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Angela Cheptea

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Title:

International trade patterns, trade potentials, national institutions and cross-border networks

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General Introduction

General motivation

It seems like from ancient times on, trade has been a source of wealth and power, and countries always sought to increase their exchanges with the outside world (Maddison (2001)). History shows that leading trading nations have often acquired regional and even global political supremacy. Nowadays, the economic isolation of a country, its withdrawal from the world economy is virtually impossible, and accompanied by a general decline of its economy. Indeed, trade embargos are the harshest economic sanctions countries can impose on each other. Although the specific reasons for which trade generates welfare have evolved over time (availability of new products, exploitation of technological and factor-specific comparative advantages, scale and rationalization effects), countries continue to regard foreign trade as a factor generating growth, and manifest large interest for its expansion.

Regardless of the amplified integration and globalization marking the present-day world economy, cross-border trade is achieved at non-negligible costs. Trade (transaction) costs occupy a central place in the modern international trade literature, and, in conformity with the sequence in which they have been studied, can be divided into two large classes: traditional and non-traditional costs. The first group of trade costs refers to transport and trade policy costs. Identified in theoretical and empirical works by bilateral distance, tariffs and non-tariff barriers, they have been considered until recently as the only burden for trading partners in a world with a geographically spread economic activity. During the last two decades, this list was completed with other types of costs, conventionally labelled as non traditional. This

class of trade costs is very large, and is far from being entirely explored. Sources of trade costs advanced in the literature include: currency, information, communication, search, contract enforcement, institutional costs, etc. Non traditional costs, according to this definition, have been referred to by some authors as hidden transaction costs. The explanation is simple: they are difficultly identified, and even more difficultly measured. They comprise currency, information and partner search costs, and costs relative to the enforcement of contracts and agreements (Rauch (2001)). Institutional costs, i.e. additional costs induced by the poor quality of domestic importer and/or exporter institutions, and the resulting risk and uncertainty with regard to the outcome of international transactions also enter this category (Anderson and Marcouiller (2002)).

Non-traditional trade determinants received a particular attention in the recent literature. Two main motivations drove economists' interest for new factors causing countries to trade more: (i) the significant drop in importance of traditional trade costs, and (ii) the observation of phenomena that could not be explained by traditional determinants of trade. Anderson and van Wincoop (2004) estimate trade costs between developed countries to a 74% tax equivalent. This figure includes all directly observed and inferred border-related trade barriers, and breaks down as follows: 21% transportation costs (both in terms of freight and time), 8% trade policy barriers (tariff and non-tariff barriers), a 14% currency barrier, and 17% inferred trade costs, which include information, contract enforcement, legal and regulatory costs ($1.74 = 1.21 \times 1.08 \times 1.14 \times 1.17$). With all technological innovations that led to reduced transport costs, the latter still account for a large share of international trade costs. Nowadays's global trade liberalization reduced significantly the friction induced by tariffs and non-tariff barriers, and as a consequence limited the gain in trade associated with their elimination. By the end of 2004, 148 countries of the world have joined the WTO, and have committed themselves to comply with multilateral trade governing rules. Under the auspices of the WTO, negotiations have been extended even to very sensitive issues, such as liberalization of trade in agricultural and textile products, and in services. Moreover, regional trade agreements, increasing in size and scope, developed in the different parts of the globe. Barriers relative to the use of different

currencies in the importing and exporting countries are large, but very difficult to reduce due to major associated macroeconomic costs.

Trefler (1995) shows that there is a large gap between theory's predictions and actual trade flows, and introduces the term "missing international trade". The same year, another Canadian economist, McCallum (1995), established the disproportion between domestic and international trade. This phenomenon, named the *border effect* or the *home bias effect* in the literature, received increased attention in the following years. Authors have not been able to reject the affirmation that there is much less international trade than one would expect with respect to trade within national borders, although several sources inflating the results have been identified (Anderson and van Wincoop (2003), Head and Mayer (2002)). Obstfeld and Rogoff (2000) demonstrate that border-specific trade costs can explain this surprising result, as well as other five major puzzles in international macroeconomics. Certainly, an expansion of the range of considered trade costs is required. Other attempts to explain the mystery of missing trade have focused on informal trade barriers, especially on weak enforcement of international contracts (Anderson and Marcouiiler (2002)), and on inadequate information about trading opportunities (Portes and Rey (2005)) supplied by markets.

Hence, there is probably little left to gain from the elimination of traditional trade costs, and certainly much more from the removal of less traditional costs. But besides the identification of specific non-traditional trade costs, one still needs to quantify them, in order to evaluate the trade creation associated with their reduction, and elaborate pertinent policy recommendations. Moreover, interactions between the two types of trade costs need also be considered. For instance, the decline in information and search costs may be reinforced by more liberal trade policies, or occur independently from them. Similarly, trade liberalization measures are easier to implement when good institutions are at work.

