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THE INTERNATIONALISATION OF THE SERVICES SECTOR

**Analytical framework, explanatory factors and
policy implications**

Tesis Doctoral

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Abstract

This thesis represents an applied economic analysis of the process of internationalisation of the services sector. The relevance of the argument is shown by the importance of services activities and the influence of the globalisation process within developed economies. The author makes use of applied research methods in order to answer the following questions. How does the process of internationalisation take place? What is the functioning of the factors affecting it? How do the consequences of the process show themselves? A high variety of research instruments are applied. All the analyses performed are based on the study of the contribution of the relevant literature on the arguments treated as well as on exploratory data analysis. Econometric tools such as panel data regression analysis and simultaneous equations estimations techniques are implemented on gravity-type models of international relations. Furthermore the structure of these relations is also studied through the applications of exploratory social network analysis. The evidence of the high complexity of the process, highlighting the different role played by the countries involved in service globalisation, the importance of cost factors in competitiveness and the description of the policy implications of the integration of European services markets are among the most relevant conclusions.

Resumen

Esta tesis representa un análisis económico aplicado del proceso de internacionalización del sector servicios. La relevancia del argumento reside en la importancia que las actividades de servicios y que el proceso de globalización tienen dentro de las economías desarrolladas. El autor utiliza métodos de investigación aplicada para responder a las siguientes preguntas. ¿Cómo se produce el proceso de internacionalización? ¿Cómo funcionan los factores que lo afectan? ¿Cómo se presentan las consecuencias de este proceso? La tesis doctoral aplica un amplio rango de instrumentos de investigación. En primer lugar cabe destacar que todos los análisis llevados a cabo se basan en el estudio de la literatura relevante así como en el análisis exploratorio de datos. Asimismo instrumentos econométricos tales como unos métodos avanzados de estimación de datos de panel y técnicas de estimación de ecuaciones simultáneas se aplican a modelos de tipo gravitacional

que describen relaciones internacionales. Además, la estructura de dichas relaciones se estudia a través de la aplicación de análisis de redes sociales. Entre las conclusiones más relevantes de la presente tesis doctoral es posible destacar la comprobación de la alta complejidad del proceso, la puesta en evidencia de los diferentes roles mantenidos por los países involucrados, la importancia de los factores de costes para la competitividad y la descripción de las implicaciones de política económica del proceso de integración de los mercados europeos de servicios.

Preface and acknowledgments

This thesis is based upon the work realised and the studies undertaken at the department of *Economía Aplicada* at the *Universidad de Alcalá* between 2006 and 2010. It represents my modest contribution to the creation of knowledge about a subject, the internationalisation of the tertiary activities, chosen because it represents a field of research with a limited but noble past, the derivation of all international economics applicable to the services sector, and a great future ahead, given by the high preponderance of the two main arguments (internationalisation and services) and their combination in economic studies.

My work all over these years had been supported by a network of persons who have guided and assisted me. The first persons I feel the need to acknowledge are the thesis supervisors Professor Luis Rubalcaba Bermejo and Professor Juan Ramón Cuadrado Roura. There is no need to say that without their support the accomplishment of this work would have never been achieved. It is a real honour to have had the chance to learn from Professor Rubalcaba as researcher and, even more, as the sincere and honest person he is. He always demonstrated to have faith in me indicating clearly the way to follow but also letting me free to advance through it relying on my own capabilities. I was delighted to interact with Professor Cuadrado, who had always been an example to me, as well as to all the department researchers, of rigor and passion for economic research.

I am in profound debt with all the colleagues I had the chance to work with all along the past five years. Some of the researches composing this thesis are the outcome of joint works in which I had the opportunity to participate. For this reason once again I would like to thank my two supervisors with who I had the honour to share the blank page and all the fervour needed to fill it. A particular acknowledgment goes to Gisela Di Meglio and Andrés Maroto for their work in one of the article that is at the base of one chapter of this thesis.

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Finally, my deepest gratitude is for my families. It goes to my "old one", formed by my mother, my father and my brother, who supported me through so many years of study that they actually wonder if they will ever see an end. I would had never been able to get to this point without their unconditional encouragement. Beyond everyone else, my heartily gratitude is for my "new" family, for Sara who had been patient, sympathetic, respectful, supporting, leading and relieving to me while I have been involved, energized and sometimes trapped within this thesis. The latest mention is for the latest arrival in my life, Adriano we have a full life of research ahead of us.

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Chapter 1 – Introduction

What this thesis is about

This thesis represents an applied economic analysis of the internationalisation of the service sector. The aim of the author is to make use of applied research methods in order to perform an empirical analysis of the subject. The objective is to make use of up to date statistical tools in order to test existing theories on international economics and extract from the available data new information on the functioning of the process. Exploratory data analysis as well as econometric tools and other innovative techniques, such as social network analysis, represent the instrument used to understand the underpinning of the process.

1.1 – Reasons behind the choice of the argument

There is a high variety of reasons supporting the choice of the main argument around which this thesis has been developed. All those reasons, to which I will come back all along this introduction chapter, can be resumed by a clean sentence: globalisation is a phenomenon sizing a phase of present history while services represent the dominant economic sector, services globalisation¹ have been historically overlooked in economic sciences and deserves researchers' attention. Few words need to be spent at this early stage to introduce the reader to the main framework of this study: the *services sector*. Among the references at the end of this thesis there are several examples of books and article that exhaustively present the argument. My intention in this introductory chapter is not to replicate those studies, but to put the reader in a position to be able to fully understand what this research is about and its relevance with respect to the latest developments of economic theoretical and empirical literature.

The definition of service sector is broad and has been designed under different perspectives. It was often defined as the refutation of what it is not. Services neither are

¹ The expressions "services internationalisation" and "services globalisation" are treated in this first introductory chapter as synonymous of the same process while the term "globalisation" refers to the more general process of increase of the international economic relations that took place since the last half of the XX century.

agricultural nor industrial products. The definition of services as the *tertiary sector* finds here its roots. Economic literature also proposed some classification based on distinguishing characteristics of services such as their intangibility or the high level of interaction between client and provider that is required in their production. Nevertheless the shortcoming of this cataloguing is evident. Too many and too different economic activities cannot be fitted into a narrow classifications. In this work I decided to adopt a pragmatic position and consider as services all those activities that are included in this group by the major statistical institutions and are embodied within the major international economic agreements. Table 1.1 presents the NACE classification of economic activities at first level (or alphabetical code).

Table 1.1 NACE classification of the economic activities in the European community

A	<i>Agriculture, hunting and forestry</i>
B	<i>Fishing</i>
C	<i>Mining and quarrying</i>
D	<i>Manufacturing</i>
E	<i>Electricity, gas and water supply</i>
F	<i>Construction</i>
G	<i>Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods</i>
H	<i>Hotels and restaurants</i>
I	<i>Transport, storage and communication</i>
J	<i>Financial intermediation</i>
K	<i>Real estate, renting and business activities</i>
L	<i>Public administration and defence; compulsory social security</i>
M	<i>Education</i>
N	<i>Health and social work</i>
O	<i>Other community, social and personal service activities</i>
P	<i>Activities of households</i>
Q	<i>Extra-territorial organizations and bodies</i>

Source: Eurostat

According with the specification presented above, in this thesis all economic activities comprised between letter F and Q are considered *services*. Evidently this is not the only possible classification of services activities, but it was adopted in order to allow for empirical analysis based on the figures comprised in the database produced by *Eurostat*, *OECD*, *World Trade Organisation* and all major national and international statistics institutes. Indeed the *services* sector included in these databases corresponds to the aggregation of the data corresponding to the activities between F and Q. Furthermore the chosen classification is also in line with the definition of services assumed by policy makers when adopting decisions

and implementing new policies². However the reader is informed whenever alternative arrangements are taken.

The existence of an aggregate service sector itself had been often questioned. Indeed, as it can be seen in Table 1.1 under the word *services* a group of activities with a high variety of characteristics is presented. In fact service activities can be classified under several perspectives. There are producer directed services, client directed services and public provided services. There are knowledge intensive services and low skill labour services. There are “pure” services and services provided jointly with goods supply. And the list of potential distinctions could continue due to their high heterogeneity. Nevertheless the existence of an aggregate under which all these various set of activities is studied and discussed is an useful framework which has been backed by the ample literature produced, the creation of specific policies and statistics.

The service sector, as aggregate, is nowadays widely considered as the dominant economic sector. It represents more than 70% of GDP and employment in developed economies. Service specific policies are at the centre of policymaker attention and service related research is gaining relevance within the academic world. In fact the number of article published within this field sharply increased during the last decade, several specific journals arose, the reputation of the existing research associations focused on this subject improved and new ones came into beings. One of the reasons that enabled the attention of researchers on this subject was the emergence in this period of the “raw material” on which applied researchers work: databases. Indeed the lack of sector specific data had always been a burden to who undertook applied research on activities belonging to this sector in the past. Even though the developments occurred between the 90s and the first years of this century started filling this gap, at the beginning of the 21st century the attention of economist on this sector can still be considered as a recent phenomenon.

The main subjects of this work, services and their internationalisation, had historically been underestimated. Classical economics consideration of the tertiary sector followed the ideas expressed by Adam Smith, who sentenced that these activities were not adding economic value and were therefore unworthy of attention. Even when classical economics had been overtaken by other lines of thought this sector had always played a secondary role in economics sciences. Following Baumol (1967) services were considered low productive and their high importance in developed economies was linked to low level of growth in the

² The inclusion of the construction sector within the services activities group is often debated. Nevertheless construction services are part of the activities addressed by the General Agreement of Trade in Services (within the so called W/120 list) and by the European Service directive, for example.

long term. Furthermore they were only partially acknowledged as involved in one of the most important economic phenomena of the second half of the past century: the globalisation process.

Most of these (false) myths on services, such as the low productivity or the link with low growth path, have been given up by theoretical and empirical studies on the subject during the last twenty years. This thesis concerns one of the "false tales" about this sector: the low participation of services in the globalisation process. Recent trends in research show how researchers and academics are changing their minds on the idea of a low level of implication of services in the growth of international economic relations. This process, also called globalisation, is one of the words by which the present phase of the history will be remembered. The idea of a low participation of services in the globalisation process was partially backed up by figures. Indeed when these relations shown acceleration during the 80s, services were almost not part of the phenomena since they performed low in one of the few indicators taken into consideration at that time: international trade. Furthermore the tertiary sector was considered as a sort of non-tradable component of the economy. Services were mainly thought as local economic activities and did not present the typical characteristics of the sectors at the centre of the globalisation process: tertiary activities were not decentralising their production processes following the cheap-factor-seeking trends and they were in most cases not transportable at low cost rates.

The main research hypothesis on which the present work is set up is that services represent an important component of globalisation and that their internationalisation process is complex and presents specific dynamic characteristics. The need to go beyond traditional ideas of low implication of services within the process and the need to deeply explore, at least, some aspects of this vast field were important motivations for undertaking this PhD research. Indeed reducing the internationalisation of the mentioned activities to the simple analysis of international trade accounting is at the best misleading, at worst it produces a false understanding of the drivers and dynamics of the process. Their complexity at the moment of crossing borders, the variety of forms adopted, their interrelation and the relevance of the sector within the figures describing these forms are all arguments at the centre of the present work demonstrating the high relevance of tertiary activities within the process of globalisation. In concert with the raising attention of researchers and academics, these activities gathered the centre of the most important debates and negotiations on international policies and treaties³, although the only recent acknowledgment of their role

³ The General Agreement of Trade in Services (GATS) and the EU Service Directive can be mentioned within the most debated international negotiations of recent history.

within the globalisation process made the advances in terms of liberalisation policies relatively delayed with respect to the ones concerning the goods sector. The presence of a catching up process of service internationalisation with respect to goods one is another general hypotheses addressed by this thesis.

Accordingly with this brief presentation of the service sector and its internationalisation process it can be stated that globalisation is one of the most relevant present economic phenomena and that services represent the dominant economic sector. Therefore, beyond any dispute, services internationalisation is a subject deserving the attention of academics, researchers and policymakers. On the basis of all these considerations I decided to dedicate my research efforts to this subject with the aim of producing a modest contribution to the improvement of the knowledge about services and internationalisation in line with the general hypothesis expressed. In this attempt several specific interrogations arise.

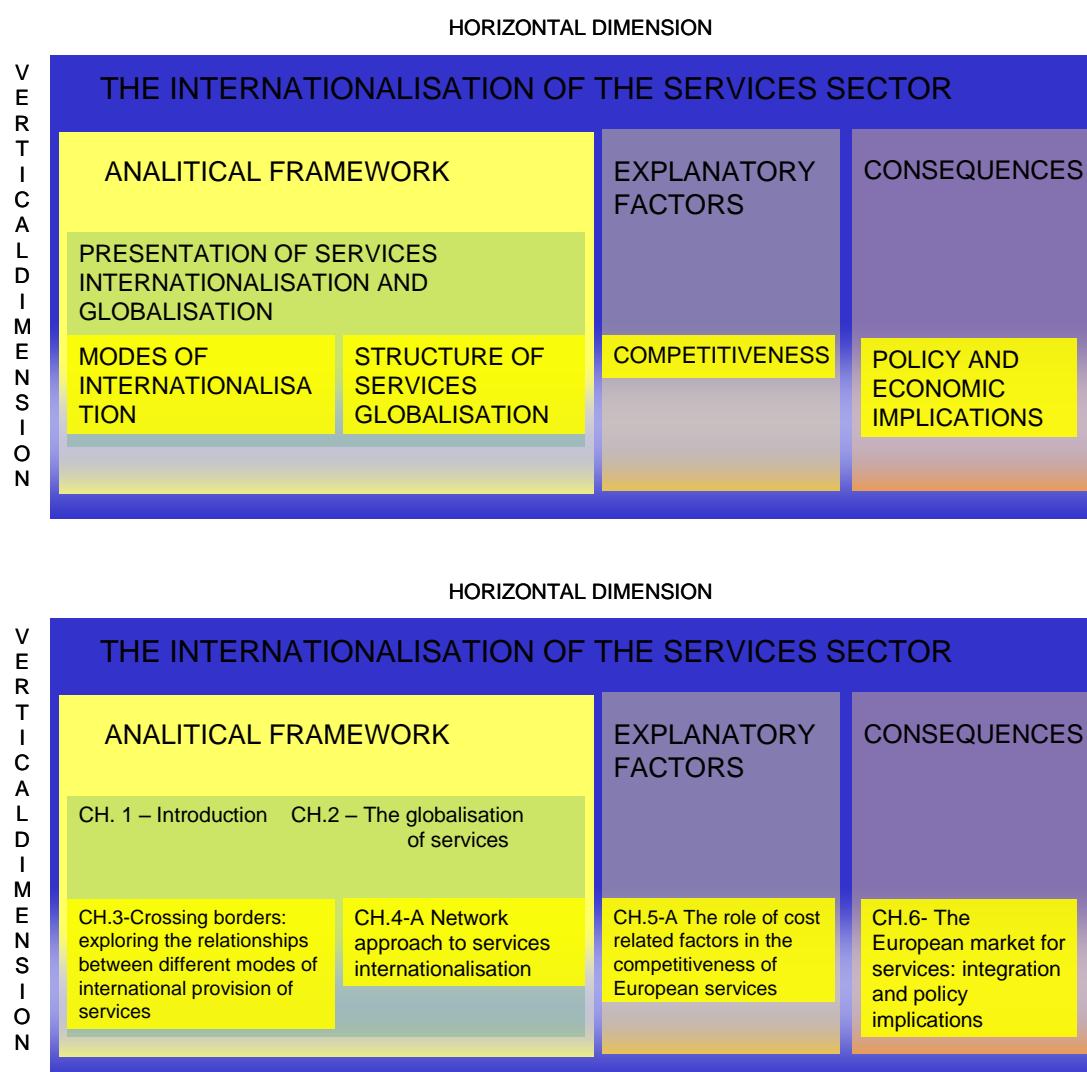
1.2 – Research structure

Studying in deep all the aspects concerning the whole process of internationalisation of the services sector goes well beyond the material possibilities of a PhD thesis. Therefore, when approaching such an extensive subject I found three ways ahead. The first one consisted in choosing a specific aspect of the process and deeply investigating it centring the whole research on a limited portion of the whole subject. The advantage of this approach is that, since the research focus is limited, a profound contribution can be produced on a specific aspect. Nonetheless the main shortcoming is represented by the fact that this approach forces the researcher to work exclusively on a limited part of a relevant subject and he is not able to demonstrate his capabilities of addressing and organising a complete research around a broad argument. The second approach consisted in producing a collection of essays on diverse aspects of the argument, with the advantage of being free to deeply research on different arguments, but the drawback of producing an unsystematic work on an argument. The third approach consisted in embracing the whole argument creating a general research line complemented by sound researches aimed at giving insight on some specific aspects of the general subject. Since high level research cannot be achieved on all the aspects of such an extensive argument, the main disadvantage of this kind of studies is that they fail at producing an exhaustive analysis on a topic. Nevertheless within this research approach the researcher can demonstrate his ability to cover an extensive field of research and, at the same time, is free to set up highly specific researches.

None of the approaches clearly outpaces the other, advantages and shortcomings compensate. For what concerning the present work, when I first began my studies on the argument I was involved in diverse research projects that led me to address the argument of service internationalisation as a whole and, at the same time, to develop researches on specific aspects of the process. Therefore the third approach is at the base of the present thesis where, on the one hand, the internationalisation of the services sector is presented and studied from an all enhancing perspective and, on the other hand, specific studies are developed on particular aspects of this process. I was personally excited by the opportunity and the challenges represented by having to deal with such an extensive subject and creating a book where, at least, most of the main aspects of the argument were touched. At the same time I was aiming at producing some sound applied economic research, which is an objective that is necessarily achieved when the research field is limited. For all these reasons all over these years I developed the present research project where an horizontal approach to the service internationalisation argument is complemented in all its main aspects by specific and (at least in my intention) robust researches on particular arguments.

The present doctoral thesis is therefore structured around three conceptual pillars aiming at covering the main aspects of the service internationalisation arguments. These pillars, or blocks, are composed by chapters approaching the argument from general, as well as specific, perspectives. The three pillars are: analytical framework; explanatory factors and consequences of the process of internationalisation. Due to the need of making this research an all comprehensive approach to the argument, the first block is the most consolidated one. Indeed this first part of the thesis is composed by chapters aimed at presenting the argument from a theoretical as well as descriptive point of view, such as the present one and Chapter 2, and by Chapters aiming at giving a macro perspective of the aspect of the process of internationalisation through empirical studies supported by sound econometric and statistic analysis tools (Chapter 3 and Chapter 4).

Figure 1.1 Structure of the thesis, concepts and correspondence with chapters



The latter chapters are therefore focused on the mode of services internationalisation and on the structure the international relation created take respectively. The second pillar through which the main subject is approached deals with the causes of the process. As it will be better explained in the first chapters, there is a high number of factors contributing to the internationalisation processes. In this part of the thesis I wanted to propose a study on one of these aspects: the competitiveness. The third pillar concerns the consequences and the policy implications of the services internationalisation. Also in this case the analysis proposed is rather specific than general since a particular consequence of the process of internationalisation presenting several policy implications is studied: the European market for services. Figure 1.1 aims at being a map of the present work. It graphically presents the

structure of the thesis from the horizontal / vertical perspective and shows the correspondence between the researched fields and the corresponding chapters.

1.3 – Research questions

This thesis aims at answering questions on the process of internationalisation of the services sector. Wide-ranging questions are integrated by questions challenging the probity or property of particular aspects of the subject. The understanding of the mechanism behind the process studied involves three core research questions:

- *How does the process of services internationalisation take place?*
- *What is the functioning of the factors affecting it?*
- *How do the consequences of the process show themselves?*

As it will be explained in the rest of this section, the first research question is mainly addressed by the chapters composing the first pillar of the present study. The horizontal approach implemented in Chapter 2 is complemented by two specific chapters devoted to answer the question through an “inside” analysis on the modes of internationalisation and through an “outside” analysis on the structures that the economic relations between countries form. The research method chosen to answer to the second and the third questions consists in going directly to a particular aspect within the more general research field and present an accurate analysis of it. For this reason the analysis of the factors influencing the internationalisation process is realised by way of the study of the behaviours and causes of services competitiveness. On the same line the consequences and policy implications of the process are seen through the example of one of the most interesting and complex consequences of the world trend: the integration of a European service market from the national ones.

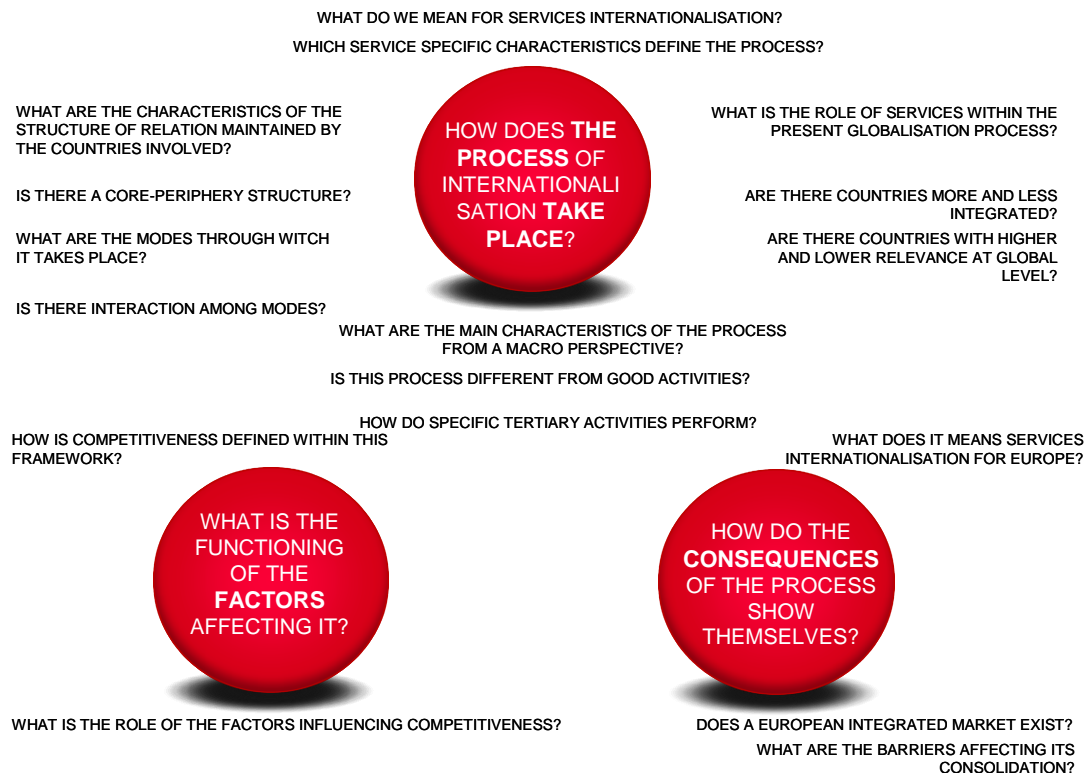
Even though there is a high correspondence between the research questions and the three main pillars, it will be shown how these three core questions represent a horizontal approach to the argument and they are addressed all over the thesis. This is due to the high interaction occurring between the three arguments addressed by the questions. Indeed, while studying the analytical framework it is unreasonable and hardly possible not investigating the factors and the consequences of the process. From another perspective, the analysis of competitiveness and of international integration can not leave aside the study of the mechanism governing the globalisation of the service sector.

The complementary of the numerous correlative research questions arising from the core ones show even clearer the high interaction between them. Indeed several complementary research questions are address throughout this investigation. Some of them complete directly one of the three main queries, the answer to others is found only in a combination of the researches developed around two main questions, while some correspond to all the main theme of investigations. For example, research questions such as

- *what are the main characteristics of the process from a macro perspective?*
- *is this process different from good activities?*
- *how do specific tertiary activities perform?*

can be asked and complement the investigations around all the three main ones. Figure 1.2 highlight the three core research questions and shows haw the complementary questions are related and, at the same time, relate them.

Figure 1.2 Logic and interaction of the research questions



Nevertheless most of the complementary questions are addressed within the three research pillars of the thesis. Indeed, the research presented under the first block aims at investigating the role services are playing within globalisation and how the process of internationalisation of the service sector takes place. Service particular characteristics, such as intangibility and simultaneity do determine their tradability all the more so their international tradability. The internationalisation of the sector is a complex process that passes through international trade, foreign investment, movement of providers and clients. Beyond presenting the international implication of service globalisation, I study the modes of international provision in order to discover in what they consist and if they influence one another. It also results of high interest in the first part of a work such as the present to propose an original insight of the whole process in order to acknowledge how the set of all relations created through the implementation of different modes of provision link the different countries involved. In particular it appears essential to know whether and the extent to which some countries are more or less important at world level and if the pattern of a structure can be inferred. As a result, the first analytical block of the thesis on the modes of internationalisation aims at answering the following questions:

- *What do we mean for services internationalisation?*
- *Which service specific characteristics define the process?*
- *What is the role of services within the present globalisation process?*
- *Are there countries more and less integrated?*
- *Are there countries with higher and lower relevance at global level?*
- *What are the characteristics of the structure of relation maintained by the countries involved?*
- *Is there a core-periphery structure?*
- *What are the modes through which it takes place?*
- *Are there interactions among modes?*

As stated above, the second part of the thesis is centred on some aspects regarding the factors contributing to the process. Several arguments could be touched within this framework. I decided to propose a specific study developed around the concept of international competitiveness. The relevance of the argument relies on the fact that this concept is at the base of all debates on internationalisation and a profuse literature had been created on goods competitiveness. Notwithstanding the relations between service specific characteristics and competitiveness is still unclear. In particular the role of factors

determining service competitiveness seems to be an unexplored field. According with these ideas, the questions to be answered in this second part of the book, devoted to the role of competitiveness in services, beyond the common ones, are:

- *How is competitiveness defined within this framework?*
- *What are the main differences between goods and services competitiveness?*
- *What is the role of the factors influencing competitiveness?*

Finally, the last section of this research work treats one of the most interesting consequences of the process of internationalisation of the tertiary activities: the creation of one specific multinational unique market. The so called *European internal market* represents in fact one particular aspect of the globalisation of the service sector that deserves attention. The particular features of this process find a concrete application in the creation and development of a market that is supposed to be the combination of several national markets. It is interesting to investigate if this process is actually taking place in the favourable context of the European Union framework. It is also worth to compare how services behave with respect with goods and to explore what are the barriers hampering the process. The question I aim intentioned at answering by writing this section can be resumed by:

- *What does it means services internationalisation for Europe?*
- *Does a European integrated market exist?*
- *What are the policy actions implemented in this direction?*
- *What are the barriers affecting its consolidation?*
- *How the Service Directive can affect the process of consolidation of the market?*

1.4 – Methodologies

A fundamental component of a doctoral thesis in applied economics is represented by the empirical analyses implemented. This thesis is composed by a series of analysis, each one of them proposing an original empirical insight on the arguments treated. Indeed, one of the strength of the present work is represented by the high variety of statistical and econometric techniques implemented in order to answer the questions cited above. The purpose of this section is to briefly present the tools implemented all along the work.

The study of the existing literature is the first fundamental step that has to be undertaken by the researcher when approaching a subject. Taking advantage from the understanding gained by major thinkers and researchers who have worked in the past is an essential stage in order to make intellectual progresses. All along the present work, every time a new argument is introduced, a survey on the most relevant existing literature is performed and presented. The essential bibliography with the main contributions on international economics with relevance for the service sector, from a theoretical as well as empirical point of view, is presented in Chapter 2 and Chapter 3. The derivations of international economics into the economics of market integration, highlighting advantages and shortcomings, are treated in Chapter 6. The fundamentals of international economics are also at the base of the survey on competitiveness performed in Chapter 5. The literature analysis performed in Chapter 4 present less direct relations with the one cited so far since it is developed around the application of a particular statistic technique to international economics figures.

Exploratory research is a fundamental component of the knowledge on economics⁴. A researcher has to be able to observe the figures describing the economy and draw conclusions on behaviours and patterns. This path from information to knowledge is not as obvious as it could seem. In the era we are living we are surrounded by a high quantity of available figures. Even though on the one hand this abundance is to the eyes of a researcher like the gold lode to the miner, on the other hand the profusion of different typology of data and the high variety of possible representations is a hurdle to be overstepped in order to achieve a clear and smooth communication flow. Too much information deficiently organised could disarray from the research focus and could be as worthless to the reader as the lack of figures. The gold lode has to be exploited in a proper way to be productive. Choosing the right information and the most effective way of displaying it is a challenge the researcher has to face. Exploratory analyses are performed in all but one⁵ chapter composing this thesis in order to set the reader in a position to understand the general framework of the arguments treated and introduce her to the deeper statistical and econometric analyses performed. The most extensive exploratory analysis is the one performed in Chapter 2 and Chapter 6. The one performed within the former aims at giving an empirical insight on the main subject of the thesis. The exploratory

⁴ Under the umbrella definition *exploratory analysis* are here comprehended all the statistical analyses performed that are not traditionally considered as econometrics nor within other specific statistical tools.

⁵ Chapter 5.

analysis included within the latter, beyond presenting the situation of the European services market, helps in understanding the effective levels of integration.

Econometric analysis is a milestone of applied economic research. At this stage of an academic career it is fundamental to demonstrate to be able to handle econometric techniques. Furthermore it is fundamental to implement these tools in accordance with economic theories. The particular techniques applied in this thesis and their shaping in accordance to the problems to be solved are described jointly with all necessary specification within each chapter. Nonetheless in this introductory chapter I feel the need to briefly introduce some of these tools in order to give a general idea of the kind of analysis implemented.

Regression analysis is at the base of modern economic analysis. These techniques are applied in order to estimate theoretical models in diverse sections composing this thesis. Regression analyses are performed in Chapter 3 and Chapter 5. As it will be more deeply explained in those chapters, the nature of the data analysed drove to the application of a particular regression analyses. In fact within this thesis figures on bilateral relations between countries along different time periods are the main object of study. These cross-country figures concerning different years are better fitted by models estimated through panel data regression techniques.

Regression analysis is a tool applied in order to estimate econometric models. One of the most popular and widely accepted models in the international economic fields is represented by the so called *gravity models*. Their name derives from the fact that they relate flows with different economic variables similarly to the gravitational equation and their theoretical foundations is based on *Huckster-Ohlin* as well as *new trade with monopolistic competition* models. The analysed flows are supposed to be positively related with the product of the economic masses of the countries (GDPs are used as proxy in this sense) and negatively related with the physical distance between them. In this thesis these equations are at the base of different sets of simultaneous equations models aiming at infer information on patterns of trade and FDI flows in services among countries. These models are increased and developed in order to fit the particular theories that are to be tested in Chapter 3 and Chapter 5. Gravity models can be a component of more complex models. This occurs in Chapter 3 where they are at the base of two simultaneous equations systems. Estimations techniques do also have an influence on the regression outcomes. Different estimators suited to regress panel data and simultaneous equations models are presented within the corresponding chapters highlighting their advantages and shortcomings.

A novel approach to the internationalisation of the service sector is represented by the application of Social Network Analysis (SNA) tools. These are techniques born with the aim to infer information from complex sets of relations between actors. Indeed the international relations concerning tertiary activities maintained by the countries at the centre of the globalisation process represent the kind of system that can be explored through these methods. Therefore, the application of SNA techniques to international relations figures represents an original approach capable of spreading some light on the topology of the whole system of relations. The novelty of this approach consists in the perspective undertaken. In fact, while most empirical work in this field, including the ones presented in the other chapters composing this thesis, take into consideration only first degree (bilateral) relations between countries and combine them with country specific characteristics, SNA is composed by several tools capable of considering the whole system of international interactions at the same time. Thus SNA focuses the attention on the dynamics of globalisation more than on the characteristics of the global actors.

Once the deserved acknowledgments had been expressed, the research structure, questions and methodologies briefly presented, it is my pleasure to welcome the reader to explore the internationalisation of the services activities through the work I realised during the past five years.

Chapter 2 – The globalisation of services

Objectives:

The purpose of this chapter is to introduce the reader to the process of globalisation of the service sector. The relevance of the service sector within the process, its influence on the phenomenon, its policy implications as well as its extent are presented.

Methodology:

A formalisation of the role of services within the process of globalisation is created. An explorative analysis of services internationalisation is performed. The relevant literature on the argument is reviewed.

Synopsis

Since this chapter represents the first step undertaken into the study of the internationalisation of the service sector, its objective is presenting it from a theoretical as well as empirical point of view. The chapter represents a first approach to most of the argument that are deeper studied throughout the entire thesis. Indeed, it draws a picture of the role played by services within the globalisation process at aggregate and sector specific level. In addition, the different forms through which services internationalise are here approached. It also presents a breakthrough on service competitiveness explaining the behaviour of the major economies (Usa, Europe and Japan) as well as that of emerging countries. The functioning of their particular forms of outsourcing is also part of this first chapter. The most important international policies adopted in this field are here treated in order to close the circle of this explorative analysis. Services demonstrate to be at the centre of the globalisation process: they actively contribute to this phenomenon and, at the same time, are influenced by it. Services internationalisation takes place through various forms. The need to further investigate their behaviour and possible interrelations appears here evident. Also the role of different countries within this process and the competitive position of the major and minor economies demonstrates to be an argument that deserves to be investigated.

Introduction⁶

A few decades ago, globalisation started to become a phenomenon under special attention, although also an opportunity, for countries that witnessed how their agricultural or manufactured goods industries had to face increasingly stronger competition. From the oil crisis in the 1970s to the materialisation of the so-called emerging economies in Southeast Asia, the relocation of factories to developing countries caused alarm in developed countries, which at the same time became concerned about the increasing de-industrialisation of the rich world. The still-industrialized countries gradually started to change into service economy countries. This was generally considered a hindrance to growth, given the intangible nature of services, associated with lower rates of capital and technology, extreme dependence on labour and labour's role within the slow-down of total productivity. The scarce internationalisation capacity was also included among the negative points related to the services sector, except for tourism and transport. A service-based economy seemed to head towards lower competitive potential at a global level. A few decades later, the economic reality and economic thought countered many of the above-mentioned suppositions, either totally or partially, as stated in the third chapter. In the last few years, within this context, where services search for their place in the economic reality, a new issue has arisen. The present trend towards externalisation and international contracting of services has again set off the delocalisation alarms, but this time with respect to services, as occurred in the 70s and still occurs today in the manufacturing business. International offshoring caused a huge loss of potential jobs, amounting to hundreds of thousands of jobs in Europe and the United States⁷. Economists try to pacify politicians with the old Ricardian and Neoclassical theories regarding the benefits of international trade and the advantages of specialisation, even when sometimes this change in specialisation seems very hard: in the 70s, industrial unemployment was palliated by services.

Which sector will now absorb services unemployment? Will a fourth sector appear? The service offshoring phenomenon is serving to intensify the interest in countries such as India or China, or makes Europe contemplate, more intensely, the United States, the world leader in the export of services, with a much higher trade balance than Europe, although

⁶ This chapter is largely based on the work developed together with professor Rubalcaba included in his book *The New Service Economy, Challenges and Policy implications for Europe* (see Rubalcaba and Visintin, 2007a)

⁷ 3.3 million of white-collar for 1025 and half a million of information technology according to The Economist, 2003; more recently, 20% of total employment is potentially affected by this event, van Welsum and Vickery, 2005.

their huge trade deficit in goods is not compensated by this. Is Europe competitive in services? Who can replicate or compensate the competitive advantages of countries such as India? In order to answer these questions, we have to consider a prior issue: the identification of service sectors with their comparative advantages and disadvantages, and the analysis and explanation of the evolution of international trade.

This chapter aims to clarify the European case, as well as to state the basic framework regarding the relationships between services and internationalisation, where we must stress the role of business services and advanced services as the axis of the new competitive positions. Service offshoring does not refer to tourism, but mainly to knowledge-intensive service-related to information technology-and operational and back-office services. This chapter provides empirical evidence regarding European trade and investment in services, once a framework of analytical understanding is exposed justifying the interest of tertiary sector competitiveness in a global economy. How it was already noted in the introductory chapter, substantial statistical difficulties are met by the researcher approaching service empirical analysis. For what concerning this particular chapter it can be stated that statistics regarding the international trade and foreign direct investment of services are complicated, as these only include, from the estimates of the balance of payments, a restrictive part of the real transactions. It is also difficult to obtain the indices that could inform about the competitive capacity of each type of service, particularly when long and homogeneous series are required from different countries. These are not the only limitations, all along the chapter, and the rest of the book, particular observations on statistical limitations are mentioned when encountered. Therefore, the empirical results presented in this chapter are obviously subject to the limitations of the statistics they are based on.

This study comprises several sections, including this introduction. Section 2.1 outlines the analytical framework suitable for understanding trade and investment relations between globalisation and services, followed by a sub-section concerning the types of services globalisation. In the empirical part of this chapter (section 2.2), the most important data regarding trade and services foreign direct investment (FDI) in Europe are provided. Then, we present the main results and compare them with those of the United States, Japan and emerging countries, in order to study the competitiveness of services in Europe in section 2.3. The chapter continues with the presentation of service offshoring or global sourcing (section 2.4), as well as their policy implications section 2.5. Section 2.6 presents the GATS framework and Section 2.7 concludes the chapter.

