even negative effects (Waheed & Mathur, 1995) on the stock price of the bidder, cross-border mergers into developing countries create value. More specifically, Kiymaz and Mukherjee (2000) conclude that the diversification benefits, in conjunction with the advantages of lower competition in developing countries, outweigh the political risk associated with expansion in such economies.

In international diversification decisions, companies seem to attune their choices to the traits of the host economy, and characteristics related to cultural elements have frequently been claimed to influence the M&A firms choice. The degree of similarity between countries based on their legal, economic, administrative, political, and cultural institutions, and institutional relatedness, the "degree of informal embeddedness or interconnectedness with dominant institutions" (Peng et al., 2005; 623) are important considerations that affect M&A strategy. The underlying assumption in this school of thought is that firms can benefit from institution-based capitals (e.g., political connections, cultural familiarity, and financial standards) better when cross-national institutional distance is low between their home and host countries. For example, cultural distance between countries is expected to back green fields because of the organizational risks of integrating foreign management into the parent organization.

Observing Table 4, we realize that, consistent with the literature, the cultural proximity between the target and the bidder in cross-border M&As is really effective. In the international cross culture management literature, differences between national cultures have frequently been conceptualized in terms of "cultural distance" (Morosini et al., 1998). The cultural distance hypothesis, in its most general form, suggests that the difficulties, costs and risks associated with cross-cultural contacts increase with growing cultural differences between two individuals, group or organizations. The cultural distance construct has been shown to be significantly related to the choice of foreign investment and M&As activities (Barkema et al. 1996). In general the literature suggests that cultural differences can create major obstacles to achieving integration benefits and are one of the key determinants for the success of international M&As and alliances.

Consistent with this literature, we observe that the top acquirers in Israel are USA, UK and Germany; in Jordan these are Kuwait, Arab Emirates and Saudi Arabia, Turkey appears among the top acquirers only for the case of another Islamic country like Azerbaijan, in Belarus the top acquirer countries are Russia, Latvia and Ukraine and Russia is among the top acquirers in all countries which were former members of the Soviet Union.

Moreover, we look at the structure of cross-border M&A between the EU and these countries to find if there are significant differences in the configuration of cross-border M&As with the ENC in terms of their propensity to integrate with the EU firms.[4] In Egypt only the 14 per cent of M&A are from EU firms while less than 3 per cent in Jordan. In Israel 10 per cent of M&A are from EU firms. In Ukraine less than 8 per cent of M&A are from EU with 46 per cent internal M&A. Algeria and Morocco are a significant exception on this trend, in Algeria the 60 per cent of M&A are from EU (with 20 per cent from France and 20 per cent from UK) and in Morocco the 36 per cent of M&A are from EU.

Considering alliances (SA and JV), there is a total amount of 2157 participations in the 991 alliances considered; it means that for the large majority of agreements the number of participants is equal to 2 (89%), then only 8% of total deals involve 3 firms, while very few agreements are carried out with a larger number of participants. In Table 5 we analyze for each ENC, which are the most important partner countries worldwide. As we have already remarked for the case of M&A deals also for the alliances the geographical closeness and also the institutional and cultural proximity influence the probability of making an international alliance. For instance Russia is the preferred partner for several eastern countries like Belarus, Ukraine and Armenia. USA is the first partner of Israel and Italy for Libya; similarly France is a top partner for Algeria and Morocco.

The spatial structure of firms transactions can be analyzed in greater details by looking at their network structure. According to network theory, interactions among agents create structural interdependencies, and agents are able to impact each other through these interdependencies (Granovetter, 2005). As noted by Turkina and Postnikov (2012), private actors are prone to emulate each other's successful practices for profit maximization, efficiency or legitimacy reasons. This logic can be extended to the case of cross-border M&As and alliances: if, for example, the density of interactions between firms from the EU and firms from ENC is high, neighborhood countries become exposed to the influence of EU-based firms that often have more advanced technical solutions and organizational practices.

In Table 6 we report two standard network indices for the four categories of international transactions considered: M&A with ENC as target, M&A with ENC as bidder, JV and SA.[5] The first index is the closeness centrality which measures how quickly within a network an entity (in our case, a country) can access more entities; it is computed as the inverse of the sum of the distances of a node to all other nodes. The betweenness centrality measures the centrality of a node within a network and it is equal to the number of shortest paths from all vertices to all others that pass through that node.

Considering the M&A where the ENC enter as the target, Ukraine proves to play the most central position in the network since it exhibits the highest value for the betweenness index and the lowest value for the closeness centrality. A key role in the network is also played by Israel, Jordan and Egypt. These findings are corroborated by the visual representation of the network structure which is reported in Figure 4. Note that we have computed the partitioning of the countries involved in the network using a clustering procedure based on the relative importance of the direct and indirect links.[6] This procedure allows to detect groups of densely connected nodes, while the nodes belonging to different groups are only sparsely connected. Interestingly, the whole networks can be clustered in three groups: a first based on Ukraine as central node which embraces all eastern neighbouring countries; a second one which pivots on Israel and US as its main partner and the third formed by the other southern ENC where Egypt, Jordan and Morocco show a central position.

The picture changes slightly when the ENC are considered as acquirer: in this case Israel acts as the most central node and its pivotal position in the whole network is confirmed by Figure 5 where the

[4] An econometric analysis of the role of cultural distance in affecting M&As between EU and ENC is proposed by Di Guardo et al. (2013) within a gravity model.

[5] The elaboration for the network analysis are based on the open source software GEPHI.

[6] The partitioning procedure is based on Blondel et al. (2008).

partition formed around Israel is so strong that, thanks to the indirect links, it attracts also Arabic countries like Egypt, Lebanon and Lybia, although there are not direct M&A deals among them.
Looking at the joint ventures and strategic alliances, we find additional support to the key position of Israel, Ukraine and Egypt together with other emerging countries like Azerbaijan and Algeria which are specifically involved in partnerships in the energy sector. Consequently also the visual representation of the alliance connections reported in Figures 6 and 7 appears more complex although the three main clusters around Israel, Egypt and Ukraine are confirmed.

5. The sectorial dimension

In this section we examine the sectoral distribution of firms transactions by looking at the primary sector of the firms involved based in the ENC countries. To give a general overview of the phenomenon we use a quite aggregate breakdown in 20 industries based on 2-digit NACE classification (see Appendix 1 for a detailed description of the sectors).
From Table 7 we can see that, on average in the ENC, the highest share of completed M&A is realized in the financial sector (38%), followed by communication (15%), while food (6.5%) and mining (5%) are the most relevant sectors among the industrial activities. Table 8 shows the three most important sectors involved in the completed M&A deals in each neighboring country. As it emerges from the table, the finance sector is the first sector involved in M&A activities for all countries except Algeria. The international financial sector has undergone tremendous change over the past decade and the banking concentration has increased in all important markets. Thus banks, especially those from countries that had already reached a high level of concentration started to look abroad and engaged in cross-border M&A activities. Another important trigger for the internationalization of the banking sector in the last decade was the breakdown of the Communist regimes in the Eastern European countries, which led to the opening of these markets and offered new opportunities to European banks. A number of Western European banks started to acquire banks in Central and Eastern European countries in order to gain attractive new business.
At the same time, there are relevant differences across areas and countries given by the production specialization profile, the endowments of natural resources, the liberalization pattern of the internal markets. Thus, for instance, in Algeria the first sector for number of deals is the mining one (25%); in Belarus the food sector shows a relatively high share of total deals (14.7%) and the same happens in Ukraine for agriculture (7.5%) and food (12.8%) while in a industrialized mature country like Israel a high number of M&A involve the machinery sector (10%).
Another interesting element worth analyzing is the sectoral relatedness of the transactions, since M&As sometimes offer the opportunity to diversify in other industries. More specifically, we have explored if M&A activities of target and bidder firms are related by computing, per each NACE sector and ENC target country, the share of M&A where the bidder and target firms belong to the same sector. This is an important dimension because we know from the literature that, market and technological relatedness of merging firms have been found to play a fundamental role in the technology transfer process and on the efficacy of M&As with innovation aims (Valentini and Di Guardo, 2012).
The results reported in Table 8 are quite interesting: the 48 per cent of total deals are realized in the same sector and there are not significant differences between ENC-east (44.4%) and ENC-south (50.9%). At the same time, we can observe important sector-specific effects. The most "closed" sector is the financial one where, on average, 85 per cent of total transactions are completed by firms operating within the same sector signalling a strong process of horizontal mergers and market concentration. On the other hand, there are sectors, such as mining and food, where the incidence of intra-industry deals is much lower, around 48 per cent and this indicates that a process of diversification was operating.
In Table 9 we report the total alliances by primary sector of activity and by country. In the last row of Table 9 we show that most of total agreements are performed in the S18 Information and Communication sector (393 equal to 62%). However there are relevant differences in the sectorial