A central place in this line of research is attributed to *institutions* and *networks*. Reforms, leading to better functioning of domestic institutions, and higher similarity between institutions of different trading countries, permit a direct estimation of the gain in trade attributed to the reduction of institutional costs. Similarly, the extra trade brought by strong cross-border

networks reflects the advantage of the removal of information, search, and contract enforcement costs. The use of institutions is not new to a number of economic areas, such as the new institutional economics (Coase (1937), North (1990), Williamson ()), and the growth and development economics (Acemogolu et alii (2001), Rodrik (), Kaufman and Kraay (1999)). Networks have been imported into the trade literature mainly from sociology and labour economics. But certainly, in the context of international trade, both factors are conceptualized slightly differently than in the field of origin.

In the international trade literature *institutions* are defined as formal and informal rules of behavior, means for ensuring their application, mediation procedures in case of dispute, sanctions for violation of established rules, and organisations and bodies in charge with their enforcement. Institutions' quality is judged as more or less good by the more or less good functioning of their different elements. Exemples include constitutions, judicial systems, banks, corporate, collateral, and bankruptcy laws, tax collection and competition agencies. Effective institutions are those ensuring that the incentives that they create actually lead to the desired behavior.

Trade theory does not underestimate the importance of institutions. Rather, the problem is that it takes the ubiquitous existence of well-functioning institutions for granted. However, only developed countries in recent times come anywhere near this ideal picture. In most countries of the world the institutional apparatus is very costly, slow, unreliable, weak, or corrupt. Under these conditions, international trade contracts are more time-demanding, uncertain, harder and costlier to accomplish. Still, economic activity does not grind to a halt because the government cannot provide adequate institutional underpinnings. Economic agents manage to find solutions even in such an imperfect world. The description of a larger number of possible contingencies and solutions to them in the contract, and international arbitration are only two examples commonly used by trade partners. However, they will unquestionably generate an upsurge in transaction costs, and lead to lower cross-border trade. The fragmentation of institutions at country level is an additional source of larger international trade costs. Even in the case of well-functioning institutions, national specificity introduces confusion and sup-

plementary costs. Therefore, similarity between institutional frameworks of the exporting and importing countries, along with the development of high-quality national institutions, has a trade creating effect.

Differently from previous works, recent developments in this field consider national, i.e. country-specific, institutions. The idea itself has been borrowed from the literature on economic growth and foreign direct investment, where institutional aspects were already an established factor. Recent research on trade and institutions coincides with the development of a range of indexes characterizing the quality of domestic institutions by different international agencies, and organizations (WB - Kaufman et alii (1999), (2003), Fraser Institute, Freedom House, EBRD, etc.). Despite the increased popularity, this field remains little investigated: there is only a handful of studies, and very reduced theoretical modelling. Anderson and Young (2002), Anderson and Marcouiller (2002), Dixit (2003a), and (2003b) constructed theoretical frameworks for specific institutional aspects. Institutional deficiencies are more acute in less developed countries and in transition economies. A more thorough investigation of these cases is hence demanded.

For all its importance, there is unfortunately no clear definition of *networks* in the literature. The trade literature considers networks as groups of individuals or firms, connected with each other with ties stronger than the ones found on the market. Rauch (1999) considers networks as an alternative to market interactions. In some contexts the key feature of networks is that their members are engaged in repeated exchange that helps sustain cooperation. In other contexts the key feature is that network members possess thorough knowledge on each other that helps them match each other or refer each other to outside business opportunities. These features correspond to two definitions of networks used in sociological literature. However, when considering the role of networks in overcoming trade barriers, a narrower definition is required. Rauch (2001) considers that only networks that were formed domestically and became transnational through migration or foreign direct investment, even if this internationalization has taken place generations ago, are suitable to this end. Networks are also referred to in the literature as informal institutions: they often operate outside the formal legal system, and

reflect unwritten codes of social conduct. In this line of thought, national institutions presented and discussed above are called formal.

The recognition that networks promote trade existed long before the issue has been questioned by economists. A poem published in June 1922 states:

"If I knew you and you knew me
'Tis seldom we would disagree;
But never having yet clapsed hands
Both often fail to understand
That each intends to do what's right
And treat each other "honor bright"
How little to complain there'd be
If I knew you and you knew me..."

Source: *Who's Who in the Grain Trade 35*, cited in the World Development Report 2002.