2.1 – Relationships between services globalisation and competitiveness

Words such as globalisation, trade, competitiveness or services have been regularly used in economic literature in order to highlight the challenges of the environments within which economies had to develop at the beginning of the 21st century (e.g., Aharoni and Nachum, 2000; Beyers, 2004; Camacho et al., 2010, among others). It is clear that we are immersed in a global economy, where the manner of thinking and acting has changed radically in recent years.

Within this framework, companies can find suppliers, clients and structure and organisation methods in a wider range of places in the world. Moreover, technology and new communications can result in a considerable saving of time and money for many economic agents. This global economy is accompanied by global trade, deduced from the new open opportunities resulting from the increase in the exchange of products, knowledge, international arrangements, foreign investment, etc. And following trade is competitiveness, understood in a merely commercial sense. Thus, the most competitive countries in a specific sector are those with the highest market share within the global economy⁸.

In this context of factors promoting competitiveness, services are not oblivious. For example, business services increasingly become essential factors for competitiveness within the global environment (European Commission, 2003a, den Hertog et al., 2007). In general, services contribute to economic globalisation, although they are also affected by such a globalisation, being obliged to participate in dynamics which break the traditional and frequent market segmentation. Therefore, in order to tackle the relationship between services and globalisation, it is important to recognise two directions: services have an influence on globalisation (and within the business area, on competitiveness, due to this a company, a sector or a country can be more or less competitive) and globalisation influences services (the global economy where all compete with or against all, which impels services to respond to internationalisation challenges). Obviously, both directions are interrelated and have some common explanatory elements.

2.1.1 – The contribution of services to globalisation

The services sector is essential in the current globalisation processes (e.g., Bryson et al, 2004; Bryson and Daniels, 2007). The contribution of this sector to the attainment of a

⁸ Competitiveness is at the centre of the analysis carried on in Chapter 5, all definitions and considerations on the term are presented within that chapter.

world dimension of economy can be summarized by classifying the activities into three groups.

The first group is composed by services that make globalisation possible by establishing transport and communication networks, thus facilitating travelling, international trade, purchase and sale of goods and services in other places. Some of these are traditional services, for example commercial transport by road or by sea, and some others are modern services such as telecommunications that apply new technologies. All of them establish links between geographically distant places and constitute the basic infrastructure that makes globalisation possible. The improvement of these services in the last decades and the decrease in prices is what leads to what some call “death of distance”, which refers to the recent exponential reduction of costs and time required for dealing with physical distances. This has been an advantage not only for producers, but also for consumers.

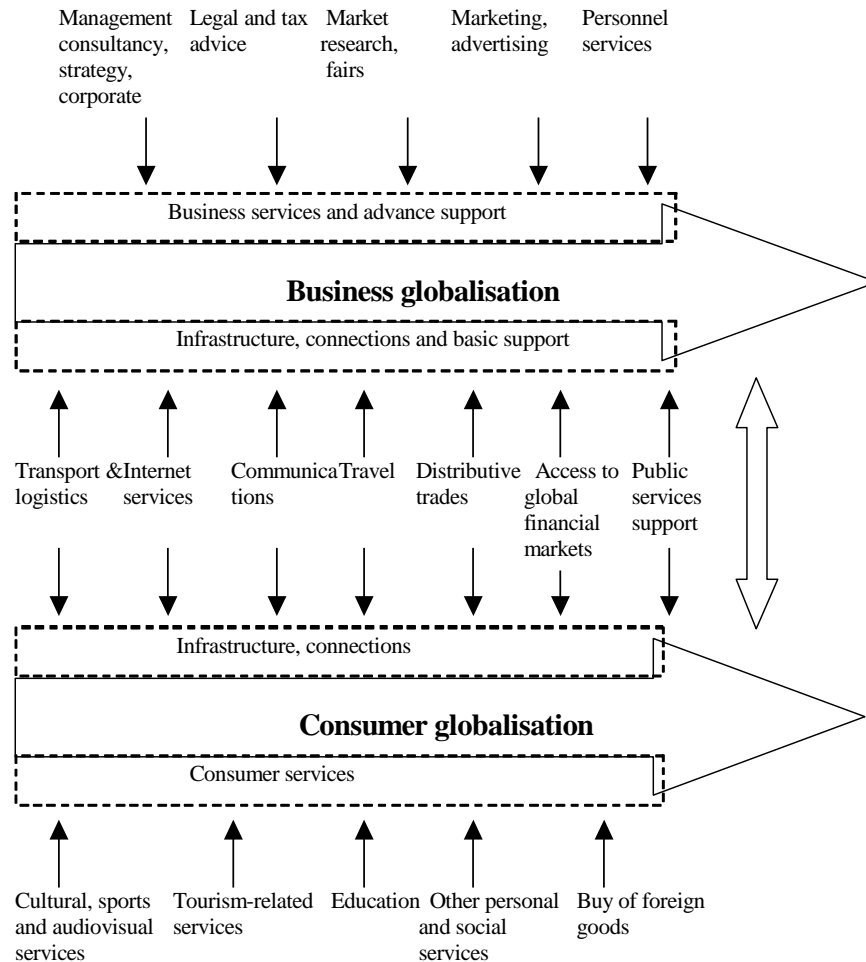
Secondly, there are business services that support the internationalisation of the activity. A modern company will hardly succeed in a global economy if it does not use business-related services properly. Sometimes, the company will require services for the direct advice regarding its international strategy or the legal and tax aspects of its transactions abroad. Others will provide assistance in foreign trade or in efficient recruitment and contracting of personnel.

And thirdly, there is a group of consumer services offered within global economy. The most globalized ones are audiovisual and cultural services such as cinema. However, also the international dimension of leisure and sport services is growing, as well as tourism-related services, which are consumer services par excellence. Obviously, distributive trades or e-commerce services are also included, facilitating the distribution of goods and other services to the global market.

Figure 2.1 shows the group of services promoting economic and social globalisation. Evidently, business and consumer globalisation are interrelated. Among all the relationships, those held by business services stand out predominantly. The weight of services in the most advanced countries shows to a certain extent their relationship with the competitive capacity of economies. This is how services contribute to business competitiveness.

Influence on productive factors. Services affect productive factors by facilitating a global access to capital and the production of globally-competitive technical innovations, to the labour force and the use of new global skills in local markets, as well as to the obtaining and control of global knowledge. A wide range of services contributes to this, from the recruitment and contracting of personnel to ICT or engineering services. In turn, financial services provide an easier access to global financial capital (credit, saving and investment).

Figure 2.1 Services and globalisation



Source: Rubalcaba, 2007.

Influence on markets. Business services steer the export and trade of goods (consultancy, marketing, fairs and exhibitions) towards new markets or towards the adaptation of goods to local needs, in which distributive trades and internet services also play a role. Services also facilitate the achievement of a global reputation by means of trademarks or franchises.

Influence on locations. Transport, communications and information services have allowed the possibility of studying new business locations, which could lead to services relocation and offshoring of processes, both high and low-skilled.

Globalisation can be defined as an individual case of market integration. The historical processes defined show the way to a higher integration and globalisation of markets,

although these concepts are different. Two markets can be completely integrated in a specific region without global companies or a maximum level of globalisation. On the other hand, globalisation always implies a higher integration of markets, but it does not seem to necessarily lead to a formal and real integration among a series of markets. Integration takes place between two or more countries, with the establishment of formal links in order to reinforce their commercial bonds. Globalisation occurs among all countries: it refers to a way of thinking and acting not restricted to a specific country or set of countries.

The contribution of services to globalisation can also be detected by means of five stages of different levels of world integration. These stages are superimposed, so that the new integration factors are added to the previous ones.

First stage: *International exchange*. From the beginning of civilisation, societies and their economies have been interrelated, generating several social, economic and cultural exchanges. The fairs that took place between the 19th and 20th centuries are an example of the contribution that services made to the first stages of globalisation (Rubalcaba, 1994).

Second stage: *Internationalisation*. This is the link between countries, which is produced primarily through the use of international trade and the mobility of production factors. Companies become more international, as do their workers and capital. The goods industry is leader in this stage, although general production and other professional services go hand in hand with this expansion.

Third stage: *Transnationalisation*. When the wars at the beginning of the 20th century were over, a process of European reconstruction began and with this came the boom of transnational companies (later to be called multinationals). Expansion by means of foreign direct investment added to the mere commercial expansion. So much that, with the crisis of the 70s, this led to a significant beginning for industrial relocation and the surfacing of new competitive countries (predominantly in Southeast Asia). In this context, the concept of *outsourcing* is established and services continue to grow, generally within the large companies, offering alternatives to reduce costs or increase quality to confront the competitive challenges of the crisis. Furthermore, many services companies accompany their clients in this international adventure. Then, the second modern wave of globalisation, in which we are immersed, begins.

With *Globalisation*, services in the 90s stopped playing a complementary role in the processes of change and market integration. Countries leading globalisation are those where the majority of their value added and employment are in the services sector. Moreover, the business services sector emerges intensely, encouraged by an increasing externalisation of tertiary activities previously provided within the big trade companies. Globalisation implies a

new way to understand business and companies within an environment which tends to coincide with the one of the whole world. Therefore, the first global companies arise, even today limited in number and restricted to some activities of very homogeneous goods, such as oil. At the dawn of the 21st century, services companies started to extend their international strategies on a global scale, as well as services externalisation to developing countries.

These four phases have grown in continuity and complementary way. There is no replacement dynamism in there. Globalisation requires a certain transnationalisation – setting-up abroad –, what needs international companies – provision of foreign factors – and international exchanges – sales and buys abroad. Business services play a role in each of these dimensions for which globalisation is the final one where value chain is generated in different places, being international fragmentation of production possible, as well as the own firm management. A particular case of economic reality suitable to promote globalisation, to a certain extent, is given by *Areas of economic integration*. As it will better explained in Chapter 6, these areas create formal and legal bonds with the aim of obtaining a single market based on common borders and customs, common regulation and administrative guarantees for free trade among a set of countries.

Services contribute decisively to the market integration and business competitiveness. In some cases (communications, transport, tourism) they bring together geographically distant realities; in other cases (legal services, strategic consultancy, language services, fairs and exhibitions, etc.) they approach realities that are distant from the economic and socio-cultural points of view. Unlike goods, where globalisation creates a conflict or an alternative between what is local and what is global, services benefit from a complementarity that tends to surpass this conflict in certain cases. The existence of some services is due to economic, social, geographical or cultural diversity. As tourism requires the existence of different destinations, language services need the variety of languages, and fairs need the variety of companies, products and innovations. Many services contribute to integrating markets through diversity, and this is highlighted in the case of the European Union. Services facilitate the completion of a single market, and promote the real integration of markets and economies. Services are large promoters of what is known as “glocalisation”: the aim of globalisation is a better “location”, understood as an improved adaptation to regulatory, economic, social and cultural parameters of the region where companies operate. It is the way of doing things on a large and small scale. Glocalisation solves the conflict between supporters and detractors of globalisation by offering a process tailored, at least potentially, to local requirements.

2.1.2 – The Influence of globalisation on services

Services contribute to and are affected by economic globalisation, which forces them to participate in a dynamism that breaks the traditional segmentation of markets existing over the centuries. There are many factors that have promoted the internationalisation of services activities. Among these, we can list those factors related to the traditional macroeconomic theories explaining international trade, the specialisation factors linked to the provision of factors and related prices, microeconomic elements characteristic of business competitive strategies, the technological change that facilitates the provision of distance services, other more qualitative dimensions associated to the change of productive systems, the so-called “service relationships” and the complementarity and substitution between different forms of services internationalisation, especially between trade and foreign direct investment. The openness of markets due to the national political action – new regulations, more liberal and favourable for competition – or the international political action – *Strategy for the Internal Market of Services*, at an European level, and GATS, at a global level – has also been an incentive to modify the borders of markets that have been divided for years.

Within the process of services internationalisation, some activities adapt better to the international situation, while others, whose local dimensions are limited, do not have a cross-border expansion. Business services are protagonists, some of which allow the presentation of a relatively high level of trade due to the influences of ICT or to the standardisation of production. On the other hand, it is more complex for final consumer services in general to go beyond local markets where they usually operate as niches. In the following section, we will summarise the key dimensions of services globalisation, followed by the existing empirical evidence.

2.2 – Key dimension of services internationalisation

In this section are presented some figures on the process of internationalisation of the services sector. The scope of this part of the chapter is to propose a bird-view of how services cross borders in order to introduce the reader to the quantitative dimension of the phenomenon. Furthermore this empirical point of view will be developed all over the present thesis.

Indeed, as it will be presented in more detail in the next chapter, challenges and opportunities of service globalisation have given rise to a wide variety of forms of internationalisation, international trade being just one of these forms. Trade has a dual function: from one viewpoint, it is a way of services internationalisation since it allows an

international approach; from the other, we can state that international trade interacts with the rest of the dimensions of services globalisation so that its complementary nature tends to dominate the substitution effects and any services internationalisation generates a kind of international trade. These relationships are described below.

Services globalisation takes many forms, implying in all cases a global concept of the market that involves the internationalisation of productive inputs and intra-firm activities. For consumers, globalisation implies a wider capacity of use and enjoyment of goods and services, originating from anywhere in the world.

The methods of services internationalisation are characterized by the some features such as the tension between the need of standardisation and the global reputation of services and the need for differentiation (a product is never identical in all markets) and customisation (due to the interactive nature of services). Both aspects imply that a service has to be altered to fit the requirements of a foreign market. This means that service internationalisation implies nationalisation, that is to say, the adaptation to normative, economic, social and cultural and parameters of foreign countries or markets where they operate. This difference means that the global movements of services are not so much associated with cross-border movements as with the transmission of processes, knowledge and techniques or with the exchange of residents and non-residents and the transfer of workers and technology.

Classical forms of internationalisation include cross-border international trade and capital movement, to which foreign direct investment, as well as international merger and acquisition processes⁹. However, there are other dimensions to take into consideration including the following which form part of the definition of international trade: the movement of the labour factor – temporary movement of workers is extremely important in many types of services – and the displacement of consumers out of their borders – mainly in consumer services –. All these modes of internationalisation will be addressed in the following chapter.

Services combine sectors where the displacement of suppliers and consumers is commonplace and there have been many typologies of services classified according to these movements (e.g., Sapir, 1993a, b). Although there is another group of components regarding services globalisation outside of the official definitions which are comprised of those groups transferring knowledge, information, standards, and innovations (either of

⁹ International organisations use the classification of 4 modes of international trade defined by the WTO: Mode 1, cross-border supply; Mode 2, consumption abroad; Mode 3, commercial presence; Mode 4, presence of natural persons.

products processes or organisations) and which superimpose to the different forms of trade and investment (Rubalcaba and Cuadrado, 2002a, b). Trademarks and franchises are some examples of these other components, which are so influential within the uncertain framework of services markets, where reputation is associated with quality and the ways of generating confidence in consumers or buyers, thus becoming an essential tool for globalisation. And finally, another form of services globalisation is collaboration networks among companies of different countries, even though these do not have formal agreements of purchase, acquisition or direct trade between the parties.

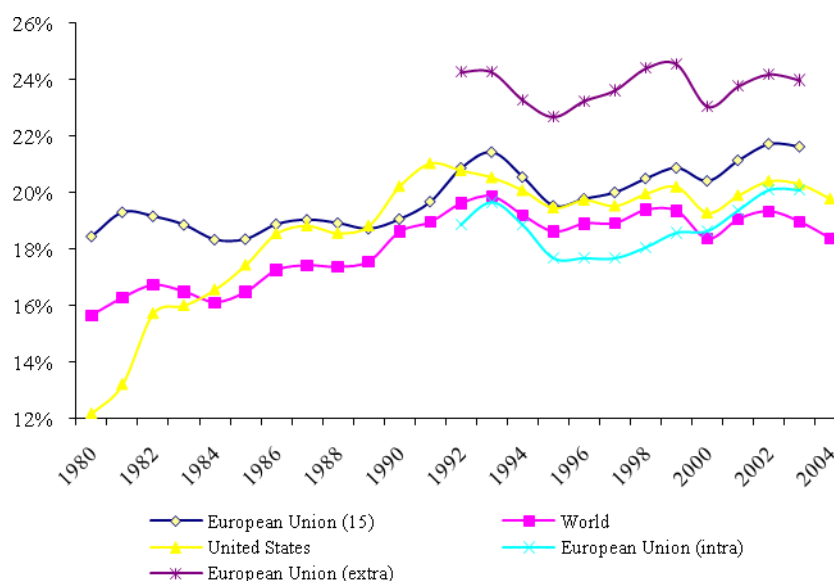
All these dimensions are interrelated. For example, a consultant travelling from one country to another to share knowledge contributes to service globalisation through client transactions and the diffusion of a brand and a reputation associated with a firm. During this type of service trade, networking and knowledge transfer will occur and the co-production of an international service will result in adaptation to local conditions. This process of adaptation will lead to further opportunities to develop service trade, as the acquired experience may result in the provision of services to other foreign companies (Wood, 2001; Rubalcaba and Gago, 2001). These interrelations explain some of the complementarities between, for example, international trade and FDI, or the role of international provision of services with and within foreign affiliates.

In general terms, business services internationalisation create cross-border trade, intra-firm trade included, which can follow or precede FDI, although some times a similar path is established (Roberts, 1999) while, in general, the relationship between trade and FDI, especially in services, is very heterogeneous, i.e. it varies by category of services (Pain and van Welsum, 2004, van Welsum, 2003a, b, 2004).

2.2.1 – International trade

Not all the exposed dimensions related to service globalisation develop in a linear manner. The existence of certain limits to service globalisation promotes a divergence between certain ways of internationalising and others. In particular, empirical evidence underlines the limits to cross-border internationalisation of services. Figure 2.2 shows the evolution of services trade within the total trade in goods and services. In Europe, the percentage has remained steadily between 18% and 22%. The situation in other geographical areas has been similar. The paradox emerging from the comparison between these data and the ones on value added is here evident.

Figure 2.2 Percentages of services trade (exports + imports) in total trade, 1980–2004



Source: Based on WTO.

The low threshold in the growing importance of services trade cannot be explained as a lack of dynamics in the sector but is due to the even larger growth of world trade in goods. International trade in services has been very dynamic during recent years but not dynamic enough to keep up with international trade in goods. Trends in the 1990s do not seem to allow a different scenario in the coming years, even if services have behaved more regularly in recent years and other commercial services (business services mainly) have shown constant growth. It is noticeable that a decrease in world trade took place between 2000 and 2002, but a recovery has been registered between 2002 and 2004.

These empirical results are used to introduce the question of differences between the goods and services trade. The importance of the human capital factor in the services trade questions the validity of traditional models of international trade (Petit, 1986), and stresses the consideration of elements related to cultural and social advantages (Riddle, 1986, Daniels, 1993): the relative abundance of production factors or raw materials acquires a less weighted explanation. This is due to the weight of expectations, reputation and prestige in the international services markets (Aharoni, 2000). Switching costs are high and confidence is crucial.

Table 2.1 confirms the predominance of goods on service trade and the fact that the latter is not presenting any catch-up patterns. The most traded service categories are the transport and travel services, but if business services are accounted all together they are

converted into the service activity with more international transactions. It has to be noticed how EU 15 was, in 2005, a net exporter in most of the principal economic sectors, a negative balance is met only in few activities: travel; communication services; royalties and license fees; personal, cultural and recreational services; audio, visual and related services; all activities where the USA are the world leader. Business services are once again at the top of the list when considering the growth rates; in fact the sector with the highest growth rate between 1995 and 2005 is the computer and information services followed by the royalties and licenses fees.

Table 2.1 Key data on international trade in business services. EU15 to Extra-EU15 trade, 2005

POST	Shares % (X+M) of services	Net Balance (X-M) millions of euros	Cover rate X/M	Annual growth rate % 95/05 (X+M)	Growth X/M 05 – X/M 95 difference
Goods (*)	280,57	16.808.000	1.02	6.75	-0.04
Services	100.00	11.876.372	1.03	8.28	0.06
Transport	24.44	3.030.647	1.03	7.28	0.13
Travel	21.99	-28.413.656	0.70	6.62	-0.24
Other services	52.55	36.874.542	1.21	9.58	0.19
Communication services	1.96	-1.141.499	0.85	8.47	0.07
Construction services	2.33	3.496.057	1.51	0.27	0.08
Insurance services	2.62	3.244.826	1.40	8.03	-1.60
Financial services	5.80	16.082.693	2.19	13.81	0.72
Computer and information services	3.43	8.316.878	1.97	14.37	1.14
Royalties and license fees	6.94	-10.620.661	0.66	11.56	0.15
Other business services	25.96	15.308.296	1.17	10.80	0.23
Personal, cultural and recreational services	1.38	-293.431	0.94	2.96	0.26
Audio, visual and related services	1.11	-452.322	0.90	4.37	0.39
Other personal, cultural and recreational services	0.26	159.229	1.18	-0.53	-0.14
Government services	2.13	2.481.382	1.37	1.57	-0.12
Services not allocated	1.02	384.839	1.11	8.36	-1.42
Business services (#)	29.39	23.625.174	1.24	11.14	0.31

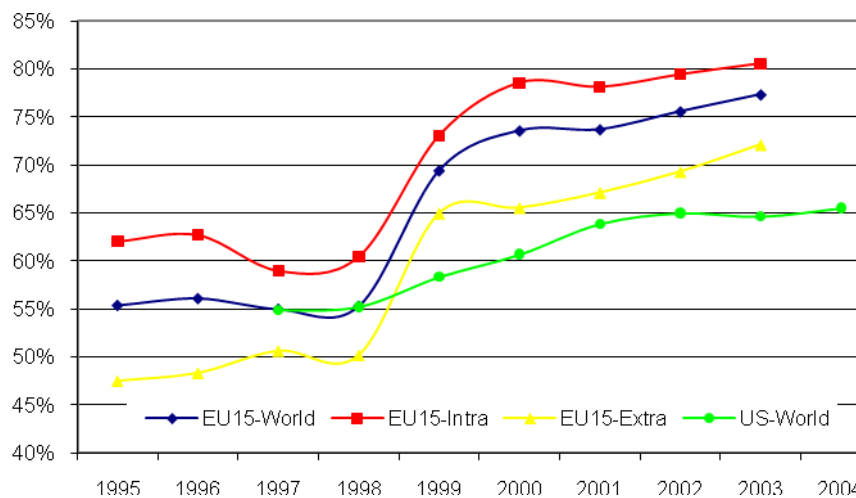
Notes: * 2004 data. # Computer and information services plus other business services (services between affiliated enterprises are excluded).

Source: Eurostat, New Cronos, 2007.

2.2.2 – Foreign direct investments

In foreign direct investment, goods only accounts for the 27% of the amount of the value of FDI in services (28% of total inwards, 25% of total outwards, see Table 2.2 The preference of services for FDI versus trading has a clear effect on these statistics where services FDI (72% of total) have a weight in coherence with its total weight in the economy (70%).

Figure 2.3 Percentages of services in total foreign direct investment (FDI) stocks



Source: Based on Eurostat, balance of payment statistics.

Within this role of services in FDI, with respect to the “minor” quantitative importance as an economic sector, financial services provide 62% of total service FDI, business services represent 22% and telecommunications represent relative share at 4%. However, this picture was not the same a few years ago. In 1996, FDI was more important in goods than in services and the composition of service FDI was less dominated by financial services (40%), business services represented 28% and telecommunications only 2%. In just five years, the composition of FDI in Europe has shifted towards services and in particular towards financial and telecommunications services compared to distributive trades. These trends are also influenced for the changes between 2002 and 2002. In 2002 business services and telecommunication had accumulated major shares (26% and 7%).

Table 2.2 Key data on foreign direct investment in business services. EU25 to Extra-EU25.
Stock position outward and inward, 2003 and growth 1996–2003

	% services (in + out) 2003	Outward/ Inward 2003	Outward % Annual GR	Inward % Annual GR
Total	139	1.4	19	18
Total Goods	27	1.4	8	9
Total services	100	1.3	26	23
Distributive trades and repairs	7	1.3	16	7
Hotels and restaurants	1	1.2	22	12
Transport (*)	7	3.2	41	27
Telecommunicati ons	4	4.6	53	29
Financial intermediation	61	1.3	32	29
Real estate and business activities	24	0.9	19	22
Real estate	2	1.0	13	19
Business services	22	0.9	20	22
Computer activities	1	2.2	49	18
Research and development	0	3.0	18	6
Other business activities	20	0.8	18	22
Other services	2	1.9	7	8
Not allocated	3	1.8	63	92

Notes: * 2002. GR: growth rate.

Source: based on Eurostat, New Cronos.

Interesting results concern in fact the relationship between outward and inward investment. The coefficient outward/inward has been built to evaluate the net investment positions in Europe. This is not a fully equivalent indicator to the one on international trade, the market quota export/imports. To obtain an advantageous export/import rate is a clear economic and political objective. The ratio outward/inward investment can be interpreted in two different ways. High outward investment can be considered as a loss for the countries that could have benefited from that investment being made domestically. On the contrary, high inward investment represents the positive capacity to attract capital, indicating certain

international competitiveness. On the other hand, only the most powerful countries have the capacity to invest strongly abroad. To a certain degree, in this age of globalisation, a country needs to be strong both in inward FDI (more resources to itself) and outward FDI (more scale economies and competitive conditions when new or part of the local production is transferred elsewhere).

In Europe, outward FDI towards third countries is higher than inward foreign investment towards Europe for every sector. This relationship is slightly stronger in goods (coefficient 1.4) than in services (1.3). In services, the outward/inward investment is higher in telecommunications (4.6), transportation (3.2) and research and development (3.0). Other business services (0.8) and business services (0.9) are in a more balanced position. Except for Other services and Other Business Activities, all the ratios have grown between 1996 and 2003. In 1996, distributive trades, hotels, telecommunications and computer services showed more inward investments than outwards stocks (the ratios were less than one).

Taking a look to the evolution in the last years it can be noticed that average annual growth rates between 1996 and 2003 have been extraordinary high. The boom of the *new economy* running up to April 2002 brought huge investments in telecommunications and computer services: from Europe more outwards than inwards. Investment in all services grew strongly. As it has been seen in Table 2.2 it was not only the *new economy* leading the figures, other high technology services gathered importance in the same period. Transport, financial and computer activities became a field open to foreign expansion for European companies and investors, which increased their presence abroad by 42% for the former sector, 32% for the financial services and 49% for the latter.

The process of globalisation sees Europe as an actor more incline to the expansion toward new markets than a receiver of investment from abroad; all the most important activities registered indeed greater outward than inwards FDI growth rates. The active role of Europe in the globalisation is not surprising, it had to be expected that this phenomenon were leaded by the developed economies. What is surprising is the fact that analysing some data registered by the USA the figures are reduced and the patterns take the opposite direction: the growth of the inward FDI had been more consistent than the outward one in most of the sectors from manufacturing until computer services. This has to be read as an index of the attractiveness the North American service sector is exercising on foreign investors. However, some of these trends seem to have changed after 2002 for many services, although official statistics do not yet offer detailed data on FDI flows or stocks for the recent 2003–2006 period. The overestimation and the consequent collapse of the *new*

economy influenced a decrease of FDI in ICT activities so relative figures and shares were already somewhat adjusted in 2003 data.

Table 2.3 Basic data on merger and acquisitions, 2003

	Number of operations between 1993 and 2003			Intra-EU 1993–2003	Average value of operation Extra-EU
	Purchases	Sales	Difference		
			Purchase/ sales		
Total of sectors	16.590	1.739	9.5	16.618	135.368
Primary sector	147	9	16.3	71	374 379
Manufacturing	7.745	723	10.7	7.379	136.877
Network industries	1.951	194	10.1	1.885	218.093
Distribution	1.301	157	8.3	1.940	143.079
Financial and real estate	2.278	194	11.7	1.840	160.014
Business services	2.615	361	7.2	2.925	55.599

Source: DG Economic and Financial Affairs data base, 2003.

An increasing part of FDI is due to the growth of mergers and acquisitions (M&A) in the second half of the 90s. According to this indicator and the DG ECFIN data base recording major M&A operations, M&A in services account for 50% of total operations, although the average value of operations in goods was not significantly higher than in services (due to the impact of operations in networking industries). Within the services financial and real estate services, that presented a total of 2472 operations of mergering and acquisition, and in the period which goes from the year 1993 to the year 2003, and business services, 2976 operations, show the highest share of processes while the group of the other services and the distribution seem to be affected by the phenomenon in a less extended way.

Once the situations in the field of international trade and foreign direct investment in services have been analyzed, it can be concluded that the establishment of a subsidiary with productive and exporting capacity is often found at the end of a long process where non-international companies start with local exports and gradually open to the rest of the world (Roberts, 1999) strongly maintaining diverse local markets. However, these companies never or almost never reach a process of complete globalisation, such as that produced in some manufacturing companies or those specialising in oil-derived energy products. The global strategy facilitates the homogeneity of products, while services are essentially very different

and their success depends on a good adaptation of the service to local needs. This is the reason why there are only very limited global companies in the services world, and they are basically concentrated in the financial, communication and software sectors.

In the report regarding the top-100 non-financial companies in the world, no more than 20–25% are services companies: their markets are very local and it would be complicated for them to divide on a global scale. The advantages of being a multinational company are important not only in goods, but also services (Enderwick, 1989), although lesser in the latter (Dunning, 1993), which are moved to act by reactive rather than proactive behaviours (Gusinger, 1992). Also, the artificial obstacles which exist in the services trade contribute significantly to their timid international behaviour.

Due to their specific characteristics, services cross boundaries more as a direct investment than as a product, therefore, for example, a services multinational is presented in a different way to a goods producer, which tends to concentrate production with localisations that associate wide scale economies at low costs and with a strongly-developed distribution network. Services multinationals are companies that offer their products to a global market, but by means of a network of subsidiaries and branches whose highest extension and level of market penetration will show their international relevance. For that purpose, multinationals of the sector develop their expansion strategies by introducing locations where services are offered principally and directly in the objective markets. A review on these concepts from an empirical viewpoint will be presented later on in this chapter.

The prestige of an international supplier enables firms to forge relationships of trust that are often better than those reproduced by local firms. This factor explains the success of most multinational service companies, but also the limitations for a global provision, as services need local staff to manage and lead the service provision. A suitable combination between a global reputation and local reputation is a balance requested by multinational firms. That explains why service companies use mergers and acquisitions to expand quickly in international markets. Alternatively, a new investment needs time to obtain a local reputation upon which the service is built.

As stated before the increasing role of outsourcing processes at a global scale is still limited to selected activities, especially in activities within the businesses services such as operative standards services (e.g., call centres) or qualified standardized international trade business services (accountancy, billing, information, computer services) where the need for local reputation is of minor concern. The links between reputation, innovation and

knowledge intensive business services are particularly strong (Wood, 2002), providing a value added package that increases the performance of users.

2.3 – Trade competitiveness of European services

This section aims at introducing a concept which is at the centre of the attention in Chapter 5: the competitiveness of services. This notion can be understood from a wide concept of competitiveness, including the sustainable development of the sector and its capacity to create employment and social welfare. However, this wider definition is implicitly included in all the chapters of this book and in the identification of the challenges that the European economy must face. This section is focused on competitiveness in its commercial sense, through the classical indicators of market shares or percentages in the world market.

2.3.1 – The European services in the World

A. Overall world performance (WTO data). An all comprehensive presentation of the state of the world commerce in services carried on in order to identify the main actors at world level can be carried through the observation of the WTO data on international trade in commercial services (all services excluding governmental ones). If we consider the EU 25 as an unique actor, later on in Chapter 6 we will discuss the limitations to this supposition, the Union results to be the economy with the largest market shares of trade in services, with a quota constantly between the 18% and 20% of total world exchanges. It is followed by the US, which maintains a quota comprehended between 14–16% since the half of the 80s. In the first years of the new century the US share is sharply declining and this is also the case of Japanese trade (the third largest service economy), which started to decline its market share since the mid-90s. These decreases are accompanied by the raising role played by recently developed economies such as the Indian or the Chinese. Their growing importance in the world market becomes even more relevant if we take into consideration that in the examined periods the total exchange of services grew at global level at the average rate of almost 7% per year.

From an analysis conducted at national level it can be observed how the United Kingdom, Germany, Japan, France and Ireland are world's leading countries in other commercial services according to WTO¹⁰, producing exports values among the highest in the world, although their world shares in exports and imports have decreased (still above 4% from around 7% in exports in 1995), indicating the increasing role of other competitors.

¹⁰ All commercial services except for travel and transportation, where most of them are business services.

Among the large countries, only United Kingdom, following the US pattern, increased its market shares between 1995 and 2004: from 8.3% to 22.8% of total world exports, anyway this rise occurred between 1995 and 2000, since then the share remains unchanged. To a lesser extent, Spain has also increased its shares: from 1.7% to 2.5% in exports and from 2.4% to 3.2% in imports. An important increase in exports market shares has taken place in India, following the off-shoring trends that occurred between 1995 and 2004: from 0.5% to 3.2%. This phenomenon brought India into the top ten economies in service exports, with a commercial value of more than 30 billions USD.

Apart from other trade services, the WTO data allow the analysis of tourism and transport categories. In both cases, and for the year 2004, the United States is again the country with the highest market share, 15.3% and 11.7% respectively. The highest differences are registered in the next group of countries. Therefore, while this group in transport services is comprised of Germany (with 6.6% of the share), Japan (6.4%), United Kingdom (5.2%) and France (5.1%), Spain stands out in tourism services, with a world share of 7.4%, above France (6.5%), Italy (5.7%) and Germany (4.4%). The Spanish international scope in this type of services is especially remarkable due to its high dynamism in the last years; in fact, it held the fourth position in 1995, with a share of 6.3%, below France and Italy.

B. EU vs. US vs. JP benchmarking (Eurostat data). The Eurostat data allow a more detailed analysis by activities. In order to assess the situation of the international services trade of the EU25, in comparison with the United States and Japan, we have taken into consideration four indicators: the volumes of trade and investment of EU25 and the US; and other three additional indicators: the coverage rate, referring to the relationship between imports and exports in the year 2002, the variation of these rates during the period 1996–2002, and the growing of exports in that same period.

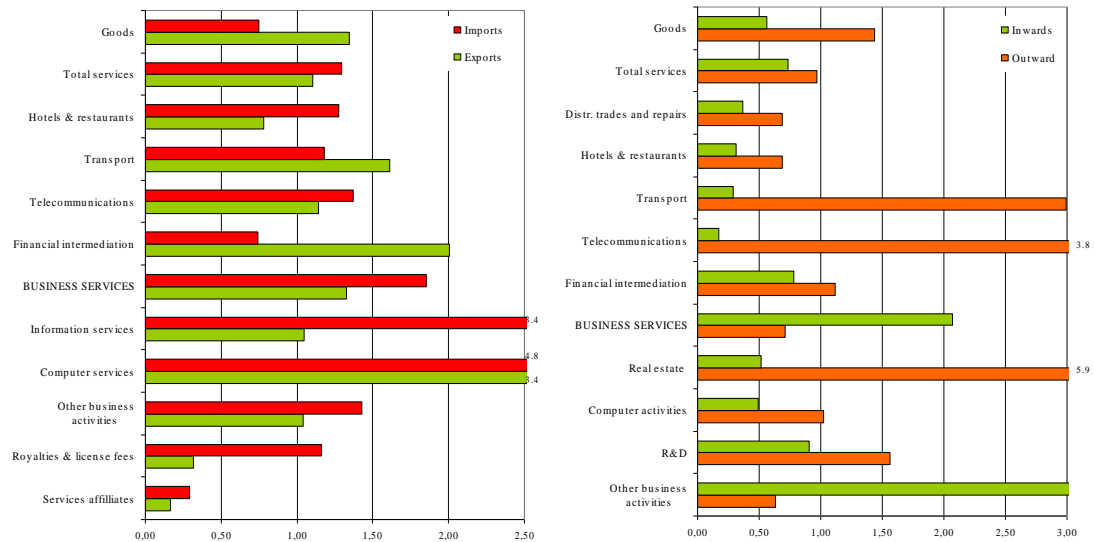
Figure 2.4 shows the volume of trade and investment of the EU15 and the US. In international trade, for most service sectors, the EU15 volumes are larger than the US ones. The largest difference is in computer services. For the US, the largest dominance is produced in royalties and licence fees. In business services, differences in volumes between the EU15 and the US are much larger in imports than in exports for business services, information services in particular.

In FDI, the situation is more differentiated. The EU15 inward FDI for total business services is very high compared to the US, while the situation in outwards is exactly the opposite. In Real State, and to a lesser extend in R&D, the US volumes are larger in inwards, the same as in many other services sectors such as telecommunications, transport,

distributive trades or hotels and restaurants. In telecommunications and transport the outwards FDI in EU15 are impressive compared to the US. In conclusion, many services in the EU can be very competitive according to this first indicator, since they surpass the US volumes in exports, imports and inward FDI. In growth terms, except in hotels, restaurants and distributive trades, in all other sectors in the figure with available data, EU inward and outwards investments have grown more than the US inward FDI (and also more than US outward FDI in many sectors). This is an indication of the competitive position of many European business services compared to the US ones, which is not the case in many manufacturing and other services activities.