distribution across countries and areas. The Information sector shows the highest share in several southern countries like Israel, Jordan and Egypt; on the other hand, among the eastern neighboring countries (like Azerbaijan and Belarus) a prominent position in the alliances is shown by the mining sector. In the case of ENC-South, in the second position we find the "Financial and Insurance services" sector. Once again in order to correctly interpret these results we have to keep in mind that Israel strongly affects this data.

6. Concluding remarks

M&A and alliances, changing resources and incentives of firms involved, represent a potential channel of knowledge exchanges generated along the variety of activities carried out before, during and after the deal. Knowledge transfer is indeed embedded in several actions like the exchanges of information in the due diligence phase and among managers, the access to new technologies and organizational competencies, the integration of task and human resources, the interaction of different organizational cultures, the transfers of capabilities and resource sharing. Such exchanges among companies imply, as a consequence, a transfer of knowledge across the geographical areas where firms are located. Therefore M&A and alliances transactions may be used as a valuable proxy of knowledge flow that involved ENC. Even though over the last decades the economic literature has devoted an increasing interest in M&A and alliances, a deep analysis of their characteristics in ENC countries still constitutes a challenge for research.

ENC, despite some commonalties, differ in size, rates of growth, patterns of economic reform, political, economic and legal regimes, and styles of government, all of which may provide opportunities. This paper offers the opportunity to investigate into the ENC M&A and alliances market, thus offering new insights on the geographical and sectoral scope of the knowledge exchanges embedded in the deals involving the neighboring countries.

We recognize that knowledge transfer is “laborious, time consuming and difficult…” (Szulanski, 2000, p. 9) and can be very “sticky”. The relevance and importance of effective knowledge flow is a function of both sender and recipient availability to open to new knowledge as well as function of the knowledge itself in terms of codifiability, teachability and observability. Nevertheless, any form of firms agreements, M&A, SA or JV, is the outcome of complex search and decision processes for the firms involved and, in most cases, it involves knowledge flows which are part of the organizational change process that happen before, during and after the transaction. Changes in government policies in emerging markets, economic reform, and liberalization of markets facilitated the transactions for firms into these markets.

Overall, our analysis provides new insights on the trends taken by M&A and alliances market in the ENC. The ENC market seems to be still immature in terms of numbers of transactions in the observed period, with a significant share of transactions are announced but not completed. We also observed a lot of differences between countries that could be a signal of a maturing path in some ENC market. More specifically, firms are more active in M&A than in alliances and the most active M&A markets turn out to be Ukraine in the East and Israel in the South. Ukraine, sharing the borders to both the EU and Russia, is characterized by a strong co-operation willingness and it represents one of the most important target country attracting relevant external investments. The case of Israel is obviously different since, despite its geographical collocation, it is characterized by GDP, technology levels comparable with those of the richest EU countries and it is fully integrated with the west economy.

Although M&A and alliances offer the fastest means of building a presence in a new market they are subject to relevant risks, which, in the case of ENC markets, may be also connected to political instability and cultural differences. We have thus examined the share of announced M&A transactions, which are actually completed. It is evident that significant differences among countries in the completion rate do exist. More specifically, we found that Libya, Syria, Egypt, Azerbaijan and Belarus have relatively low share of completed transactions (50-60%). This may signal a situation of uncertainty in these countries linked to the political situation, high corruption and low indexes in easiness of doing business which makes more difficult the completion of the acquisitions, especially for the international deals. In some countries there is a resistance to international integration due to political and institutional factors and also for the fear of giving too much control to foreign multinationals.

Another interesting result which has emerged from our analysis is that the ENC show a relatively low level of domestic deals (47%) compared to the USA or the EU and this signals the weakness of the internal production structure, although we have observed over the period considered an increasing trend in the share of domestic deals.

Focusing on the international M&A and alliance we observe, as expected, that cross-border transactions are affected by the historical, cultural, political, economic and geographical links among, for example, EU and neighborhood countries. In general, firms entering in markets characterized by cultural and political differences come across an increase in the costs and risks associated with the transactions (Di Guardo et al., 2013).

In regards to the sectoral dimension, there are relevant differences across countries in the sectoral distribution induced by the production specialization profile, the endowments of natural resources and the liberalization pattern of the internal markets. On average, it results that half of total transactions are realized within the same sector even though important sector-specific differences emerge. The most "closed" sector is the financial one (on average 85% of total transactions are completed by firms operating within the same sector), which signals a strong process of horizontal mergers and market concentration. On the other hand, there are sectors, such as mining and food, where the incidence of inter-industry deals is much higher (52%) and this indicates that a process of diversification and cross-sector technology transfer is operating.

The main purpose of the present analysis is to provide a first descriptive analysis of the general dimension of the M&A and alliances phenomenon while exploring also its geographical and sectorial dimensions. Future work has to be devoted to a more rigorous analysis, to assess the origin and destination determinants of transactions spatial flows and also in order to provide relevant indications for effective knowledge transfers in and out the ENC.

References

Autant-Bernard, C., S. Chalaye, E. Gagliardini, & S. Usai (2013), Technological activity, R&D collaboration networks and Knowledge flows between ENC and the EU. *This special issue*.

Barkema, H., J. Bell, & J. Pennings (1996), Foreign entry, cultural barriers, and learning. *Strategic Management Journal* 17, pp 151-166.

Blondel, V.D., J.L. Guillaume, R. Lambiotte, & E. Lefebvre (2008), Fast unfolding of communities in large networks. *Journal of Statistical Mechanics: Theory and Experiment* 10, 10008.

Buch C., & G. DeLong (2004), Cross-border bank mergers: What lures the rare animal? *Journal of Banking and Finance* 28, pp. 2077-2102.

COM 373 (2004), European Neighbourhood Policy Strategy Paper. Final. *Commission of the European Communities.*

Cockburn, I. M., & R. M. Henderson (2001), Scale and scope in drug development: unpacking the advantages of size in pharmaceutical research. *Journal of Health Economics* 20(6), pp.1033-1057.

Di Guardo, M.C., E. Marrocu, & R. Paci (2013), The concurrent impact of cultural, political and spatial distances on international Mergers & Acquisitions. *Working Paper CRENoS* 2013/08.

Fauli-Oller, R. (2000), Takeover Waves. *Journal of Economics and Management Strategy* 9, pp. 189-210.

Helfat, C. E. (1997). Know-how and asset complementarity and dynamic capability accumulation: the case of R&D. Strategic Management Journal, 18(5), pp. 339-360.