Recent research by Greif (1993), Gould (1994), Rauch (1999), Feenstra et alii (1997), Cassela and Rauch (2003) and other authors establish both theoretically and empirically that networks play an important role in international trade. Economists have identified two broad types of network ties, social and business, and three functions or channels through which they shape trade (Rauch (2001), Combes et alii (2005)). Networks promote trade due to (i) the increased information about foreign partners, and business contacts they provide to their members, (ii) contract enforcement mechanisms they establish, that discourage or limit the opportunistic behaviour, and (iii) shifts in consumer preferences and tastes they generate. Social networks are based on common ethnic, religious, linguistic, and other common ties. Business networks, as suggested by their name, rely on contacts between firms or other organized entities. A main function of networks is to exchange detailed information between members at zero or low cost. Transnational networks can help members to match to profitable trade opportunities through providing market information, letting suppliers know whether consumers in a particular country would be receptive to their products and/or on how to adapt their products to consumer preferences in a given country. Networks can also facilitate trade by building or substituting

for trust when contract enforcement is weak or inexistent. Repeated mutual contacts and punishment schemes developed by networks discourage members from violating an agreement, reduce opportunistic behavior, and lower costs of implementing contract's clauses. This second function is specific to cross-border business networks. The preference effect, on the contrary, is present only in the case of social ties. Individuals with common ethnic or religious origins situated in different countries have generally increased preference for each other's home country products. However, certain researchers aggregate the first two functions under a single one. The reason is straightforward: perfect information about members of the network can become a powerful device persuading firms to fulfill their contractual liabilities. Business and social networks operating across national borders can help overcome informal trade barriers, and at the same time help document and even quantify the existence of these barriers. Research on the identification of network types and channels of their action remains limited.

The literature on trade and transnational networks is closely linked to international migration. The adoption of the network view of international trade contributed to a recent upsurge of the literature on trade and migration. Increased empirical research of ethnic networks benefited from the easiness of identifying their membres. Immigrants can promote bilateral trade by providing market information and supplying matching and referral services. Members of coethnic groups share a set of common characteristics and ties defining social networks. In a different line of work, the ability to communicate in a common language has been considered as the main feature delimiting social networks. Coethnic networks active in international trade often display features specific to business networks: they create the conditions for limiting opportunism and bridge direct contacts between partners in the host and home country. Many ethnic networks will blacklist a business owner violating an agreement and refrain from doing business with the guilty party. Employment of foreigners is often motivated by the desire of companies to develop business contacts with firms in the country of origin. Alternatively, business networks have been summarized to financial linkages developed through repeated

interactions or foreign direct investment (e.g. French economic groups, Japanese keiretsu).

Organization of the dissertation

The study of issues described above is interesting not only for the understanding of a series of today phenomena. It is especially useful for the formulation of relevant economic policies. This dissertation approaches this problematic throughout four chapters, assembled in two parts. The first part concerns the estimation of trade potentials, i.e. trade costs expressed in terms of actual trade volumes, and costs specific to the domestic and foreign institutional environment. Empirical applications consider the particular case of Central and East European countries. This choice was motivated by the recent reintegration of these countries into the world economy, the important shifts in the volume and structure of their trade patterns, and especially by the deep trade policy and institutional reforms they have suffered in the last fifteen years. Network ties linking the importing and exporting countries are tackled in the second part of the dissertation. This part evaluates the role of cultural exchange in defining trade-sustaining social networks, and regards the capacity of ethnic communities to organize into voluntary associations as a form of business networks. This time the geographical span of the sample used is very different from the sample used in part one, and was dictated by the availability of data. The order in which different aspects have been addressed in the dissertation follows the chronological evolution of the literature during the last years.

*T*he first chapter estimates total border-related costs, and addresses the issue of trade potential. To asses the contribution of institutions and networks in overcoming formal and informal trade barriers one needs first to quantify the barriers. The discussion is restricted here to border-specific costs: all trade costs except the ones related to the physical transportation of merchandize are particularly large or arise exclusively in international transactions. The liter-

ature on border effects permits an evaluation of costs in terms of trade volumes. For example, McCallum (1995) finds that the Canada-U.S. border corresponds on average to a reduction of trade between states and provinces by twenty times. However, for multiple reasons, all this missing international trade is unlikely to be reached as long as two countries remain separated by a political frontier. In the literature trade potentials have been traditionally estimated with respect to international trade patterns of a control or reference group of countries. However, a country's trade with itself is a much more reliable benchmark. We use advances in the literature on border effects and trade potentials to construct a measure based on this principle. It is assumed that integration translates first into a reduction of bilateral trade costs, and only afterwards an upsurge of trade is obtained. This coincides with the logical evolution of events: firms increase demands from suppliers when the reduction of costs has already been achieved. In our specific case, East-West European trade costs are assumed to converge in the long run to the lower level observed for trade between Western countries. Following the traditional literature, trade potentials are computed with respect to a reference group of countries, but it is computed in terms of differences in transaction costs rather than in terms of volumes of trade. Taking domestic trade as a benchmark, one needs to compare total border-related trade costs for the two groups of countries. Border effect techniques are applied to that end. As a result, trade potentials are computed as second differences in trade volumes: as the difference between the predicted and the actual volume of trade for the control group, minus the difference between the predicted and the actual trade for the inquired group. For the considered set of European countries, large possible trade creation is predicted. Our results greatly surpass findings in the traditional trade potential literature, and warn governments about the higher-than-expected effect of regional integration.