When services are compared to goods from the perspective of the most selected competitiveness indicators (Table 2.4), the first aspect to be highlighted is that the European Union has been the economic area with the lowest level of discrepancy in coverage rates, both in growth levels and rates. In other words, the coverage rates in goods and services, as well as their evolution in the last years, have been very similar. On the contrary, the United States and Japan present very different situations. In the first, the coverage rate of services is higher than goods, which shows the increased American trade deficit (compensated by the services surplus to a large extent). In Japan, deficit is registered by services (coverage rate of 0.72), against the goods surplus (1.32). As regards to the growth rates of services and goods exports, the most important ones have been experienced in Europe (8.1% and 7.6%). In the USA, although coverage rates of exports have been lower, services have registered a higher growth (4.8% against 3.7% of goods). In Japan, services exports grew more than manufactures (4.8% against 4.0%).

Figure 2.4 Volumes of trade in investment in EU15 and the US (rates EU15/US; 1=volumes are the same)



Source: Based on Balance of Payment Statistics, New Cronos, Eurostat, 2004.

The differences are even more obvious when analysing the behaviour of the various services branches, which allow us to draw a preliminary map of strengths and weaknesses. This comparison is basically restricted to the EU25 and the United States, since the statistical coverage for Japan is only available for some services branches.

Therefore, the greatest strengths in the European Union (backed by high coverage rates, growth and exports) lie mainly in computer and financial services, which were especially dynamic between 1996 and 2002. The situation of public administrations, legal services and R&D is also considerable.

The best records in the United States occur in advanced services implying a high investment in Information and Communication Technologies, which illustrates the advantages of an earlier investment in these types of technology in the US. These advantages foster other changes within the organisation (for example, in management strategies or in the introduction of re-engineering processes) and, in the end, will result in a higher productivity and competitiveness (Van Ark and McGuckin, 2002). As examples, we can mention R&D, technical, information or telecommunications services. As well as these, the US is outstanding in other services including: royalties, construction, leasing and tourism.

The superiority of the United States in the competitiveness of many services can be related, to a large extent, to the weight of their multinationals. The number of companies leading business services, transport, trade or TIC is similar on both sides of the Atlantic Ocean, although the average market value in America is usually double that of European companies. In contrast, the European weight in financial services and telecommunications is very considerable. In Europe, there are also around a hundred non-financial service firms among the Top 500 and 22 business service companies are listed: seven software and computer service companies and 15 other business services. In the US, the number of service companies in the top 500 ranking is slightly higher since they have few companies in telecommunications (only 12 versus 30 in Europe) and in transportation (only seven versus 19 in Europe) but many more in other services such as computer services (e.g., 27 US versus 7 EU in computer services).

Table 2.4 EU, USA and Japan in the global service market

Sectors	Coverage rate 2004			Differences in coverage rate 1996–2004			Growing of exports 1996–2004		
	EU15	US	Japan	EU15	US	Japan	EU15	US	Japan
Goods	1.02	0.55	1.32	-0.06	-0.21	0.06	6.98	3.74	3.97
Services (total)	1.10	1.15	0.72	0.03	-0.41	0.20	7.58	4.75	4.83
Transportation	1.11	0.72	0.75	0.12	-0.36	0.11	7.46	2.51	5.23
Tourism	0.77	1.35	0.29	-0.24	-0.30	0.18	3.71	1.99	12.94
Other services	1.29	1.28	0.99	0.13	-0.55	0.29	9.13	7.22	3.44
Communications	0.93	0.94	0.73	-0.01	0.54	-0.01	8.67	3.58	-13.62
- Post	0.83	0.46			-0.03			0.65	
- Telecommunications	0.96	1.00			0.60			3.78	
Construction	1.52	3.15	1.43	-0.18	-4.43	0.20	-0.21	-1.86	2.10
Insurance	1.51	0.20	0.31	-0.84	-0.10	0.06	8.04	16.64	10.08
Financial	2.41	4.41	1.66	0.63	1.58	0.71	11.34	12.49	5.77
IC services	2.30	3.29	0.48	1.15	-3.28	-0.02	21.29	11.09	-1.72
- Computer	2.11	2.32			-3.54			11.54	
- Information	4.51	9.24			1.31			10.43	
Royalties	0.70	2.20	1.15	0.14	-1.94	0.47	11.05	6.30	10.96
Other business services	1.25	1.42	0.89	0.07	-0.20	0.22	9.06	9.51	0.21
- Distributive trades	1.48			0.39			7.05		
- Leasing	1.04			0.17			10.31		
- Various business companies	1.21	1.42		-0.02	-0.20		9.64	9.51	
-- Legal, management, accountant	1.09			0.12			14.58	20.9*	
-- Marketing and advertising	0.75			0.07			9.77	5.8*	
-- R&D	1.15			0.00			13.09	49.2*	
-- Technical	2.01			0.32			6.22	4.8*	
-- Other services	1.24	1.95		-0.54	-0.12		6.97	7.95	
Services between subsidiaries	1.02	1.28		0.07	-0.19		8.76	10.16	
Personal, cultural and leisure services	0.76	23.71		0.42	7.99		13.50	12.42	
- Audio-visual	1.38			0.64			3.53	5.9*	
- Other personal	1.56	0.57	1.78	0.11	-1.01	0.74	3.33	-1.25	8.93
Public administrations	1.63	0.55	1.32	0.55	-0.21	0.06	12.86	3.74	3.97

Notes: * 2002 data.

Source: Based on Eurostat data, Balance of Payments statistics.

Table 2.5 Services in the market value of top World, European and American 500 companies

Market value by sector	Global 500 N° of firms	Data 2004 Market value \$m	Global Ranking	Europe 500 N° of Firms	Data 2003 Market value \$m	EU Ranking	US 500 N° of firms	Data 2003 Market value \$m	US Ranking	EU / (EU+US+JP) N° of Firms	Market value \$m (%)	Data 2003 Ranking Share EU in Triade
Banks	65	2 591 665.5	1	76	876 485.3	1	39	809 401.8	2	44	48	7
Pharmaceuticals & biotechnology	23	1 504 255.3	2	16	465 610.4	4	23	917 070.2	1	25	31	16
Oil & gas	31	1 487 874.0	3	21	594 192.0	2	29	523 754.1	6	38	52	6
Telecommunication services	36	1 467 881.8	4	30	517 602.3	3	12	295 203.2	12	63	53	4
Information technology hardware	34	1 300 001.6	5	7	124 224.8	10	32	595 592.0	4	14	16	30
General retailers	24	765 522.5	6	14	91 217.6	15	25	533 135.0	5	22	14	31
Insurance	20	761 448.7	7	18	160 398.0	7	22	397 076.8	9	38	27	19
Software & computer services	15	746 348.1	8	7	53 309.2	25	27	597 614.3	3	13	8	33
Media & entertainment	22	630 035.6	9	25	133 224.7	9	24	415 843.2	8	40	22	28
Health	18	434 373.5	13	12	44 407.5	28	29	373 114.8	10	27	10	32
Life assurance	12	218 845.1	19	11	70 302.8	21	7	74 861.5	23	58	47	8
Support services	9	209 417.6	21	15	64 753.5	22	14	150 243.7	16	45	29	18

Source: Financial times, 2004.

Market shares of European business service companies in leading countries (EU+US+Japan) are particularly low (8% in computer services, 29% in other business services) while telecommunications and banking are among the highest (53% and 48%; see Table 2.5 for further information).

The results for market shares in the top segment of the markets show that the role of services in global businesses differs according to regions and countries. That means that there are limitations to service globalisations that depend, not on the nature of services, but on the framework conditions operating in different geographical areas: market size and market fragmentation among different countries, different business models, entrepreneurship, economic, social and cultural differences, etc.

2.3.2 – Place held by the emerging countries

In order to assess more concretely and meticulously the role of emerging countries in the internationalisation of services, the analysis will firstly concentrate on the shares in the so-called other commercial services (excluding transport and tourism), as it is in this category that the present offshoring trends occur to a longer extent and where, consequently, the real possibilities of the emerging countries as services export centres arise. Therefore, Figure 2.5 shows the relationship between the export rate of other commercial services in percentages over the world total in 2004 (abscissa axis), and the growth of this rate registered between 2000 and 2004 (ordinate axis).

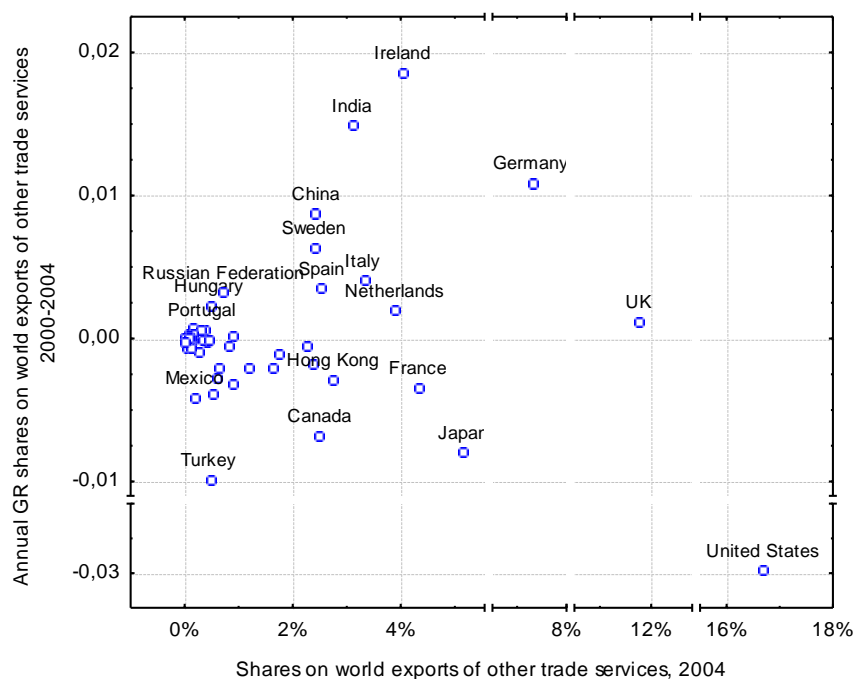
The relationship between the export rate in these services and recent growth is quite uneven. From a detailed analysis of Figure 2.5, we can deduce the existence of a triple relationship level depending on the magnitude of the 2004 rate. Therefore, there are strong

contrasts between those countries with lower rates, which happen to be emerging countries, alternating between countries with extremely high, positive variation share rates (for example, Russian Federation or Hungary) and those whose rates are on the decrease (Mexico, Turkey).

These varied results should be interpreted in the sense that the international trade of services offers opportunities to these countries, although there is not an inertial logic that these are the net winners; the end result will finally depend on their capacity to take advantage of such opportunities. A second level of relationship links these countries with average export rates. In this case, there seems to be a correlation (although quite weak) between a higher growth and a higher level of rates.

Finally, the countries with a higher market share (the United States and the United Kingdom) have not been the most dynamic ones in recent years. In fact, the United States has slightly decreased its share, while the United Kingdom has remained stable.

Figure 2.5 Leaders in trade of other commercial services (exports in % over the world total) in 2004 and recent dynamics (growth rates 2000-2004)



Source: Based on World Trade Organisation data.

Ireland stands out among all the countries represented in the figure. It is a country combining a considerable export rate in 2004 (4.0%), with a much accentuated growth rate during the period 2000–2004. From this, we can conclude that the *Irish miracle* is also

expressed in the evolution of the market share of these services, or even more so, the force of this type of services in international markets is, at the same time, a cause and a consequence of this “miracle”.

A combination of different factors, such as a qualified labour force, a clear commitment to R&D&I and the Knowledge Society, as well as a favourable legalisation and tax treatment of investment, has increased the level of international notoriety and the attraction of foreign investment in highly tradable and added-valued services, which has been a decisive lever for the attainment of this success. In its turn, Spain is located in a *warm area*, its market share in 2004 being 2.5% and the variation rate of its shares approximately 1.5%. Spain and France are much related, in a certain sense, to the growth of Morocco as an emerging exporting country of other commercial services.

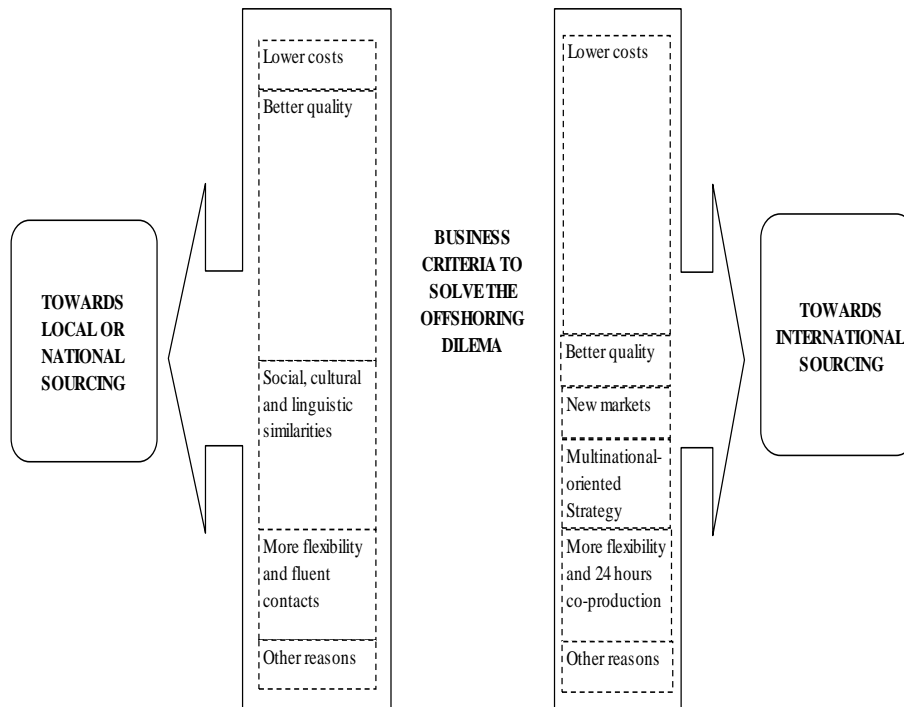
2.4 – The migration of services: the emerging role of services offshore

The role of emerging countries within the flow of international services is strongly linked to a series of events that have frequently attracted the attention of economists during recent years. Offshoring would be the term defining all of them, although there are different dimensions.

Sometimes there is a certain confusion using the terms delocalisation, externalisation, outsourcing and off-shoring. This can clarify the use of some of the terms:

- Delocalisation means the transfer of certain activities once produced in a given place, to other place. However, currently this term is restrictive mainly to regional flows (e.g., intra-EU flows).
- Outsourcing is the contracting out of productive activities, manufacturing or services, new or previously produced in-house.
- Externalisation means any transfer from in-house activities to external companies. It is mainly an organisational change.
- Off-shoring is the outsourcing of services in other countries or areas. For Europe, off-shoring is the international sourcing to extra-EU countries.

Figure 2.6 Business criteria to solve the offshoring dilemma



Source: Rubalcaba, 2007.

Off-shoring can also be related to international insourcing in multinational companies established abroad. Offshoring covers both international outsourcing and international insourcing (van Welsum and Vickery, 2004). Sometimes these two subcategories are grouped in the “global resourcing” definition (McKinsey Global Institute 2003; global insourcing is named captive offshoring). The distinction between the two ways of offshoring is based on degrees of control between enterprises or subsidiaries.

Enterprises in different countries with different history, languages and commercial partners look for different strategies to solve the dilemma between local or national sourcing and international offshoring. Figure 2.6 shows this dilemma and the elements enterprises take into consideration when choosing between the two options. An OECD (2004) report explained that to compete with the internal cost savings achieved through internal offshoring and offshore joint ventures, multinational outsourcers (i.e. providers of outsourced services to others) moved part of their activities offshore through FDI and subcontracting. With multinationals accessing the same cost base, indigenous offshore-based firms responded by opening front-office operations in developed country markets in order to compete in the country of origin of outsourcing with the multinational enterprises (MNE) providers of outsourced services. This, in turn, has compelled MNE providers of outsourced services to

extend their offshoring activity. This is an example of the type of explanations behind the business criteria to solve the offshoring dilemma.

In August 2003, the Financial Times published a famous article¹¹ that summarized the services being provided in India, South Africa, Australia, Malaysia, Singapore and China. These productive destinations for services had resulted in the migration of thousands of people: in the financial sector alone Europe migrated 730 000 jobs, the United States 850 000 and Japan 400 000¹². A forecast for 2025 was published at the end of 2003: 3.3 million white-collar jobs (500 000 in IT) would move offshore to countries such as India¹³. The Forrester study (Parker, 2004) reports that more than one million jobs will move offshore being the UK the main active country in the process. Farrell (2005) and McKinsey Global Institute (2005) estimate that actual offshore employment will reach 4.1 million jobs worldwide in 2008 and reach an estimated 1.2% of total demand for labour services from developed countries. Unfortunately, all these figures cannot be confirmed or negated by official statistics due to the lack of data in the European statistical system. Indirect measures, like the ones from OECD, based on occupations data, estimate a 20% of total employment potentially affected by offshoring in developed countries (van Welsum and Vickery, 2005).

The offshoring of services to countries like India also has its limits. As reported in *The Economist* in March 2004 "A lift to India", non English-speaking countries have more difficulties in keeping a service provision on a general scale¹⁴. The language is of course an important factor, but not the only one: the cultural and socio-economic environments play a role. The historical links of India with the English-speaking tradition has facilitated exchanges of people and knowledge so India thus becoming a natural place for large-scale

¹¹ Give Roberts and Edward Shines (2003) "Service industries go global: how high-wage professional jobs are migrating to low-cost countries".

¹² Another example is provided by the business sector process outsourcing (BPO) employing 200 000 people. It must be emphasised that this, without being a large figure, has grown rapidly in few years and has great prospects for future growth. The link between the migration of business services and the world of financial services is clear. Banking and insurance have been at the forefront of the complex outsourcing processes in human resources and information technologies. The financial world has been the preferred client of the BPO outsourcers. The reduction in costs has been the leitmotif for its contracting in countries like India.

¹³ Offshoring: Relocating the back office, *The Economist*, December 11th 2003.

¹⁴ The case of India is rather special, with several active cities sharing the leading role. Bangalore is India's premier international trade location but has seen a double-digit wage rate increases in recent years; as a result Hyderabad and Chennai (Madras) are emerging as service provider cities. Rated above Bangalore as the city of choice for service offshoring, Delhi and its local government are focusing on developing quickly. Mumbai also has some important services, but costs and pollution are high.

outsourcing. In continental Europe, similar trends are continued by some multinationals, but generally a lack of common behaviors still predominates. European enlargement will bring new opportunities for concentration of the offshoring process inside Europe. The new member states are already exporting services based on cheaper jobs – lower wages – to current member countries, within a relatively close cultural and social framework. They are already starting becoming a reference for international outsourcing in Europe. The new countries could assume a role similar to that played by India, Mexico, Brazil or Malaysia. The competitiveness of countries like Hungary or the Czech Republic in the offshoring of information technology services has already awaked the interest of the stakeholders and researchers (see Stare and Rubalcaba, 2005).

The A.T. Kearney Report gives an attractiveness index for IT offshoring¹⁵. The leading countries according to the index are (from the best performance): India, Canada, Brazil, Mexico, Philippines, Hungary, Ireland, the Czech Republic, Russia, and China. The presence of Canada and Mexico, close to the US, among this list of countries suggest that something similar can be extrapolated to many or most of the new EU Member States. German firms send roughly 60% of their “offshore” work to Eastern Europe, and only 40% to India, even if in Indian services are 20% cheaper. Another recent classification from a McKinsey study also includes the new Member States among the country players in the offshoring world. Most European offshoring projects remain on the European continent (UNCTAD, 2003), while India and Ireland become the dominant producer countries in BPO and IT offshored services with impressive world shares of 12.2% and 8.6% respectively (McKinsey Global Institute, 2005).

An OECD study estimated an annual growth after 2001 of 20% in ICT services outsourcing. In the same study it is highlighted how the higher rates of growth of the phenomenon are expected in sectors such as finance and accounting, market research, administrative and corporate services. The role of differences in wages and labour costs as the main explanatory driver cannot be neglected “A body called Accountants in India recently estimated that a qualified bookkeeper or entry-level staff member in the US cost about \$30 an hour, including all the overheads (employee benefits, computers, office space, continuing education and so on). Experienced accountants got 50% more. In contrast, a qualified, college graduate accountant, trained in standard business management applications could be hired for about \$8 an hour in India” (Robert, 2004) even if there are other important reasons explaining offshoring, in particular in India, where the offshoring of R&D services cannot be explained by reduced costs alone.

¹⁵ Reported in “The Geography of the IT Industry”, *The Economist*, July, 22th 2003.

Recent evidence is pointing out the difficulties and increasing limitations of some offshoring activities. The return of some services home started with Dell in January 2003 when the company brought back some tech support services home (T. Krazit, *Network World*, 12 January 2003) after corporate customers complained about the quality of service they were receiving from workers in other countries. An article published by A. Bednarz, The downside of offshoring (*Network World*, 7 May 2004) stressed that poor communication, cultural differences and lack of expertise can derail engagements: "What's the big deal? Unrealistic expectations about cost savings, loss of control over intellectual property and management gaps are among the issues that can derail an offshore outsourcing Project". From the same article we acknowledge that even if the expectations of the economic actors are leaning towards an increase in their use of outsourcing, the other side of the coin shows a high number (21% of the interviewed) of companies prematurely terminating an offshore arrangement. The most common causes behind this *back home* phenomenon relate with the difficult relationships with the provider.

The supposed cost-saving is not always a reality for firms as in some cases the effort required to transfer the knowledge, at technical and managerial level, leads to a loss in productivity in the first year up to 20%. This evidence is not in contradiction with the fact that, according the UNCTAD-Roland Berger sample to 500 European companies, 8% with experience of offshoring are satisfied with the results, reporting cost savings in the range of 20% to 40%.

The increasing business evidence limiting offshoring to certain services, under certain conditions to certain countries is confirmed by recent Eurostat data on international trade. There is not a net import position of EU15 to Asia neither in ICT services nor in most of other services. The India case for ICT, where most of the offshoring processes have taken place, is more an exception than a rule.

Taking into consideration data on international trade of services, the positive coverage rate of EU15 ICT services international trade can be noticed in all major commercial areas, even in the US (after 2002), except in India, where the difference between small exports and huge imports is impressive (limited but increasing cover rate of 0.32 in 2003). In new member states service exports to the EU15 are more important than imports but this is not the case for ICT and other business services where EU25 exports dominate and grow at very high rates (Table 2.6). The growth of Indian exports of ICT services has been very important during recent years (1996–2005) but its imports from the EU are increasing as well. In the shorter period 2001–2005 growth of EU25 exports has been more intense than imports, even in countries such as India or the new member states, mainly in ICT and other business

services. In India a certain shift is register from ICT exports to other business services exports.

In any case, the figures are still very limited comparing the total trade of ICT services intra and extra-Europe. Off-shoring and outsourcing to/from Asian and other countries are a very important and increasing phenomenon but it is necessary to go beyond the myth and consider the still limited magnitude.

Table 2.6 Data on international trade of total services, ICT and other business services from EU25 to other mayor partners. Growth rates (percentages) 1996–2005 and 2001–2005

	Intra-EU15	Ext-EU15	NMS*	US	Partner Asia	Hong-Kong	Japan	India	World
Total services GR 1996–05									
Exports	7.6	8.1		6.6	7.9		3.9	11.3	7.8
Imports	7.2	7.5		6.3	7.2		5.2	11.6	7.3
ICT services GR 1996–05									
Exports	22.7	18.6		16.2	23.8		19.2	34.8	20.9
Imports	14.8	12.2		11.1	16.8		13.2	34.2	13.8
Other business services GR 1996–05									
Exports	8.1	10.4		8.5	10.1		8.7	13.3	9.2
Imports	9.7	8.8		10.6	7.5		6.3	12.2	9.3
Total services GR 2001–05									
Exports	4.9	5.9	14.0	0.5	8.9	13.9	1.3	16.6	5.3
Imports	3.9	3.4	5.2	-1.5	5.2	4.4	0.6	11.2	3.6
ICT services GR 2001–05									
Exports	10.9	7.9	22.5	8.5	8.7	1.8	-0.5	29.7	9.7
Imports	7.2	2.4	-2.2	-0.7	2.3	-25.3	-1.0	5.1	5.4
Other business services GR 2001–05									
Exports	4.1	8.9	9.1	-0.9	15.9	30.4	11.9	30.4	6.4
Imports	4.7	2.3	6.0	-0.3	3.9	1.1	0.5	15.8	3.7

Notes: * Includes Czech Republic, Estonia, Latvia, Lithuania and Hungary. Data refer to the period 2001–2003.

Source: Based on international trade statistics, Eurostat, New Cronos.

2.5 – Internationalisation and policy implications

Because of its magnitude, the globalisation phenomenon is not immune from enhancing political reactions. The delocalisation of the production in particular had been, and still is, at the centre of the political debate with different contributions sustaining the multiples points of view. The most protectionist positions, adopted by some politicians in some countries seem to suggest that the migration of manufacturing and services jobs to other countries represents an evil in itself that must be avoided by the strengthening of borders and reviving

traditional industrial policy. This position contrasts with economic theory that has demonstrated in very diverse ways that trade and specialisation contribute to the increase of the wealth of the nations. Furthermore several economists think that it is senseless to prevent what is the natural course of events. The migration of services outside Europe or the United States results initially in an employment loss that, on the other hand, tends to be compensated by greater effectiveness and the lower prices of the service provision. The benefits should serve to generate other new services jobs, probably better paid and more specialized. The more advanced countries desire, as benefits from outsourcing processes, to contribute to replacing manual manufacturing or services activities (blue collar) with the more qualified activities (white collar) where labour conditions are better. The benefits derived from replacing a part of traditional industry by services – at the same time, the remaining industry has become more competitive – can also be replicated within the services sector. As has been indicated by most experts on industrial delocalisation, this is not a problem in itself. The only major problem is the capacity to move resources towards specialisation strategies, towards new activities, whether industrial or services.

Besides the advantages derived from each country's specialisation, offshoring reports direct benefits for both the host and provider countries. In the first case, the advantages are clear (employment, income, wealth, tax collection) but in the second, it is important not to underestimate the effects of cost reduction by contracting companies, exports generated by the new needs coming from companies abroad and the transfer of incomes and profits by those national companies in foreign countries.

The debate on whether the offshoring of services to low-cost countries is good or bad for an advanced economy such as Europe's leads to the question of what are the advantages and economic and policy implications for service globalisation. Globalisation means, among other things, four major changes: more competition (international competition in particular), more available markets (the world becomes the target market both from the provision of resources and from the sales points of view), more movement of resources (more transfer of workers, technology, knowledge) and finally more interrelations with ICT in order to procure a global provision of services or a global organisation of service enterprises.

As a result of globalisation, enterprises develop new competitive advantages which contribute to reinforcing globalisation trends. Companies can be more productive, by obtaining a better ratio between outcome and income. For example, companies develop more economies of scale or scope when they operate at a larger scale. In general, price reductions resulting from globalisation are significant, and that is always a way to become

more competitive, even if prices in services competition do not have the same strategic role as in goods competition. In services, to offer a wider range of services or to increase the quality of services can provide a greater competitive impact.

Other macroeconomic advantages spring from these points. Globalisation of service activities brings new employment in those areas and sectors that are competitive, and promotes migration of services jobs from those countries or sectors that are not very competitive. The employment balance between new jobs and migration of jobs should be considered as an indicator of competitiveness, but in any event, a change in specialisation should always be possible to counterbalance the negative effects of off-shoring. Otherwise, a related-market failure (e.g., skills shortages) or a related-state failure (e.g., rigid labour regulations) would require policy actions.

Globalisation of services should also bring lower prices and therefore, less inflationary pressures, especially in more standardized services. This factor is becoming a driver of trade and investment throughout the major commercial areas of the world. All these effects are also combined with new regional dynamics. Globalisation produces a twofold effect at geographical level: a further concentration in those countries, regions or cities which are already the leaders of the service economy – reputation breeds reputation, from the geographical point of view too – and trends towards decentralisation, mainly towards low-cost countries, regions or cities, in standardized services (delocalisation or offshoring). In doing so, new geographical areas can emerge as new competitors in some service sectors, although this fact does not yet threaten the dominant positions of leading areas since forces towards concentration are still too strong.

As a consequence of these impacts, globalisation of services should lead to productivity and competitiveness gains all over the world, having an impact on economic growth and economic development¹⁶. The advantages are to a certain extent based on international trade theory and comparative advantage. The studies carried out using economic theory apply different models to producer services, based on the applicability of the theories on trade in services¹⁷. The traditional models for international trade, based on the relative comparative advantage theory and Heckscher-Ohlin-Samuelson type, explain that a country will specialise in products for which it has a relative abundance of positive

¹⁶ From the macroeconomic point of view, a wide set of interrelations between service trade and competitiveness can be found in Rubalcaba and Gago (2001).

¹⁷ This is based on a previous contribution (Rubalcaba, 1999). A true examination of these studies is beyond the scope of this work. Studies that have sought to apply economic models to trade in services are, for example, Landesmann and Petit (1995), Dearforff (1985), Bhagwati (1987), Sapir and Lutz (1981), UNCTAD (1989) and Markusen (2005).

factors. Exchanges will enhance the production and consumption possibilities of the countries through the access to goods or services produced in relatively favourable framework conditions. The cost and intensity of factors are the two parameters that explain trade and specialisation. It can be supposed that business services follow this logic when they are intensive in capital (leasing), or highly qualified workforce (knowledge-intensive services), or in low-skilled workers (operational services). Production can be expected to be located in countries that provide the production factor with greatest endowment, in that they are more intensive, creating trade with other countries. In spite of the generic validity of this argument, the classical models have been criticised because of the unrealistic nature of a number of the suppositions and the co-existence of trends towards both specialisation and despecialisation (Landesmann and Petit, 1995)¹⁸.

This is not the place to survey deeper into the abundant literature on the advantages and disadvantages of globalisation¹⁹. What this chapter wanted to stress so far is a twofold summary of the aforementioned ideas that from one side the impacts of globalisation and internationalisation of service activities are positive in many respects. New opportunities are created for dynamic service companies, dynamic regions and dynamic countries bringing further boost of productivity and employment growth rates. Even when projections indicate the migration of millions of jobs to low-wage countries, what these projections do not take

¹⁸ Markusen (1989) indicated the application difficulties in a market with few competitive characteristics. His model (2005) on white-collar offshoring proposes some simulation models to clarify existing ambiguity in the area and approach the gains of trade for different countries. Nusbaumer (1987a, b) highlighted how the supposition of available technology runs counter to the objective of many services, based precisely on the non-availability of technology. Melvin (1989) and François (1993) pointed to the difficulties of the supposition of mobility of factors at an international level, stressed the need of reinterpreting the traditional models, and came to the conclusion that liberalisation is beneficial for the gains in specialisation derived from trade. This can be confirmed by the specialisation of large multinationals that have benefited from the mobility of people and a degree of standardisation of the service (Aharoni, 1993). In this way, the growth and specialisation of hotel chains, American Express and airline companies can be explained, as can, to a certain extent, Accenture's specialisation in integrating systems, McKinsey's in management or BCG in strategy. Trade, specialisation and comparative advantages are all terms that are closely linked. For firms, these advantages can be translated into (Daniels, 1993): production of market-cost specialized knowledge, development of scale or scope economies, maintaining of highly specialized staff, reinforcement of corporate identity and reputation, and variations in the access to inputs and markets.

¹⁹ Among the many works on globalisation those by Joseph Stiglitz (2002), *Globalisation and Its Discontents* (New York: Norton) and J. Bhagwati (2004) *In Defence of globalisation*. Oxford University Press are considered books. About the differences between international competitiveness in business and competitiveness in nations the works of Krugman (e.g., 1996) are important in a conceptual framework where changes in specialisation are possible and advantage of changes in relative comparative advantages are recognized.

into account is that, for example, globalisation of software and IT services, in conjunction with diffusion of IT to new sectors and business, will yield even stronger job demand in developed economies for IT-proficient workers (Mann, 2003). There are no reasons to fear liberalisation of services trading when goals and instruments are clear (see Cuadrado, Rubalcaba and Bryson, 2002). From the other it has to be borne in mind that sometimes it is not easy to take advantages of new challenges such as changing of specialisation patterns when delocalisation or off-shoring trends happen. Some market failures in the free provision of services are the results of state failures, normally translated into protectionist measures. For this reason, it is necessary to promote both the liberalisation of service activities and the provision of complementary policy measures that, on one hand, can limit the negative effects and, on the other hand, achieve the most from the new competitive challenges.

The economic and business advantages of international trade in business services, acknowledged in most studies, should be evaluated considering that it is necessary to clarify several points:

The effects of internationalisation cannot be generalized in all sectors and regions. The different activities and sectors are affected differently according to their specific conditions, maturity, degree of present concentration, growth dynamism, etc. Equally, the effects on countries, regions or cities are necessarily different. Trade in services raises many new issues because of their strong contribution to regional development in uneven scales and concentration patterns (e.g., Daniels, 1993, Daniels and Moulaert, 1991, Illeris, 1996, Beyers, 2004, Leo and Philippe, 2005, Bryson et al., 2004).

The framework conditions in a given region or country are very important in getting the most out of globalisation. According to the study from the McKinsey Global Institute, "every dollar of corporate spending shifted offshore by an American firm—mostly, now, to India—generates \$1.13 in new wealth for America's economy. However, when a German firm moves a euro to a cheaper place to buy services, its home economy is on average 20 cents worse off" (The Economist, July 15th 2004). One of the key reasons for such substantial difference is found in labour markets: "In America, McKinsey estimates that around 70% of workers ousted in favour of offshore alternatives find new work within six months. In Germany, however, the re-employment rate is only around 40%. The reason? Above all, Germany's thicket of labour laws, which discourages firms from hiring workers who may prove a hard-to-shed liability. Admittedly, these same laws – which are increasingly under fire – also make it harder for German firms to shed workers to take advantage of efficiency-enhancing offshoring. The lesson: offshoring may be an easy target for politicians, but if they have flexible labour markets it may actually be a good thing, not

just for big firms, but for everyone". As stated in a recent report for Germany (Farrell, 2004), "Germany's political leaders should view offshoring not as an economic threat but as an important opportunity for the nation's businesses, consumers, and shareholders".

All the positive effects are attenuated by the following secondary effects: there are extremely narrow and weak markets that diminish the effects of internationalisation; the pressures of competition can have a negative influence on specific places where there is no comparative advantage; etc.

The changes in specialisation or in the provision of competitive advantages are not possible on some occasions due to the market forces, registering some policy complementary to those of market liberalisation and international trade being required.

Not all countries react in the same way when faced with the advantages of the liberalisation of the international trade of services and some associate the GATS negotiations with goods negotiations.

2.6 – GATS Negotiations

The *General Agreement on Trade in Services* GATS is at the same time, the service economy globalisation framework and a driver for its development. After almost fifty years since the firsts multilateral trade agreements on goods, WTO members decided to support the world service trade expansion through the settlement of an agreement based on transparency and a progressive liberalisation of the sector. The GATS is an achievement of the Uruguay Round of trade negotiations (1986–1993) and went into effect in 1995. The reason why the agreement took so much to be signed, with respect to the GATT, has to be found, once more, in the particular features of service trade and in the high range of activities classified within this category. Up to the 1990s most of the services that nowadays are worldwide provided, were traditionally considered domestic activities (hotels and restaurants, personal services,...) or directly related to the fulfilment of the obligations governments have towards their citizens (health services, telecommunications, transports,...). Furthermore natural monopolies, due to the high fixed establishment costs and to the strategic relevance some service has within modern economies, existed in most of these activities. Therefore the weakness of the service international trade is not surprising at all. The rapid technological evolution affecting some services and their commercialisation, the fact that some of them are not in a position of natural monopoly anymore and the lateness of the public sector with respect to the necessities of dynamism of many sectors and of the population, sharply increased international transactions and evidenced the need of an international framework in this field.

In order to adapt its structure to the several forms undertaken by the internationalisation within the sector, the agreement classifies service trade under four different forms. In addition to international trade, this four-pronged definition includes consumption abroad, commercial presence and natural person movement²⁰. As stated before, the GATS scope is to drive international trade expansion through the application of the transparency principle and a progressive liberalisation. The principle affirms the idea that low levels of uncertainty are a favourable endowment for trade. It is for this reason that signatories committed to make public all the changes in regulations that could affect international commerce. It has to be noticed that GATS explicitly affirms the intention of not influencing governments' decisions about regulation or regulation changes planned to meet policy objectives or particular needs. In fact, due to the importance of the sector and the relevance of the regulations, any rule affecting the existing frameworks would mean the self-destruction of the agreement that, anyway, evidences the key role played by national regulations in the internationalisation of the sector. The second pillar consists in signatories' obligation to take part in successive rounds of negotiations with the intention of promoting a progressive liberalisation toward the service internationalisation. This process will pass through a greater market inclination toward services produced in foreign countries and toward the establishment of foreign providers in national markets.

Although the existence of sector specific or country specific exceptions, the GATS covers all the measures affecting services exchange. This means that all kind of law, regulation or procedure operating at international, national or local level carry on with the obligations signed in the agreement. The mentioned measures regard all kind of services, which had been classified in 12 core sectors further subdivided into 160 sub-categories, with the only exception of the provision of services in the exercise of governmental authority (public administration, security, etc.). Restrictions also affect services directly related with air transport.