Hitt, M.A., J.S. Harrison & R.D. Ireland (2001), *Mergers and acquisitions. A guide to creating value for stakeholders*, Oxford University Press, New York.

Hussinger, K. (2010), On the importance of technological relatedness: SMEs versus large acquisitions targets. *Technovation* 30, pp. 57–64.

Karim, S., & W. Mitchell (2000), Path-dependent and path-breaking change: Reconfiguring business resources following acquisitions in the U.S. medical sector, 1978–1995. *Strategic Management Journal* 21, pp. 1061–1081.

Keeler, J.T. (1993), Opening the window for reform: Mandates, crisis, and extraordinary policy-making. *Comparative Political Studies* 25, pp. 433–486.

Kiymaz, H. (2004), Cross-border acquisitions of US financial institutions: Impact of macroeconomic factors. *Journal of Banking and Finance* 28, pp. 1413-1439.

Kiymaz, H., & T.K. Mukherjee (2000), The impact of country diversification on wealth effects in cross-border mergers. *Financial Review* 35, pp. 37–58.

Lamin, A., & D. Dunlap (2011), Complex technological capabilities in emerging economy firms: The role of organizational relationships. *Journal of International Management* 17(3), pp. 211-228.

Larsson, R., & S. Finkelstein (1999). Integrating strategic, organizational, and human resource perspectives on mergers and acquisitions: A case survey of synergy realization. *Organization Science* 10(1), pp. 1-26.

Li, D., S.R. Miller , L.Eden, & M.A. Hitt (2012), The impact of rule of law on market value creation for local alliance partners in BRIC countries. *Journal of International Management* 18(4), pp. 305–321.

Luo, Y., & M.W. Peng (1999), Learning to compete in a transition economy: Experience, environment, and performance. *Journal of International Business Studies* 30(2), pp. 269-295.

Melnykovska, I., & R. Schweickert (2008), Bottom-Up or Top-Down: What Drives the Convergence of Ukraine’s Institutions towards European Standards? *Southeast European and Black Sea Studies* 8, pp. 445–468.

Moeller, S., F. Schlingemann, & R. Stulz (2004), Firm size and the gains from acquisitions, *Journal of Financial Economics* 73, pp. 201-228.

Morosini, P., S. Shane , & H.Singh (1998), National cultural distance and cross-border acquisition performance. *Journal of International Business Studies* 29(1), pp. 137-158

Nelson, R., & S. Winter (1982), *An evolutionary theory of economic change*, pp. 929-964.

Peng, M. W., S.-H. Lee, & D. Wang (2005), What determines the scope of the firm over time? A focus on institutional relatedness. *Academy of Management Review* 30, pp. 622–633.

PricewaterhouseCoopers (2006), *Cities of the Future. Global Competition, Local Leadership*, London, PricewaterhouseCoopers.

Rodríguez-Pose, A., & H. Zademach (2006), Industry dynamics in the German merger and acquisitions market. *Tijdschrift Voor Economische en Sociale Geografie* 97(3), pp. 296-313.

Rothaermel, F.T., & D.L. Deeds (2006), Alliance type, alliance experience and alliance management capability in high-technology ventures. *Journal of Business Venturing* 21(4), pp. 429-460.

Scherer, F.M. and D.Ross (1990), *Industrial market structure and economic performance*, 3rd ed., Houghton Mifflin, Boston.

Sivadas, E., & F.R. Dwyer (2000), An examination of organizational factors influencing new product success in internal and alliance-based processes. *The Journal of Marketing* 16, pp.31-49.

Szulanski, G. (2000). The process of knowledge transfer: A diachronic analysis of stickiness. *Organizational Behavior and Human Decision Processes* 82(1), pp. 9-27.

Tallman, S., & A.S. Chacar (2011), Knowledge Accumulation and Dissemination in MNEs: A Practice-Based Framework. *Journal of Management Studies*, 48(2), pp. 278-304.

Teece, D.J. (1992), Competition, cooperation, and innovation: Organizational arrangements for regimes of rapid technological progress. *Journal of Economic Behavior & Organization* 18(1), pp. 1-25.

Tjemkes, B. V., O. Furrer, K. Adolfs, & A. Aydinlik (2012), Response strategies in an international strategic alliance experimental context: Cross-country differences. *Journal of International Management* 18(1), pp. 66-84.

Turkina, E., & E. Postnikov (2012), Cross-border Inter-firm Networks in the European Union's Eastern Neighbourhood: Integration via Organizational Learning. *Journal of Common Market Studies* 50, pp. 632–652.

Valentini, G., & M.C. Di Guardo (2012), M&A and Innovation Quality, *Strategic Organizazion* 10(4), pp. 384-405.

Vermeulen, F., & H. Barkema (2001), Learning through acquisitions. *Academy of Management Journal* 44, pp. 457-476.

Waheed, A., & I. Mathur (1995), Wealth effects of foreign expansion by U.S. banks. *Journal of Banking and Finance* 19, pp. 823-842.

Wesselink E., & R. Boschma 2013) Overview of the European Neighbourhood Policy: Its History, Structure, and Implemented Policy Measures, *this special issue*.

Whitman R. & A.E. Juncos (2011), Relations with the Wider Europe, *Journal of Common Market Studies* 49, pp. 187–208.

Whitman, R. and S. Wolff (eds) (2010) *The European Neighbourhood Policy in Perspective: Context, Implementation and Impact*. Basingstoke: Palgrave Macmillan.

Appendix 1. Sectoral classification (based on NACE 2 digit)

Sectors		NACE label division
S1	Agr	Agriculture, Forestry, Fishing
S2	Min	Mining and Quarring
S3	Food	Manufacture of food products, beverages, tobacco
S4	Text	Manufacture of textiles, wearing apparel, leather
S5	Wood	Manufacture of wood, furniture
S6	Paper	Manufacture of paper. Printing and reproduction of recorded media
S7	Chem	Manufacture of coke, refined petroleum products, Chemicals, Pharmaceuticals, Rubber, plastic products
S8	Nm min	Manufacture of other non-metallic mineral products
S9	Metal	Manufacture of basic metals, fabricated metal products
S10	Mach	Manufacture of computer, electronic, optical products; Electrical equipment
S11	Vehic	Manufacture of motor vehicles; other transport equipment
S12	O man	Other manufacturing
S13	Electr	Electricity, gas, steam. Water supply. Sewerage, waste management
S14	Constr	Construction
S15	Trade	Wholesale and retail trade; repair of motor vehicles and motorcycles
S16	Transp	Transportation and storage
S17	Accom	Accommodation and food service activities
S18	Comm	Information and communication. Real estate. Professional, scientific and technical activities
S19	Financ	Financial and insurance activities
S20	O serv	Administrative activities. Public administration and defence. Education. Health. Arts, entertainment

Table 1. M&A per status and countries, 2000-2011

Country		Target			Acquiror			Target, completed		
		Total	Completed	% compl.	Total	Completed	% compl.	intra national	inter national	% intra.
AM	Armenia	91	63	69.2	16	9	56.3	6	57	9.5
AZ	Azerbaijan	122	57	46.7	23	20	87.0	13	44	22.8
BY	Belarus	209	95	45.5	24	17	70.8	9	86	9.5
GE	Georgia	129	91	70.5	40	33	82.5	28	63	30.8
MD	Moldova	107	72	67.3	19	17	89.5	14	58	19.4
UA	Ukraine	2425	1658	68.4	1093	858	78.5	762	896	46.0
Total ENC- East		3083	2036	66.0	1215	954	78.5	832	1204	40.9
DZ	Algeria	64	44	68.8	19	12	63.2	4	40	9.1
EG	Egypt	666	352	52.9	394	232	58.9	160	192	45.5
IL	Israel	1588	944	59.4	1559	987	63.3	516	428	54.7
JO	Jordan	458	384	83.8	367	323	88.0	284	100	74.0
LB	Lebanon	86	64	74.4	92	76	82.6	32	32	50.0
LY	Libya	28	14	50.0	26	16	61.5	0	14	0.0
MA	Morocco	205	166	81.0	112	93	83.0	78	88	47.0
SY	Syria	20	11	55.0	5	1	20.0	0	11	0.0
TN	Tunisia	101	70	69.3	27	24	88.9	16	54	22.9
Total ENC-South		3216	2049	63.7	2601	1764	67.8	1090	959	53.2
Total ENC		6299	4085	64.9	3816	2718	71.2	1922	2163	47.1