The new method introduced in the first chapter also permits to integrate the rich theoretical progress in deriving gravity-type trade specifications. In this case, the identification of the trade model that is best supported by the empirical data represents an additional challenge. We

construct a test for the compatibility of national product differentiation *à la* Anderson (1979), and monopolistic competition *à la* Dixit and Stiglitz (1977) and Krugman (1980) trade models with the observed data. Bilateral regional trade flows are estimated with each model and predicted values are compared with the actual trade. The exercise is repeated for different values of the elasticity of substitution, and the model with a monopolistic competition market structure is identified as a better replica of European trade. The corresponding elasticity of substitution estimated by the test to have a value equal to three, which lies within the range of values found by previous works.

The size of estimated border effects and border-specific trade costs depends on a variety of factors, among which is the way in which distances are calculated. We address this question in more detail in the last appendix to the chapter. This is not a debate on how to compute internal distances, which will undoubtedly affect border effects, but rather a discussion proposing the use of compatible computation techniques. All theoretical trade models are based on a nonlinear relationship between distance and trade, confirmed by a multitude of empirical works. However, this aspect is ignored in the calculation of distances employed in trade estimations that pay attention to countries' internal geography. Instead of simply summing weighted bilateral distances separating the different regions of importing and exporting countries, we develop and apply a nonlinear procedure for computing distances between and within countries as a function of the estimated distance elasticity of trade. An iterated procedure, consisting at each step of an estimation of the distance elasticity and its employment in the computation of distances, permits to estimate the true value elasticity that verifies the nonlinear correlation suggested by trade theory. Our results confirm previous findings about the general overestimation of border effects in the literature. Our results suggest that defective computation of distances inflates border-specific trade costs by a factor of two. Nevertheless, this effect is constant over time and does not affect the conclusions formulated in the first chapter.

In the *second chapter* we consider in more depth the role of institutions in international trade. The idea of well-functioning institutions encouraging economic activity is not new to economists, but it had few applications to international trade. We complement this literature in several ways. First, inspired by the works on economic development, we study the endogeneity between trade and institutions. It is not only that better institutions at home and abroad increase the security of international exchange, reduce uncertainty and contract enforcement costs, and thereby persuade firms to trade more, but also that increased participation in international transactions generates more demand for institutional reforms, and higher pressure on governments to finance and implement them. Trade, is also a channel through which a country's economic agents can learn of the ways to ameliorate existing institutions and design new, more similar to those of its trading partners. Secondly, we consider two aspects of the institutional framework: the quality and the similarity of national institutions. International fragmentation represents an additional barrier to trade. Even firms from advanced countries with strong institutions might find difficult to conclude mutual agreements with one another if institutions in their home country differ a lot from those in the partner country. Unlike previous works, we construct a real measure of institutional heterogeneity, the institutional distance, and find that it is a significant determinant of trade, comparable in importance to the quality of domestic and foreign institutions. Next, we compare the effect on trade of institutional reforms to that of the foreign trade policy, and compute the share of each factor in total border-specific trade costs. As in the first chapter, we consider the trade of transition economies with West European partners. This choice is motivated by the fact that institutions in transition countries have undergone profound reforms in the recent years, while their trade with EU members benefited from increased liberalization. Similarly to other authors, we find strong national institutions to be at least as important for international trade as the removal of policy barriers to trade. A further increase of regional trade is likely to occur even after all tariff and non-tariff barriers are eliminated. Moreover, we distinguish between general institutions

promoting economic development, and those specific to transition economies. As expected, the latter are of greater importance for our group of countries. Finally, we employ both index and quantitative measures to evaluate institutions. The second type of measures permit to formulate specific recommendations to governments in terms of economic policy. Increasing the share of the private sector in the economy by one percentage point, for example, would lead on average to a 1.6% raise in trade of a transition country with an average EU partner.

The *third chapter* focuses on cross-border social network ties. They benefited from an increased attention in the empirical literature due to the fact that they are relatively easy to quantify. Previous research relied mainly on the use of stocks of immigrants or shares of different ethnic groups in a country's population, and share of the population speaking a common language. A new aspect of social networks is studied in this chapter on a large sample of countries. International trade itself can contribute to the development of transnational social ties. Differently from the repeated interactions definition of networks, exchange of cultural goods can increase the awareness of and/or preference for products from the origin country in the same time period. Cultural goods, more than any other products embody information of the origin market. Trade in motion pictures, books, other printed matter, newspapers, or recorded audio media is much more sensitive to the presence of common ties between countries engaged in the exchange. The presence of cultural and social links increases the utility associated with the consumption of these products, and in certain cases is even an indispensable premise for their consumption. We show that firms and individuals can acquire increased information about foreign markets and in general develop a higher preference for foreign products, by consuming cultural goods from those countries. The amount of extra trade in cultural goods between two countries with respect to the predictions of the general gravity model is used to express the intensity of social ties linking them. However, one needs to adjust for the presence of culture-free bilateral linkages, such as the general preference of Americans for Canadian products. We control for this element by including non-cultural ties, estimated as the residual

trade in similar goods without a cultural component: as an independent variable in the trade model. But even then, the consumption of foreign cultural goods is found to contribute to the accumulation of information about partners situated and goods produced abroad.