In addition to the transparency principle and to the obligation of intervention when discriminations in service provision and market accession occur, one of the central tools of the agreement is the most-favoured-nation (MFN) principle. This concept had been developed within the international goods trade, in order to avoid power-based distortions between countries with different international weight. It often occurs that an economically strong country achieves favourable conditions in bilateral agreements because of disparities in contractual power, and that these conditions could not be reached by single "minor"

²⁰ These modes of International provision and their mutual interaction are the focus of the study presented in Chapter 3 of this thesis.

countries. Under the MFN principle, conditions conceded to one country are automatically extended to all the others commercial partners.

The GATS implies the WTO obligations to control national legislations on service trade, to create a working group with the aim of presenting recommendations on requirements and procedure for the homologation of professional qualifications and technical standards and to attend to international disputes.

The increasing volumes of international service trade and the way in which globalisation has been affecting the tertiary sector in recent years had been endorsed by the GATS. Anyway the agreement has to be considered a first step toward the creation of a complete legal framework in international commercial law. According to plans, more negotiations started after the date the agreement took effect. Nonetheless progresses over the last years in this kind of settlements had been slow and low connected. After the failure of the Seattle ministerial conference of 1999 the greatest improvement had been reached by including in the Agenda of Doha of 2002 an agreement to open new negotiations on services. As it will also be seen later when discussing about the European single market for services, the international accord on such an important issue in terms of employment and value added is always a long process that has to concern many connected interests and is therefore of difficult success.

2.7 – Conclusions

Five main challenges have been stated in this chapter.

Services are not just receivers of globalisation outputs, but also their active agents. Business services and consumer services promote the current globalisation wave and its effects, shortening distances, supporting activities regarding business internationalisation, making the diffusion of international consumption and leisure products possible. In particular, advanced business services intervene in key domains, orienting the global strategy of companies. Europe requires competitive services in order to become a strong player on the international scene.

The internationalisation of services is understood from a multidimensional perspective, where cross-border trade has a lower position compared to direct investment and other ways of globalisation. Due to the nature of services, and despite the emergence of ICT, which has led to more tradable services than one decade ago, there are still limits to the traditional goods internationalisation. Artificial barriers to the services trade also play their part. In all respects, the present trends seem to indicate growing complementarity among service globalisation methods with differences by sector type.

Comparing the situation of the European Union with the other two economic world powers, United States and Japan, the panorama presents lights and shades. In total volumes, the European position is clearly positive in the majority of services. As regards to the growth of services exports during the period 1996–2003, the goods rate in Europe is outstanding, although a certain distance from the United States' rate comes into view. Taking into consideration that the coverage rate of the United States is higher than the European one, and that its goods deficit does not show clear moderate indications, it is very probable that the North American privileged situation will persist, or even grow, in the future. The main challenges seem to exist in those services related to ICT, knowledge society and royalties, while the European strengths are in financial and insurance services. In any case, the North American coverage rate in services shows a decreasing trend, thanks to the vigorous development of importation and to the new emerging countries. This means an opportunity for Europe in the sense that it could provide a larger future trajectory to its exports, although it could also be seen as a threat. The presence of services is lower than goods regarding multinationals, although the number of large firms in Europe and the United States is similar. However, the stock-exchanges values of the ones in America are considerably higher than of those in Europe, and there are some sectors with significant European absence.

While treating the globalisation phenomenon particular attention has to be devoted to global sourcing processes and service offshoring in particular. The increasing role of some Asian locations providing both qualified and low-skilled business services is a matter of concern to business-men and politicians in Europe. Services could eventually follow the delocalisation path initiated by manufacturing firms some decades ago. However, the advantages of offshoring processes are important both for importers and exporters of these services. The point is that countries such as the Member States of the European Union should be ready to specialise in those new sectors in which they can offer competitive advantages. Re-specialisation processes will have to take place also within the service sectors and within business services. These offshoring trends are mainly explained by lower costs in low-wages countries, although other additional reasons do exist. For example, R&D services in India offer high quality in addition to cheap services. Even if current statistical evidence shows that offshoring processes are limited to certain sectors and certain areas, current trends call for action. Europe has to look for the framework conditions in which services can operate in a competitive way. European countries will have to provide high levels of quality and specialisation although some of them can also be competitive by providing services at lower relative costs. The present situation is not static and the

dynamism of the EU25 business services, supported by improved framework conditions, holds the less to a more competitive Europe. The outstanding cases of Ireland and some new EU members such as the Baltic States are important, although they are rather exceptional within the group of 25. Recent works (van Welsum and Reif, 2006) show that the potential employment affected by offshoring (20% of the OECD countries) is not negatively correlated to the importance of business services, but in a positive way to the exports of those services, which reinforces the positive aspects of the phenomenon.

There is no doubt about the advantages of the internationalisation of services, even if some re-assignment processes have to be developed. The globalisation of services produces both macroeconomic effects and business and microeconomic effects. Based on traditional and new theories on international trade, it is possible to identify gains in productivity, employment, prices, innovation and economic growth. Policy implications are derived since barriers between markets should be reduced to a minimum—represented by the efforts to create an internal market for services and the GATS negotiations. Complementary policy measures are necessary to cope with existing market failures, e.g., innovation, skills –and to guarantee equal opportunities for all enterprises, SME and less developed regions in particular.

Chapter highlights:

Services internationalisation is a factor contributing to the globalisation process as well as a phenomenon influenced by it.

The internationalisation of services is understood from a multidimensional perspective, where cross-border trade has a lower position compared to direct investment and other ways of globalisation.

Europe represents the largest international service market while the USA represents the most competitive service economy.

Emerging countries, especially Asian countries, are becoming a new point of reference in this field.

Although the evidence of data do not allow for definitive conclusion, service offshoring is a growing phenomenon (nevertheless presenting several limitations) .

Based on traditional and new theories on international trade, it is possible to identify gains in productivity, employment, prices, innovation and economic growth due to service internationalisation.

The *General Agreement of Trade in Services* represents the most important legal framework of services internationalisation and is the outcome of large negotiation processes.

Chapter 3 – Crossing borders: exploring the relationships between different modes of international provision of services

Objectives:

Introduce the different modes of international supply of services; present the most relevant figures on the internationalisation process at world and Spanish level; draw a methodology capable to investigate relations between different modes of international provision; empirically study the mutual influence of different modes of provision at world level and for the spanish case.

Methodology:

Two different models of simultaneous equations are built on the basis of the gravity equations. Eventually they are estimated through different estimations techniques.

Synopsis

The first part of this chapter works as connection with Chapter 2. It is here shown how services are at the heart of world economic integration. Their particular characteristics (intangibility and simultaneity) decidedly influence their tradability and therefore their international provision. The different modes through which they cross national borders play an active role in this course of action. However the knowledge on these modes, how these modes act and interact, is far from complete. Empirical evidence shows that international trade and service FDI seem to play on different levels within the internationalisation process. This could be explained by the complementarity or substitution effects occurring between these two internationalisation ways. The second part of the present chapter, after presenting the forms of provision performs an empirical analysis, aimed at discovering possible relations between Mode 1 and Mode 3 of cross border supply of services. It draws a research line based on different estimation techniques of simultaneous equations models built on the basis of the gravity equation. A first step of the analysis is carried on bilateral services relations between 65 countries during the period 2000-2007. A similar methodology is then applied to the spanish case. Results reinforce the complementary hypothesis between the two modes beyond the existence of substitution effects.

Introduction²¹

The process of globalisation has been one of the most important economic issues of the last 20 years. Within this framework, the tertiary sector played, and is still playing, a major role. Service activities head toward increasing internationalisation patterns: services, providers and clients are increasingly crossing national frontiers while business and consumption habits evolve at a fast rate. Services passed from being considered mainly local activities provided by local suppliers to global products created and sold all over the world. The export of services grew at the yearly average rate of 9 per cent since 1990. Even the composition of the exported services experimented important changes. At the beginning of the nineties, travel and transport services represented two thirds of the total world export of services. Nowadays they sum only one third of the total while activities such computer services consulting or distributive trade are gaining importance in the world market.

At the same time, the speed at which capitals cross national borders to face the challenge of new markets quickly increased. Sectors that until recently seemed to be an exclusive field of national company, and in many cases state-owned ones, are now open to the entrance of foreign capital and corporations. The evolution of the telecommunication sector is a good example of this kind of transformation. The large majority of foreign direct investments (FDI) are related with service activities. For example, according to Eurostat, in 2006 services accounted for more than 77 per cent of the total direct investment of the European Union.

Furthermore it has to be taken into account that services represent more than 70 per cent of GDP and employment in developed countries. Therefore it results clear how important and crucial is the process of globalisation experimented by the sector when attempting to understand the possible development of world economy and employment. Unquestionably, the comprehension of mechanism behind this process represents a central challenge for stakeholders and policymakers. The recent growth of service offshoring has created a new hot topic in policy agendas leading to discussion on the limits and challenges of international trade and investment in services.

The high relevance of services within developed economies is in contrast with its limited importance in total international trade (around 20 %). This paradox is explained by

²¹ This chapter is based on two different works. The first one was developed with professor Rubalcaba (see Visintin and Rubalcaba, 2010a). The second one was originally written by Visintin (see Visintin, 2009).

many reasons: manufacturing globalisation is a phenomenon that took off more than ten years earlier than service one, natural barriers for services trade (due to the physical proximity requirements of service trade) and artificial barriers (e.g differences in regulations in services markets). An additional reason of high relevance can be identified: internationalisation of service takes place through FDI as well as through direct transnational trade. If international providers have the opportunity to decide between different channels of internationalisation, substitution between different modes may apply.

International trade theories applied to services established that the first international approach of these activities takes place through the traditional cross-border transactions and that, when, in a second phase, physical presence is requested, service companies setup-up a subsidiary company. This viewpoint does not reject the importance of complementary effects between different modes of supply. Potential complementarity and substitution effects influencing the flows of trade and investments needs to be investigated at macro level in order to understand if the commercial relations foster the presence of national companies in a foreign country and if the presence of national companies installed in a country promotes international trade.

The internationalisation process of the service sector takes place through various channels or modes of provision. Although service internationalisation is embodied in many different forms (Rubalcaba and Cuadrado, 2002), the WTO summaries major modalities, which have been classified under four modes. The literature developed on the relations between different modes of international supply is still scarce. The contribution of this chapter is drawing a research strategy designed to investigate possible relationships between two modes of supply (Mode 1 and Mode 3 which can be roughly approximated by trade and investment) in the service sector at world level.

The rest of the chapter is developed as follows. Section 3.1 introduces the main concepts regarding the internationalisation of the tertiary sector and drivers of the process. Some figures on the process of internationalisation of world and spanish services are briefly presented in Section 3.2. Section 3.3 is a survey of the literature on the relations between trade and investments. The aim of Section 3.4 is to present a methodology, based on a system of simultaneous equations developed on the basis of the gravitational relation, capable to investigate possible relations between the different modes of supply of services. A similar methodology specifically elaborated for the spanish case is presented in Section 3.5. These methodologies are applied to two different dataset (a database where the information of bilateral relations between more than 60 countries is collected and a database

on the internationalisation of the spanish service sector). The results of this analysis are exposed in Section 3.6; Section 3.7 resumes the main findings and concludes the chapter.

3.1 – Characteristics of service internationalisation

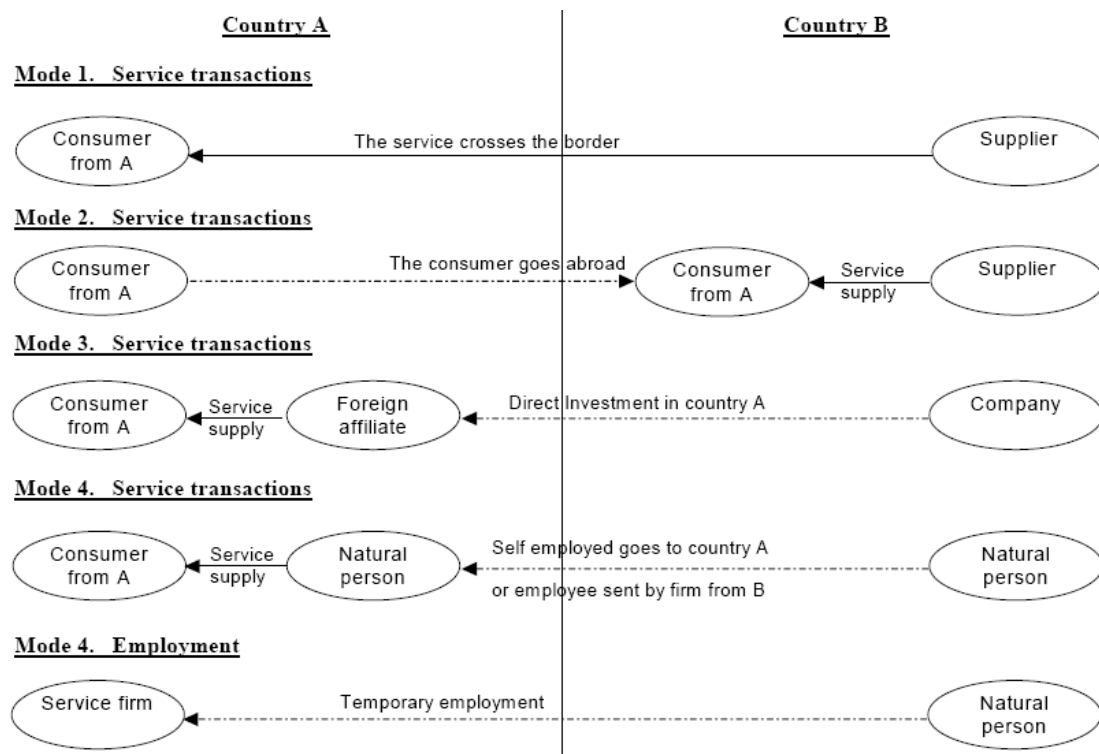
The internationalisation of the tertiary sector becomes a more complex matter when compared to the internationalisation of the goods sector. Manufacturing companies fabricate their goods where the production plants are situated. At that moment, if they intend to sell them in foreign markets, they have to transport the goods crossing one or various borders until the final consumer. Sometimes the strategy to get to international customers is different. Often companies decide to establish the production plant directly in the markets where the final consumers are settled. This explication of the internationalisation of the goods sector is defiantly naïve, nevertheless it is a useful benchmark to understand the complexity behind the process of internationalisation of the tertiary activities. When they decide to go international, service firms face different ways of achieving their new clients. Services can be sold without any need of movements, neither of the supplier neither of the client. A good example of this case is the translation service provided online by several companies, neither the clients nor the providers have to move from their desk. Sometimes the supplier needs to actually reach the client in order to create and provide its service. In other cases, it is the client who crosses the border to take advantage of a service produced abroad (e.g. tourism). The description of the possibilities of international provision of services does not run out here. Many service companies decide to open a division or acquire an already existing entity abroad in order to be able to achieve other's countries customers. Large restaurant chains or financial entities are used to this kind of internationalisation.

There are some service-specific characteristics definitely influencing service transactions in general and international transactions in particular. Services are intangible and their production and consumption often occurs simultaneously. These two particular characteristics are the ones making the greatest difference with respect to goods internationalisation. Intangibility and simultaneity require that an intense relation between clients and providers take place in order to produce and consume a service. In some cases this relation is essential to the existence of the service. There will be no taxi or air transport if the client did not take the taxi or the plane as well as there would be no health services if the patient did not go to the doctor. Furthermore it has to taken into consideration that this relations is often essential to the client in order to be able to assess the value of the service he is about to purchase. As an example, it is worth to notice how difficult is for a company to be aware of the real quality of a consulting service until it is not in direct touch with the

provider. Finally, another service-specific characteristic influenced by the intense relation taking place between clients and providers is the high differentiation and variety of service products a provider is able to offer on the basis of clients needs. Evidently, all these characteristics exert an influence on international transactions of tertiary activities.

In order to analyse this complex situation a conceptual framework was created. The classification created within the General Agreement on Trade in Services (GATS) is nowadays considered the main reference in this sense. This taxonomy organises service internationalisation in four ways or *modes*. The first mode (Mode 1) includes all the international transaction made without any need for movement, both the client and the provider act from their location. Under this mode are traded services such as telecommunications, insurance and most financial services and information technologies services among others. Mode 2 refers to the consumption made in a foreign country when the consumer has to move to a foreign country in order to buy the service. This mode of supply mainly refers travel services and all tourism related activities. Under Mode 3 are classified all that transaction realised by a corporation in a foreign country through its divisions, daughter companies or subsidiaries settled there. These branches could be the result of a direct expansion or of the acquisition of already existing companies and structures. This is the case of several business related activities such as business, legal or technical consulting, as well as the case of several hotels and restaurant services. Finally, Mode 4 gathers the transactions that require the physical presence of the supplier, but without any need for local infrastructure, in order to provide the service. An example of this mode of provision is given by all those advisor providing services in foreign countries.

Figure 3.1 Synthetic view of the modes of international supply of services



Source: United Nations Statistical Division (2002)

This classification is not only the reference on which international agreements are set up, it also represents the benchmark for the academic research and it is the conceptual framework used in the collection of data by the various statistical institutions and research organisations. In spite of that, such a complex system of internationalisation makes the collection of data particularly tough. For this reason, and due to the newness of the framework, most of the data available so far relates to international trade and FDI (stocks and flows). Only recently, some major statistic institution started releasing data on the income produced in foreign countries. It is the case of Eurostat, which published data on the income perceived by national companies from the direct investment realised. According to WTO (2006), international trade figures, usually collected from data of the balance of payments, represent transactions realised under Modes 1, 2 and 4. However, the main services traded under Mode 2 are travel and tourism services. It is therefore relatively trouble-free to isolate these transactions from the ones produced under Mode 1 and 4 when sectoral break-down is available. On the other hand it is not possible to make any distinction in order to understand which figures relate to Mode 1 and which to Mode 4. Since data on FDI stocks and flows represents the investment realised by companies with the aim of future

gains, they could be interpreted as indexes of the commercial presence or Mode 3 transactions. The volume of stock of FDI is a proxy for Mode 3 commonly applied in empirical studies (Nordas and Kox 2009). Nonetheless, the data which would best represent Mode 3 operations should describe the volume of business of foreign affiliates of national companies. Due to the scarce availability, few previous works are based on this kind of data. Lennon, 2008 and Benassy-Quere et al. (2006), for example, consider data on the sale of foreign affiliates of USA companies to study Mode 3 of provision of services.

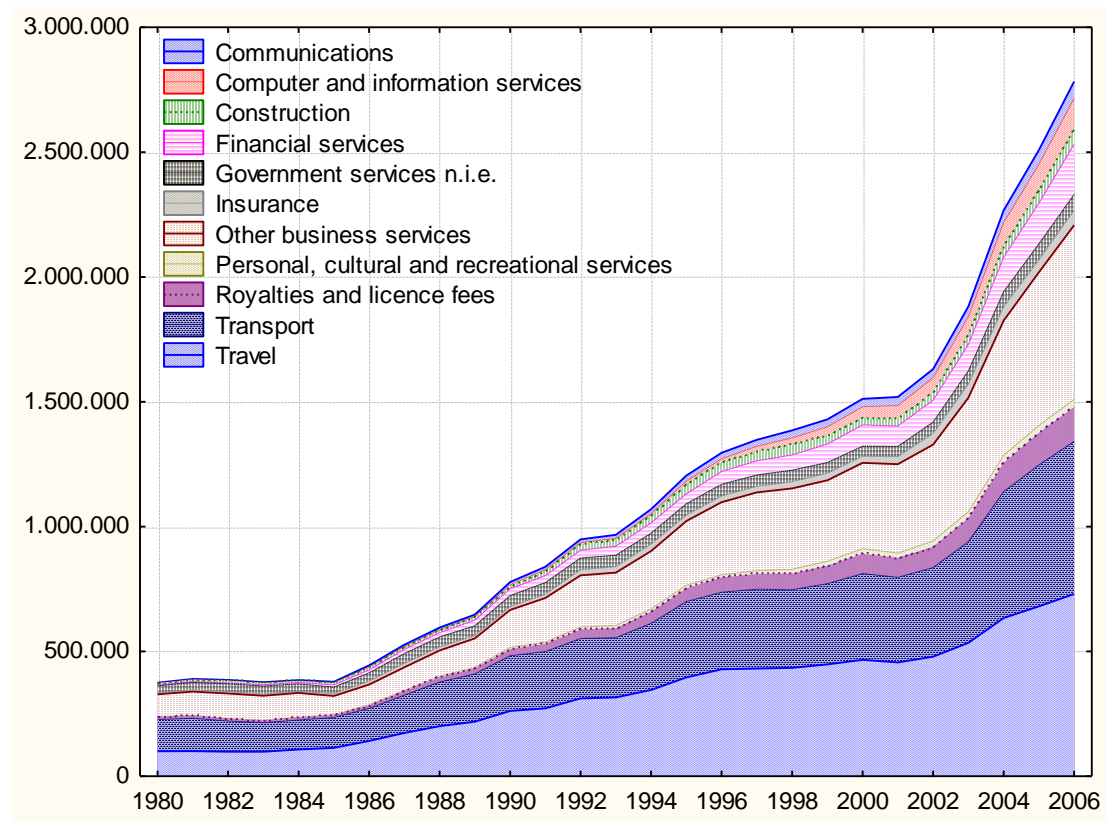
Notwithstanding all limitations, nowadays these three kinds of data, Trade, FDI and income from foreign affiliates, represent the field upon which stands most of the empirical analysis on the internationalisation of the service sector and the relations between its different modes. It is actually interesting to investigate what kind of relations these modes maintain. There is an ample literature on the relations between trade and investment in economics. Nevertheless, most of it regards trade and investment in the manufacturing sector. The complementarity and substitution relations maintained by these two ways of internationalisation are the main focus in literature since most companies face this doubt when attempting to attain foreign markets. One decision definitely influences the other. This discussion can be easily brought from micro to macro level. It is actually reasonable to think that international trade volumes have an influence on the flows of investment and vice versa. A commercial expansion, made through trade, of a sector in a foreign country represents the first “bridge” between the two economies, the commercial relations created can be the bases for possible future investments. At the same time, when several companies are set in a foreign country via FDI, their commercial relations with home headquarters and others national companies increase the levels of trade. Furthermore, it can be observed that if most of the corporations of a sector choose a particular way of internationalisation, this choice will definitely influences the actions of the rest of the sector. Improving knowledge on the behaviour and relations between the different modes of internationalisation in the service sector is the aim of this paper.

The path followed by the service sector on its way to internationalisation is not clear so far. Only a limited number of works focused on the functioning of the recently produced framework exposed above. In particular there is no consensus on the existence and the direction of the mutual influence the different modes can have on each others. The role of the different modes is not clear. The next sections propose two different research lines capable of spreading some light on the possible interaction between Mode 1 and Mode 3 of provision of services.

3.2 – Internationalisation, stylized facts

Services are moving quickly towards internationalisation. A fast look at some figures shows the extent of the process. During the first five years of the eighties the world trade of services followed a stable pattern of around 360 000 millions dollars of internationally traded services per year. That moment, the mid eighties, can be considered the turning point when services started to be global. As can be appreciated in Figure 3.2, the average growth rate of the export of commercial services between 1985 and the year 2000 was almost 10 per cent per year. Later on, service globalisation become even faster. From the beginnings of the century until the start of the current crisis, the latest data available, it showed a growth rate of almost 12 per cent per year on average. This escalation was leaded by different facts. From one side, several activities, which relevance in international markets was low until the nineties, started to be international: *Royalties and licence fees* or *Financial services* for example. These activities gain importance on the international scene during that period. Nevertheless, the fast growth patterns were leaded by the expansion of the most traded activities: *Transport*, *Travel* and *Other business services*. The latter category, which performs the fastest growth in the observed period, is composed by all those business-to-business activities used as inputs by services and manufacturing companies such as the various types of consulting, marketing and advertising or architectural and engineering activities, for example.

Figure 3.2 Evolution of services world trade 1980 – 2008. Millions of dollars



Source: UNCTAD

Another typology of data capable to give a helicopter view of the process of internationalisation is the stock of foreign investments in the sector. As it will be more extensively explained in the following sections, the stock of FDI of a country represents the value of the capital that national companies have invested in other markets. Roughly speaking, all investments that are necessary to open new international branches and divisions or to acquire already existing entities in foreign countries are recorded here. In this brief presentation we can consider it as a sort of barometer of the internationalisation not realized *via* trade. In the following paragraphs the concept will be deepened. Unfortunately, available data on FDI in service is not as complete as data on trade and long time series are not accessible. Table 3.1 presents an outlook of what FDI in services looks like for most OECD countries. Services represent the majority of the international investments realised. As it can be seen in the second column, most investments are realised in this sector. The magnitude of these investments is relevant even when compared with countries' GDPs, in the majority of the countries observed it represent more than 20 per cent of national gross product. In any case, the relevance of the sector is not only a matter of dimensions, the

growth patterns during the first years of the century is a double digit figure in almost all countries surveyed.

Table 3.1 Outward FDI stock in services, 2006

<i>country</i>	<i>service FDI</i>	<i>% of total FDI</i>	<i>% of GDP</i>	<i>agr 02-06</i>
United States	1.841.080	75	14	12
Japan	158.682	35	4	
Germany	767.052	80	26	11
United Kingdom	697.142	48	29	4
France	890.859	78	40	17
Italy	225.609	60	12	20*
Spain	352.344	85	29	
Korea	20.512	38	2	
Netherlands	427.502	56	65	17
Turkey	4.164	47	1	7
Sweden	179.822	68	47	
Switzerland	341.127	61	90	14
Poland	2.822	20	1	29*
Austria	74.890	71	23	18*
Greece	19.302	86	6	21*
Denmark	62.894	42	23	
Finland	20.071	21	10	7
Portugal	47.930	89	25	24

Source: OECD-Stat

*= annual growth rate 03-06

Two factors can be individuated as the main drivers of this extensive internationalisation process. From one side it has to be considered that during the period observed the world went through a tertiarisation process. The natural growth of some activities and the externalisation of others made services employ around 70 per cent of the labour force and produce approximately the same amount of GDP in developed countries. Since services became the dominating sector in employment and production, its international relevance is not surprising at all. From the other side it is interesting observing how service internationalisation was, at the same time, a main actor and a recipient of the world globalisation process. Thanks to great diffusion of the communications technologies, market liberalisations and to the efforts directed to the creation and implementation of international treaties, services became a leading character of the globalisation process. These activities took part in the process inactively, taking advantage from the international opening to get to new markets, as well as actively, directly supporting the internationalisation (Rubalcaba and Cuadrado, 2002). A good example of these two sides of

the coin is the financial sector. Higher levels of international integrations, due to new common rule for example, opened the doors to several entities to reach new markets; at the same time the presence of national financial companies in a market represented a support for business heading toward international expansion. The joint effect of the growing importance of the sector and the globalisation process contributed to the figures previously exposed.

Due to several reasons the internationalisation of the spanish service sector deserves the attention of researchers, policy makers and stakeholders. The high growth of international transaction experimented by these activities during the last decades and the increasing importance of the sector within the economy are reasons that underlines the necessity of implementing researches spreading light on the internationalisation mechanisms. The following paragraphs aim at approaching this process through an exploratory analysis of available data on IT and FDI. A picture of the situation of spanish services in relation with the international environment is therefore given.

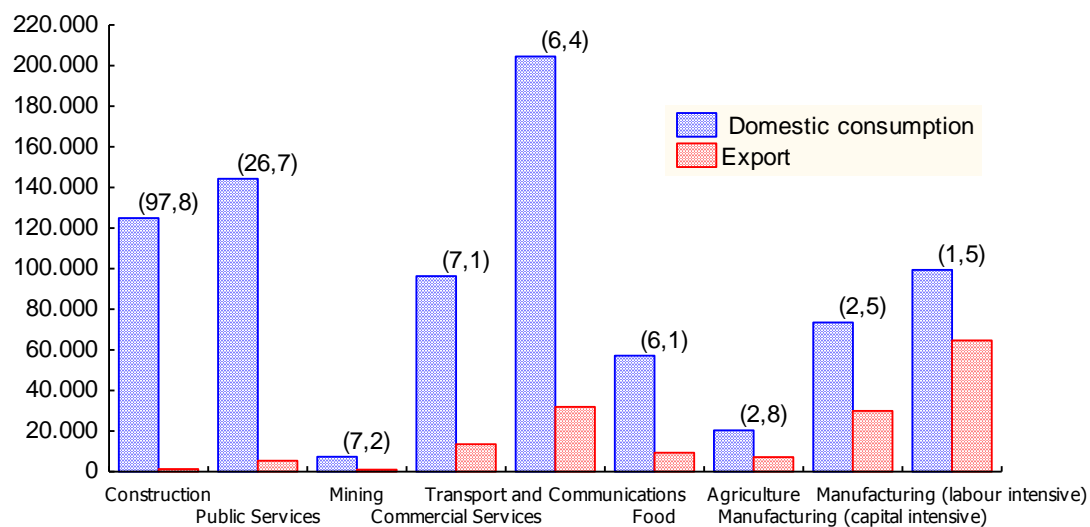
Data on IT are collected and elaborated by various institutions²². Nevertheless all of them apply to the same sourced, the information on transaction between residents and foreigners composing the Balance of Payments produced by the Banco de España (the spanish central bank). Data on the flows of international investments are collected by the *Registro de Inversiones Extranjeras* an office belonging to the Economic Ministry. Transactions are recorded here as FDI if the investment is realised with the intention of controlling or influencing the management of a foreign corporations or *viceversa*. This means that all investments with purely speculative purposes are excluded. Only the flow of investments aimed at acquiring stocks, assets or addressed at creating companies is recorded. The study of FDI can not be limited to the exploration of its flows, since the value of its stock is an indisputable source of information. Within this category are recorded the value of the properties belonging to foreigners in a determined country. These values correspond to the sum of the flows realised in the past corrected by their retirement and by the devaluation of the capital invested.

Figure 3.3 and Table 3.2 describe the international propensity of spanish services with respect to other activities. In Figure 3.3 the value added of the year 2001 of every sector is divided into the portion consumed by the national market and the portion exported. As it can be observed, the activities with the highest propensity to export are the ones belonging to the agriculture and manufacturing sectors. Their ratio between value added consumed

²² This chapter, for example, makes use of data proceeding from Eurostat, OECD Stat, World Bank and GTAP (Global Trade Analysis Project).

internally and consumed in foreign country goes from 1.5 to 3.8. Service commercial activities belong to an intermediate range, while public services and constructions are the closest sectors. Around 30 per cent of total goods produced in Spain are exported. The same figure regarding the tertiary sector is 8. The minor exporting propensity of service activities is evidenced by the figure.

Figure 3.3 International propensity of the spanish economy. Millions of dollars



Source: GTAP

Note: reference year 2001. Domestic consumption – export ratio in parenthesis

The situation of spanish stock of FDI is presented in Table 3.2. The first fact to notice is how the situation here is the opposite of the one presented in the previous paragraph. Service aggregate represent two thirds of total stock of FDI realised by national companies and its dynamism during the last years is higher. The financial sector presents the highest values invested in foreign markets and real estate activities present the highest growth rate between 2003 and 2006. There figures are not surprising if we take a minute to think about the greatest transactions realised during the last ten years. According to this first explorative analysis it seems that spanish economy choose different channels of internationalisation depending on the production activity: goods seems to prefer the IT channel while spanish services are more keen to cross borders through FDI operations.

Table 3.2 Stock of spanish FDI in services. Millions of Euros

<i>sector</i>	<i>2003</i>	<i>2006</i>	<i>% total</i>	<i>agr 03-06**</i>
Agriculture		475	0,2	
Mining	14.464	9.869	4,4	-9,6
Manufacturing	26.764 *	43.951	19,6	12,4
Energy	11.568	14.159	6,3	5,1
Contruction	1.517	7.740	3,5	40,7
Services	67.259	148.353	66,1	19,8
Trade	6.507	12.196	5,4	15,7
Travel and Tourism	2.190	4.265	1,9	16,7
Transport	3.153	11.684	5,2	32,8
Communication	16.526	33.319	14,8	17,5
Finacial services	36.268	64.280	28,6	14,3
Real estate	1.156	13.521	6,0	61,5
Business services	1.459	5.397	2,4	32,7
other services		3.691	1,6	
other sectors	2.865			
TOTAL	124.437	224.547		

Source: *Datainvex-Registro de Inversiones Extranteras*

*= do not include textile industries

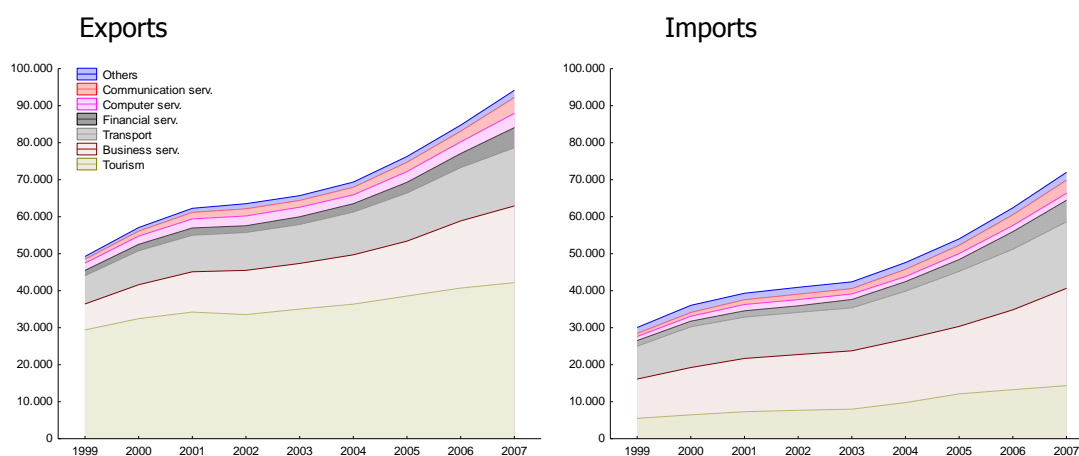
**= annual growth rate, percentages

Figures 3.4 and 3.5 represent the composition and the evolution of commercial and FDI flows since 1999. The higher volatility of the FDI flow with respect to the trade one is clearly put in evidence. As it was stated in previous paragraphs, investments can be interpreted as the intention of companies to create in a foreign country a production structure in order to supply the local market. This means that the volume of the investment can be considered as an index of the present value of the expected turnover for the middle-long run. Consequently, values relating to one specific year do reflect the most important actions taking place during that period. The flow corresponding to the years 2006 and 2007 can be taken as an example. During that period *Santander Central Hispano*, *BBVA* and *Mapfre* (three of the main spanish financial institutions) proceeded with the acquisition of *ABM Amro*, *Compass* and *Commerce* respectively. According to the historical figures in these fields, it can be stated that these operations involved very high volumes of capital invested. This can be clearly noted in Figure 3.4 observing the value of the flow of investment related to the financial sector.

Since or research is focused on middle-long run behaviours, in order to avoid bias due to this high volatility we decided to take into consideration in our analysis a moving average (MA) of the FDI flow. The figure corresponding to each year is calculated as the average of the flow of the previous five years. Analysing the MA of the spanish FDI flows in services it

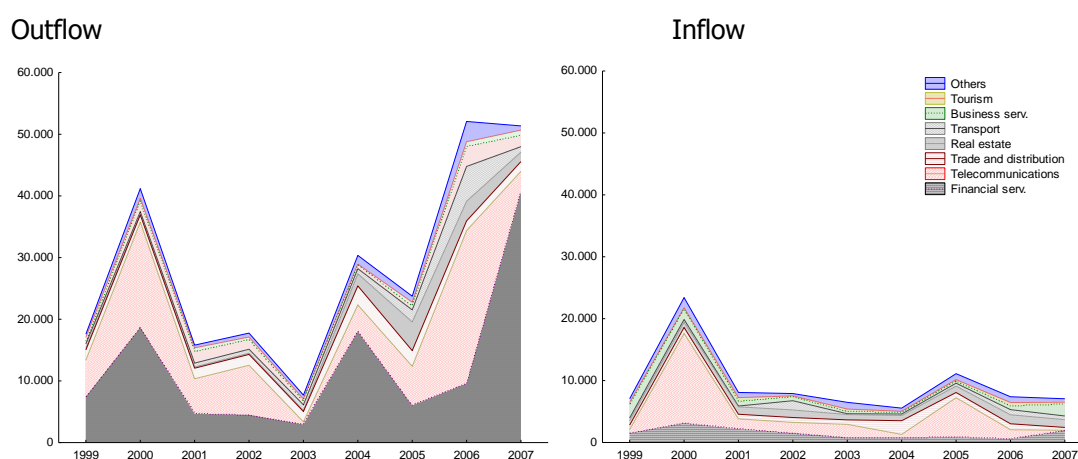
can be observed that it increased at an annual growth rate of 17 per cent between 1999 and 2007. The real estate sector presents the most dynamic annual growth: 34 per cent rate in the observed period. During the rest of the chapter the MA of the last 5 years is used as proxy for the spanish FDI in services. On the other side, also trade data show high annual growth rates. Between 1999 and 2007 service exports increased at around 8 per cent per year, while imports grew at 11 per cent. The figure representing growth rate of the tourism sector is around 5 per cent per year, while activities such as business services, transport or financial services expanded their exports at higher growth rates: 14, 9 and 17 per cent respectively.