Table 2. Agreements announced per country and typology, 2000-2011

Country		Total agreements			Joint Ventures			Strategic Alliances		
		Intra.	Intern.	Total	Intra.	Intern.	Total	Intra.	Intern.	Total
AM	Armenia	0	7	7	0	6	6	0	1	1
AZ	Azerbaijan	2	35	37	0	22	22	2	13	15
BY	Belarus	0	28	28	0	20	20	0	8	8
GE	Georgia	0	6	6	0	5	5	0	1	1
MD	Moldova	0	2	2	0	2	2	0	0	0
UA	Ukraine	3	68	71	1	39	40	2	29	31
Total ENC- East		5	146	151	1	94	95	4	52	56
DZ	Algeria	5	49	54	4	29	33	1	20	21
EG	Egypt	12	105	117	11	71	82	1	34	35
IL	Israel	42	498	540	12	110	122	30	388	418
JO	Jordan	3	30	33	1	19	20	2	11	13
LB	Lebanon	1	18	19	0	7	7	1	11	12
LY	Libya	0	28	28	0	22	22	0	6	6
MA	Morocco	0	27	27	0	17	17	0	10	10
SY	Syria	0	14	14	0	9	9	0	5	5
TN	Tunisia	0	8	8	0	8	8	0	0	0
Total ENC-South		63	777	840	28	292	320	35	485	520
Total ENC		68	923	991	29	386	415	39	537	576

Table 3. Agreements by typology and activity, 2000-2011

Activity	Total Agreements	Joint Ventures	Strategic Alliances
Manufacturing Agreement	210	150	60
Supply Agreement	15	4	11
R&D Agreement	72	9	63
Technology Transfer	88	7	81
Marketing Agreement	127	18	109
Licensing Agreement	49	4	45
Total	561	192	369

Table 4. Completed international M&A in ENC target nation per top five acquiror nations, 2000-2011

Target Country		**Top 5 acquiror nations and number of deals**									
		1°	**n.**	**2°**	**n.**	**3°**	**n.**	**4°**	**n.**	**5°**	**n.**
AM	Armenia	Russia	26	UK	6	Canada	4	Germany	3	4 countries	2
AZ	Azerbaijan	UK	8	Turkey	6	USA	5	China	4	Netherlands	4
BY	Belarus	Russia	32	Latvia	5	Ukraine	5	Austria	4	Finland	4
GE	Georgia	USA	9	UK	8	Russia	6	Ukraine	6	Kazakhstan	5
MD	Moldova	Russia	17	UK	5	France	4	Austria	3	Ukraine	3
UA	Ukraine	Cyprus	276	Russia	141	USA	59	UK	54	Austria	33
Total ENC- East			342		165		79		71		49
DZ	Algeria	France	9	UK	9	Spain	4	USA	3	3 countries	2
EG	Egypt	Arab Em.	26	USA	25	France	16	S. Arabia	16	UK	12
IL	Israel	USA	253	UK	36	Germany	19	Canada	17	France	15
JO	Jordan	Kuwait	17	Arab Em.	14	S. Arabia	8	USA	7	Bahrain	6
LB	Lebanon	France	5	USA	5	Kuwait	4	S. Arabia	3	Egypt	2
LY	Libya	Austria	2	France	2	UK	2	8 countries	1	-	
MA	Morocco	France	38	Spain	7	UK	6	USA	5	Australia	3
SY	Syria	Egypt	2	India	2	Lebanon	2	5 countries	1	-	
TN	Tunisia	France	11	Spain	5	USA	5	Kuwait	4	3 countries	3
Total ENC-South			354		96		62		54		41
Total ENC			696		261		141		125		90

Table 5. Top 3 nations in agreements per country and number of partecipants, 2000-2011

Country		Top 3 Participant Nation						
		1°	n.	2°	n.	3°	n.	Total
AM	Armenia	Belgium	3	Russia	3	China/USA	1	15
AZ	Azerbaijan	UK	6	Turkey	5	USA	4	83
BY	Belarus	Russia	15	Venezuela	3	China	2	61
GE	Georgia	USA	2	Azerbaijan/Chin:	1	Russia/Turkey	1	12
MD	Moldova	Belarus	1	Ireland	1	-	0	4
UA	Ukraine	Russia	19	USA	9	5 countries	3	146
Total ENC- East			46		22		11	321
DZ	Algeria	Germany	7	Spain	6	France	5	126
EG	Egypt	Arab Em.	19	USA	16	Italy	9	285
IL	Israel	USA	233	Japan	33	UK	26	1136
JO	Jordan	USA	7	Saudi Arabia	3	Arab Em	3	74
LB	Lebanon	USA	3	Arab Em.	3	4 countries	2	43
LY	Libya	Italy	6	Egypt	4	Russia/Arab Em	3	62
MA	Morocco	USA	6	France	5	Pakistan	3	60
SY	Syria	Belgium	2	France	2	India/Russia	2	31
TN	Tunisia	India	3	6 countries	1	-	0	19
Total ENC-South			286		73		53	1836
Total ENC			332		95		64	2157

Table 6. Centrality indicators for ENC international networks, 2000-2011

Country		M&A (target)		M&A (acquiror)		Joint Ventures		Strategic Alliances	
		Close.	Between.	Close.	Between.	Close.	Between.	Close.	Between.
DZ	Algeria	2.20	51.6	2.36	182.8	2.08	238.4	2.03	134.3
AM	Armenia	1.89	185.9	2.30	20.5	2.81	0.7	2.54	0.0
AZ	Azerbaijan	1.87	59.1	2.22	104.4	1.90	406.5	2.16	55.9
BY	Belarus	1.93	133.9	2.59	13.0	2.30	245.8	2.41	71.6
EG	Egypt	1.78	445.4	1.63	1365.3	1.75	539.5	1.83	216.3
GE	Georgia	1.86	127.1	2.38	16.0	2.44	2.0	2.57	0.0
IL	Israel	1.54	858.3	1.55	2335.6	1.74	858.1	1.62	631.6
JO	Jordan	1.87	463.5	1.87	517.8	2.29	135.9	2.16	68.7
LB	Lebanon	2.17	57.6	2.21	319.6	2.45	12.1	2.13	29.2
LY	Libya	2.23	27.5	2.32	226.3	2.12	138.7	2.29	20.7
MD	Moldova	2.01	86.5	2.78	3.5	3.26	76.0		
MA	Morocco	2.24	121.7	2.40	442.5	2.34	101.3	2.27	77.0
SY	Syria	2.28	88.3	2.39	2.8	2.43	11.8	2.32	17.9
TN	Tunisia	2.18	90.1	2.41	59.6	2.52	78.7		
UA	Ukraine	1.46	1454.1	1.99	468.7	2.19	343.4	1.79	211.2

Closeness centrality: inverse of the sum of the distances of a node to all other nodes

Betweenness centrality: number of shortest paths from all vertices to all others that pass through that node