The main way proposed in the literature of separating the information from the preference effect of social networks consists in comparing the size of effects on exports and imports. According to it, a larger network effect on imports testifies to the adoption of foreign consumption habits. Nonetheless this approach is quite imperfect, as foreign-born individuals can not only preserve their preference for products produced in their country of origin, but also, given their increased knowledge of the host country acquired after migration, encourage family and friends at home to purchase more goods produced in their country of residence. Indeed, community-specific studies confirm the presence of both phenomena. Differently from this literature, we compare the effect of cultural ties estimating it for seven types of cultural goods. By their very nature newspapers and periodicals, booklets, and other printed advertising material have mainly an informative role, while motion picture, books, recorded media, and agricultural goods are more likely to produce shifts in consumer preference structure. We find strong evidence of both effects in the data. Rauch (1999) states that networks are of particular importance when markets fail to provide necessary information or enforcement mechanisms, i.e. in the case of differentiated products. Applying his classification of goods into homogeneous, reference priced, and differentiated, only partial support for this statement is found.

Fourth and last *chapter* addresses the role of business networks *per se*, and relative to social networks. A possible way to quantify trade costs reduced by cross-border networks is to consider international migration. There is a recent and expanding literature showing that international transaction costs are generally lower in the presence of large flows or stocks of immigrants. The intuition behind it is straightforward: immigrants carry their increased knowledge of the country of origin to the host country. From this point of view, international

migration can be viewed as a transfer of information. Countries which receive immigrants also import their knowledge of opportunities, practices and tastes in their respective countries of origin. However, this literature does not consider the organized activity of immigrants in the host country. Rauch and Trindade (2002) observe that many ethnic groups living outside their countries of origin create formal and informal associations to which coethnic businesspeople both from the host country and from the native country have access. In this line of thought, the last chapter proposes a different view on international migration. The classification of networks into business and social can be transposed to migration as follows: overseas ethnic populations represent social networks referring to common linguistic, ethnic, religious, and historical ties, while home country associations established by immigrants in the host country depict business networks formed by interlinked firms and organizations. A central issue in the literature on business networks is the presence of organized structures. The capacity of immigrants to associate, to define common goals, to raise funds, and to undertake joint actions in the benefit of their home country is, therefore, used as a measure of the intensity of business networks.

We employ a new, unexplored dataset on migrant associations established in France, along with data on flows of immigrants to France in order to quantify the impact of social and business networks on its trade with seventeen selected developing countries. A significant effect is found only for trade in differentiated goods, but this result is most likely due to the asymmetric composition of considered trade flows. Similar to Combes et alii (2005), we find a larger impact on trade of business compared to social networks. Information and business contacts supplied by unorganized immigrant communities, however, are irrelevant for French imports from developing countries. Home country associations generally become convenient for trade immediately, or with a delay of two to four years, the time needed for the establishment of local business contacts in France and abroad. Similar effects of networks are identified in the case of foreign direct investment of French firms. Interestingly, results are stronger and more

robust than in the case of trade. Still, the procurement of information on the foreign market via migrant associations is more efficient than by the word-of-mouth.

This dissertation shows that there is a large place for non traditional trade costs in explaining missing international trade. Trade potentials may actually have been underestimated in the literature, and trade creation associated with regional economic integration might be much larger than expected. This finding is illustrated in the particular case of trade between East and West European countries. Results presented in different chapters confirm the pro-trade effect of both institutions and transnational networks. The well-functioning of domestic and foreign institutions is a factor comparable in importance to foreign trade policies. Even after all tariff and non-tariff barriers are removed, institutional reforms may generate a large increase in international trade. Social networks promote trade not only via common ethnic, linguistic and other ties that connect their members, but also via information and tastes acquired from the consumption of foreign cultural goods. A particular form of business networks studied in this dissertation are home country associations established by immigrants in their host country. Migrant associations have a stronger effect on trade than social network ties, they shape foreign trade and affect as well decisions to invest abroad.

General Conclusion

The present thesis studies the burden of international trade costs on trade between countries, and the contribution of two new factors, institutions and networks, in lowering it. It evaluates the size of overall border-related trade costs, and the extent to which their reduction can be achieved via regional economic integration. A central place in this discussion is attributed to non-traditional trade determinants, represented by country-specific institutions and transnational social and business networks. The latter increase the security and contract enforcement in international transactions, and furnish foreign contacts and information on potential partners, which all translate in reduced costs and uncertainty of cross-border exchange. This study is important not only for a more thorough understanding of a series of phenomena observed in international economics, but also for the development of specific economic policies assisting countries in the achievement of their long term objectives.