Figure 3.4 Structure and evolution of spanish service trade, 1999 – 2007. Millions of Euros



Source: Eurostat

Figure 3.5 Structure and evolution of spanish FDI in services, 1999 – 2007. Millions of Euros



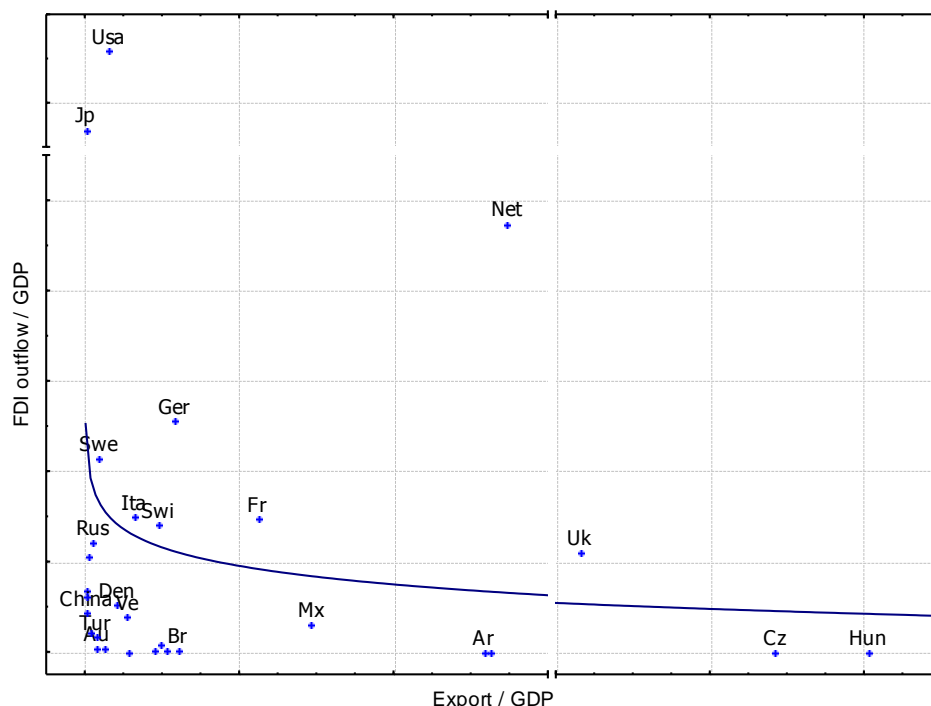
Source: *Datavex-Registro de Inversiones Extranjeras, Ministerio de Industria, Turismo y Comercio*

Figures 3.4 and 3.5 suggest interesting observations about flows composition. Service activities presenting high volumes of trade behave poorly in FDI and *viceversa*. Tourism, business services and transport account for around 90 per cent of service exports in 2007, while their combined relative weight within FDI during the same year is 7 per cent. The opposite occurs when observing FDI figures: financial services and telecommunications account for around 70 of FDI flows and only 7 per cent of IT. We can therefore present a preliminary conclusion on the relations between modes of service internationalisation which is valid, at least for the spanish case. A substitution effect between IT and FDI seems to apply when observing sector specific flows. Service activities crossing borders mainly through IT do not directly invest in foreign countries, while sectors presenting predilection for FDI are scarcely exporting.

It is now interesting to notice whether this substitution effects can be observed at under a geographical perspective at aggregate level. The aim here is to investigate the ways chosen by spanish services to approach different national markets. We therefore confront figures about service aggregate trade and FDI in different countries. Noticeably, there is a direct relation between the volume of the flows and the dimension of the economy, therefore we took into consideration volumes of IT and FDI weighted by the destination economy GDP. A clear trend can be observed in Figure 3.6: countries in which spanish service export present high figures do not receive relative high flows of investment and *viceversa*. It seems that when spanish service corporation decide to penetrate a market they also decide about the form in which this expansion has to take place, and only one way of internationalisation seems to be admitted.

Some preliminary conclusion can be drawn from this exploratory analysis on the behaviour of services, and spanish services in particular, when crossing national borders. Internationalisation through FDI seems to be the mode where the relevance of the service sector is higher. Around 80 per cent of the total amount of capital invested abroad relates to tertiary activities. We also came to the conclusion that certain activities within the service sector prefer to internationalise through trade (e.g. travel and transport) while others seems to opt for the direct investment way (e.g financial services and communications). Spanish services present a geographic attitude: they are keener to reach each foreign market through one specific mode of internationalisation.

Figure 3.6 Export and FDI outflows of spanish services relations, 2006



Sources: World Bank, OECD and *Datainvox-Registro de Inversiones Extranjeras, Ministerio de Industria, Turismo y Comercio*

3.3 – A survey of the literature on internationalisation and relationships between modes of provision

This section of the paper briefly presents theoretical and empirical developments on the relations between the different ways of internationalisation, paying particular attention to works focusing on the service sector. The presentation starts with an overlook on the theory on international trade and investment. The process of internationalisation intended as a combination of different ways finds its first theoretical foundations within the so called *new theories of international trade* shaped during the eighties. The well known works of Helpman (1984), Markusen (1984) and Helpman and Krugman (1985) among others, beyond explaining international trade, allow the presence of multinational companies which localisation is based on factors endowments. These are the first models leaving behind the limitations of the identity internationalisation-trade and approach the argument in a more complex way. They justify the presence of vertical FDI, this means investment realised to

produce goods and services for the national market in foreign countries, taking advantage of the difference in production costs.

During the nineties, the developments that followed were able to create a more complete theoretical framework where horizontal FDI as well as vertical were allowed. This kind of investment is realised with the firm's aim to be fully present in a new market: produce in the new country goods and services to be sold locally. Horstman and Markusen (1992), Brainard (1993) and Markusen and Venables (1998) reached this point, principally including transport costs, scale economies at company and plant level in their models. Trade and production overseas is seen in these models as two substitutive ways to reach the foreign customer.

What can be considered the current theoretical framework of the internationalisation processes finds its roots at the end of the past decade and is based on the so called *Knowledge-Capital models* (kk models). The idea that supports this thinking is the essential role played by companies' headquarters. These are actually considered in charge of a phase of the production, employing mainly high qualified labour force and presenting their particular scale economies. The role of the headquarters is to provide services to several production plants. It is the presence of the headquarters in the kk models that permits FDI to be horizontal as well as vertical while previous models only allowed one type of investment at a time. The decision of the company between the two kinds of investments is taken considering transport costs, fixed cost related with the creation of a branch and factors endowments. Among the main contributors to this framework it is worth to mention Markusen et al. (1996) Markusen and Maskus (1999a and 1999b) and Carr et al (2001). During the last ten years, the necessity to develop theories going beyond the relations between FDI and trade inspired new lines of thought. These new developments take into consideration different ways or modes of internationalisation. A complete survey on this argument can be found in Helpman (2006). Also in this case the theory predicts substitution between the different ways of internationalisation.

Theoretical developments prepared the field for the progress of empirical literature. Actually the aim of most of it is testing the strength of the theoretical concepts elaborated through the exploitation of available data. Therefore a consistent part of this literature is focused on the relationship between the different ways of internationalisation. In this sense, due to data availability, several works focused on the links between trade flows and FDI. It is interesting to note how, despite the fact that the theory mainly sustains the substitution between trade and foreign investment, most empirical literature argues for a complementary relationship between the two ways. In Forte (2004) a comprehensive survey of the empirical

work focused on the relation between trade and FDI can be found. In the following paragraphs we will highlight some key examples of pertinent contributions to this debate.

These works can be classified into two groups distinguishing on the level of the analysis. In the first group might be included all the articles which aim is to study the flows among countries or regions (macro level). The second group is composed by the works that consider the dichotomy between trade and investment as a decision to be taken at company level; therefore they study companies' behaviour (micro level). Evidently, the different approaches require different kind of data.

Studies of the first group generally relate data on trade and FDI flows with other macroeconomic data. The first work going in this direction is the article of Lipsey and Weiss (1981) showing how the activity of North American daughter companies in a foreign countries contribute the export to the same countries. This complementary performance is confirmed by the work of Grubert and Mutti (1991) on trade and proxies of FDI data. Nevertheless, trade and FDI tend to follow the same growth patterns as a consequence of the influence of other factors simultaneously affecting both variables. It is the case of the globalisation process or the country income, for example. The analysis of trade flows and business volumes of multinational firms carried on by Clausing (2000), controls for these variables. The outcome evidences the complementary relationship between these forms of internationalisation.

Contributions belonging to the second group make use of data describing companies' actions. Having as benchmark their already cited article of 1981, Lipsey and Weiss (1984) tested their results using firm level data. They verified that if a company has a branch in a foreign country, its exports to this country are proportional to the volume of activity of the local branch. A complementary relationship between trade and investments is supported by the results of Head and Ries (2001) as well in their study on the internationalisation of Japanese manufacturing firms. The article of Bloningen (2001) represents an essential work approaching the differences between theory and empirical results. The author argues that analysis on firm-aggregate data presents bias. Therefore he develops an analysis looking for substitution or complementarity based on product-level data. The analysis implemented on Japanese automobile parts for the U.S. market finds strong evidence of substitution. The decision between export and foreign production seems not to be taken at firm level but at product level.

The service sector only recently appears in the debate on the international provision. This delay is due to the late recognition of the sector as one of the main economic actors and to the difficulty in the collection of consistent data on international transactions.

Nevertheless the last ten years saw the rise of the attention on the argument. The implementation of models created to study the internationalisation of the manufacturing sector had been one of the first steps undertaken to investigate the particularities of the internationalisation of the tertiary. It is the case of works such as the one of Deardorff et al. (2000), Ansari and Ojemakinde (2003) and Mann (2004) among others. Van Welsum (2003b) presents a detailed survey on this kind of studies. Furthermore, it is worth to mention the work of Grunfeld and Moxnes (2003) and Mirza and Nicoletti (2004) among the most important contribution to the study of the service sector and its internationalisation patterns. Kimura and Hyun-Hoon (2004), Kox and Lejour (2005, 2007) and Walsh (2006) are valuable recent empirical contribution to the argument²³.

Reasonably, the internationalisation of the spanish service sector presents a limited literature exclusively focused on the field at aggregate level. Beyond the articles centring the attention simultaneously on good and services and beyond the articles focused on some sector specific activity there are some research fully centred on the internationalisation of the spanish tertiary sector. Di Meglio and Rubalcaba (2007) study international service trade and its effects on the trade balance. Cuadrado and Visintin (2008) approach the argument with a research on the role of FDI and its sectoral composition. Factors affecting international trade are the centre of the work by Rubalcaba and Maroto (2007). Their work evidences the importance of non cost related factors. On the same research line Visintin et al. (2008) study possible sources of competitiveness of spanish services.

The different modes of provision and their complementarity and substitution effects is the argument investigated in a limited group of works. The quoted contribution of Grunfeld and Moxnes (2003) was a pioneer in this direction. After analysing the behaviour of trade and FDI through a gravitational approach, they perform an analysis of the residuals which outcome confirms the complementarity effects thesis. Nicoletti et al. (2003) estimate a negative relation between an FDI restriction index and trade flows in the sector. This conclusion supports the complementarity hypothesis. Taking the latter work as benchmark, Lennon (2008) studies the relationship between Mode 1 and Mode 3 of USA services. The results achieved by the author support the thesis of a mutual positive influence between the two modes of provision. Pain and van Welsum (2004) implement an analysis breaking down the service aggregate into several tertiary activities. Using panel data on six different service activities in the United States they investigate the relation between foreign investment/

²³ In addition to the works treating the aggregate sector it is worth to be noted the existence of vast sector-specific literature dedicated to the internationalisation processes.

foreign production and trade. These authors find out that trade in certain activity go along with investment (complementarily) in some particular sector but not in all of them.

The advances in the literature exposed above give a clear idea on how open is the debate. It is still not clear if crossing borders through a particular mode endorses or deters the use of other modes of provision. The relationships between different modes represent still an open field of research with no abundance of empirical contribution. The recent availability of data is eventually making possible the applications of various kind of technique to the subject and its growing importance is attracting the attention of stakeholders and policymakers. Our paper takes advantage from this recent availability at world level and contributes to the debate on the complementarity or substitution effects between different modes of international provision of services.

3.4 – Methodology applied to the analysis on world data

The aim of this section is to present a methodological approach able to empirically investigate the relationship between different modes of international provision of services that will be applied to the database composed by 65 countries for the period 2000-2007. In particular the article focuses on Mode 1 and Mode 3, according to the GATS definition. The main purpose of the analysis is to establish whether there is a complementary or substitutive relationship between these two modes. A system of simultaneous equations created in a gravitational framework will be the tool implemented to this aim. Since clearing up all the dilemmas on the relationships goes beyond the extent of this paper, this analysis can be considered as a benchmark to be developed in future investigations. A similar approach will be followed to analyse the spanish database and presented in the following session.

In the previous section different works on the relationships between internationalisation ways were presented. In this article we decided to follow the line draw by those articles assuming a macro approach. There are two main reasons behind this choice. As it will be explained later, the analysis will be founded on the principles that the different ways by which services cross the borders influence each others. It is to say that we assume the quantities exported from country A to country B are not independent from the volumes of business maintained by the branches of firms from country A set in country B. Considering this mutual influence that affects macro variables, we maintain the so called autonomy requirement (Wooldrige, 2002, chapter 9), which is a necessary condition in order to implement a simultaneous approach. According to this requirement, the equations that will compose our model represent an underlying conditional expectation that has a causal

structure. If we choose to move the analysis at the micro level we would fail this requirement and could not implement a simultaneous analysis. Indeed the endogenous variables in the system would be all choice variables of the same economic unit. From the firm's decision between exporting and investing we cannot infer any causality because none of the two quantities is influenced by the other, since they are part of the same economic choice. In this case we could only estimate a variable trade off against the other. On the other hand, considering macro quantities we are able to construct structural equations from which infer causality. The investments realised in a country by national companies affect the export there, but are not part of the same economic decision. The investments made by a bank in a particular country, for example, have some bearing on the decisions whether to export or not of others banks or of different kind of firms in that particular country. Another reason to choose the macroeconomic approach is the recent availability of data that opened the door to this kind of analysis at world level. The available micro data on firms' behaviour are seldom specific enough to implement this sort of analysis and are hardly comparable at international level.

Mode 1 and Mode 3 of provision of services abroad and their mutual influence will be at the centre of this study. For the empirical analysis we make use of data on three variables: international bilateral trade (IT), FDI and income produced in foreign countries (INC) in the service sector²⁴. It is widely recognised that data on IT can be used as proxy for Mode 1 of provision and we will proceed in this line. Nevertheless some remark needs to be made. As already highlighted in the previous paragraphs, the data on trade cover those transactions made through Mode 1, 2 and partially Mode 4. Data on Mode 2 are given by the values of tourism services traded. Identifying and separating these values from the IT service aggregate would mean losing a large amount of information. Furthermore, there are no realistic estimates for Mode 4 of supply (Magdeleine and Maurer, 2008)²⁵. From now on we will refer uniquely to Mode 1, but it has to be taken into account that within this definition we include Mode 2 and, partially, Mode 4 of provision.

At the moment, there is not any available precise measure of Mode 3 of provision of services²⁶. In some works (Lennon, 2008, for example), it was represented by the volumes

²⁴ The definition of the aggregate service sector adopted by the main statistical institution is here applied: from NACE F to NACE U.

²⁵ An estimation of Australian supply of services in 2002-03 reported in this article shows that 63 per cent are provided via mode 3; 19 per cent through mode 2 and the remaining 18 per cent is trade via mode 1 and mode 4.

²⁶ In a previous work (Visintin, 2009) data on FDI are used as proxies for mode 3 of provision of services. The 5 years moving average of FDI flows was considered as a proxy of the expected returns on investments, and therefore of the volume of business carried on by national companies in foreign countries.

of business of foreign firms in a country. Unfortunately this data is available only for few cases like USA firms, which is a strong limitation when the aim is to analyse the global process of internationalisation. In order to proceed with an empirical analysis founded on data on a large range of countries, we decided to split Mode 3 of provision into two different dimensions. In our perspective, the first one can be considered as the "causal" dimension, since it is useful to measure the extent by which Mode 3 influences Mode 1 of supply. This dimension is represented by the data on the stock of FDI. The second dimension can be called "consequence" dimension and it is implied in the determination of the impact of Mode 1 on Mode 3. This dimension is embodied by the data on the INC. In fact, for each country, the data on the income produced in foreign countries is representative of the volume of business effectively realised there by national companies. It is a proxy of the services provided by a branch or daughter companies, or by acquired firms.

The basic idea behind the model is that the three quantities considered influence each other. Therefore, studying this mutual influence we will be able to infer awareness about the relation between Mode 1 and Mode 3 of international provision of services. Creating a system of equations that takes advantage from the information on IT, INC and FDI means using the best information available in order to give a complete picture of the internationalisation process of the sector and understand if there is mutual influence between Mode 1 and Mode 3.

Empirical studies of international economics found in the gravitational equation an important tool, capable of spreading some light on the relations between countries or regions. Since their first formulation by Tinbergen (1962), the models based on this equation (gravity models) had been widely employed to describe trade, as well as FDI behaviour. Their name derives from the fact that they relate flows (mainly trade and FDI) with different economic variables similarly to the gravitational equation. The analysed flows are supposed to be positively related with the product of the economic masses of the countries (GDPs are used as proxy in this sense) and negatively related with the distance between them. Their high explicative power impelled the research on their theoretical foundations. Their existence is justified in the theoretical models developed by Anderson (1979), Helpman and Krugman (1985) and Helpman et al. (2007), among others. It is not in the intention of this paper to reply here their neoclassical mathematical underpinning, since it can be found in several works. It is anyway worth to mention that most of the derivations are centred on demand functions where the consumer maximises his utility function facing his budget constraint and choosing between national and imported products on the bases of international prices. For what concerns their estimation, there is an intense debate on the different techniques that

can be applied to gravity models. Gómez and Milgram (2009), for example, is a recent paper presenting an overview of this debate.

The model had been widely used to empirically estimate trade in services, and its capacity was also demonstrated when modelling investments flows and stock. Grunfeld and Moxnes (2003), Kox and Lejour (2005) and Walsh (2006) are some examples of the application of these models to the internationalisation of the tertiary sector. In some cases gravity models have been included in simultaneous equation systems. A system of simultaneous gravity equation was elaborated to study the reciprocal influence between bilateral trade in goods and asset holdings by Aviat and Coeurdacier (2006).

In this empirical analysis three equations are used to describe the analysed variables: bilateral service trade, bilateral FDI stock and bilateral INC in the sector. In the gravity equation describing the behaviour of IT, FDI is considered as a factor. The way by which IT is influenced by FDI can be interpreted as the effect of Mode 3 on Mode 1 of provision. Simultaneously, in the gravity equation describing FDI, IT acts as a factor. The mutual influence between trade and FDI represents only partially the relationship between the different modes of provision of services. A third equation closes the circle describing the behaviour of INC. Both IT and FDI are considered variables having an effect on INC.

This allows us to study the influence each variable has on the other, controlling for the effect of factors contemporary affecting the considered quantities. A priori, their relationship is ambiguous. As it has been previously explained, it is reasonable to assume that the actual value of the investment realised in the past in country B from country A's firms (the stock of FDI) has a direct influence on the present export from A to B. If these investment were horizontal this influence is negative, since there could exist a substitution effect. From the other side, the relationships established could have "opened the door" to further commercial relations and, therefore, has a positive influence on trade. From the other side, it can be noted how international trade can have a positive impact on FDI, due to the "opening the door" factor, as well as negative, since trade can be a substitute for investment. Thirdly, we expect a positive effect of FDI on INC, since the volume of business carried on is proportional to the investment realised in the past. At the same time we have no expectations and therefore aim at inferring information about the impact that export has on the income generated in foreign countries, once the effect of other variables is controlled.

Therefore we can assume that the three variables observed exert a simultaneous reciprocal influence. In this framework we have to elaborate a system capable to capture all these effects at the same time. Considering each effect singularly would lead to misleading results. A system of three simultaneous equations based on the gravity framework was

elaborated. The identification strategy that covers all the relations at the centre of the study is as follows:

$$\ln IT_{ijt} = \alpha_1 + \beta_1 \ln GRAV_{ijt} + \gamma_1 \ln Z_{ijt}^{IT} + \delta_1 \ln FDI_{ijt} + v_{ijt} \quad [3.1]$$

$$\ln INC_{ijt} = \alpha_3 + \varphi \ln IT_{ijt} + \lambda \ln FDI_{ijt} + \varepsilon_{ijt} \quad [3.2]$$

$$\ln FDI_{ijt} = \alpha_2 + \beta_2 \ln GRAV_{ijt} + \gamma_2 \ln Z_{ijt}^{FDI} + \delta_2 \ln IT_{ijt} + v_{ijt} \quad [3.3]$$

IT_{ijt} represents the flow of export of services from country i to country j in year t (OECD data). FDI_{ijt} is the stock of foreign direct investment of companies of country i maintained in country j in the year t (EUROSTAT data). INC_{ijt} is the variable corresponding to the income produced during the year t in country j by firms which headquarter is located in country i (EUROSTAT data). Due to data availability the list of countries i and j is not symmetric. In Appendix A can be found the full lists of the 36 countries considered as *exporters/owner of the commercial presence* and of the 65 states considered as *importers/consumers of the foreign commercial presence*. The range of countries considered covers the whole world. Although the availability of data gives more weight to the European and OECD countries, it has to be noted that all the main emerging economies²⁷ several South American countries and some African economies are considered, at least within the second group. The fact that the OECD and, more in general, the so called developed countries present an higher weight within the database is not misleading, since they represent the vast majority of the international exchanges in the service sector. We used data from the period 2000 – 2007. Unfortunately not all the variables presented data for the whole period and in some cases shorter time intervals are studied.

$GRAV_{ijt}$ is a vector of gravity variables included in all the equations. Under the definition of gravity variable we include the usual variables comprised in this kind of models,

²⁷ We refer here to the BRIC economies (Brazil, Russia, India and China) as well as to the Asian emerging economies (South Korea, Singapore or Taiwan, for example). See Appendix A for details.

the GDP of country i and j , and the distance between the two countries. The distance is approximated by the physical distance ($dist$) between the two capitals of the two countries and represents the costs to provide the service. We also augmented the model with some additional variable that have been demonstrated to influence the flows considered. Consequently we introduced a dummy variable which is equal to one when the two countries share the same language ($lang$), a dummy variable showing when the two country have a common border (adj), a dummy variable indicating if the couple of countries are both part of the European Union (eu) and two variables indicating the productivity of the considered economies ($prod$). The latter measure, provided by OECD, is composed by data on the productivity of the labour force in the commercial service sector, all the tertiary activities not provided by public institutions. In this model the index of the productivity does not account exclusively for the extent at which the country is capable to take advantage from its human resources, it can be also considered as a measure of the technology development and of the income levels in different countries²⁸.

$$GRAV_{ij} = \begin{pmatrix} GDP_i \\ GDP_j \\ dist_{ij} \\ lang_{ij} \\ adj_{ij} \\ eu_{ij} \\ prod_i \\ prod_j \end{pmatrix}$$

Finally, Z^{IT} and Z^{FDI} are vectors composed by several variables that affect uniquely IT and FDI respectively. For what concerns Z^{IT} , an index of corruption of the importer country is included ($corr$)²⁹. Most services are activities often regulated by national and local laws and rules. The financial system, health or transport services are few examples of activities where the private operator has to deal with national and local red tape. The clearer is this institutional framework the easier is for an operator to work in a foreign country. Vice

²⁸ Actually multicollinearity problems arise when introducing measures of the income levels, such as the GDP per capita.

²⁹ The Corruption Perception Index employed in this analysis had been elaborated by the organisation Transparency International. It is an indicator between 0 (maximum corruption) and 10 (minimum corruption).

versa, the more difficult is the ensemble of regulations to understand the harder will be for foreign operators penetrate the market. In this line, it is reasonable to think that the higher is the level of corruption in a country the tougher is the work for international companies to be present in that market.

$$Z_{ij}^{IT} = \begin{pmatrix} corr_j \\ RER_{ij}^{ULC} \\ RERHET_{ij}^{ULC} \\ prodHET_{ij} \end{pmatrix}$$

The RER_{ij}^{ULC} variable is the real exchange rate based on unit labour cost. It is an index of the labour competitiveness of the service sector of a country. Among the various competitiveness index proposed in the literature, there is a general tendency to consider the real exchange rates (RER) as range of indicators that better fits the concept of cost related competitiveness. In their benchmark paper, Turner and Van't dack (1993) conclude that the real exchange rate based on unit labour costs seems to be the most useful proxy for competitiveness since it assesses developments in profitability of production when labour is the main input required. These results were confirmed in following works, among which Carlin et al. (2001) deserve to be mentioned. The significance of this index in the internationalisation of the service sector was confirmed by Maroto et al. (2008) when analysing the commercial performance of European countries, and by Visintin et al. (2008) for the Spanish case. This real exchange rate between country i and j is calculated as the nominal exchange rate e times the ratio of the countries' unit labour cost (ULC). The latter is a widely used measure of the competitiveness of countries and/or sectors and it represents the relation between the cost of the labour factor and its productivity. In the following equations LPH represents the labour compensation per hour of the labour force; VA is the value added; Emp stays for the employment and H is the number of hour worked per person by the labour force.

$$RER_{ij}^{ULC} = e * \frac{ULC_i}{ULC_j} \qquad ULC = \frac{LPH}{\left(\frac{VA}{Emp * H} \right)}$$

Beyond the *RER* index, we decided to include another index based on this indicator. We created a heterogeneity index measuring the difference in the real exchange rate based on unit labour cost between the two different countries (*RERHET*). Furthermore a productivity heterogeneity index was elaborated and applied (*prodHET*). The idea at the base of the inclusion of the latter variables is that countries trade more with other countries with similar characteristics.

Z^{FDI} is composed by eight indexes of regulation regarding the j country, the country that received the investment (from $reg1_j$ to $reg8_j$). The idea behind this inclusion is that setting up in a foreign country means facing unknown legal frameworks, the highest is the level of regulation the more costly should be the process. The measures are obtained by the well known *Doing Business* report by the World Bank. Among the several indexes elaborated within this report we selected a group directly affecting the establishment and implementation of a daughter company in a foreign country. It is the case of several indexes affecting the organisation and start-up of a business (such as the *days to start a business* index or the *difficulty of hiring index*), and several measures of the level of regulation in fields related to the implementation of a business (e.g. *rigidity of employment index* or *credit information index*). The complete list of the regulation indexes employed can be found in Appendix B of the present paper. The level of these regulations is assumed to affect directly the provision of services through Mode 3, but not the provision via international trade.

$$Z_{ij}^{FDI} = \begin{pmatrix} reg1_j \\ reg2_j \\ \dots \\ reg8_j \end{pmatrix}$$

The presence of the variables composing the vectors Z^{IT} and Z^{FDI} fulfils theoretical justifications. Beyond this reason, they had been selected because their high correlation with the endogenous variable of the equation where they appear, *IT* and *FDI* respectively, and their low correlation with the others exogenous variables. This orthogonality is of great importance when considering estimation techniques.

Equations [3.1], [3.2] and [3.3] are considered as a system of simultaneous equations since they represent the simultaneous effects the variables have on each others. Accordingly to what previously exposed, none of the three dependent variables acts independently from the others and independently from the variables simultaneously affecting the three

quantities. A system of simultaneous equations can therefore be considered the best way to infer information from the available data since it takes into consideration the mutual interactions while estimating each equation separately would lead to biased estimators due to endogeneity problems.

There are several estimations techniques that take into account this simultaneity and correct, therefore, endogeneity. To proceed with the estimation, first of all we have to notice how the system of equations composed by [3.1], [3.2] and [3.3] satisfies rank, as well as order condition. Once we checked these conditions the system can be estimated. A closer look at the system shows how equation [3.2] is independent. It means that while FDI and IT has an effect on INC while the vice versa does not apply. This drives to no endogeneity problems while using panel estimations techniques. Consequently this equation can be estimated separately. Equations [3.1] and [3.3] compose a system with potential endogeneity problems that can be solved since it satisfies rank and order conditions.

Equation [3.2] relates the income produced by the foreign affiliates of national companies with the past behaviour of these companies, represented by *FDI*. We expect to find out a significant and positive relation, since it is reasonable to think that the more is the actual value of the investment, the greater is the expected flows of income. The significance and the sign of the coefficient of the *IT* will describe the relation between Mode 1 and Mode 3 of provision of services. As it was specified at the beginning of this section, this paper can be considered as a first step in the acquisition of knowledge on the subject. The specification of equation [3.2] represents a first attempt to model INC and should be developed and theoretically supported in further investigations.

In order to achieve the aim of this paper, investigating the mutual relationship between Mode 1 and Mode 3, we are interested in estimating equation [3.1] and equation [3.2]. The elasticity of IT with respect to FDI will show what kind of influence Mode 3 has on Mode 1, while the coefficient of IT in the third equation will be an indicator of the effect that trade has on the commercial presence. Equation [3.3] can be considered as structural, therefore the results of its estimation can be considered of minor importance and are reported in the Appendix C.

Simultaneous equations estimations techniques rely on instrumental variables. Actually, these techniques correct endogeneity problems substituting endogenous variable with instrument variables. A good instrument is characterised by the fact that it is strongly correlated with the instrumented variable and weakly correlated with the rest of endogenous variable included in the system. We would need instruments for the variable FDI in equation

[3.1] and instruments for the variable IT in equation [3.3]. We decided to use vector Z^{FDI} ³⁰ as a vector of instruments for the former and the variables included within Z^{IT} as instruments for the latter, since they presented the aspired characteristics. When instrumental variable are used, the results strongly depends on the choice of the instruments. In order to show that the selected instruments are suitable instruments we present the result of the underidentification, weak identification, overidentification and endogeneity test are presented. The regressions of the instruments on the instrumented variables are also presented in Appendix D. The results of the F-tests validate the suitability of the instruments.

There exist different estimations techniques that deal with simultaneous equations systems. In this work we make use of three of them which belong to the group of so called *limited information techniques*. This name was given after the fact that the equations of the system are not estimated at the same time, but one after the other. Several works in literatures rely on this kind of techniques. The *two stages least square* method (2SLS) is among the most popular technique of simultaneous equations estimation. The purpose of this methodology is to obtain a predicted value of the endogenous regressor (FDI and IT in this case) from the instruments (first stage), and then apply the obtained values to estimate the coefficients in the equation.

Nevertheless this technique presents relevant limitations when applied to a system of gravitational equations with the intention of estimating panel data. Two different kinds of problems arise. First, it does not take into account the relations deriving from the panel structure of the data. Not accounting for individual (pairs of countries) and time differences could lead to endogeneity problems and, therefore, biased estimators. Secondly, it is widely acknowledged that gravity models present heteroskedasticity. These estimations are not consistent in this case.

The limited information maximum likelihood (LIML) is an estimator capable of dealing with clusters. It takes into consideration individual effects and has the same asymptotic properties of 2SLS. There exist another estimator capable to control for the endogeneity derived from the repetition of the same individual and that allows for heteroskedasticity and autocorrelation. It can be found under different names in the literature, Green (2005), for example, calls it heteroscedastic two-stage least square (H2SLS). It is basically a general method of moment estimator in two stages. It is consistent in presence of cluster and heteroskedasticity.

³⁰ The relevant influence of regulation on FDI stock is highlighted in Nordas and Kox (2009).

As it was stated, although it is part of the system, equation [3.2] is autonomous and is therefore estimated separately. Due to the nature of the data, panel data techniques were chosen as the most suitable in the present work. Since our model cases are composed by country pairs, we can expect that a series of fixed effects case-specific applies. For this reason the fixed effects estimators should be chosen as the most reliable. Nevertheless the results of the estimation using the fixed effects and the random effects estimators are presented. The results of the Hausman-Taylor test are also presented in order to verify which should be the most suitable estimator.

3.5 – Methodology applied to the analysis on spanish data

In this section we propose an alternative methodology aimed at analysing potential complementarities and substitution effects in the internationalisation of the spanish service sector. The econometric analysis is in line with the methodology presented in the previous section, the same approach and principle are respected. Since the methodological approach to data is the same, we don not feel the need to reply it in this section. We redirect the reader to the consideration exposed above about gravity models and estimations techniques suiting simultaneous equations models. We will present here a new system of equations designed to deal with spanish data and display the differences between this system and the one presented in the previous section.

The main difference of this approach consists in a simplification of the model presented. In fact IT and FDI are here modelled thorough a two equations system. We assume here that Mode 3 of international provision is fully proxied by a MA of the flows of FDI. Nevertheless the structure of the equations included in the system remains unvaried. IT and FDI are modelled through augmented gravity models. As it will be seen none of the two equations considered here is autonomous and therefore none will be estimated separately. On the same line of the methodology exposed above, the aim of this section is to draw an econometric model capable to investigate the effects that Mode 1 has on Mode 3 of provision of services, and *viceversa*, controlling for different variables. This means that we aim at isolating the effects produced by other factors influencing contemporaneously Mode 1 and Mode 3.

The dataset exploited is composed by data on IT and FDI occurred between companies resident in Spain and foreign partners³¹. In order to obtain a balanced panel of

³¹ Gravity models usually take into consideration all the possible couple of countries of a determined group. Since Spain is the main focus of this section we consider exclusively its international relations.

data, we consider the largest number of available partners for which official data had been published for the period 1999-2006. The resulting group is composed by 31 countries comprehending developed economies, and developing ones from the five continents³². Export data were collected by the OECD Stat, while the source of the FDI data is the already cited database *Datainvox*. As stated above, in order to filter the high volatility of investment flow data, for each year we take into consideration the average of the flows registered that year and the previous four. We constructed therefore a database in which each figure is the average of five years flows. This value can be considered a proxy of the business volume produced abroad by spanish companies operating in foreign countries. IT data will proxy Mode 1 of provision of services while FDI data will proxy Mode 3.

As it happened in the previous section, the gravity equations had been augmented in order to include variables affecting the considered flows. *GDP per capita* is an index of the development of a country. The openness of an economy to international relations is often related with its development. A trade preferential agreement, such as belonging to the European Union (*eu*) is a factor influencing trade and FDI. In order to capture this effect we introduce a dummy variable of value one when the partner country is part of the EU or, alternatively, the European Monetary Union (*emu*). Doubtlessly, sharing a common language is a factor contributing to the enforcement of bilateral relations. We have discussed how important is in service activities the relation maintained by client and provider. Sharing the same language is therefore a factor to be taken into consideration. In the case of Spain this strategic feature seems to be of high relevance since it shares the same language with most south American countries (Jimenez and Narbona, 2008).

Beyond the variables influencing contemporaneously IT and FDI, we consider other factors affecting exclusively one of the flows. We considered the real exchange rate (*rer*) of Spain. Since service specific data were not available we calculated the *rer* on the basis of total consumption data³³. Corruption of economic actors can be also considered as a barrier to international trade. The highest is the level of corruption the highest the barriers to the market, especially in high regulated sectors such as several services activities. The same index elaborated by *Transparency International* cited above was here included within the equation describing trade patterns. Some variable measuring regulations levels were included in the FDI equation. These indexes measure the level of regulations encountered

³² Argentina, Australia, Brazil, Canada, Chile, China, Colombia, Czech Republic, Denmark, Egypt, France, Germany, Honk Kong, Hungary, Ireland, Israel, Italy, Japan, Mexico, Morocco, Netherlands, Norway, Poland, Russia, Singapore, Sweden, Switzerland, Turkey, United Kingdom, United States and Venezuela.

³³ World Bank data.

in: the use of inputs (labour force mainly) and the cost of terminating a business. Pica and Rodriguez (2005) and Kox and Lejour (2005) demonstrate how it is not the value of regulation levels that hampers international trade, but that the real barrier is the value of the difference in regulations levels between countries. In line with the latest work, we elaborated heterogeneity indexes of regulation having as benchmark Spain and confronting its level of regulation with its partner countries ones. The indexes were computed on the basis of the *Doing Business* database by World Bank. These data are available for the period 2004-2006.

Taking into consideration all the aspects exposed above, the two equations composing the models are:

$$\ln(X)_{it} = \alpha + \beta \ln GRAV_{it} + \gamma \ln Z_{it}^X + \delta \ln(FDI)_{it} + v_{it} \quad [3.4]$$

$$\ln(FDI)_{it} = \alpha + \beta \ln GRAV_{it} + \gamma \ln Z_{it}^{FDI} + \delta \ln(X)_{it} + u_{it} \quad [3.5]$$

Where $GRAV_{it}$ is the vector of the gravitational variables defines as:

$$GRAV_{ij} = \begin{pmatrix} GDP_j \\ dist_{ij} \\ lang_{ij} \\ eu_j \end{pmatrix}$$

As seen in the previous section Z^X and Z^{FDI} are two vectors composed by the export and FDI specific variables respectively. These variables were included within the model due to their high correlation with the endogenous variable and their poor correlation with the exogenous one. As explained in the previous paragraph, this orthogonality is of fundamental importance in the model estimation. Error terms are composed by two components, a country specific effect, constant in time, and a component not related with time.

3.6 – Results

This section presents the results of the estimations described in sections 3.4 and 3.5. The section begins with the presentation of the results relative to the world data analysis and continues with the spanish case. For what concerning the test at world level, as anticipated the outcome of different estimations techniques applied to equations [3.1] and

[3.2] are displayed here, while the results corresponding to the estimation of the equation (3) can be found in the Appendix C. The aim is to focus on the two effects investigated: the influence of Mode 1 on Mode 3 of provision of services and *viceversa*.