Table 7. Completed M&A in ENC target nation per primary sector, 2000-2011

Target Country		**S1**	**S2**	**S3**	**S4**	**S5**	**S6**	**S7**	**S8**	**S9**	**S10**	**S11**	**S12**	**S13**	**S14**	**S15**	**S16**	**S17**	**S18**	**S19**	**S20**	**Total**
		Agr	Min	Food	Text	Wood	Paper	Chem	Nm min	Metal	Mach	Vehic	O man	Electr	Constr	Trade	Transp	Accom	Comm	Financ	O serv	
AM	Armenia	0	11	1	0	0	0	0	0	4	0	0	1	4	1	2	1	0	7	28	3	63
AZ	Azerbaijan	0	9	2	0	1	0	1	0	0	1	0	0	5	1	0	0	0	5	25	7	57
BY	Belarus	0	6	14	2	0	2	2	0	3	4	2	1	0	1	7	3	0	6	37	5	95
GE	Georgia	0	9	3	0	0	0	5	3	0	0	0	0	4	0	3	8	0	11	43	2	91
MD	Moldova	0	1	5	2	0	3	0	0	0	0	2	1	7	2	5	1	0	10	27	6	72
UA	Ukraine	64	46	110	4	0	20	40	17	65	40	34	6	33	11	56	30	12	81	183	6	858
Total	*ENC- East*	64	82	135	8	1	25	48	20	72	45	38	9	53	16	73	43	12	120	343	29	1236
DZ	Algeria	0	11	9	0	0	0	5	3	3	1	0	0	0	0	1	0	1	1	9	0	44
EG	Egypt	4	32	19	2	0	5	18	18	3	5	1	1	12	3	7	7	9	37	157	12	352
IL	Israel	4	15	22	3	1	53	43	2	4	95	11	42	4	4	35	9	4	240	345	8	944
JO	Jordan	1	2	7	2	0	1	9	4	4	1	0	0	8	3	8	8	6	62	249	9	384
LB	Lebanon	0	0	5	0	0	0	1	0	0	0	0	0	0	0	7	0	0	7	42	2	64
LY	Libya	0	2	0	0	0	0	0	2	0	0	0	0	1	1	0	0	0	1	7	0	14
MA	Morocco	0	7	14	1	0	2	4	1	0	3	9	0	5	0	7	3	3	22	82	3	166
SY	Syria	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	0	11
TN	Tunisia	0	14	3	0	2	1	2	7	0	0	1	0	2	0	6	2	0	9	21	0	70
Total	*ENC-South*	9	87	80	8	3	62	82	37	14	105	22	43	32	11	71	29	23	380	917	34	2049
Total ENC		73	169	215	16	4	87	130	57	86	150	60	52	85	27	144	72	35	500	1260	63	3285

The detailed list of sectors is riported in Appendix 1.

Table 8. Completed M&A where the acquirer firm is in the same sector of the target ENC firm (% over total M&A in the sector), 2000-2011

Target Country		**S1**	**S2**	**S3**	**S4**	**S5**	**S6**	**S7**	**S8**	**S9**	**S10**	**S11**	**S12**	**S13**	**S14**	**S15**	**S16**	**S17**	**S18**	**S19**	**S20**	**Total**
		Agr	Min	Food	Text	Wood	Paper	Chem	Nm min	Metal	Mach	Vehic	O man	Electr	Constr	Trade	Transp	Accom	Comm	Financ	O serv	
AM	Armenia	-	66.7	0.0	-	0.0	0.0	0.0	-	66.7	0.0	-	100.0	44.4	-	0.0	33.3	-	100.0	80.0	-	58.7
AZ	Azerbaijan	0.0	31.3	40.0	-	-	-	100.0	0.0	-	-	-	-	100.0	0.0	0.0	0.0	-	57.1	81.0	-	52.6
BY	Belarus	-	-	85.7	50.0	0.0	100.0	33.3	-	50.0	33.3	20.0	100.0	0.0	-	60.0	50.0	-	55.6	81.3	-	63.2
GE	Georgia	-	42.9	50.0	-	-	-	66.7	75.0	0.0	-	0.0	-	50.0	0.0	25.0	16.7	0.0	50.0	100.0	25.0	51.6
MD	Moldova	-	25.0	38.5	50.0	-	50.0	0.0	0.0	0.0	-	-	-	57.1	100.0	0.0	0.0	-	64.3	89.5	0.0	54.2
UA	Ukraine	23.2	31.2	36.7	33.3	-	34.8	25.6	38.1	33.7	17.6	16.9	23.1	25.6	8.7	30.4	24.1	13.3	37.9	87.3	27.3	41.7
Total ENC- East		23.0	34.8	40.4	41.7	0.0	37.3	26.2	39.6	33.6	18.5	16.7	33.3	30.8	11.1	31.7	23.0	12.5	43.1	86.8	25.0	44.4
DZ	Algeria	-	100.0	88.9	-	-	0.0	50.0	100.0	50.0	0.0	-	-	-	-	0.0	-	-	20.0	100.0	-	68.2
EG	Egypt	0.0	60.0	64.0	12.5	0.0	23.1	35.5	50.0	25.0	0.0	-	-	77.8	0.0	27.3	50.0	50.0	60.5	83.6	14.3	52.0
IL	Israel	66.7	61.5	63.6	18.2	-	32.1	42.6	40.0	13.3	58.7	0.0	55.6	23.1	0.0	34.0	33.3	28.6	51.8	78.5	15.0	49.5
JO	Jordan	0.0	16.7	35.7	7.7	0.0	14.3	31.6	30.8	42.9	0.0	0.0	-	50.0	0.0	16.7	17.1	0.0	23.3	79.8	25.0	38.0
LB	Lebanon	-	-	50.0	-	-	0.0	100.0	-	-	-	-	-	-	-	50.0	-	0.0	63.6	93.9	0.0	71.9
LY	Libya	-	40.0	0.0	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	100.0	100.0	-	71.4
MA	Morocco	-	87.5	81.3	100.0	-	66.7	27.3	100.0	0.0	0.0	80.0	-	40.0	0.0	28.6	33.3	66.7	52.8	97.4	0.0	62.7
SY	Syria	-	66.7	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	100.0	-	81.8
TN	Tunisia	-	87.5	60.0	-	100.0	20.0	33.3	75.0	-	-	100.0	-	50.0	-	50.0	66.7	0.0	63.6	88.9	0.0	67.1
Total ENC-South		25.0	67.0	63.9	13.0	33.3	28.7	38.8	52.4	25.6	53.0	36.0	55.6	45.5	4.3	30.8	29.1	30.6	48.6	83.9	14.7	50.9
Total ENC		23.3	48.1	47.9	19.0	20.0	31.9	33.3	46.8	31.5	36.0	22.0	50.7	35.1	8.0	31.3	26.3	25.0	47.0	85.5	18.0	47.7

The detailed list of sectors is riported in Appendix 1.