The work presented in this thesis consists mainly in an empirical analysis of evoked issues. Still, it takes advantage of recent theoretical advances in international trade literature. Thus, results and conclusions formulated in the thesis are supported by predictions of theoretical trade models. For each chapter, we choose a group of countries for which the set of questions treated in it find particular resonance. Accordingly, regional integration, trade liberalization and institutional reforms are studies for the case of transition countries and their West European partners. Cultural aspects of social networks are considered for a very large geographical span of trading countries. Finally, the role of migrant associations, as a form of business

networks, in shaping cross-border trade and investment decisions is investigated for a limited number of French partners from the developing world.

We started our analysis by estimating the magnitude of total border-related costs, and how economic integration reduces them. Trade both between transition countries, and with EU members improved remarkably during the last decade of the twentieth century. The former become more and more similar to their Western partners in many aspects, including the way to trade. Continuous economic integration in Europe led to an important drop in regional trade costs, reflected first by the removal of import tariffs. However, as additional impediments or trade are reduced, important trade creation effects may be observed even after CEE countries have joined the European Union. A possible quantification of these effects is to compute East-West trade potentials, i.e. in terms of actual trade volumes. Differently from traditional research in this field, we use trade within national borders as reference for international trade, but similar to it estimate trade potentials with respect to a control group of countries. The underlying idea of this innovative method, presented in chapter one, is that extra trade arises as a result of lower transaction costs. Convergence of CEE-EU trade costs to the lower intra-EU level is a primary result of European integration, and should be exploited in the computation of the associated increase in trade.

Results obtained according to this technique show that there is still place for important growth in bilateral CEE-EU transactions. They are very robust and confirmed by three different theoretically compatible trade specifications employed. At the beginning of the twenty-first century trade between CEE and EU countries represented about half of its attainable level, suggesting a 100% increase with further EU integration. As for regional CEE trade, its potential ranges depending on the model between 112 and 175%. And this is regardless of the strong reduction of bilateral border effects between these countries achieved during the 1990s. These findings contradict with those of traditional trade potential models, who claim that

East-West European trade has already reached its highest level. A discrimination test for monopolistic against perfect competition trade models, based on the estimation of bilateral trade flows with country and partner specific effects, is also developed in the chapter. According to it, European trade is better replicated with monopolistic competition trade models *à la* DSK, and exhibits an elasticity of substitution of traded varieties equal to three. This outcome complements the exiting literature, which relies deeply on the share of intra-industrial trade and the presence/absence of the home market effect to assess the empirical success of perfect and imperfect competition trade models.

The size of estimated border effects and border-specific trade costs depends on a variety of factors, among which the way in which distances are calculated. We address this question in more detail in the last annex to chapter one. It discusses the necessity of using compatible techniques for the computation of distances and the estimation of trade flows. Trade theory predicts a nonlinear relationship between distance and trade, confirmed by a multitude of empirical works. This aspect is ignored in the calculation of distances in trade models that take into account the internal geography of trading countries. Instead of simply summing weighted bilateral distances separating the different regions of importing and exporting countries, we develop and apply a nonlinear procedure for computing distances between and within countries as a function of the estimated distance elasticity of trade. An iterated process of estimation of the distance elasticity of trade, and computation of distances, permits to estimate the true elasticity value that verifies the nonlinear correlation suggested by the theory. Our results confirm previous findings on the general overestimation of border effects in the literature. Defective computation of distances inflates border-specific trade costs by a factor of two. Nevertheless, the effect is constant in time and does not affect conclusions formulated in the first chapter.

The second chapter treats into more detail the role of national institutions and trade liberalization in international trade. Recent European integration was initiated by the conclusion

of regional trade agreement and the progressive reduction of tariff and non-tariff trade barriers. It is brought to an upper level with the decision of transition countries' governments to improve their domestic institutions. These actions have been largely motivated by their willingness to join the European Union. Besides the compulsory character of EU's recommendations regarding institutional reforms in these countries, included in bilateral pre-accession agreements, institutional cohesion is required for the good functioning of a Union with a large number of member countries. Accordingly, changes in the institutional framework can generate a non-negligible increase of regional trade. We explore this idea by estimating the impact of the quality of institutions in the origin and destination country on trade between 25 European countries. A monopolistic model of trade is employed, which, according to the trade theory test developed in the first chapter, reproduces with greater exactitude observed trade flows. National institutions, evaluated by different index measures, are found to be a strong determinant of trans-European trade. The result is confirmed when we control for endogeneity between trade and several right-hand variables. Differently from the existing literature, we study as well the two-way causality between trade and institutions. The pro-trade effect of well-functioning institutions is only a part of the story. The participation in international trade helps countries improve their domestic institutions. Like a small number of authors, we show that similarity in home country institutions increases the extent to which firms engage in mutual transactions. However, we reach this conclusion by employing a separate variable reflecting institutional heterogeneity. Given the specific composition of the sample, we divide institutions in two classes according to their contribution to the general development of the country, and support of market activities. To judge on the importance of institutional reforms on trade relative to that of foreign trade policy, we include data on tariffs and non-tariff barriers in the analysis. Estimation results show that the two factors have effects of comparable size. A large part of the trade potential predicted in the first chapter can be reached by raising the quality of institutions in transition countries in general, and of those supporting the mar-

ket economy in particular. Finally, using continuous variables for the quality of institutions, such as the size of private sector or the investment rate, we formulate a number of explicit recommendations in terms of economic policy.