Table 3.3 Instrumental variable estimation of a gravity model for the stock of international trade (exports) in the service sector; equation [3.1]

dep:IT	2SLS	LIML	H2SLS
<i>FDI</i>	.169***	.176***	.152***
<i>gdp i</i>	.488***	.480***	.501***
<i>gdp j</i>	.689***	.684***	.705***
<i>dist</i>	-.609***	-.603***	-.650***
<i>lang</i>	.760***	.746**	.739**
<i>adj</i>	.218*	.215	.154
<i>eu</i>	-.213*	-.215	-.271
<i>prod i</i>	-.017	-.032	-.009
<i>prod j</i>	.218*	.226	.214
<i>rer</i>	.003	.003	.014
<i>corr</i>	.493***	.483**	.501**
<i>prodhet</i>	-.016	-.014	-.025
<i>rerhet</i>	-.001	-.001	-.011
<i>underidentification (p-value)</i>	.000	.001	.001
<i>weak identification (F stat)</i>	8.066	5.380	5.380
<i>overidentification (p-value)</i>	.089	.339	.337
<i>number of observations</i>	412	412	412

Note: 2SLS, two-stages least squares; LIML, Limited information maximum likelihood; H2SLS, heteroscedastic two-stage least square. * significant at 10%; ** significant at 5%; *** significant at 1%

Table 3.3 shows the results of different estimations of equation [3.1]. The gravity framework allows controlling for the influence of other variables affecting the export of services and for the variables simultaneously affecting exports and investments realised abroad. The three methods applied are consistent with each others on the effect that the stock of foreign direct investment realised overseas have on the export of services to the same countries: there is a significative and positive influence. The elasticity of the log of the export of services with respect to the log of the stock of FDI is around 0.16. This means that, at aggregate levels, the more the companies of the service sector of one country are set in a second country, the more they export there, *ceteris paribus*. In other words, the more Mode 3 is used to provide services from one country to another, the more increases

the supply via Mode 1. It has to be noted that we can not infer a causality relation from this kind of analysis. Nevertheless it is a valuable result demonstrate the existence of a positive relation between the two modes of international supply.

The tests presented support the outcome of the analysis. The *underidentification* test is a LM test of whether the equation is identified. The null hypothesis is that the excluded instruments are not correlated with the endogenous regressor (*FDI* in this case). We can reject this null hypothesis at 1 per cent significance level. The *weak identification* test is useful to detect problems that can arise when instruments are “weak”. This happens when the instruments are correlated with the endogenous regressor, but only weakly. In the worst of these cases the regressor could be as biased as the OLS regressor. There is general accordance to accept a “rule of thumb” of 10 in the Cragg-Donald Wals statistic. The reported values do not reach that benchmark, nevertheless the critical values elaborated by Stock and Yogo (2005) permit to understand that the regressor presents always (at least) less than 20 per cent of the OLS bias. Finally the *overidentification* test is reported in order to demonstrate that the excluded instruments are distributed independently of the error process. The results of the p-value of the Sargan and Hansen J. statistics do not permit to reject the null hypothesis that the instruments are valid instruments.

Table 3.4 Estimation of the model describing the behaviour of Incomes produced in foreign countries in the service sector; equation [3.2]

dep: <i>INC</i>	<i>FE</i>	<i>RE</i>
<i>IT</i>	.323***	.355***
<i>FDI</i>	.539***	.583***
hausman test	chi2(2)= 2.10 ; prob .350	
number of observations	882	882

Note: * significant at 10%; ** significant at 5%; *** significant at 1%

The estimations presented in Table 3.4 show how the income produced by foreign affiliates of national companies clearly depends on the investment realised in the past and on the present value of the exports realised in the same country. The former result was reasonably expected. The higher is the value of the investment realised, the higher should be its return. From the perspective analysed in the present paper, the most important result is the coefficient of the (logarithm) of the *IT* variable. It is clearly positive and highly significative. According to econometric theory, the fixed effect estimators should be the most

appropriate. The cases analysed are country pairs and it is reasonable to assume that several pair characteristics are taken into account by this estimator. Actually the Hausman test confirms this hypothesis. Nevertheless it has to be noted that the estimated coefficients are similar in both cases. We can therefore affirm that the income produced by foreign affiliates in a particular country is positively affected by the volumes of exports realised in that country, in the service sector. In other words we can affirm that there is a positive relation between Mode 1 of international provision of services and Mode 3.

As it was stated in the previous session, the equation modelling the behaviour of the income generated by foreign affiliates applied here represents a first approximation to the subject and will need further theoretical developments backing it up. For this reason it is not helpful to interpret the magnitude of the coefficient obtained. Nonetheless its consistency and sign are useful indicators of the underlying relation. Finally, although from these analyses we are not allowed to infer causality relations, it results clear that Mode 1 and Mode 3 of international provision of services are positively related. The present empirical study affirms that there are evidences of complementarity between these two modes of supply.

For what concerns the analysis carried on the spanish case, the results of the estimations of the system are presented in Table 3.5. The first observation to be made regards the values of different endogeneity tests implemented. We aimed at assuring the endogeneity of the independent variable and the validity of the instruments. FDI is not endogenous in equation [3.4], which means that investments are not determined by IT when they are considered as a factor influencing IT. From the other side, it can be observed how IT is endogenous in equation [3.5]. Furthermore instruments used in this case are appropriate³⁴. FDI realised by spanish firms in a determined country are positively affected by the volumes of export directed to that country. Service sector aggregates show complementarity between IT and FDI.

As for the case of the world data, these results represent just a first approach to the study of mutual influence between modes of international provision of services. Nevertheless some useful indications can be drawn. First, FDI of spanish companies do not seem to represent a boost for services exports. This is not surprising when considering the spanish case. As it was exposed in previous sections, spanish tertiary exports are leaded by the tourism sector. This activity is internationally trade through Mode 2. Therefore in this case FDI realised above do not have the potential influence (made mainly of relation building) that can have

³⁴ Instruments are valid, uncorrelated with the error term and the potential instruments, instruments are correctly chosen among potential ones.

on Mode 1 transaction. Further research should be able to split Mode 1 and Mode 2 data to avoid this bias.

Table 3.5 - Instrumental variable estimation of gravity models for IT (exports) and FDI realised in the spanish service sector; equations [3.4] and [3.5]

Dependent variable	2SLS		LIML		H2SLS	
	X	FDI	X	FDI	X	FDI
<i>Independent variable</i>						
X		2,345**		2,352***		2,287***
FDI	,078		-,181		-,178	
GDP	,952***	-1,054	1,044***	-1,056	1,049***	-1,070
GDP per cap.	,302	-1,230	,313	-1,232	,430**	-1,020*
dist.	-1,24***	1,422	-1,377***	1,425	-1,529***	1,787*
lang.	2,953***	-1,673	3,466***	-1,677	3,707***	-1,707
eu / emu	,425	-,554	,446	-,555	,020	,975**
corruption	,803*		,886**		,923**	
rer	,081		,101		,107*	
productivity		,294		,294		
Lab. Market reg.		-,161		-,161		-,184**
termin. busin. reg.		-,419		-,420***		-,394***
<i>n. of observ</i>	92	92	92	92	92	92
<i>Endogeneity test (p-value)</i>	(p- 0,123	0,007	0,314	0,048	0,302	0,042
<i>overidentification test (p-value)</i>	0,083	0,943	0,257	0,925	0,147	0,828
<i>underidentification test (p-value)</i>	(p- 0,002	0,073	0,212	0,027	0,081	0,039

Note: * significant at 10%; ** significant at 5%; *** significant at 1%

We evidenced how IT (export in particular) is a determinant of FDI for the spanish case. If we consider to aggregate os spanish tertiary activities we can observe an evident complementarity between these two flows. The more firms export to one particular market, *ceteris paribus*, the more they invest in it. This means that trading with one country opens the doors to other kind of relations. We can state that also in the spanish case, trade partners share information and this flow of information contributes to the implementation of investments. This complementarity observed at aggregate level could hide other kind of complementarity at sectoral level. We have seen how some services cross borders mainly through IT while others prefer to set up their business in other countries. Presumably these service categories maintain a relation during this process. Another line of research is opened here.

3.7 – Conclusions

During the last 20 years, the volume of services activities crossing national borders increased steadily. We have seen how this is true when observing world as well as spanish specific data. Their internationalisation process presents different patterns when compared with the good one. In particular, the relation between distinct modes of internationalisation seems to be different³⁵. Their intangibility and simultaneity characteristics give to service firms different internationalisation possibilities. This chapter presented the situation of the aggregate sector facing the internationalisation challenge. Furthermore it drew a research strategy in order to, at least partially, figure out the functioning of this process.

In particular, we aimed at creating an empirical approach capable to study the relations between Mode 1 and Mode 3 of the international provision of services at macro level. We implemented two systems of simultaneous equations built up in a gravity framework in order to analyse the relations between three different variables capable to describe the behaviour of these modes of supply. The analysis was carried twice: first on a set of 65 countries and the largest period of time studied goes from the year 2000 till the year 2007; secondly focusing on the relation maintained by the spanish service sector with 31 countries in the period 1999-2006.

What we were able to explore was if at macro level, once the effect of other variables is controlled, the presence of national companies installed in a country promotes international trade (influence of Mode 3 on Mode 1 of provision) and, from the other side, if trade relations foster the volume of business maintained by national companies in a foreign country through affiliates and foreign branches (influence of Mode 1 on Mode 3 of provision). Within the first analysis carried on, it resulted clear that Mode 1 and Mode 3 of international provision of services are positively related. We can affirm that there are evidences of complementarity between these two modes of supply from both sides at aggregate level. This result is in line with the empirical researches cited in Section 3.3 that approached the argument with different datasets and econometric techniques. A substitution effect can not be observed at this level of aggregation. However, this underlying relation can be considered one of the factors that affected the increase in the internationalisation patters shown in Section 3.3.

For what concerning the analysis of the spanish case, we demonstrated how the export of spanish services to one specific country have a positive influence on the FDI realised by spanish companies in the same market. We did not observed here the effects of

³⁵ Services represent 20 per cent of international trade, but around 70 per cent of foreign direct investments.

Mode 3 on Mode 1 of provision of services because of the biases produced by the presence of the tourism sector in the aggregate of data.

The macro approach implemented in this chapter presents several limitations. The main constraint is due to the fact that the available data, allow aggregated analysis only in both cases. The whole service sector, composed by more than 51 activities³⁶, is considered as a single sector. Evidently, this aggregate approach hides important information. Some service activities are likely playing a catalyst role within the process of internationalization. The function of national financial entities abroad could be an example of the deepness of the level of the relations we have not been able to reach in our analysis. The presence of national entities in third countries could be a factor promoting the trade relationships since it provides a recognised framework in which national operators are keener to develop their business. This means that probably there could be sectors acting as auxiliaries for others activities to expand internationally. The same process probably occurs the other way round. We suspect that some exporters break boundaries and create the needs for national infrastructures to implement and improve their business relations. When data on bilateral flows in specific sectors will be available, the task of the analysis will be to identify which activities' investment act as vehicle for others' trade and vice versa and account for these effects. So far this level of analysis cannot be achieved.

We helped in understanding that, even though part of the theory states that at micro level there should be a substitution effect between trade and production abroad, the service sector at aggregate level shows mainly complementarity. We have demonstrated that, *ceteris paribus*, the different relations maintained by countries strengthen each others: the more intense are trade relations the more intense is the connection in terms of national companies installed abroad and vice versa. This means that if operators sell their services to foreign clients, other national entities, from the same or different business area, are keener to reach the same foreign market starting a division there. It also means that when service firms set abroad, it is more likely that other national firms export to that foreign market. In general, we analytically demonstrated that the involvement of some operators in international operations promotes the development of more businesses relations in the foreign country where the experience takes place.

These conclusions can be useful from the political economy perspective. Policy makers have to be aware of the indirect effects of international modes of service provision: Mode 1 and Mode 3 of internationalisation promote each others. This means that the effect of

³⁶ According to the two digit NACE classification.

policies encouraging, for example, the development of commercial relationships does not run out in international trade, but extends its outcomes to the investments/capital relations between the two countries. At the same it has to be taken into account that the opening of the frontiers to foreign capitals will be a support improving commercial deals. Policy actions regarding trade liberalisation or regulations should analyse more in deep, and take into consideration, the existing interrelations among the two main modes of service internationalisation.

Chapter highlights:

Services internationalisation is a complex process due to service-specific characteristics, mainly intangibility and simultaneity.

Four Modes of international supply of services compose the framework in which this process is studied.

The growth of the internationalisation of the sector presents an increasing pattern.

Services represent around 20 per cent of world international trade and around 80 per cent of world foreign direct investments.

The behaviour of spanish services does not overly differ from world data.

The composition of spanish activities crossing borders and their ways of internationalisation is in evolution.

Models of simultaneous equations represent a consistent methodology to investigate relations between different modes of supply

Mode 1 and Mode 3 of supply are keen to present complementarity.

Chapter 4 – A network approach to services internationalisation

Objectives:

The purpose of this chapter is investigating the structure of the process of internationalisation of the service sector at world level applying Social Network Analysis techniques. Since this method of analysis is designed to assess network structures, it can be applied in order to produce a picture of the whole process of internationalisation.

Methodology:

The method of analysis applied in this chapter is called exploratory social network analysis. It consists in a series of graphical and mathematical techniques capable to describe pattern and characteristics of complex systems of relations.

Synopsis:

The set of international relations linking the tertiary sectors of developed economies composes networks of countries which structures is still an unexplored field. Indeed, most of the studies on this subject realised so far centred their attention on bilateral relations and countries characteristics, failing to give a picture of the whole set of relations. In order to fill this gap, the present chapter proposes various graphical and geographical representations of trade and FDI networks as well as a mathematical insight on the argument. Furthermore it performs an exploratory network analysis on the structure and the role played by different countries within these networks. The presence of patterns, such as core-periphery structures, or central position maintained by particular countries is studied and presented.

Introduction

According to Chapter 2 and Chapter 3, the internationalisation of the service sector is a complex process involving all developed economies. It is complex because, due to their particular characteristics services cross borders following strategies composed by different modes of provision. It involves all developed economies since the tertiary sector plays a central role within the process of globalisation. Even though when it took off in the 1980's the process was dominated by industrial interchanges, during the 1990's services became part of the international dynamics and their prominence steadily increased during the last decade. This fact is particularly evident when the whole process of globalisation, and not only trade exchanges, is taken into account, in other words, when their complex internationalisation is considered. Globalisation actually generated huge international economic flows that go well beyond international trade and are represented by foreign direct investments (and the profits generated by these investments). In most developed economies services represent the large majority of foreign direct investments (FDI). Therefore the driving forces beyond the process of services internationalisation became an appealing field of research for economists and stakeholders.

Indeed, in a globalised service economy such as the present world economy, it is of great interest to improve the knowledge on the mechanism governing the international relations concerning the tertiary sector. In particular the structure of the process arises as a central subject. Actually the globalisation and all its outcomes are stoutly related with the forms under which the process takes place. So far few articles centred their attention on the relations rather than on the characters. The purpose of this chapter is to make use of *Social Network Analysis* (SNA) in order to spread some light on the features of the structure of the internationalisation of the tertiary sector. SNA is a method of analysis capable of extracting information from complex systems of relations. The international relations concerning tertiary activities maintained by the countries at the centre of the globalisation process represent the kind of system that can be explored through these methods. In fact, SNA has been applied in literature to study trade relations between countries and produced interesting outcomes on the role played by the different economies within the process.

As stated above, services internationalisation goes beyond trade flows. Its heterogeneity in international provision finds a framework in a four modes classification (United Nations Statistical Division, 2002)³⁷. We want to apply SNA to different typology of data, proxies of the exchanges taking place under these modes, in order to present an innovative picture of the whole process. The novelty of this approach consists in the perspective undertaken. While most empirical work in this field take into consideration only first degree (bilateral) relations between countries and combine them with country specific characteristics, SNA is composed by several tools capable of considering the whole system of international interactions at the same time. This method of analysis deals with sets of relational data (e.g. all trade flows maintained by a group of countries in a certain period) and is capable to implement a mathematical breakthrough of the system describing patterns and characteristics. Thus SNA focuses the attention on the dynamics of globalisation more than on the characteristics of the global actors.

The aim of the empirical analysis implemented in this chapter is to map the topology of services internationalisation employing solid network-based measures to data on trade and FDI of services between the largest samples of countries for which these data are available. Since this represents the first attempt, to our knowledge, of applying these techniques to the service internationalisation process, exploratory SNA tools will be implemented. In particular we aim at answering some questions on the macro-properties of the network of international relations in the tertiary sector. Does this process present a structure? In particular, is there a core-periphery structure with countries playing central roles and other less integrated? Are there clusters of countries? Are there differences between trade and FDI networks?

With the aim of answering to these research questions, the rest of the chapter is developed as follows. The first part of Section 4.1 consists in an overview of SNA focusing on the potential advantages of its employment in the analysis of economic relation data. The second part of this section is a survey of the literature applying this method to globalisation dynamics. Section 4.2 presents the data studied in this chapter and describes the methodology of the empirical analysis. The results of the analysis implemented are detailed in Section 4.3. Finally Section 4.4 summarises the main outcome of the research and proposes further developments.

³⁷ This classification is based on who, or what, crosses the national boarder: services crossing boarders, Mode 1 of provision; client crossing boarders, Mode 2; investment crossing boarders, Mode 3; temporary employment or self employed crossing boarders, Mode 4.

4.1 – A survey on SNA and its application to international relations

Social Network analysis is a method of analysis developed to tackle with relational data. Namely data referring to the relations maintained by persons, countries, companies or, in more general terms, actors. The focus of the attention moves from the characteristics of the individual, to the characteristics of the relation maintained by this individual with others and to the structure formed by all the relations maintained by individuals: the network. One of the most important features of SNA is that it is capable to make a mathematical breakthrough into the structural analysis of the network in order to highlight and interpret its characteristics.

This analytic approach aims at producing different sort of information through the identification of the kind of structure and the properties of the network. This means that the tools provided by SNA are capable of measuring persistent patterns, relations and forces acting on the networks agent. Once this information is produced we can apply a series of theories to interpret the complex outcomes provided and explain present scenarios and potential future development. Examples of issues treated by SNA are the network position of each actor, the degree to which an individual is at the centre of many relationships, the characteristics of the relations or the access to relevant positions. Being able to extract and take to mean information of this kind represents a fundamental step in the understanding of several kinds of (social) structures. SNA is therefore applied in numerous fields of research such as sociology, biology, medicine, geography, information sciences or economics. Within economics it is often a tool used in financial exchanges, international trade and globalisation studies.

The so called globalisation process, intended here as the internationalisation of economies and the high growth of international economic relations, experimented acceleration during the last decades. Services internationalisation is, jointly with the rise of huge exporters, an important phenomenon within this process (García et al., 2009), and deserves the attention of researchers. It is a phenomena characterised by arise and growth of international bilateral relations in the tertiary sector between countries or regions. In literature, these relations are empirically approached through the analysis of data such as international trade or FDI figures. Traditionally international trade had been the centre of the attention of studies in this field, but the role of FDI has lately be recognised as fundamental in the understanding of present dynamics (Mayer-Foulkes, 2009). If we approach globalisation considering countries as actors, the relations maintained by several

countries as links and we consider the whole picture we obtain a complex structure, a network. Countries represent nodes, or vertices and their economic relations are links. As in most networks, it appears clear that the structure of ties and its patterns has an inevitably influence on the possibilities of the actors involved. This situation raises the need for tools capable of interpreting complex set of relations and making them clearer for the observer. Since SNA provides methods for numerical assessing these structures, its application to international relations, such as those maintained through trade and FDI in services, could help researchers in understanding and interpreting the process of globalisation.

Most of the analyses carried on in this field explain international relations on the basis of the individual characteristics of the countries involved. They relate trade and FDI flows to the GDP of the countries or the physical distance between them, for example. In this way international trade models are able to explain a large amount of international relations. Nevertheless, it is reasonable to think that the flows between two countries do not exclusively depend on the characteristics of the countries, but that the environment where they act, e.g. a globalised world, can influence exchange volumes. The SNA approach is therefore a natural complement to the empirical analysis based on international trade models.

SNA goes beyond what it is usually studied by other methods. Most of the approaches to this subject concentrate the analysis on the first step / bilateral relations exclusively, while SNA propose tools to investigate the extent to which the structure of ties influences the whole group of relations. In a given period, this methodology considers the whole structure of the trade network. Under this point of view the international relevance of a country is not given anymore exclusively by its particular characteristics, but also by its role in the network. This is in line with a general view /interpretation of economic phenomena. Indeed, often in economics the centre of the attention is not the value of a variable referring to an actor, e.g. the productivity of country A, but how this value relates with the value expressed by other actors, the productivity of country A face to face the productivity of the rest of the countries competing on the same markets.

Consequently, SNA proposes a new point of view on international relations. According to Hafner-Burton et al. (2009), the value added of applying network analysis to these fields resides in the precise description of international relations that it is able to provide, the possibility of distinguishing network effects within key international outcomes and the development of new sources of data. Applying SNA to international relations can also be a useful instrument to test international relation theories. Furthermore, better knowledge on

network functioning gives the actors the possibility to increase their relative “power” by exploiting their network position.

The roots of the application of SNA to international relations can be found in some inaugural work published during the decades of the forties of the past century. League of Nations (1942) and Hilgerdt (1943) represent the pioneer of this perspective since they are the first publications where world trade is presented as a network and not only as a set of bilateral exchanges of goods and services. This point of view remained undeveloped for decades. It is only during the sixties when we can find further advances in this line of thought. During this and the following decade, a group of statistician and sociologist, Savage and Walsh (1960), Brams (1966; 1969) and Snyder and Kick (1979) among others, exploited network analysis in order to classify countries on the basis of their trade relations.

The evolution of SNA techniques, jointly with the advances made in the field of international economics, prepared the ground for a new round of researches applying SNA with the aim to describe the patterns of international trade relations. These researches took place during the first ten years of the present century and consist in a series of papers elaborated within a new interdisciplinary scientific area which springs from the collaboration between researcher coming from the economic background and other sciences such as physics, mathematics, automation or informatics. This new interdisciplinary research field, where methodologies and theories from various scientific areas are applied to economics was given the name of econophysics.

The main aim of the very first SNA applications elaborated within this research area had been to test whether international trade can actually be seen as a network. The network structure of countries and international trade flows is usually named as international trade network (ITN) or world trade web (WTW). These studies address also at determining if the trade network is a complex type of network. In few words this means employing network analysis to understand if this system of relations follows certain (predictable) rules and if it can be modelled according to these rules.

It is found (Xian et al, 2003) that the WTW is a complex network that ties countries. In accordance with this finding the role of the network in the world economic synchronisation is also tested. The particular influence of the WTW on world economics is of high interest when analysing the spreading of virtuous period and crisis. The ITN is seen as a complex network also by another contemporary work (Serrano and Boguña, 2003). Social and technological networks can actually be considered the paradigm of complex networks. Garlaschelli and Loffredo (2004) represents another step in the investigation on the properties of the WTW as a network. The main relevance of the study dwells in the empirical

tests implemented that shows how the topology (the structure of the connections) of the web is strongly determined by the economic dimensions of the actors.

More recent studies followed this research line and aimed at describing the main patterns of the ITN through the application of SNA techniques. The main advance with respect to the papers cited so far is that the new researches refer to the WTW as a weighted network. The cited papers treated the links connecting countries as binary relations, this means that they were given the value of zero, when no link was present, and one, where a trade flow between the two countries existed. Most recent works weight each link assigning it the value of the export and/or import between the referred countries. Taking into consideration this heterogeneity is essential when describing such a complex series of international relations.

The topological properties of the WTW are therefore seen under this perspective (Fagiolo et al. 2008). The weighted network analysis is capable to demonstrate how the majority of world trade links consist in low volume trade and that countries holding more intense relationships are keener to trade with each others, this means that they form trade clusters. Similar conclusions are achieved by Bhattacharga et al. (2008) in their analysis highlighting scale invariance and other universality properties of the ITN. Following the same line, Fagiolo et al. (2009), study the topological properties of the WTW focusing on its dynamics and its evolution over time. The complementarity of SNA with other techniques is proved by Fagiolo (2009), where the author first applies a gravity model in order to control several determinants of trade flows and then infer network characteristics through network analysis.

All the cited works belong to the same framework, the so called econophysics. Nevertheless their focus is more on physics than on economics. In other words, if the focus of the analysis is explaining economics relations, they share a common “limit”. They all emphasize research methods on substance. Most of them address at demonstrating how trade relations form a network and at describing the topological properties of these networks, but they do not aim at investigating the explanations or reasons at the bases of the observed relations. Another research line centred in exploring, with the help of SNA, international economic relations was developed simultaneously and in cooperation with the researches cited above. During the last years we can observe the flourishing of several articles applying SNA to increment the knowledge on the economic relations standing behind the trade relations.

It is worth to cite, among others, the work of Serrano et al. (2007) studying the patterns of trade networks highlighting global and local heterogeneity. In particular the

authors make use of SNA to evidence how geographical, political and historical relationships affect trade patterns. In addition, they study the role of the international network as substrate for the propagation of crisis, since trade is seen as vehicle of the influence of one economy on the other. The economic interpretation of SNA applied to the WTN is the focus of other works such as the extensive paper by De Benedictis and Tajoli (2009). Another example of a research aimed at mapping the topology of the WTW and giving it an economic explanation is the work produced by Kali and Reyes (2007). In the latest article the results of the network analysis is combined with a growth model so that the relation between network position and economic growth is highlighted.

Reyes et al. (2007) create new indicators based on weighted network analysis to substitute standard openness measures. They make use of these indicators in order to assess the international economic integration. In particular they study if the implementation of different international economic policies in Asia and Latin America brought to difference in growth and stability patterns. The authors are able to draw different images of how world trade is composed. At low levels of trade, the network seems decentralised and homogeneous, while when higher levels of trade are taken into consideration the WTN looks centralised and a core-periphery structure can be discerned. The paper is another example of complementarity of SNA with other techniques. An important outcome is that the authors include some indexes elaborated applying SNA in a growth model and the included variables are statistically significant and present the expected signs. On the same line Riccaboni and Schiavo (2009) apply SNA to a set of micro-data to describe the prominent role played by the extensive margins of trade in explaining a large amount of the exports of the most important economies.

4.2 – Data and Methodology

The structure of the present section is triple. In the first part we present the data studied and define the networks object of the analysis. Successively, the methodology applied in our research approach is described making a distinction between measures quantifying country specific characteristics and the techniques applied to the networks as a whole.

4.2.1 – Data description

As exposed in the previous sections, the objects of study are the relation maintained by countries at world level in the service sector. The internationalisation of the tertiary sector is a complex process taking place through different channels of provision (see

Rubalcaba and Cuadrado, 2002 and Visintin and Rubalcaba, 2010a, among others). The four modes of provision classification is nowadays a widely accepted framework for its analysis. So far, data on the volumes of flows classified under these four modes are still not available. Therefore empirical studies rely on data describing trade and FDI volumes³⁸.

Following this distinction, two different kinds of networks are identified. In both cases countries represent the actors (or vertices). However, in the first one the link between two vertices is defined as the value of bilateral trade between the two countries; in the second one, the value of the stock of FDI invested by a country into another identifies their commercial relation.

The data implied in the construction of the international trade network (ITN) were collected by OECD Stat. We extracted the figures representing the export between 26 countries³⁹ referring to the year 2006. Countries were chosen on the base of data availability. Nevertheless, most developed countries are included. The export flows taken into consideration represent more than 90 per cent of the flows registered by the OECD database and, according to WTO data. The countries included in our sample are responsible of more than 70 per cent of service world trade. Finally it is worth notice that they represent 26 out of the 35 countries with the highest trade volumes. Under a geographical perspective, even though the sample is decidedly Europe oriented, all continents but Africa are represented.

650 export relations are needed in order to construct a full 26x26 matrix (considering the fact that countries cannot export to themselves). However the data provided by the database were not complete. Two assumptions were made in order to impute values to missing data. We made use of import data assuming that $X_{ij} = M_{ji}$ in 79 cases, and we made the assumption that $X_{ij} = X_{ji}$ in further five cases.

The network of the FDI relations (FDIN) was created using data on the relations between 23 countries⁴⁰ in 2006. In this case the source database was created by Eurostat.

³⁸ Trade volumes data are considered a proxy for Mode 1, Mode 2 and partially Mode 4 (WTO, 2006), while data on FDI volumes are often considered a proxy for Mode 3 and partially Mode 4 of provision of services (Nordas and Kox, 2009).

³⁹ Austria (at), Australia (au), Belgium (be), Canada (ca), Czech Republic (cz), Germany (de), Denmark (dk), Spain (es) Finland (fi), France (fr) Greece (gr), Honk Kong (hk), Hungary (hu), Ireland (ie), Italy (it) Japan (jp), Luxemburg (lu), Netherlands (nl), Norway (no), Poland (pl), Portugal (pt), Russia (ru), Sweden (se), Slovakia (sk), United Kingdom (uk) and United States (us).

⁴⁰ Bulgaria (bg), Cyprus (cy), Czech Republic (cz), Germany (de), Denmark (dk), Estonia (ee), Spain (es), Finland (fi), France (fr), Greece (gr), Hungary (hu), Ireland (ie), Italy (it), Lithuania (lt), Luxemburg (lu), Latvia (lv),

Due to data availability, only European countries and the USA are considered in this case. Consequently the FDIN does not aim at representing the world internationalisation network of direct investment. Nevertheless, as a result of the relevance of the European and North American investment at world level, the behaviour of the FDIN can be considered as an approximation of the conductions at world level. Further researches will benefit of more complete data collection. Of the 506 figures needed to construct the FDI relations matrix, 51 were obtained assuming that $outwardFDI_{ij} = inwardFDI_{ji}$. In addition, 30 relations were estimated as $outwardFDI_{ij} = outwardFDI_{ji}$.

Since several network measures of the topological characteristics applied are independent from the value of the links (this means that they take into consideration only the presence of a link) we decided to construct, in each case (IT and FDI), three networks applying different thresholds. Following Kali and Reyes (2007), beyond the network comprising all relations, we built up another network taking into consideration exclusively exports / FDI flows representing more than one percent of the total export / FDI realised by each country. The process was repeated for a five percent threshold. This procedure allows for some conclusions on the nature of the relations of service internationalisation at world level. In addition, in this way we aim at understand the sensitivity of the topological characteristics of the networks to different links magnitudes.

4.2.2 – Methodology

The analysis performed in this chapter can be considered as a first approach to the internationalisation of the service sector through the application of network techniques. According to this premise we apply network methods able to give a bird's eye view on the phenomenon. We first move towards a better understanding of the role of different countries in the examined networks and successively have a closer look at the topological properties of the networks as a whole.

The first step in our approach is to propose an insight on the role of different countries within the networks. The position of a country in the internationalisation network is valuable information that can spread some light on the role played in this process. Some countries can occupy central and strategic positions within the system of relations. Knowing this position is useful if we consider international relations as channels through which information (e.g. management procedures or innovations) move from one country to

Netherlands (nl), Romania (ro), Sweden (se), Slovenia (si), Slovakia (sk), United Kingdom (uk) and United States (us).

another. Actors positioned at the centre of the networks can yield power and profits (Nooy et al. 2005) since, due to the position maintained, some countries can have a better access to information and better opportunity to spread it.

Therefore we begin the analysis focusing our attention in measuring the centrality of the countries involved in the internationalisation networks. Since the definition of *central* varies depending on the viewpoint, there are several measures of centrality. The first measure of centrality we propose deals with the number of links each country maintains. If a country presents several trade and investment partners, it becomes a reference point, has an easier access to information and can spread it several times. The straightforward measure of this characteristic is the number of neighbours, also called the *degree centrality* of a vertex of the network. In order to allow for comparison we calculate the normalised degree centrality of the countries composing the networks.

If we consider a network as a series of links through which information flows, the distance between two vertices (the number of links) gains relevance. The shortest is the path through two vertices the fastest the communications. The shortest is the distance between one actor and the rest the easiest is its access to information. For example we can affirm that if one country has direct commercial relations with all the network partners, its companies will be aware of the state of the art of the new production and commercialisation processes. This is a comparative advantage with respect to countries with few relations that do not have first hand information on the evolution of these processes and is the sort of advantage that could boost national competitiveness. So the easiest is the connections between one country and the rest, the greater is its comparative advantage. The measure assigning to each actor a value on the basis of its distance to all other vertices is called *closeness centrality*. The normalised measure is based on the length of the average shortest path between a vertex and all vertices and is described by the following formula:

$$C'_{ci} = \left[\frac{\sum_{j=1}^N d_{ij}}{n-1} \right]^{-1}$$

Where C'_{ci} is the normalised closeness centrality of country i , d_{ij} is the distance between country i and country j and n is the number of countries composing the network.

A country through which passes the connection between two countries can be considered relevant for their relation. Think about the case of one firm maintaining

commercial relations with two foreign partners that do not know each other. Since commercial relations imply exchange of information, it could happen that the knowledge owned by one of the foreign firms reaches the other passing through their common partner. If this partner is the only potential connection its “power” as intermediary is high. From a network perspective, the more connections pass through one country the more central is his position. The measure of *betweenness centrality* of an actor depends on the extent to which it is needed as a link and is defined as the portion of all geodesics between pairs of other actors that include this actor⁴¹. Its normalised formula is as follows:

$$C_{bi}^i = \frac{\sum_{j < k} \frac{g_{jk}^i}{g_{jk}}}{\frac{(n-1)(n-2)}{2}}$$

Where g_{ik} is the number of geodesic connecting countries j and k , g_{jk}^i is the number of those geodesic passing through i and $(n-1)(n-2)/2$ is the number of pairs of vertices excluding vertex i .

The concepts of degree, closeness and betweenness centrality, which describe vertices characteristics, can be extended to the analysis of the whole network. The extent to which a network has a centre is measured in SNA by *centralisation* indexes. Three centralisation measures corresponding to the ones presented above are proposed. The mathematical underpinning of the three measures is based on the fact that when a network is highly centralised one of its vertices presents a high centrality and the rest of vertices are characterised by low centrality values. This means that there is a high variance in the centrality of the vertices. Therefore, the highest is the variance of the centrality of the vertices the highest is the centralisation of the network. In practice, centralisation indexes are calculated as the variation in the centrality of vertices divided by the maximum variation possible in a network of the same size. It appears clear from this definition that one shortcoming of these indexes is that they allow for comparison with networks of the same size.

Nevertheless, in our case, high centralisation values correspond to internationalisation networks where one or few countries play a fundamental role of the

⁴¹ A geodesic is the shortest path between two actors.

process and the rest of countries can be considered peripheric. Consequently, we are able to compare the centralisation of the ITNs and of the FDINs constructed on different thresholds.

SNA proposes more descriptive indices aimed at the presentation of the network structure. The *density* (defined as the number of links divided as the maximum number of potential links) and the *average degree* of vertices are two measures of the density of the links between countries, determining the intensity of the internationalisation process.

One of the most interesting features of SNA applied to international relations is the possibility to investigate whether their interaction creates cohesive subgroups. Beyond the observation of the “importance” of each single country through its centrality, it results very attractive to an economist to be able to understand if these relations constitute structurally delineated subgroups presenting different characteristics. Several techniques were developed to this aim. We decided to present here two of them leaving to further researches the task of investigating cohesion through other tools.

First we aim at identifying, within the studied networks, the existence of any subnetwork in which from each vertex it is possible to reach all the other vertices (of the subnetwork) following the flow of the exports. This subsection of the original network is called *strong component*. Identifying a (strong)⁴² component means determining the presence of a group of actors with internal cohesion. In the case of the service internationalisations it means identifying one or several groups of countries trading or investing more intensely with each others than with the rest of the network. The detection of components could be a first step in discovering if the internationalisation of the service sector is composed by a core-periphery structure and if clubs can be individuated.

Similarly, the last exploratory technique to be applied in the identification of cohesive subgroups concerns the study of cluster of vertices that are firmly connected because each vertex has a minimum degree within the subgroup. This kind of subgroup, or core, is called *k-core*, where *k* is the degree of the minimum degree of the vertices. A 3-core, for example, is composed by vertices that maintain a bilateral relation with at least three other vertices of the group. Since *k*-core are nested (e.g. all vertices belonging to a 2-core also belong to a larger 1-core network), removing low *k*-cores from the network we are able to individuate the core of the network or break it into cohesive subgroups. It is also a useful technique in the designation of the countries which are less integrated within the internationalisation process.

⁴² A component is defined as strong if the network is directed (the links, as in this case, present a direction) and from each vertex we can reach all the rest following the direction of the links. When it is possible to reach all vertices, but it is not possible following the direction of the links, the component is defined as weak.

4.3 – Results

One of the main features of SNA is the high range of graphical representation possibilities. In the first part of this section we will present different kind of mapping of the ITN and FDIN. Initially we concentrate our attention on the visualization of the nets realised with sizable arcs and vertices and then present some geographical mapping. The first result that can be derived by the network graphical representation of the data described above consists in evidencing the differences between various thresholds. Figure 4.1 and Figure 4.2 show the representation of the ITN comprehending all trade relations and the one considering only the relations that represent more than five per cent of the export of each country respectively.