Table 9. Agreements per primary sector, 2000-2011

	Country	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15	S16	S17	S18	S19	S20	Total
		Agr	Min	Food	Text	Wood	Paper	Chem	Nm min	Metal	Mach	Vehic	O man	Electr	Constr	Trade	Transp	Accom	Comm	Financ	O serv	
AM	Armenia	0	2	0	0	0	0	1	0	1	0	0	0	0	0	0	2	0	1	0	0	7
AZ	Azerbaijan	0	11	0	0	0	1	3	0	1	1	3	0	3	1	0	3	0	7	2	1	37
BY	Belarus	0	5	0	1	1	1	3	0	0	4	3	1	2	0	3	2	0	2	0	0	28
GE	Georgia	0	0	0	0	0	1	0	0	0	0	0	0	2	1	0	1	0	1	0	0	6
MD	Moldova	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2
UA	Ukraine	0	10	3	0	0	0	5	0	2	2	11	1	6	2	7	3	0	18	1	0	71
Total ENC- East		0	29	3	1	1	3	12	0	4	7	18	2	13	4	10	11	0	29	3	1	151
DZ	Algeria	0	15	2	0	0	0	8	0	2	0	1	0	10	3	3	2	0	7	1	0	54
EG	Egypt	0	7	6	5	3	1	15	3	2	0	2	2	2	3	8	4	2	31	20	1	117
IL	Israel	0	5	7	5	0	18	19	2	3	21	10	13	4	4	64	9	1	291	56	8	540
JO	Jordan	0	3	0	0	0	2	2	0	1	0	4	0	1	0	0	3	0	16	1	0	33
LB	Lebanon	0	1	0	0	0	2	0	1	0	0	0	0	0	0	2	1	0	5	6	1	19
LY	Libya	0	5	1	0	0	0	2	0	1	0	2	0	2	3	0	0	0	8	4	0	28
MA	Morocco	0	3	3	0	0	0	7	0	0	2	0	0	0	2	3	0	1	4	2	0	27
SY	Syria	0	3	0	0	0	0	4	0	0	0	0	1	3	0	0	1	0	1	1	0	14
TN	Tunisia	0	1	0	0	0	1	3	0	0	1	0	0	1	0	0	0	0	1	0	0	8
Total ENC-South		0	43	19	10	3	24	60	6	9	24	19	16	23	15	80	20	4	364	91	10	840
Total ENC		0	72	22	11	4	27	72	6	13	31	37	18	36	19	90	31	4	393	94	11	991

The detailed list of sectors is riported in Appendix 1.

Figure 1. Completed M&A net acquirer rate, 2000-2011

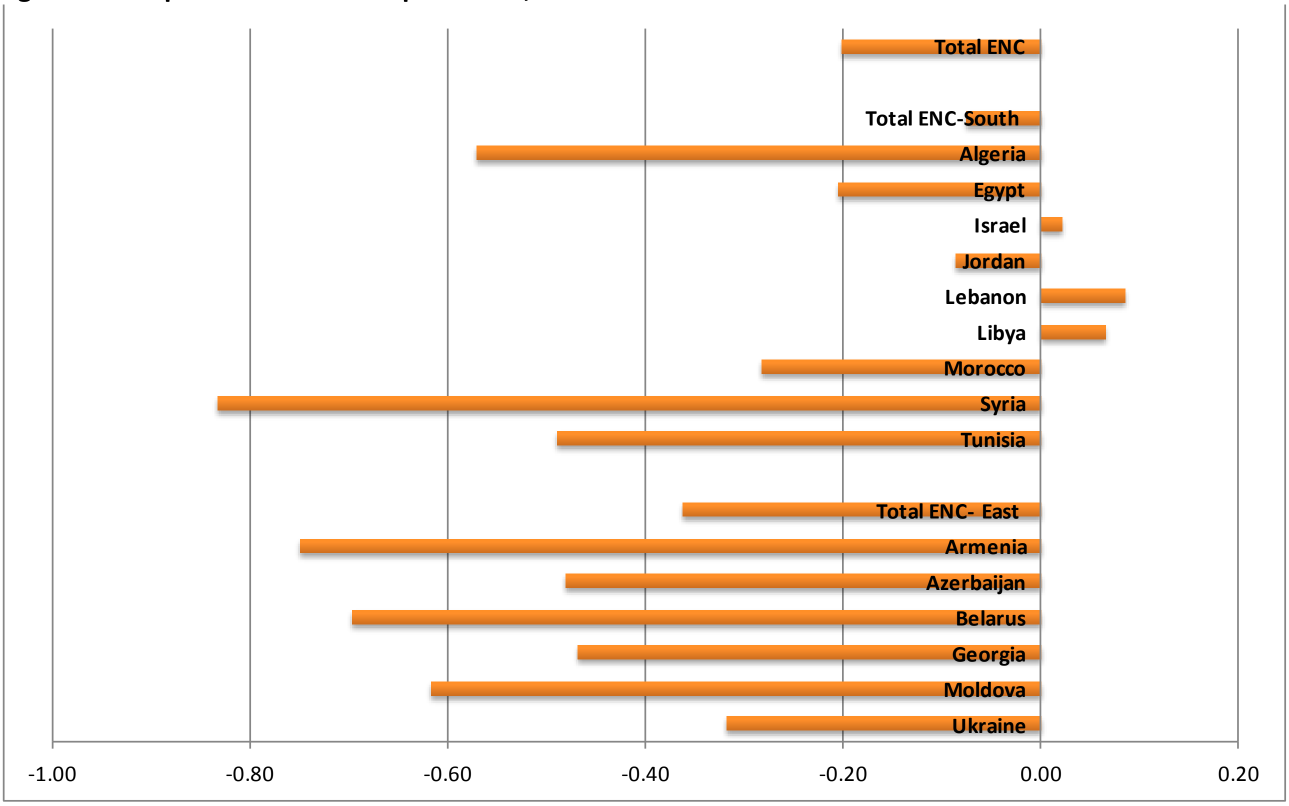


Figure 2. Dynamics of completed M&A per ENC target nations, 2000-2011

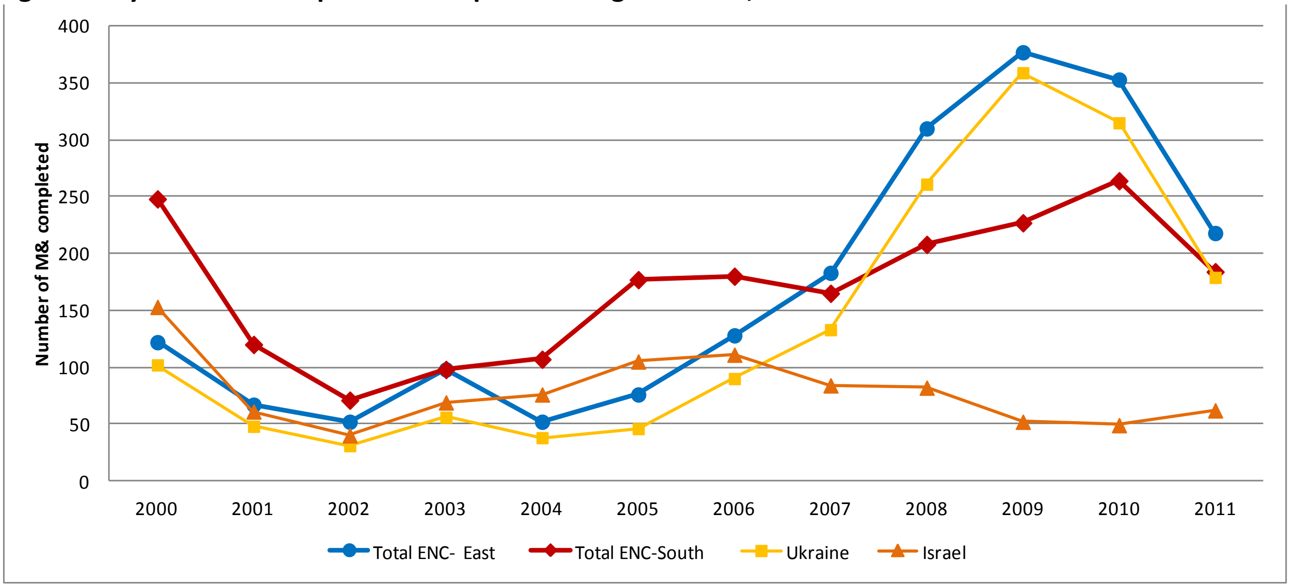


Figure 3. Joint ventures and Strategic agreements per typology, % shares, 2000-2011