In the second part of the thesis we investigate the role of a different trade determinant, transnational networks. Social and business networks increase trade by lowering mainly information, search, and contract enforcement costs. Social networks benefited from increased attention in the empirical literature due to the fact that they are relatively easy to quantify. The literature relied mainly on ethnic ties, and the ability to communicate in a common language. The third chapter of the thesis analyses a new aspect of social networks. International trade itself can contribute to the development of transnational social ties. Exchange of cultural goods can increase the awareness on and/or preference for products from the origin country. Cultural goods (books, music, films, newspapers, etc.) more than any other products emboby information on the origin market. Trade in these products is much more sensitive to common ties between countries engaged in the exchange. The presence of strong cultural and social links is a major factor in the purchase decision, and increases the utility associated with the consumption of cultural goods. We employ a simple gravity model to construct a measure of the intensity of the social networks from trade with cultural goods. Results indicate that trade with cultural goods is an important interface for the assimilation of information about foreign markets and preferences. The simple consumption of the foreign goods with a cultural component generates shifts in the structure of the preferences, but also contributes to a superior information on foreign partners and markets. This outcome is confirmed even we adjust for the presence of culture-free bilateral linkages, such as the general preference of Americans for British products. To separate the information from the preference effect of social networks, we compare the effect of cultural ties estimated for seven types of cultural goods. By their very nature newpapers and periodicals, booklets, and other printed advertising material

have mainly an informative role, while cinematographic films, books, recorded media, and agricultural goods are more likely to produce shifts in the preference structure of consumers. Estimation results confirm the importance of both channels in international trade. The analysis is then carried separately for homogeneous, reference priced, and differentiated goods, and partial support is found for the statement that networks are of particular importance when markets fail to provide necessary information or enforcement mechanisms.

The recent literature sets forward the positive role on trade of both business and social networks. Although the two types of ties may alter trade in similar ways, business networks suggest the existence of organized structures. This difference is employed in the last chapter to differentiate social from business networks. Transnational business networks help members to find profitable trade opportunities through provision of market information, and increase trust between network members and reduce opportunism by applying contract enforcement and punishment schemes. A special dimension of business networks is considered in the chapter. It relies on a recent and expanding literature showing that international transaction costs are generally lower in the presence of large flows or stocks of immigrants. Immigrants increase trade by providing superior knowledge on their market of origin, and business contacts between firms situated in the home and host country. Moreover, many ethnic groups living outside their countries of origin create formal and informal associations that facilitate the contact among businesses situated in the two countries. The capacity of immigrants to organize in the host country is used to measure the intensity of cross-border business networks. We employ an entirely new and previously unexplored data set on migrant associations established in France, and find that their presence affects positively the decisions of French companies to trade with and invest in their home countries. Compared to social ties, represented in the chapter by international flows of immigrants, business networks have a stronger and more robust effect. Information and business contacts supplied by unorganized immigrant communities are less

important or even irrelevant when these can be procured via migrant associations.

This thesis elucidates certain aspects in which trade is affected by institutions and international networks. These two non traditional determinants of international trade patterns received until recently limited attention from economists. It has been shown in the thesis that both factors permit to explain a large part of hidden border-specific trade costs, and thus explain a part of the mystery of missing international trade. The presence of sound and similar institutions in the home and partner country are comparable in importance to foreign trade policies, and suggest that trade creation is still possible after tariffs and non-tariff barriers are removed. Social networks promote trade not only via common ethnic, linguistic and other ties, but also via information and tastes assimilated with the consumption of foreign cultural goods. The strength of business networks can be judged upon the capacity of immigrants to form home country associations in their country of residence, and their suitability for promoting international transactions upon the information and contacts they provide to interested parties.

The trade literature considers networks as established phenomena which can vary in intensity. In microeconomics networks are the outcome of choices made by individuals of a community, and their emergence is a central issue in their analysis. According to the definition of social networks in the trade literature, individuals are unlikely to have the option of forming a network or not, as well as to choose the strength of ties that connects them. Business networks, on the contrary, are much more close to the definition employed in other parts of economics. Actually, firms possess the liberty to enter an existing network or create one. Enforcement and punishment mechanisms functioning inside business networks are an evidence of that. The effect on trade might be more complex and even different than shown in the literature, if this aspect of networks is to be considered. Therefore, a logical continuation of the literature and of questions treated in this thesis is to develop a trade model where trading

firms decide themselves to participate in a network or not. An interesting issue that can be investigated by such a model is the reverse causality between trade and networks. Past foreign trade experiences may be of great importance when enterprises are free to chose the type of interaction, market or network. But if both institutions and networks are regarded as the result of some optimization program solved by economic agents, their interaction demands a thorough study. Attempts to treat this subject exist in the literature, but they are scarce and detached from the international trade context. Well-functioning institutions and strong network ties can be substitutes as well as complements. The outcome depends on several things, among which the incentives of firms and individuals to improve institutions and form networks (augment profits and/or utility, preserve or improve the bargaining power parity, etc.) Finally, as shown in the last chapter of the thesis, a large part of the analysis carried for international trade flows apply as well to foreign direct investment.