Figure 4.1 International trade network, all values

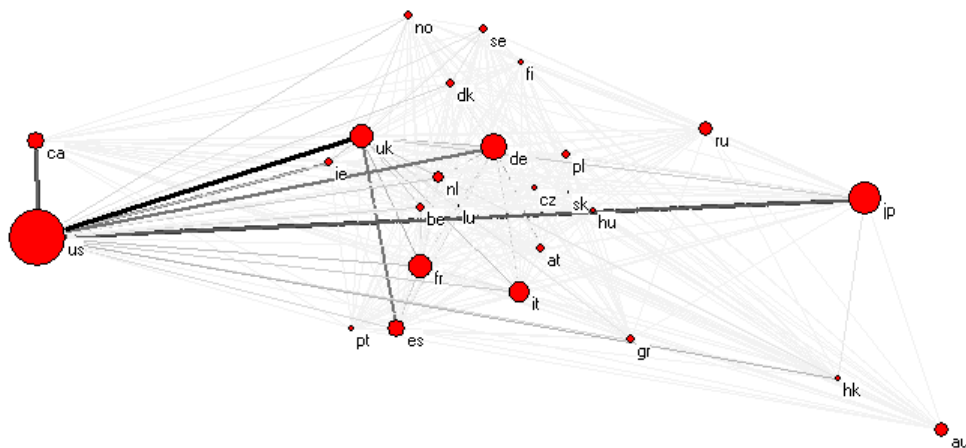
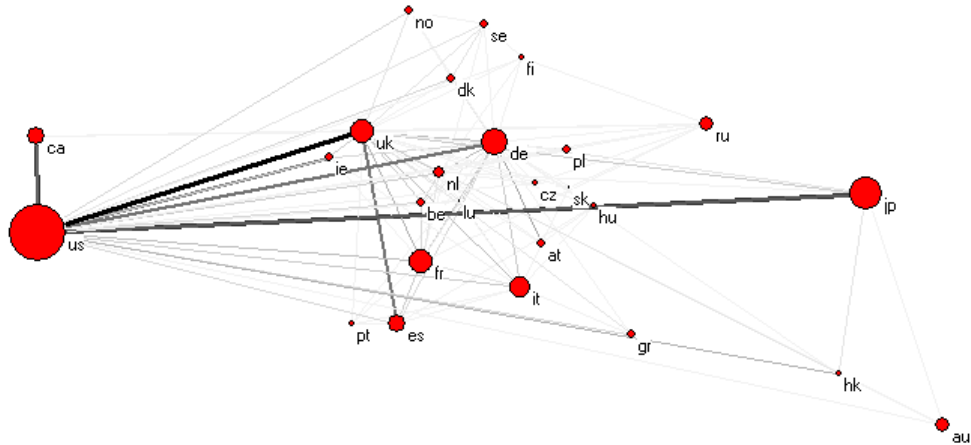


Figure 4.2 International trade network, 5% threshold



In order to visually present the relation between economic importance and trade we decided to size the vertices proportionally with countries' GDPs, while the width of the arcs indicate the volume of the service flow between the two countries. The latter distinction is reaffirmed using a scale of greys in the arcs representation. According to these assumptions and maintaining the same scales, Figure 4.3 and 4.4 present the graphs of two FDI networks.

Figure 4.3 Foreign direct investment network, all values

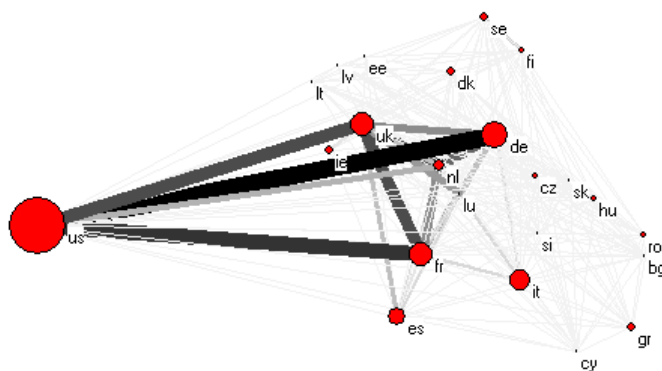
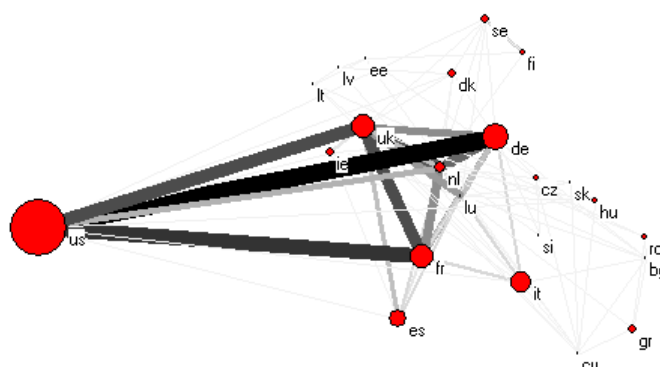


Figure 4.4 Foreign direct investment network, 5% threshold



A visual analysis of these graphical representations permits a series of immediate considerations. As first observation it is worth noting that there is an, expected, relation between economic size and internationalisation flows. The greatest interchanges occur between the most developed economies. A second observation, common to both kinds of flows, concerns the differences between the networks constructed on different thresholds. Actually, applying the one and five percent thresholds it can easily be noticed that several (IT and FDI) links do not exceed those boundaries. 650 relations are registered in the trade matrix and represented in Figure 4.1. If we take into consideration exclusively the export flows that represent more than one per cent of the total export of each country, only 392 links can be observed. If this threshold is moved to five percent the links are 137 and are presented in Figure 4.2. For what concerning the FDIN, the matrices considering all FDI stocks and the ones constructed on the basis of the one and five percent thresholds are composed by 385, 203 and 113 links respectively. These figures show that the great majority (around 75 percent in number) of trade and investment relations in the service sector are composed by operations of secondary importance. In other words, in the internationalisation of the service sector few bilateral relations represent the majority of the volumes. For this reason most of the results presented in this section concerns the analysis carried on the five percent threshold networks. This first visualisation also suggests the presence countries playing more relevant roles within the international relations nets, this hypothesis will be explored hereafter.

In the case of international economic relations, geographical maps provide us a natural baseline of study. Several advances were carried on during the last years in the

application of network relations and graph theories to geographical maps (Leydesdorff and Olle, 2010). Making use of the latest software elaborated in this field we prepared a first overview of the services international networks. In order to present a clearer illustration of the IT and FDI relations we include the maps of the five percent threshold only.

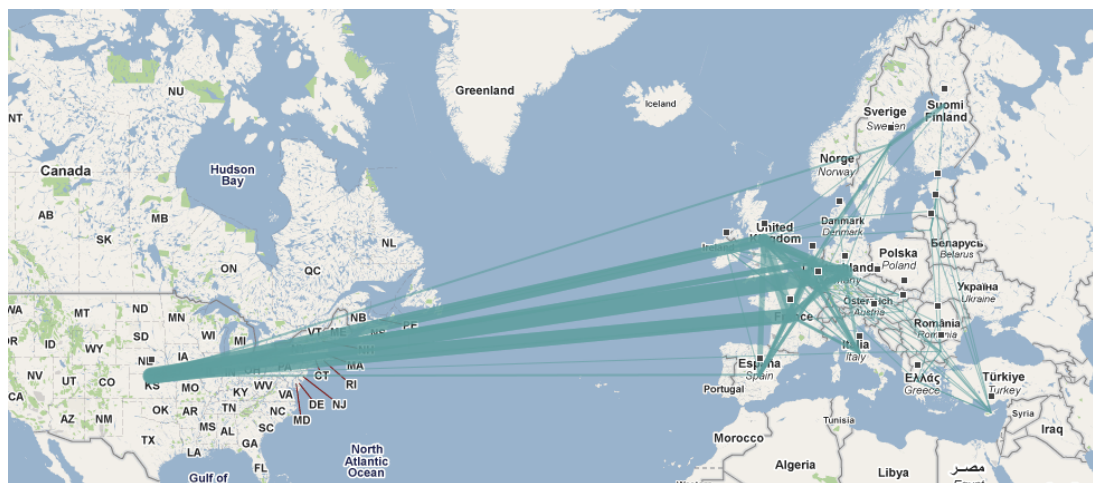
Figure 4.5 Geographical representation of the services international trade network



Note: elaborated applying the *Paj2KML* software (Leydesdorff and Olle, 2010) and *Google Maps*

An advantage of this new software is the interaction that the researcher can have with the representation of the results. The combination of SNA software and geographic software, such as *Google Maps* and *Google Earth*, allow for zooming and partial representation of maps detail. Further applications made it possible by these new techniques are to be explored. Nevertheless, since this chapter represents a first approximation to the exploration of the services internationalisation networks through SNA techniques, we limit our exposition to two maps realised through the combination of the following software: *Pajek*, *Paj2KML* and *Google Maps*. As highlighted by the graphic representation it results clear that the service internationalisation process is an issue mainly regarding the USA and the most relevant (in terms of GDP and development) European economies.

Figure 4.6 Geographical representation of the services FDI network



Note: elaborated applying the Paj2KML software (Leydesdorff and Olle, 2010) and Google Maps

All conclusions deduced from graphical and geographical representations can be confirmed by the mathematical breakthrough of SNA techniques presented in the methodological section. The first move in this sense is the analysis of the role of the different countries within the networks. In order to apply our analysis to the net composed by the relevant flows only, the centrality indexes will be calculated on the five percent threshold networks only. Tables 4.1 and 4.2 present the results of the node degree centrality analysis. Several conclusions can be made following this kind of analysis. For what concerning trade relations, it has to be noticed that in all columns nine out of ten countries at the top of the list are the same. This means that, no matter the point of view on the role of centrality (degree, closeness or betweenness), there is a group of countries, representing around one third of our network, which play a central role. Within this group further distinction can be made. The most central countries are Germany, United Kingdom and United States. These are the top three scoring nodes of the network independently of the index computed. France and Netherlands seems to belong to a second subgroup while Italy, Russia, Belgium, Sweden and Spain complete the body of the most central economies.

Table 4.1 Node centrality indexes of the international trade network

degree		closeness		between	
de	0.60	uk	1.00	de	0.11
uk	0.60	de	0.93	us	0.1
us	0.56	us	0.89	uk	0.05
fr	0.36	nl	0.68	fr	0.05
nl	0.34	fr	0.66	be	0.04
it	0.28	it	0.66	nl	0.04
ru	0.20	ru	0.61	se	0.02
se	0.20	es	0.58	fi	0.02
be	0.18	hu	0.58	ru	0.02
es	0.16	jp	0.58	it	0.01
fi	0.16	lu	0.58	jp	0.01
jp	0.16	se	0.58	at	0,00
lu	0.16	at	0.57	ie	0,00
at	0.14	be	0.57	es	0,00
cz	0.14	cz	0.57	cz	0,00
dk	0.14	fi	0.57	hk	0,00
hu	0.14	dk	0.56	sk	0,00
ie	0.14	hk	0.56	lu	0,00
no	0.14	ie	0.56	au	0,00
hk	0.12	no	0.56	ca	0,00
sk	0.12	pt	0.56	dk	0,00
au	0.10	sk	0.56	gr	0,00
pt	0.10	au	0.54	hu	0,00
ca	0.08	gr	0.54	no	0,00
gr	0.08	pl	0.54	pl	0,00
pl	0.08	ca	0.53	pt	0,00

The analysis of the node centralisation of the FDIN, presented in Table 4.2, drives to similar observations. In this case it appears clear that degree and closeness centrality indexes propose similar outcomes: a group of nine countries, composed by Netherlands, United Kingdom, Germany, Luxemburg, France, United States, Italy, Cyprus and Bulgaria govern the network. What actually causes some astonishment is the inclusion of the two latter countries in this group. Observing the result of the betweenness index, Cyprus and Bulgaria become even more important. This is due to the fact that the indexes applied in this analysis take into consideration the links between countries, but do not consider the value of the link. Constructing networks using threshold attenuate eventual bias due to this characteristics, but do not eliminate them. Cyprus and Bulgaria are countries maintaining several investment relations of relatively low value.

A simple exploratory analysis made through SNA can open the door to several researches. An example of new fields to explore can be the observation of the different role maintained by some countries within the trade and FDI networks. The Netherlands and

Luxemburg are far more central in the FDI network than for the trade one⁴³. Therefore It could be investigated if this situation is due to the role of these two countries with respect to tax heavens⁴⁴.

Table 4.2 Node centrality indexes of the foreign direct investment network

degree		closeness		between	
nl	0.55	nl	0.81	cy	0.12
uk	0.41	uk	0.71	ee	0.12
lu	0.39	de	0.69	bg	0.10
de	0.36	lu	0.67	nl	0.08
fr	0.32	cy	0.65	gr	0.08
us	0.32	bg	0.61	uk	0.06
it	0.27	us	0.62	lv	0.06
cy	0.25	fr	0.59	dk	0.06
bg	0.23	it	0.59	se	0.05
es	0.20	se	0.59	fi	0.03
ie	0.20	dk	0.58	lu	0.03
se	0.20	ie	0.56	cz	0.03
dk	0.18	cz	0.55	lt	0.02
ee	0.16	es	0.56	de	0.01
lt	0.16	hu	0.57	it	0.01
cz	0.14	lt	0.58	fr	0.01
gr	0.14	sk	0.59	ro	0.01
lv	0.14	fi	0.51	us	0.00
sk	0.14	ee	0.50	hu	0.00
hu	0.11	gr	0.50	ie	0.00
ro	0.11	lv	0.49	sk	0.00
fi	0.09	ro	0.49	es	0.00
si	0.07	si	0.48	si	0.00

As observed, the results on the analysis of vertices characteristics suggest that some countries play a central role in the internationalisation of the tertiary sector, while others seem to participate in a lesser extent. In short, the internationalisation process is governed by a group of central countries. This hypothesis can be confirmed by the analysis carried on the whole networks. Table 4.3 summarises the result of a first exploratory approach to the networks considered.

⁴³ The Netherlands performs as the 4th, 5th and 6th central country in the trade network, while it is twice the 1st and once the 4th; Luxemburg appears as the 13th, 11th and 18th country in trade centrality index classification and as the 3rd, 4th and 11th country in FDI analysis.

⁴⁴ Weyzig and Van Dijk (2008) show that even though the Netherlands is not itself a "pure" tax heaven, it works as "coduit" country for international corporations channelling funds to tax heavens.

Table 4.3 Network statistics of the service internationalisation

	n.of vertices	% of tot. values	sum of all link values*	desity index	average degree	degree centralisation	closeness centralisation	betweenness centralisation
trade all	26	100	2316.85	0.997	0.498	0.003	0.006	0.000
trade 1%	26	96	2213.76	0.603	0.302	0.343	0.364	0.058
trade 5%	26	72	1657.70	0.211	0.105	0.422	0.809	0.095
fdi all	23	100	5361.76	0.763	0.336	0.260	0.229	0.020
fdi 1%	23	98	5251.43	0.401	0.177	0.282	0.312	0.088
fdi 5%	23	88	4695.41	0.223	0.098	0.353	0.498	0.089

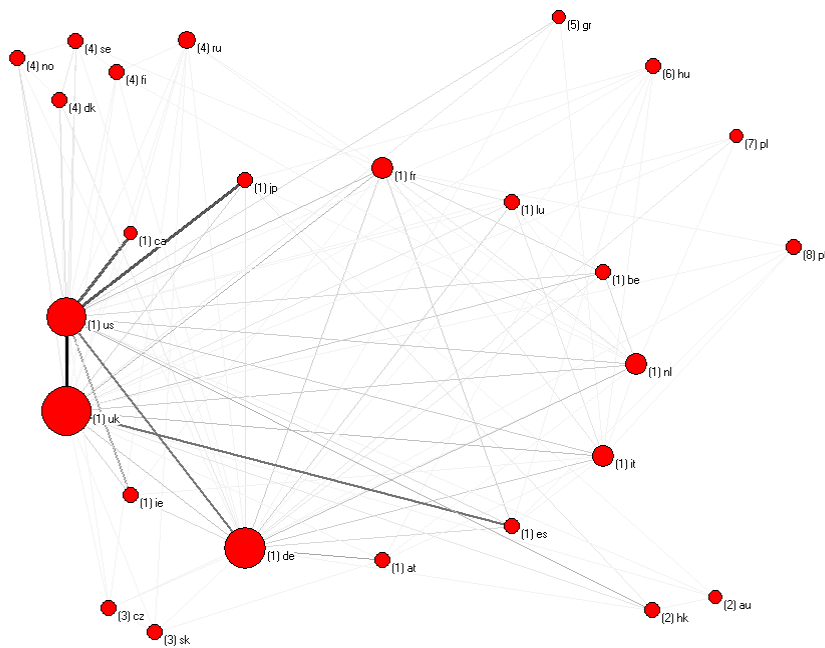
*= billions of Euros

It is interesting to interpret the results shown as a comparison between the networks built up on different threshold and to compare the features between IT and FDI networks. First, it has to be noted that applying the five percent threshold to the trade and FDI network, which means eliminating 513 (78% of total) and 272 (70%) links respectively, the value of the exchanges composing the network still represents 72 and 88 % of the original figures. This means that the process of internationalisation is centred in around 20-30 % of the interchanges, which account for 70-90 % of total values. Centralisation indexes show very low values when considering the total amount of international trade and FDI. What it is interesting noting is that, when we consider the high level trade and investments relations only (the five % threshold) both network gain centralisation. Once again, at first sight the internationalisation seems a very complex and not centralised process, but it is actually dominated by few links. However the networks are fairly non-hierarchical. This means that, even though some country plays central roles, it is not essential to the existence of the network. This result is suggested by the presence of relatively high values of degree and closeness jointly with low values of betweenness centralisation. The last conclusion to be drawn from Table 4.3 concerns the similarities between IT and FDI networks. According to the density index, the average degree and betweenness centralisation indexes, trade and FDI networks built on the five percent threshold behave similarly. Trade and FDI networks seem to have an analogous structure.

All the results exposed so far suggest the presence of a group of countries within the networks studied playing a central role. It results of high interest at this point to further investigate this hypothesis applying some technique designed to identify the presence of cohesive subgroups. To this aim we identified strong components among the IT and FDI five percent networks and present the outcome under a graphical perspective. Figure 4.7 and Figure 2.8 represent the ITN and FDIN. Each vertex has been labelled with the corresponding country acronym and the component it belongs to. In order to present a

clearer visualisation, countries belonging to the same component were grouped together. In addition the size of the vertices was determined by their closeness centrality score.

Figure 4.7 Components of the international trade network



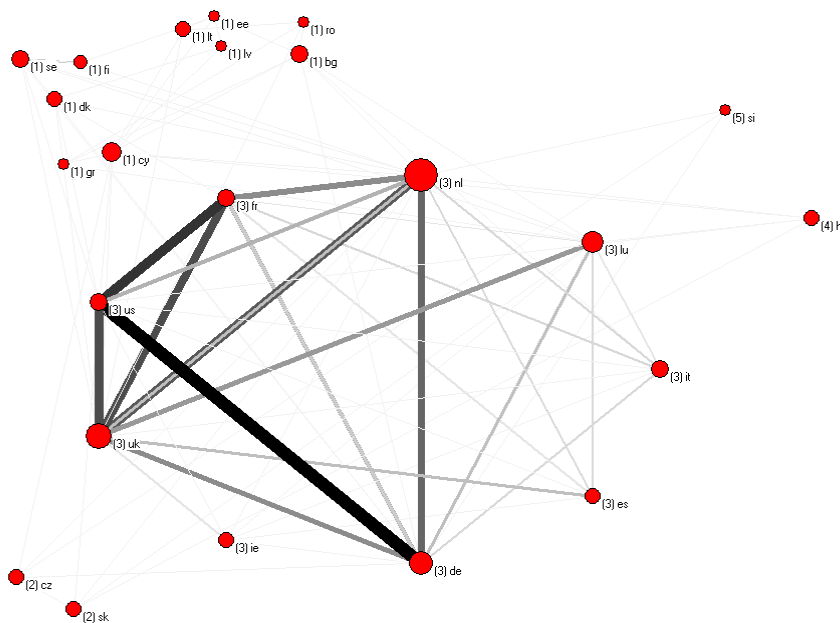
Note: vertices sizes proportional to closeness centrality, arcs sizes proportional to the volume of bilateral trade

A group of 13 countries form the main component of the trade network⁴⁵. Due to their centrality indexes presented above and the value of the relations maintained within the group it can clearly be labelled as the core group of the international trade in services. More strong components, group of countries in which each pair is directly or indirectly connected, are identified. Honk Kong and Australia as well as Czech Republic and Slovakia form two subgroups due to their geographical position and historical reasons. It is interesting noting how scandinavian countries (Sweden, Norway, Finland and Denmark) and Russia form a cohesive subgroup. Four countries do not belong to any component: Greece, Hungary, Poland and Portugal.

⁴⁵ It is the case of United States, United Kingdom, Ireland, Germany, Austria, Spain, Italy, Netherlands, Belgium, Luxemburg, France, Japan and California.

For what concerning the component analysis carried on the FDIN similar results arise. Two main components are identified. The first is formed by the more centralised countries, which are nine in this case. It is within this group that the majority of the investment in the tertiary sector takes place. The second component comprehends the scandinavian countries, the baltic countries, Greece, Cyprus, Romania and Bulgaria. Czech Republic and Slovakia form an isolated subgroup. Slovenia and Hungary represent two cut off economies under this point of view. From both analyses it appears clear how the internationalisation networks present a core-periphery structure

Figure 4.8 Components of the foreign direct investment network



Note: vertices sizes proportional to closeness centrality, arcs sizes proportional to the volume of bilateral investments

The last part of this analysis insists on the identification of subgroups through the detection of *cores* within the networks. A core is a group of countries in which each node has a particular minimum degree within the group. As it was explained in the previous section, the cores of a network are nested: the countries belonging to a 3-core will all take part to a 2-core probably including countries which did not appear in the 3-core. This means that, from one side, with this technique we are able to distinguish if a central core exists, from the other we can spot isolated countries belonging to low level cores. In other words we are not only able to recognize once more countries at the centre of the

internationalisation, but we can also determine which countries take part limitedly to the process.

As a result of this partition of the trade network, the core group is composed by eight countries. They are mainly the ones highlighted by the other techniques. United States, United Kingdom, Netherlands, Luxemburg, Italy, France, Germany and Belgium compose a cluster where everyone export or imports from at least six partners⁴⁶. The less integrated ones are Australia, Canada, Honk Kong, Greece and Poland. The geographical position of the first three could be an explanation of their low level of integration. For what concerning Greece and Poland the reasons have probably to be searched in their relatively low level of tertiarisation. The core of the FDIN is more extended and comprehends United States, United Kingdom, Sweden, Netherlands, Luxemburg, Italy, Ireland, France, Spain, Denmark and Germany (6-core). The countries with less participations are Finland and Slovenia, which belong to a 3-core only. The full outcome of the k-core analysis is presented in Table A4.1 in Appendix E. Finally Table 4.4 resumes the outcomes of the different SNA techniques and presenting the distinction between countries belonging to the *core* and the *periphery* of the networks.

Table 4.4 The core-periphery structure of the internationalisation of the service sector

		<i>Core</i>	<i>Periphery</i>
	Centrality indexes*	Germany, United Kingdom, United States, France, Netherlands, Italy, Russia, Sweden, Belgium and Spain.	Poland, Greece, Canada and Portugal
<i>International trade network</i>	Components analysis	United Kingdom, United States, Germany, Netherlands, Italy, France, Austria, Canada, Japan, Luxemburg, Belgium, Spain and Ireland	Greece, Hungary, Poland and Portugal
	K-cores analysis	United States, United Kingdom, Netherlands, Luxemburg, Italy, France, Germany and Belgium	Australia, Canada, Honk Kong, Greece and Poland
<i>Foreign direct investment network</i>	Centrality indexes*	Netherlands, United Kingdom, Germany, Luxemburg, France, United States, Italy and Cyprus	Slovenia and Romania
	Components analysis	United Kingdom, United States, Germany, Netherlands, Luxemburg, France, Ireland, Spain and Italy	Slovenia and Hungary
	K-cores analysis	United States, United Kingdom, Sweden, Netherlands, Luxemburg, Italy, Ireland, France, Spain, Denmark and Germany	Slovenia and Finland

*= no mathematical threshold was applied, countries were chosen on the basis of the average scores of the three centrality indexes applied.

⁴⁶ The core analysis was performed on undirected networks, it means that the link between two economies is given by the sum of the two export flows and no significance is given to the direction of the flow.

We can extrapolate some conclusion on the core-periphery structure from Table 4.4. For what concerning the international trade of services we can identify a core group of countries composed by USA, United Kingdom, Germany, France, Netherlands, Italy and Belgium. Another group of relevant economies plays a minor role within the centre of the net, it is the case of Luxemburg, Spain, Japan and Ireland. The presence of a Nordic cluster appeared clear with Sweden and Russia as references but composed also by Norway, Denmark and Finland. Probably because of their geographical position Honk Kong and Australia are not central to the process, while the eastern European countries jointly with Greece and Portugal are economies less integrated within the trade set of relations. Similar results arise observing the FDIN outcomes. Here the central group is composed by United Kingdom, USA, Netherlands, Germany, Luxemburg, France and Italy. Spain, Ireland Cyprus and Denmark compose the second line. Also in this case a Nordic cluster can be observed while Slovenia seems to be the less integrated economy.

4.4 – Conclusions

Service internationalisation is a complex process requiring complex analysis tools. SNA is a method of analysis that can deal with this challenge. The particular features of this method allow studying the relations maintained by different actors and at the same time maintaining a perspective of the whole set of relations: the network. The bases of this kind of analysis are the data on bilateral links maintained by the actors, or vertices of the network. The internationalisation of the service sector offers two different sets of this kind of data. Trade and FDI bilateral relations maintained by different countries (the actors) can be object of study in order to present a picture of the internationalisation process at global level.

We therefore apply some exploratory network analysis techniques to bilateral data describing trade and stock of FDI between 26 and 23 developed economies respectively. In our knowledge, this chapter represents the first attempt to apply network techniques to service specific data and the first time that different kind of data describing international relations are studied in the same work, even though separately.

The first goal achieved was to propose a graphical representation of the process of internationalisation. The visual analysis of trade and FDI relation confirmed some hypothesis on the nature of the process. The largest trade flows and FDI stocks are maintained between the most developed economies. It was also clear that the great majority of the international economic relations consist in a thick network of relatively low value exchanges.

Furthermore it resulted interesting to apply some recently developed software to the network data in order to obtain a geographical mapping of the internationalisation networks. Graphical and geographical representations suggest that countries show different behaviours within the process: some economies seem to play central roles while others are less involved.

The mathematical breakthrough confirms the outcomes of the graphic analysis and leads to some consistent result. The studies of node centralities clearly show that there is a group of countries performing high centrality scores independently of the measure applied. This outcome is particularly evident when studying the trade network but holds for the FDI set of relations too. In addition, the statistics elaborated on the whole network confirms that, even though the networks appear weakly centralised, when only the relevant relations are taken into consideration the two networks appear centralised. This means that there are one or more countries dominating the process.

Some techniques aimed at identifying cohesive subgroups within complex nets finally confirm the presence of a subgroup of countries playing a central role and various peripheric subgroups or isolated economies. The network of trade relations in the service sector is dominated by USA, United Kingdom, Germany, France, Netherlands, Italy and Belgium while Luxemburg, Spain, Japan and Ireland play a secondary role. For what concerning the network created by the investment relations, the same countries with some exception are the central ones: United Kingdom, USA, Netherlands, Germany, Luxemburg, France and Italy. A Nordic cluster is evidenced in both cases.

Finally, we were able to answer to some basic questions on the nature of the process of internationalisation of the service sector. Nevertheless we are aware that our efforts just scrubbed the surface of subject. The results proposed can be interpreted as a first step in this direction, since the analyses implemented are more means to an end rather than an end themselves. We are confident that further researches applying more sophisticated network techniques and / or other analysis tools with SNA techniques will follow.

Several questions on the nature of the structure presented could be answered through the combination of SNA and other techniques. What are the characteristics of the countries in the core group? What these countries have in common? And countries in the periphery? Do common characteristics foster interaction or similarities are due to this interaction? In order to go beyond the results achieved in this chapter, further researches in this field are needed.

Chapter highlights:

Services internationalisation can be seen as complex set of international relations between countries that form networks.

Social network analysis is a method of analysis that can propose a new perspective on the structure of the internationalisation of the service sector.

The combination of SNA with mapping software can produce useful geographical representation of economic international relations. The network representing international trade and FDI are here presented.

The network of service internationalisation show how few relations account for the large majority of economic links taking place between countries.

The countries involved in the internationalisation process play different roles. Some countries are central others are peripheral.

USA, United Kingdom, Germany, France, Netherlands and Italy are the countries at the centre of both networks, trade and FDI.

Other clusters, based on historical and geographical characteristics can be identified.

Some countries are more influential within one of the two networks rather than the other.

Chapter 5 – The role of cost related factors in the competitiveness of European and Spanish services

Objectives:

Approaching the concept of competitiveness in services internationalisation. Presenting a survey of the mayor contributions to the theoretical and empirical literature on competitiveness and services competitiveness in particular. Make a distinction between cost-related and non cost-related factors of competitiveness. Set up proxies for cost-related competitiveness factors. Perform empirical analyses on the relation between factors and measured competitiveness in the service sector at European and spanish.

Methodology:

Linear econometrics models are elaborated in order to address the relation between factors and measured competitiveness. They are applied to panel data sets. The models are estimated through various linear and panel data estimators.

Synopsis

The emergence of service internationalisation places competitiveness at the centre of the discussion, especially because the study of service competitiveness factors is so far a field largely unexplored. This fifth chapter addresses the role of cost related factors explaining service competitiveness. First, it empirically tests trade performance of 15 European countries in 8 service markets in order to observe the role of cost factors, country effects and industry specific patterns. A model based on cross section and panel data regressions is suggested in order to test the influence of cost determinants and their elasticities. Results show the importance of cost related factors of competitiveness, great heterogeneity among service activities and suggest the importance of non-cost related factors within European Union countries. Secondly, a country specific analysis is carried on for Spain. The role of three different measures of cost factors is studied in order to investigate its relation with trade performance of Spanish service activities in 14 foreign markets.

Introduction⁴⁷

Service international sourcing is one of the most dynamic phenomena in the global economy arena. After emerging on a significant scale around the year 2000, nowadays it is a consolidated activity. For example, every day thousands of queries from British clients are tackled by customer service representatives in India while simultaneously Dominican operators telework for Spanish enterprises, a single company ships goods in Frankfurt and Hong Kong while an Italian architect draws up plans for Shandong urban development. In the last 10 years several businesses have become global in sectors previously dominated by domestic players and this phenomenon saw an increasing involvement of service activities. As it had been extensively presented in previous chapters, the first stages of globalisation since the 1970s crisis were of interest mainly in the industrial sector, with rapid increases in international trade operations and delocalisation of production sites. Nevertheless, relatively recent trends towards global sourcing, from around 2000 and onwards, established new paths breaking traditional market segmentations and limits of service internationalisation, turning them into an active player in business internationalisation on a worldwide scale.

Among all the characteristics related to the factors contributing to the internationalisation process one concept is emerging as the benchmark upon which the discussion at economic and policy level stands: competitiveness. This concept encloses all the elements promoting (and somehow hampering) internationalisation. Competitiveness is one notion with which a large number of concepts and related works have been associated (Siggel, 2007), although the Porter (1990) work on the competitive advantage of nations was an outstanding one together with the debate launched by Krugman (1996) during the 1990s. More generally, competitiveness can also be understood from a wider definition expressed in the Lisbon Agenda where it is seen as the capacity of a country to improve and raise the standard of living of its inhabitants by providing more, and higher quality, employment and greater social cohesion. Among the several social and economic factors contributing to the achievement of these objectives, a major contribution is given by the commercial (or “trade”) competitiveness which is considered to be the result of countries’ export (and import) performances. This narrow concept of competitiveness is the one more

⁴⁷ The present chapter is based on two different works. I am in debt with the co-authors of both of them: Dr. Andrés Maroto, Gisela Di Meglio, Professor Luis Rubalcaba and Professor Juan Ramón Cuadrado (see Visintin et al, 2010; and Visintin et al., 2008).

widely linked to business competitiveness through export and is the one which will be used in this chapter.

There are many reasons why countries might want to influence and increase their commercial external position in services, but mainly because it affects the current balance and its stability avoids crises and serious economic disruption. Furthermore, employment growth, structural changes, stable growth patterns and, more generally, living standards (Krugman, 1996) are all concepts related with the competitive position of a country.

Some of the reasons motivating the research in this field correspond with those expressed in the introductory and following chapters. Indeed since services nowadays represent more than 80% of modern economies in terms of employment and value added, more than 20% of international trade, the majority of foreign direct investments and many manufacturing trades are also associated with the business services trade. Thus service competitiveness turns into a very relevant issue and a real challenge for European businesses (Guerrieri and Meliciani, 2005; Rubalcaba, 2007), deserving much more attention, at least similar to the extended bibliography available on goods and trade competitiveness. Service competitiveness is an almost under-researched field, thus justifying the interest proposed in this chapter.

The importance of the topic is also provided by the relevance of the explanatory factors behind service international trade. At the very beginning of the 2000 decade services offshoring was largely explained as costs factors so low-wages countries could benefit to create new competitive advantages in the area of services, mainly of most standardised services. Relative or absolute costs were at the centre of the new economy geography of services (Camacho, Rubalcaba and Bryson, 2010). Within Europe, costs have also been used as the major explanation behind service trade between Western Europe and Central and Eastern European Countries (CEECs) (Stare and Rubalcaba, 2009). However, this latest work underlines that factors such as geographical and cultural proximity might also contribute to the preference of the CEECs by the EU 15 companies when deciding on international outsourcing. International trade in services is evidencing new competitive advantages, some based on reduced relative costs, some on improved quality and product differentiation. A right balance between cost and non-costs factor may be essential to identify potential growth in services trade. This chapter contributes to understanding the role of cost and non-cost factors in services international trade.

The rest of the chapter is structured as follows: Section 5.1 reviews the existing literature on competitiveness particularly focusing on services characteristics and factors of competitiveness in services. Section 5.2 describes the empirical setup of the chapter; the

database chosen, the indicators of competitiveness and the methodology used in their construction are presented. The description of the model used to empirically assess the relation between cost-related factors and trade competitiveness concludes the section. Section 5.3 begins with an overview of the relations between the indicators. Then, the described methodology is applied and results are presented and commented on. Finally, Section 5.4 offers concluding remarks.

5.1 – Behind trade competitiveness and its measurement

The need for statistical measures oriented towards competitiveness and factors exercising influence on it emerges among businesses and policy-makers. Applied researchers have proposed several indexes aimed towards this, but since there is no ideal measure for such a wide notion, the debate on these indicators is vigorous and widespread among academics and practitioners. We start this section by briefly presenting the state-of-the-art empirical research on this subject, which basically concentrates on the manufacturing sector. A discussion on the particular characteristic of service activities and feasible measures of competitiveness of these sectors follows.

So far, while analysing the manufacturing sector, most researchers have focused their attention on factors determining competitiveness based on consumer price levels and costs, or from now on, cost-related factors. Competitiveness is here merely intended as the capacity of a country to produce goods and services at competitive prices in international markets. Following this, attention is concentrated on price indexes, export unit values and labour costs.

Empirical studies in this direction try to connect cost-related factors with external trade performances. The range of indicators that better fits the concept of cost-related competitiveness is the real exchange rate (RER). Turner and Van't dack (1993) explored different cost-related measures of competitiveness for the manufacturing sector. The conclusion achieved shows how no single measure can be regarded as the sole indicator, since all of them present important shortcomings. Similarly, in a paper one year later, Marsh and Tokarick (1994) provided a theoretical framework and empirical tests for five cost-related competitiveness indicators. After considering five different RERs the authors eventually suggest that the indicator that best captures competitiveness aspects should be the RER using unit labour costs⁴⁸.

⁴⁸ For a more in-depth study of real exchange rate see also Chinn, 2006.

The RER based on unit labour costs (RER_{ULC}) seems to be the most useful proxy for competitiveness since it assesses developments in producing goods profitably, as labour is the main input required. Unit labour costs (ULC) are defined as the ratio of the compensation of workers to their productivity in a country. The ratio of the ULC of country *A* to the ULC of country *B* is defined as the relative ULC ($RULC_{AB}$). This index and the RER based on it (RER_{ULC}) are the most popular benchmarks applied in theoretical (Fagerberg, 1988), and empirical analysis on competitiveness (Lipschitz and McDonald, 1991; Carlin et al., 2001; Cerra et al., 2003; Neary, 2006). Nevertheless, all competitiveness indicators present shortcomings, $RULC$ and RER_{ULC} are no exceptions. Since they are calculated starting from ULC, they basically consider only the difference in levels and variations related to labour costs, but do not assess their proportionate share of total production costs.

The attention of the works presented so far has focused on the manufacturing sector. Nevertheless, a distinction between secondary and tertiary sectors deserves to be made. Actually, the process of globalisation of the tertiary sector is characterised by the particular features these activities present (Sampson and Snape, 1985; Daniels, 2002; Banga 2005; among others). Intangibility and simultaneity of production and consumption have an important influence on their mobility and tradability. The distinctiveness and the complexity of service international provision (Segal-Horn and Dean, 2008; Nyahoho, 2010) is underlined by the fact that, in order to take them into account, international trade in services is defined under four different modes of supply. As it was seen in previous chapters, service international trade had been classified in cross-border supply, consumption abroad, commercial presence and presence of a natural person abroad. This structure gives an idea of how their globalisation is a complex process that deserves specific attention. Furthermore, the role services play in the internationalisation of economic activities largely determines and defines the rate of globalisation (Cuadrado et al., 2002; Rubalcaba, 2007).