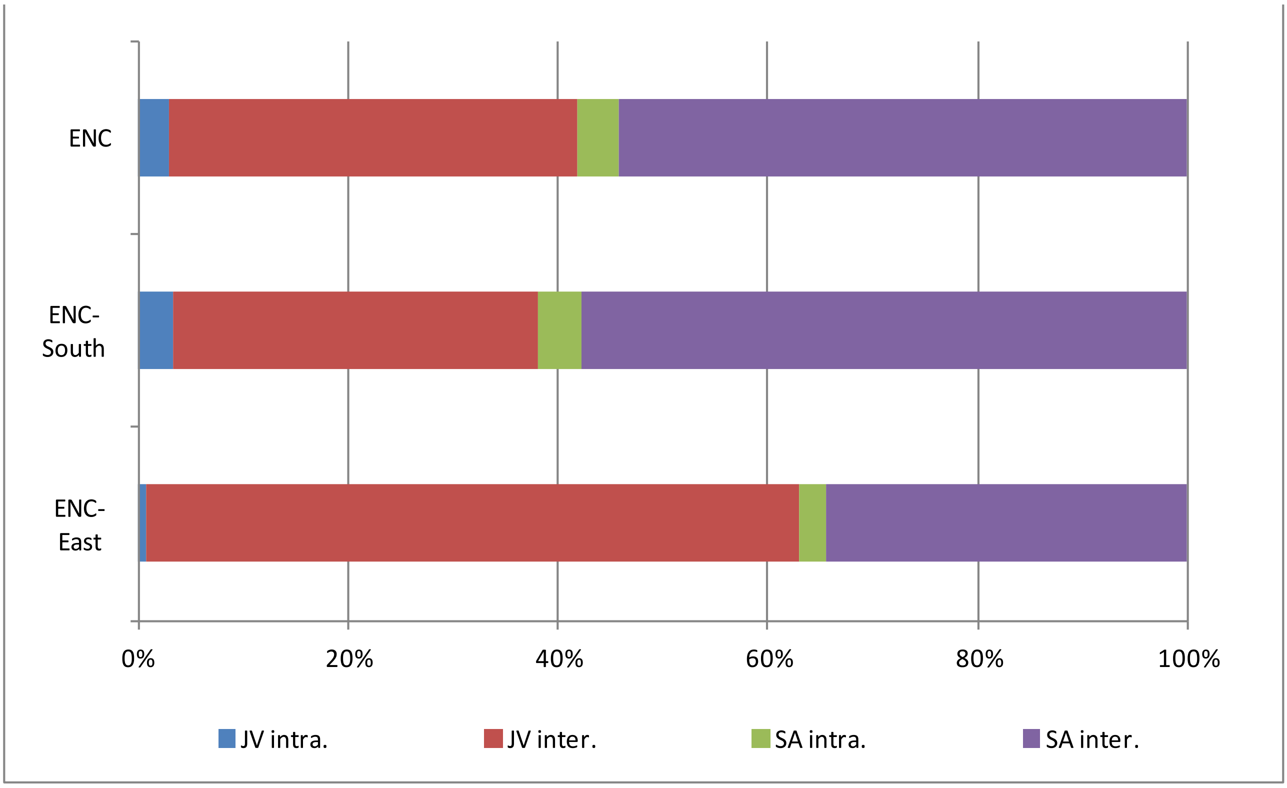

ENC
ENC-South
ENC-East
0%
20%
40%
60%
80%
100%
JV intra.
JV inter.
SA intra.
SA inter.