Bibliography

Acemoglu, D., J. A. Robinson, and S. Johnson (2001). The colonial origins of comparative development: An empirical investigation. *American Economic Review 91*(5), 1369–1401.

Anderson, J. E. (1979). A theoretical foundation for the gravity equation. *American Economic Review 69*, 106–116.

Anderson, J. E. and D. Marcouiller (2002). Insecurity and the pattern of trade: An empirical investigation. *Review of Economics and Statistics 84*(2), 342–352.

Anderson, J. E. and E. van Wincoop (2003). Gravity with gravitas. *American Economic Review 93*(1), 170–192.

Anderson, J. E. and E. van Wincoop (2004). Trade costs. *Journal of Economic Literature 42*(3), 691–751.

Anderson, J. E. and L. Young (2002). Imperfect contract enforcement. *NBER Working Papers 8847*.

Casella, A. and J. E. Rauch (2003). Overcoming informational barriers to international resource allocation: prices and ties. *Economic Journal 113*(484), 21–42.

Coase, R. (1937). The nature of the firm. *Economica 4*, 386–406.

Combes, P.-P., M. Lafourcade, and T. Mayer (2005). The trade creating effects of business and social networks: Evidence from France. *Journal of International Economics 66*(1), 1–29.

Dixit, A. (2003a). On modes of economic governance. *Econometrica 71*(2), 449–481.

Dixit, A. (2003b). Trade expansion and contract enforcement. *Journal of Political Economy 111*(6), 1293–1317.

Dixit, A. and J. Stiglitz (1977). Monopolistic competition and optimum product diversity. *American Economic Review 67*(3), 297–308.

Feenstra, R. C., G. G. Hamilton, and D.-S. Huang (1997). Groups and trade in East Asia: Part 1, networked equilibria. *NBER Working Paper 5886*.

Gould, D. (1994). Immigrant links to the home country: Empirical implications for U.S. bilateral trade flows. *Review of Economics and Statistics* (2), 302–316.

Greif, A. (1993, juin). Contract enforceability and economic institutions in early trade: The Magribi traders' coalition. *American Economic Review 83*(3), 525–548.

Head, K. and T. Mayer (2002). Illusory border effects: How far is an economy from itself? *CEPII Working Paper 1*.

Kaufmann, D., A. Kraay, and P. Zoido-Lobatón (1999). Governance matters. *World Bank Policy Research Working Paper 2196*.

Kaufmann, D., A. Kraay, and P. Zoido-Lobatón (2003). Governance matters III: Governance indicators for 1996-2002. *World Bank Policy Research Working Paper 3106*.

Krugman, P. (1980). Scale economies, product differentiation, and the pattern of trade. *American Economic Review 70*(5), 950–959.

Maddison, A. (2001). *The World Economy: A Millennial Perspective*. Paris: OECD.

McCallum, J. (1995). National borders matter: Canada-U.S. regional trade patterns. *American Economic Review 85*(3), 615–623.

North, D. C. (1990). *Institutions, Institutional Change and Economic Performance (Political Economy of Institutions and Decisions)*. Cambridge University Press.

Obstfeld, M. and K. Rogoff (2000). *The six major puzzles in international macroeconomics.* Macroeconomics Annual. MIT Press.

Portes, R. and H. Rey (2005). The determinants of cross-border equity flows. *Journal of International Economics 65*(2), 269–296.

Rauch, J. E. (1999). Networks versus markets in international trade. *Journal of International Economics 48*(1), 7–35.

Rauch, J. E. (2001). Business and social networks in international trade. *Journal of Economic Literature 39*(4), 1177–1203.

Rauch, J. E. and V. Trindade (2002). Ethnic Chinese networks in international trade. *Review of Economics and Statistics 1*(84), 116–130.

Rodrik, D. Institutions for high quality growth: What they are and how to acquire them. *Studies in Comparative International Development, YEAR = 2000, volume = 35, pages = 3-31,.*

Trefler, D. (1995). The case of missing trade and other mysteries. *Journal of international Economics 85*(5), 1029–1046.

Williamson, O. The new institutional economics: taking stock, looking ahead. *Journal of Economic Literature, YEAR = 2000, volume = 38, number = 3, pages = 595-613,.*