Figure 4. International network of M&A deals with ENC as target, 2000-2011

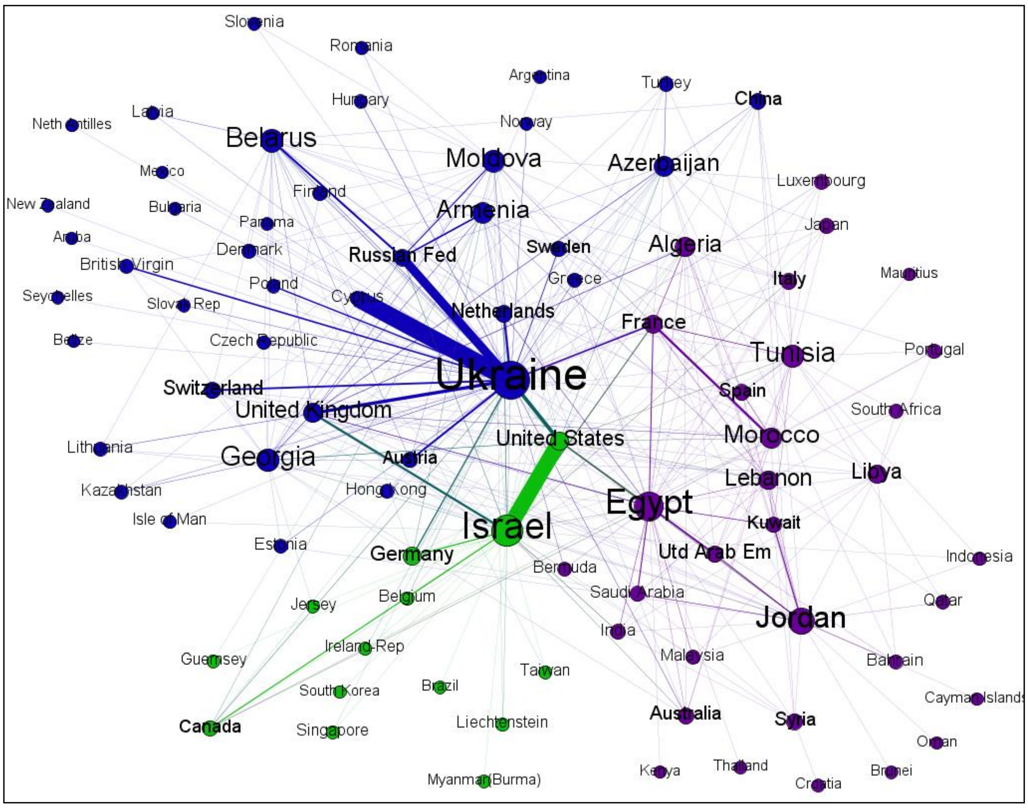


Figure 5. International network of M&A deals with ENC as acquirer, 2000-2011

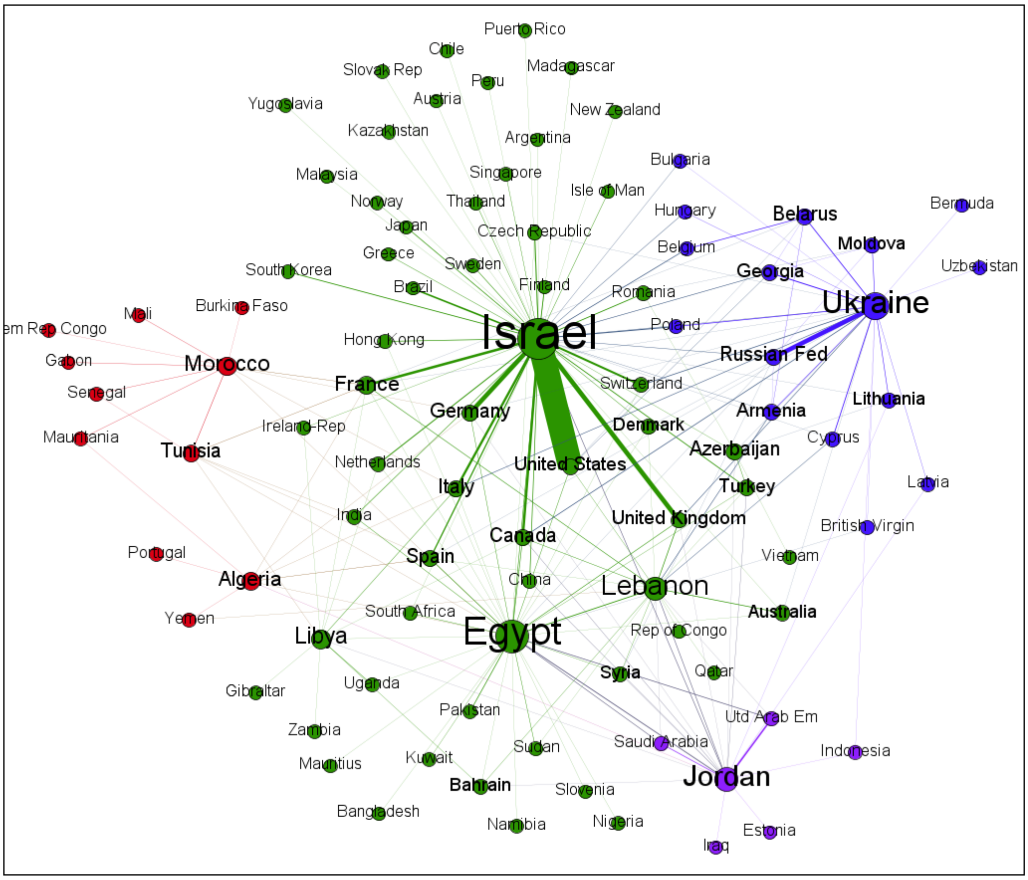


Figure 6. International network of Joint Ventures involving ENC, 2000-2011

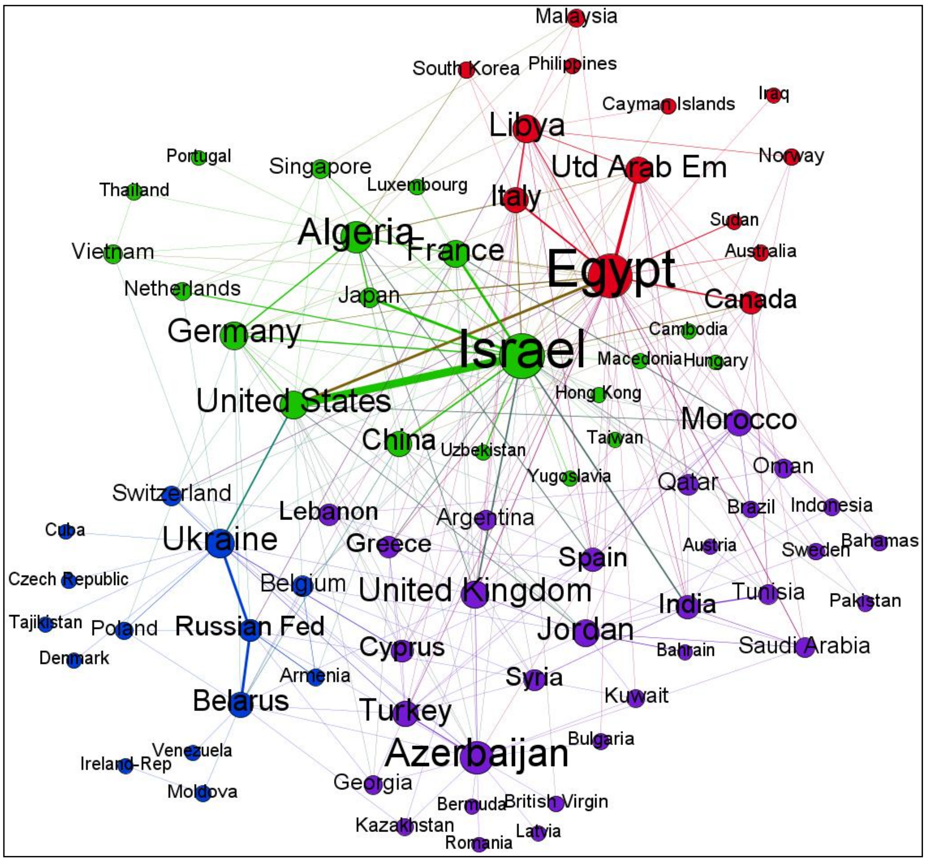
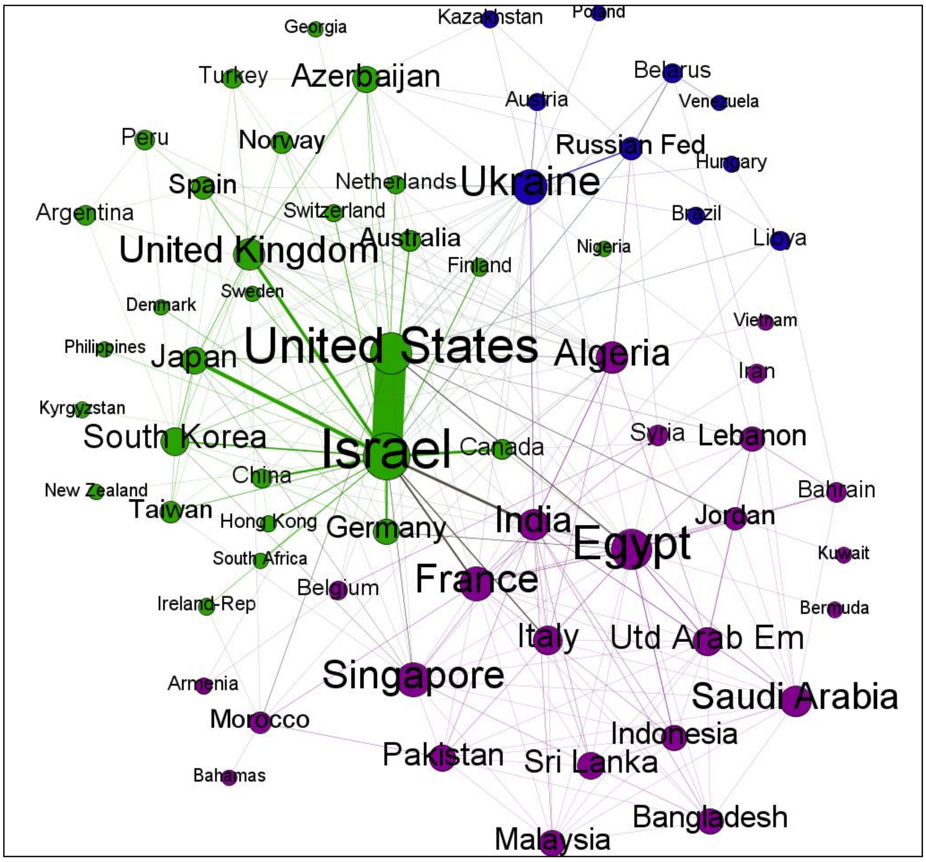


Figure 7. International network of Strategic Alliances involving ENC, 2000-2011


Georgia
Kazakhstan
Poland
Turkey
Azerbaijan
Belarus
Austria
Venezuela
Peru
Norway
Russian Fed
Hungary
Spain
Netherlands
Ukraine
Argentina
Switzerland
Brazil
United Kingdom
Australia
Libya
Nigeria
Finland
Denmark
Sweden
Vietnam
Philippines
Japan
United States
Algeria
Iran
Kyrgyzstan
South Korea
Syria
Lebanon
Israel
Canada
New Zealand
China
Bahrain
Taiwan
Hong Kong
Germany
India
Jordan
Egypt
South Africa
Kuwait
France
Belgium
Ireland-Rep
Bermuda
Italy
Utd Arab Em
Armenia
Singapore
Saudi Arabia
Morocco
Indonesia
Pakistan
Sri Lanka
Bahamas
Bangladesh
Malaysia