Undoubtedly, all these features have an influence on service competitiveness distinguishing tertiary activities from manufacturing. Several works approached the argument, theoretically and empirically, aiming at evidencing service-specific characteristics. From a theoretical perspective it is worth mentioning the work of Ahroni (2000) analysing the role of reputation, and the features behind reputation, such as the quality of management or innovation, as a source of comparative advantage in business services. Knowledge, intended as the ability to produce and manage the expertise to be sold to the clients, is treated as a key competitive advantage by Grosse (2000). Roberts (1999) recognises that ownership advantages, such as brands, technology, knowledge and

reputation are factors which influence the internationalisation patterns of service firms' internationalisation.

From an empirical standpoint, several studies try to shed some light on the factors enhancing competitiveness in services. The aim of most of these studies has been to prove the validity of Ricardian and Hecksher-Ohlin models based on comparative advantages and factor endowments. This is the case of the studies of Sapir and Lutz (1981), Li et al. (2003, 2005), and the already mentioned work of Nyahoho (2010). The cited works evidence how capital-labour ratio, human capital and scale economies (among other aspects) can be considered as competitiveness factors for specific service activities. Rubalcaba et al. (2005) and Molero and Valdez (2005) are other empirical studies worth specifically mentioning which are directed to services competitiveness.

The cited theoretical and empirical works present one common feature: they recognise that cost and price dimensions cannot be the only factors influencing trade competitiveness, but there are other "less tangible" features affecting service trade. There is an increasing awareness of the importance of other kinds of factors considering economic, structural and institutional features. Following Schumpeter (1943), the theoretical arguments in favour of non-cost-related factors sustain that international competitiveness is strongly related to technological competition. Moreover, the importance of the economic environment has to be taken into consideration. Innovation (Griliches, 1994; Gallouj, 2002, Rubalcaba et al., 2010), flexibility, the relations within the market (Wilkinson et al., 2000) and high quality standards are some determinants deserving the attention of researchers. From now on these sources of competitiveness will be referred to as non-cost-related factors.

Once more, empirical studies centred on the role of non-cost competitiveness factors focus on the goods trade. Carlin et al. (2001), for example, set up three different measures representing technology at industry level (R&D expenditure, patenting activity and investment in fixed capital) and three variables describing institutional factors (human capital formation, disembodied technical progress and the structure of corporate ownerships) and included them in their competitiveness analysis. In Cheptea et al. (2005) competitiveness driven by cost and non-cost-related factors is included in a "performance effect" within the empirical analysis. Following neo-Schumpeterian logics, in 2004 Fagerberg et al. created a model where the growth of the market share of a country is dependent on four variables: cost-related factors and three variables representing non-cost-related factors; potentials in exploiting knowledge developed elsewhere, innovation, and growth in the capacity to exploit knowledge.

So far we have focused our attention on the determinants of competitiveness. Nevertheless studies on competitiveness also need to take into consideration the effects of competitiveness. Trade competitiveness of a country in a determined market is invariably associated with its commercial performance. Therefore, the market share of an economy in its partner countries is considered the most significant indicator for this kind of analysis (see, among others, Cheptea et al., 2005; Rubalcaba and Maroto, 2007).

The existing empirical contributions on competitiveness present some limitations. They are mainly focused on the manufacturing sector and hardly combine theoretical developments with data analysis. Service literature on competitiveness factors is still limited and does not allow a clear position to be staked out. This chapter takes a new step in this direction, by applying concepts supporting successful methodologies in the manufacturing sector to tertiary activities. In particular, the chapter intends to assess, through an industry level study of the European market in several service activities, the influence that cost-related factors have on trade performance. The empirical approach tries to evaluate the existence of non-cost-related factors behind service competitiveness in Europe. Due to the labour-intensive nature of service activities, ULCs and RER_{ULC} are chosen to be observed and statistically analysed in relation to countries' market share. These analyses take place on the one hand at European level, on the other for the specific Spanish case. In this way the importance of the cost-related and non-cost-related factors in the tertiary sector will be addressed.

5.2 – The empirical setup: data and modelling

5.2.1 – Data Description

Before presenting the econometric models implemented, we introduce the description of the empirical dimensions of the studies, their temporal scope, the countries under analysis, as well as the key variables constructed, and their sources.

The first analysis carried out in this chapter focuses on the role of cost competitiveness in trade performance across service industries in the EU15 countries. The period considered runs from 1992 until 2004. International trade statistics in services and nominal exchange rates data come from Eurostat. In the first case, EU15 information is available from 1992 onwards. This represents a serious limitation of the empirical analysis since the rest of the time periods have to be confined to this temporal scope. The data set used for measuring cost competitiveness comes from EU KLEMS Database (March 2007

release),⁴⁹ a project financially supported by the European Commission. This extensive database computes statistics on economic growth, productivity, employment, intermediate inputs and technological change at industry level across EU member states from 1970 to 2004. The construction of the relative unit labour costs (RULC) by service sectors is possible due to the availability of consistent labour compensation, employment, hours worked and value added data.⁵⁰ Labour compensation (L) includes total labour costs (wages, salaries and other costs) associated with employees and the self-employed. Since labour compensation of the self-employed is not registered in National Accounts of member states, the EU KLEMS Database makes an imputation by assuming equality between compensation per hour of self-employed work and compensation per hour of work by employees. This assumption may not be totally appropriated in the service industries, since the characteristics of the self-employed and employees differ extensively within categories. According to EU KLEMS Methodology (Timmer et al., 2007) the self-employed in business services appear to earn even more than employees, so in this sector a higher ratio would be more suitable. Further research based on survey estimates of earnings for the self-employed in the different European countries is needed.

Since trade and cost competitiveness data come from different databases, the different service categories are harmonised. In this way, the analysis concerning the European economy is mainly restricted to the following sectors:

- Goods (agriculture and manufacturing)
- Services
- Transport
- Hotels and restaurants
- Communications
- Financial Services
- Computer and related activities
- Other business services (research & development, plus other business activities)
- Social and personal services

⁴⁹ www.euklems.net

⁵⁰ For the Eurozone countries the values of labour compensation and value added are expressed in (millions of) euros since 1999 onwards. Before 1999, the EU KLEMS Database converted national currencies to Euros using the 1999 official fixed Euro conversion rate for each country. In this chapter, these figures were converted in order to reflect the changes present in nominal exchange rates prior to 1999 in the variables under analysis.

A similar approach is carried on for the Spanish specific analysis. We implement a research on the role of different kind of cost-factors in the trade performance of the aggregate Spanish service sector in 14 foreign markets⁵¹. As it will be explained later, the three labour cost indexes refer to three kind of labour forces: high, medium and low skilled workers. It is in our intention to address in this way the role of human capital specialisation in this field. The reference period for this last analysis goes from the year 2000 until 2005.

5.2.2 –Indicators

The general approach adopted in analysing service competitiveness in this chapter is based on the study of export market share indicators and unit labour cost indexes. Real exchange rates were constructed on the latter. For what concerning the first part of the analysis, the variable chosen to measure the effective trade performance of each country in every selected service sector within the European market is the market share. Indeed, market share presents the advantage of evaluating competitiveness through its effects. Economies and industries are qualified as competitive if they play an important role in international supply. We actually investigate if the international relevance is related to the factors that intervened in the promotion of the supply capacity (competitiveness determinants). The market share in every year is here defined as the ratio of the exports of each country, in the determined sector, to the total EU15 imports coming from European countries. Market share is also the chosen indicator of the Spanish specific study, in particular we take into consideration the market share of the Spanish services in each of the fourteen countries observed.

As seen, *ULC* is the variable commonly observed in competitiveness analysis representing the cost related factors. It is computed as the relation between the cost of the labour factor and its productivity. Since labour is the main factor contributing to the value added in the observed activities, it is considered as the best cost factor competitiveness indicator.

For each country and sector, ULC are defined as follows:

⁵¹ The data, which source is the OECD Stat database, refer to the following countries: Austria, Belgium, Czech Republic, Denmark, Finland, France, Hungary, Italy, Japan, Netherlands, Slovakia, Sweden, United Kingdom and Germany.

$$ULC = \frac{LPH}{\left(\frac{VA}{Emp * H} \right)}$$

where LPH represents the labour compensation per hour of the labour force; VA is the value added; Emp is employment and H is the number of hours worked per person in the labour force. The above term is a measure of cost while the below term assesses productivity.

For what concerning the general analysis, the real exchange rate used is based on relative ULC ($RULC$). The latter is calculated as the ratio of the ULC in a sector in the home country to the EU15 value in the same sector. Therefore, in each year considered, the RER of country c in sector s will be:

$$RER_{ULC}^{c,s} = e^c * \frac{ULC_s^c}{ULC_s^{EU15}}$$

with e being the nominal exchange rate of the home currency to the Euro⁵² in the considered year. As seen in Section 5.1, despite limitations, RER based on ULC is the dominant approach in economics literature.

The real exchange rates used in the Spanish specific analysis are constructed similarly. As anticipated we set up three different RER , which are based on unit labour cost of high, medium and low skilled workers. Another difference with the index explained above is that the ratios of ULC are constructed on data on Spanish and the other 14 countries. Therefore the index applied results to be:

$$RER_{ULC}^{S,c} = e^c * \frac{ULC_{sk}^S}{ULC_{sk}^c}$$

The real exchange rate between Spain and a country c is determined by the nominal exchange rate of the Euro with respect to each country currency⁵³ multiplied by the ratios of the Spanish and foreign ULC . Three kind of ULC are used depending on the specialisation of

⁵² Since 1999 e is fixed in the 12 countries composing the Euro area in the time period considered.

⁵³ e represents the quantity of national currency necessary to buy one Euro. e corresponds to one unit when country c belongs to the Euro area.

the labour force, sk indicates the skill levels: low, medium and high skilled workers. The RER where constructed so that an increase of the indicator corresponds or to a decline of the ULC relation or to a monetary depreciation. In other words, an increase of the indicator corresponds to a decline in competitiveness and *viceversa*.

5.2.3 –The models

The general empirical analysis carried out is twofold. In the first part, the estimation technique is based on pooled Ordinary Last Squares (OLS). In this sense two models are presented and tested. Secondly, a panel data regression with fixed effects is run in order to take into account the industry specific characteristics.

Within the OLS analysis, our modelling strategy looks at the relation occurring between the levels and the growth rates in market share and the RER_{ULC} . The work presenting the strongest relation to our empirical analysis is the first part of the article by Carlin et al. (2001) on export performance of OECD countries in manufacturing industries. Our OLS analysis takes into consideration competitive behaviours of several activities (producing goods as well as services) at aggregate level, allowing the panel data analysis to observe service sector specific characteristics.

The first attempt investigates existing linkages between changes in labour costs and in market share. The supposed relation works as follows: an increase in marginal cost is directly related to increases in prices, while rises in domestic costs in a sector within the considered country should have negative effects on its European market share. The effects due to changes in cost and price are supposed to last for more than a period as a result of the delay by which consumers react to changes in prices. Therefore a model that captures present and past changes in relative unit labour cost was created. It has to be noticed that the elasticity of European market share to RER_{ULC} will also depend on the part of cost changes absorbed by the adjustments in profit margins. The evaluation of this effect goes beyond the aims of this work. The intention here is to understand if variation in labour costs in service activities influenced the market performance of the country in the service activity considered. This will lead to a conclusion on the importance of cost related and non-cost related factors of competitiveness.

In accordance with the introduction section, there are many elements determining cost related competitiveness other than labour cost. Currency movements are important determinants. Since they influence prices in the external markets and they have often been provoked with the intention of driving national exports, competitive currency devaluations can be considered among the cost related factors. The nominal exchange rate included in

the RER_{ULC} as defined in the previous section, introduces monetary changes into the model.

Due to the low level of services standardisation, the same service can be produced differently in each country and this would be reflected in the country export market share. Country specific trends are captured by the model including a full set of dummy variables corresponding to the country considered. Therefore, the models used for the level and first difference regressions are expressed as follows:

$$\ln(EMS)_{ct} = \alpha + \sum_{k=0}^1 \beta_k \ln(RER_{ULC})_{c,t-k} + \sum \beta_c COUNTRY_c + \varepsilon_{ct} \quad [5.1]$$

$$\Delta \ln(EMS)_{ct} = \alpha + \sum_{k=0}^1 \beta_k \Delta \ln(RER_{ULC})_{c,t-k} + \sum \beta_c COUNTRY_c + \varepsilon_{ct} \quad [5.2]$$

with EMS being the European market share in a determined year and Δ the first difference in terms of time.

The panel data analysis, based upon a similar model, aims at identifying aggregate relationships at industry level. A panel of data is built up for each of the nine sectors considered. Given the available information, the use of this estimation methods lead to more accurate and reliable results and allows for sector specific conclusions. Since the cases within the panel represent bilateral relations (country-EU15), the error term captures unobservable effects. Therefore, in this case we consider suitable the use of fixed effects estimators. Indeed this estimator is considered appropriate when individuals are "one of a kind". This means that they cannot be considered as a random draw from some underlying population.

The need for a sectoral analysis is driven by the fact that the tertiary sector is composed of several kinds of activities with different technologies and different cost formation processes. Furthermore it is reasonable to assume that the market share elasticity towards changes in price differs from sector to sector. The panel data regression identifies sector specific developments in the changes in European market share even after considering the changes in RER_{ULC} . The analysis is here split into two as well: from one side the levels of the indicators are pooled, from the other the regression is run applying the first difference operator.

$$\ln(EMS)_{ct} = \alpha + \beta_s \ln RER_{ct} + \mu_t + \varepsilon_{ct} \quad [5.3]$$

$$\Delta \ln(EMS)_{ct} = \alpha + \Delta \beta_s \ln RER_{ct} + \mu_t + \varepsilon_{ct} \quad [5.4]$$

For every sector s , behaviours particularly are identified by the sign and the values of the coefficient β , while country specific forms are observed within the values assumed by μ .

The analysis carried on the Spanish case represents a particular application of the mechanism described above. An increase in relative labour cost is supposed to have an influence on Spanish service aggregate performance in the 14 considered markets. In this case the analysis is carried on levels. The models to estimate are:

$$\ln(EMS)_{S,c,t} = \alpha + \beta \ln RER_{c,t,sk_H} + e_{c,t} \quad [5.5]$$

$$\ln(EMS)_{S,c,t} = \alpha + \beta \ln RER_{c,t,sk_M} + e_{c,t} \quad [5.6]$$

$$\ln(EMS)_{S,c,t} = \alpha + \beta \ln RER_{c,t,sk_L} + e_{c,t} \quad [5.7]$$

In these models $\ln(EMS)$ represents the natural logarithm of Spanish export market shares in country c at time t . The three Real exchange rates used refer to country c at time t and to the three skill levels of the work force: high (H), medium (M) and low (L). The estimation approach is the same as above since each equation is estimated through two methods: OLS and panel data techniques are implemented. Panel data estimations seem to better fit models [5.5], [5.6] and [5.7] because they take into consideration the dynamics behind the process and because they control for country specific effects. The most popular estimators used in panel data estimations are *fixed effects* and *random effects estimators*. We make use of both and implement the Hausman test in order to verify the existence of correlations between individual effects and each independent variable. According to the results of the test the null hypothesis (of no correlation) cannot be refused and therefore the results of the random effects estimators are proposed in the next section.

5.3 – Results

5.3.1 – Explorative Results

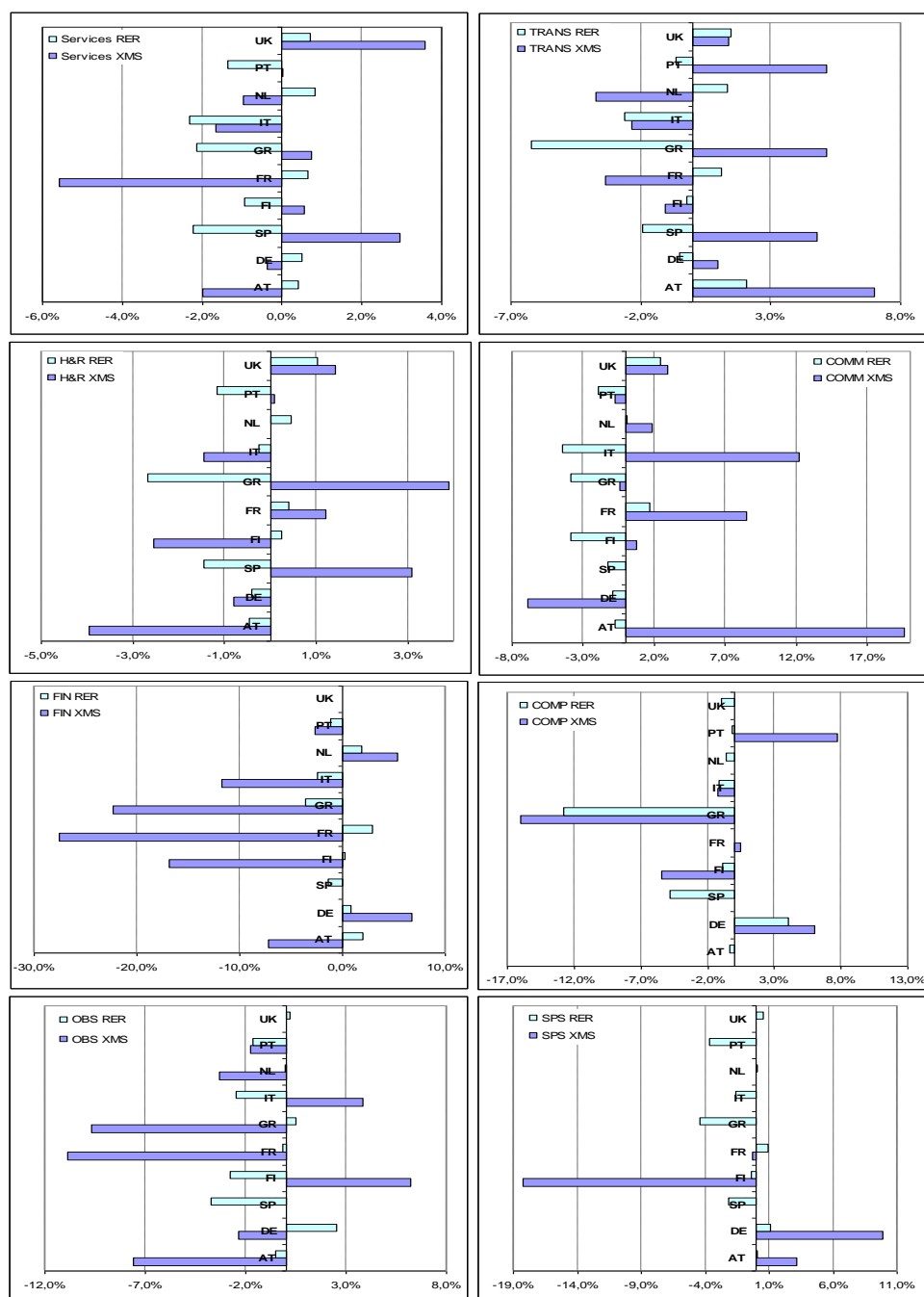
This sections aims at introducing some descriptive results arising from data examination before the regression analyses outcomes are described. In accordance with what has been previously stated, we do expect negative relations between export performance and RER_{ULC} values. It would mean that the relative labour costs affect market share in a

“traditional” way: relative increases in costs drive to downfall in market share and *viceversa*. A positive relation could be considered a “paradox”; we will refer to this paradox as the “Kaldor paradox⁵⁴”.

Accordingly, with Figure 5.1 a negative relation between RER and XMS can be appreciated in most countries in sectors such as *Services*, *Other Business Services* and *Transport*; while the majority of countries show a positive relation in *Financial Services*, *Social and Personal Services* and *Computer and Related Activities*. Considering a country perspective in the *Services* sector (first graph of the left column), an inverse relationship between services export market share and cost competitiveness based in RER_{ULC} can be observed in most EU countries. As explained before, this means that gains in competitiveness though decreases in RER_{ULC} are associated with larger export market share – and vice versa. However, two countries show an opposite behaviour: Italy and the United Kingdom. In the former, gains in competitiveness were related to a loss in market share. On the other hand, in the United Kingdom, the substantial improvement in trade performance was associated with deterioration in service cost competitiveness. This relation, which could be classified as a sort of “Kaldor paradox” behaviour, means that in these cases the cost related factors of competitiveness do not present a determinant influence on market share. When this behaviour is observed we have to deduce that other kinds of competitiveness factors (e.g., non-cost factors) are influencing the market performance of the countries. This direct relationship between export market share and RER_{ULC} can be appreciated in six countries in the case of the *Hotels and Restaurants* sector and in six countries in the case of the *Communications* sector (United Kingdom, Netherlands, Italy, France, Germany and Austria in the first case and United Kingdom, Portugal, Netherlands, Greece, France, Germany in the second). In *Financial Services* and *Computer and Related Activities*, this relation can be observed in five countries in each sector (Portugal, Netherlands, Italy, Greece, Germany and Italy, Greece, France, Finland, Germany, respectively) whereas in *Transport*, *Other Business Services* and *Social and Personal Services* only three countries performed this way. In a European perspective, heterogeneity is not only a matter of sectors but of countries too.

⁵⁴ In 1978, while studying the effects of monetary devaluations on international trade in manufacturing sectors, Kaldor observed what apparently is an inconsistency: that countries with the fastest improvement in exports were those with the fastest increases in costs. Since then the increase of export associated with a rise in costs is referred to as the “Kaldor paradox”. This fact has been proved by the evidence (Kellman, 1983; Fagerberg, 1988; Amendola et al., 1992; Meliciani, 2001; Rubalcaba and Gago, 2001).

Figure 5.1 Export market share (XMS) and real exchange rates (RER) annual growth rates in the services sector



Note: XMS annual growth rates for the period 1992-2005, and RER annual growth rates for the period 1992-2004. TRAN: Transport, H&R: Hotels and restaurants, COMM: Communications, FIN: Financial services, COMP: Computer and related activities, OBS: Other business services, SPS: Social and personal services.

Source: Di Meglio, in Visitinin et al. 2010, based on EUKLEMS Database, March 2007 and Eurostat.

Table 5.1 illustrates the behaviour of factors behind the evolution of RER_{ULC} by presenting its components: the nominal exchange rate (NER) and the relative unit labour cost (RULC). By definition, countries that have depreciated the NER and decreased RULC show an enhancement in cost competitiveness (a decline in RER_{ULC}). On occasions, these two forces went in opposite directions and the final effect on RER_{ULC} depended on the strength of both. Greece, Spain, Italy and Portugal are countries where the highest currency depreciations took place during the observed period. These operations could counterbalance the growth of RULC in several sectors, thus enhancing cost competitiveness. The improvement in cost competitiveness was also achieved in a more virtuous way by some countries in sectors where the RULC has declined more than national currency has appreciated (i.e., several service sectors in Austria, financial services in United Kingdom).

Table 5.1 The RER components: nominal exchange rate (NER) and relative unit labour costs (RULC) annual growth rates

	<i>Tot. Services</i>			<i>Transport</i>		<i>Hotels and Rest.</i>		<i>Communications</i>		<i>Financial serv.</i>		<i>Comp. and rel.</i>		<i>Other BS</i>		<i>Social and pers.</i>	
	<i>NER (*)</i>	<i>RULC</i>	<i>RER</i>	<i>RULC</i>	<i>RER</i>	<i>RULC</i>	<i>RER</i>	<i>RULC</i>	<i>RER</i>	<i>RULC</i>	<i>RER</i>	<i>RULC</i>	<i>RER</i>	<i>RULC</i>	<i>RER</i>	<i>RULC</i>	<i>RER</i>
<i>AT</i>	0,272	0,1	0,4	1,8	2,1	-0,7	-0,4	-1,1	-0,8	1,7	2	-0,6	-0,3	-0,8	-0,5	-0,2	0,04
<i>DE</i>	0,27	0,2	0,5	-0,8	-0,5	-0,7	-0,4	-1,2	-1	0,6	0,8	3,8	4	2,2	2,5	0,8	1,1
<i>SP</i>	-1,89	-0,3	-2,2	-0,03	-1,9	0,4	-1,4	0,6	-1,3	0,5	-1,4	-2,9	-4,8	-1,8	-3,7	-0,2	-2,1
<i>FI</i>	-0,19	-0,7	-0,9	-0,1	-0,3	0,4	0,2	-3,7	-3,9	0,4	0,2	-0,7	-0,9	-2,6	-2,8	-0,2	-0,4
<i>FR</i>	0,359	0,3	0,7	0,7	1,1	0,1	0,4	1,3	1,7	2,6	2,9	-0,35	0,01	-0,5	-0,1	0,5	0,9
<i>GR</i>	-2,68	0,6	-2,1	-3,6	-6,2	-0,01	-2,7	-1,2	-3,8	-0,9	-3,6	-10,1	-12,8	3,2	0,5	-1,8	-4,5
<i>IT</i>	-1,61	-0,7	-2,3	-1	-2,6	1,4	-0,3	-2,9	-4,5	-0,9	-2,5	0,5	-1,1	-0,8	-2,5	-0,02	-1,6
<i>NL</i>	0,264	0,6	0,8	1,1	1,3	0,2	0,5	-0,2	0,1	1,6	1,9	-0,9	-0,6	-0,3	-0,04	-0,2	0,1
<i>PT</i>	-1,14	-0,2	-1,4	0,5	-0,7	-0,01	-1,2	-0,8	-1,9	0,02	-1,1	1	-0,2	-0,5	-1,6	-2,5	-3,7
<i>UK</i>	0,631	0,1	0,7	0,8	1,5	0,4	1	1,8	2,4	-0,7	-0,1	-1,6	-1	-0,4	0,2	-0,1	0,6

Note: NER annual growth rates for the period 1992-2004. RULC annual growth rates for the period 1992-2004, and RER annual growth rates for the period 1992-2004.

Source: Di Meglio, in Visitnin at al. 2010, based on EUKLEMS Database, March 2007 and Eurostat.

5.3.2 – Regression Analysis

5.3.2.1 – Relative costs as a determinant of export market share.

Table 5.2 shows the results of implementing models [5.1] and [5.2] for the pooled sample. Columns 1 and 3 contain only the RER_{ULC} variables (levels and first differences respectively); columns 2 and 4 present the same regression including country dummies. The inclusion of two different time periods makes for interesting results.

The coefficients of RER_{ULC} allow us to address the question of the average impact of real exchange rate on export market share. In most cases, the RER_{ULC} terms are jointly highly significant and yield a considerable long-run elasticity (around 0.5). A significant positive relationship between RER_{ULC} and market share in the initial period (with the exception of column 2, statistically not significant) can be observed. This means that an increase of cost factors did not lead immediately to a competitive loss, but to an increase in export market share. This fact is in contrast to conventional theories. The exogeneity of the exchange rate is more plausible in studies using disaggregated data, such as the present. This may help to explain why papers that use aggregate data can only find very small elasticities (e.g., Fagerberg, 1988, and Amendola et al., 1992).

The long-run elasticity of EMS with respect to RER_{ULC} is not dependent on the exact degree of disaggregation used in the sample, the choice of weights in the regression, or the choice of maximum lag length.

This initial perverse effect, a decline in cost competitiveness bringing immediate improvement in market share, is compensated in the second period, when increases of RER_{ULC} have negative effects on market share. This is most plausibly interpreted as the well known *J*-curve effect often ascribed to long-run contracts being fulfilled after exchange rate movements at predetermined domestic prices (Carlin et al., 2001). The protracted nature of the response is notable. If the perverse effect were left out by omitting the contemporaneous change in RER_{ULC} , the estimate of long-run elasticity would be clearly negative, in that there are still significant effects of RER_{ULC} coming in after four or five years.

Table 5.2 The base-line equation: Pooled regression results

<i>Dependent variable: EMS</i>	Levels (in logarithms) (1)		Growth rates (DLn) (2)	
<i>Intercept</i>	-2.7596*** (0.05)	-3.1445*** (0.10)	0.0053 (0.01)	0.1301 (0.08)
<i>RER (t)</i>	1.1663** (0.45)	-0.2489 (0.32)	0.3360** (0.16)	0.3321** (0.16)
<i>RER (t-1)</i>	-1.0461** (0.46)	-0.2418 (0.31)	-0.1027 (0.14)	-0.1127 (0.15)
<i>Long-run elasticity of RFR</i>	0.5333	-10.405	0.4911	0.1537
<i>p-value of joint significance</i>	0.000	0.000	0.085	0.145
<i>Austria</i>	-	-1.4511*** (0.33)	-	-0.1258 (0.09)
<i>Belgium</i>	-	-1.2811*** (0.48)	-	-0.1175 (0.12)
<i>Germany</i>	-	0.6956*** (0.15)	-	-0.1108 (0.09)
<i>Denmark</i>	-	-1.1650*** (0.29)	-	-0.1419 (0.11)
<i>Spain</i>	-	-1.6310*** (0.63)	-	-0.0972 (0.10)
<i>Finland</i>	-	-2.1658*** (0.25)	-	-0.1716* (0.09)
<i>France</i>	-	-0.0755 (0.25)	-	-0.1733* (0.09)
<i>Greece</i>	-	-4.0621*** (0.71)	-	-0.1611* (0.09)
<i>Ireland</i>	-	a	-	0.0110 (0.10)
<i>Italy</i>	-	-3.2066*** (0.89)	-	-0.1289 (0.09)
<i>Luxembourg</i>	-	-1.9461*** (0.48)	-	a
<i>Netherlands</i>	-	0.2239 (0.16)	-	-0.1325 (0.09)
<i>Portugal</i>	-	-3.7697*** (0.65)	-	-0.1056 (0.09)
<i>Sweden</i>	-	-1.3543*** (0.29)	-	-0.1130 (0.09)
<i>United Kingdom</i>	-	1.2745*** (0.14)	-	-0.0885 (0.09)
<i>Observations</i>	1067	1067	942	942

Note: The sample consists of 9 industries across 15 countries between 1992 and 2004. Estimation by Ordinary Least Squares (OLS). Between brackets standard errors. *, **, ***: represent statistical significance at 10, 5 and 1% respectively. ^a: A country was dropped in order to avoid exact multicollinearity.

Source: Maroto, in Visintin et al. 2010

Another striking result arising from the estimations shown in the second and in the fourth columns is that most country dummies are significant once the change in cost competitiveness is included. This result highlights once more the heterogeneity among countries shown in the previous paragraph. If the cost factors really explained all the systematic variation in the change in market share, then these dummies would shrink to irrelevance. The country dummy represents a series of country-specific factors acting on competitiveness and not included in the model.

5.3.2.2 – The heterogeneity of the elasticity of competitiveness to cost factors in service industries.

In this section we address a second question: what lies behind the variation in the cost-sensitivity of export market share? Furthermore we also test the hypothesis arising from some empirical works (see Section 5.1) and from our explorative analysis of Section 5.3, that relative cost may be less important to competitiveness performance in some service industries than in others. Internal nature characteristics might play a role. In order to contrast this, a fixed effects regression is run on a data panel. We separately run equations [5.3] and [5.4] for each service activity presented in the previous sections in order to highlight each particular behaviour. Nonetheless we first decided to present the service sector situation as a whole and confront it with the goods sector.

Table 5.3 shows the results of implementing models [5.3] and [5.4] for the goods producing industries and services as a whole, both for levels (in logarithms) and annual growth rates (first differences). The first observation to be made concerns the goods sector, where the coefficients are not significant, although results are not far removed from those for the services model. In the service sector coefficients are highly jointly significant. Similar results to those shown in the previous section for the pooled sample can be observed. A loss in cost factor competitiveness is accompanied by an increase in market share, although this perverse effect is immediately deleted in the successive period. It confirms previous results, competitiveness effects of cost related factors in services arising after one period. This fact stands out both in levels and growth rate models. In the very short run, cost factors do not seem to play a role in competitiveness performance, but they seem to be relevant in the medium and long run.

Table 5.3 Data panel results: Services *versus* goods

<i>Dependent variable: EMS</i>	<i>Levels (in logarithms)</i>		<i>Growth rates (DLn)</i>	
	<i>Goods</i>	<i>Services</i>	<i>Goods</i>	<i>Services</i>
<i>Intercept</i>	-2.8102*** (0.59)	-0.5945 (0.90)	0.0037 (0.01)	0.0065 (0.01)
<i>RER (t)</i>	0.1577 (0.18)	1.3889*** (0.41)	0.0384 (0.19)	0.7486** (0.29)
<i>RER (t-1)</i>	-0.0617 (0.13)	-0.6552** (0.28)	-0.1100 (0.13)	-0.2519 (0.21)
<i>Long-run elasticity of RER</i>	-0.6384	-15.640	37.856	43.984
<i>p-value of joint significance</i>	0.678	0.005	0.689	0.026
<i>Observations</i>	52	141	47	125

Note: The panel data consists of 15 countries between 1992 and 2004. Estimation by fixed effects. Between brackets standard errors. *,**,***: represent statistical significance at 10, 5 and 1% respectively.

Source: Maroto, in Visitinin et al. 2010

The relationships, presented in Table 5.3, between service sector RER_{ULC} and export market share, lead us to explore the situation at sectoral level. Therefore, it is necessary to have a brief look at the patterns within those different industries which belong to the service sector. In particular, we analyse the relationship between cost factors and competitive position across eight branches: *Transport, Hotels and Restaurants, Communications, Financial Services, Computer and Related Activities, Other Business Services, and Social and Personal Services*.

The relationship between RER_{ULC} and market share is far from similar across sectors. Actually a series of strongly differentiated patterns can be observed. Main results are shown in Table 5.4⁵⁵. According to the results exposed in the explorative analysis, *Transport* and *Hotels and Restaurants* follow the aggregate service trend outlined previously in this analysis, and *Computer and Related Activities* behave in conjunction with the

⁵⁵ Results show statistically non significant relationships in most branches. They might therefore be considered with caution

aggregates service sector. *Other business services* and *Communication* present a similar behaviour, but here the role of cost related factors becomes important after the first period. *Social and Personal Services* behave contrary to aggregate patterns. In these activities, an increase of RER_{ULC} is related to a decrease of export market share, although this intuitive logic effect disappears in consecutive periods. Moreover, in most cases coefficients are not statistically significant, although *Computer and Related Activities* really is an exception. Another exception is *Financial Services*, presenting a positive and significant relationship between cost factors and competitiveness position (Kaldor-type pattern). We can conclude that in Europe, increases in cost related competitiveness might have a positive influence on market share after the first period but this is not statistically significant in most service activities.

Furthermore it has to be taken into consideration that the service activities taken into account represent a very heterogeneous group of activities. This heterogeneity can be observed in the differences in the production processes as well as in the disparities of the distribution and internationalisation procedures.

Table 5.4 Data Panel Results: Service industries

	$RER(t)$	$RER(t-1)$	Pattern
Other Business Services	-0.8252	-0.2142	cost related factors influence competitiveness
Communications	-0.6107	-0.0150	cost related factors influence competitiveness
Hotels and Restaurants	0.0481	-0.5718**	cost related factors influence competitiveness after one period
Transport	0.0135	-0.3413	cost related factors influence competitiveness after one period
Computer and Related Act	1.2021***	-0.0657	cost related factors influence competitiveness after one period
Social and Personal Serv.	-1.7671	1.1854	cost related factors influence competitiveness only in the first period
Financial Services	2.2003***	0.3083	cost related factors do not influence competitiveness

Note: The panel data consists of 15 countries between 1992 and 2004. Estimation by fixed effects. Between brackets standard errors. *, **, ***: represent statistical significance at 10, 5 and 1% respectively.

Source: Maroto, in Visintin et al. 2010

Even though we demonstrated that cost related factors have an influence in Europe on trade competitiveness, the present analysis shows how the particular characteristics of the activities studied make a sector specific analysis necessary. Nevertheless the low significance of the cost related factor proxy casts some doubts on the depth of the influence of these factors on export performances. This low significance, jointly with the limited (in terms of time and activities) influence of cost factors evidenced by the analysis raises

questions on the role that could be played by other kinds of factors more related with non-cost aspects such as innovation or quality of service.

5.3.2.2 – Results for the Spanish case

In this subsection the results of the estimations of models [5.5], [5.6] and [5.7] are presented. The value added of this part of the analysis consists in the fact that the availability of data allowed for a country specific study considering the differences in labour force skills. The results of the models estimations are presented in Table 5.5.

Table 5.5 Relations between export market shares and real exchange rates based on different labour costs for the Spanish service sector.

<i>Dependent variable: EMS</i>	<i>[3.5]</i>		<i>[3.6]</i>		<i>[3.7]</i>	
	<i>OLS</i>	<i>Random Effects</i>	<i>OLS</i>	<i>Random Effects</i>	<i>OLS</i>	<i>Random Effects</i>
<i>Intercept</i>	-2.78***	-2.76***	-3.11***	-3.11***	-2.49***	-2.58***
<i>RER_H</i>	-0.44***	-0.45***				
<i>RER_M</i>			-0.41***	-0.41***		
<i>RER_L</i>					-0.35***	-0.32***
<i>R2</i>	0.58	0.58	0.52	0.52	0.61	0.61
<i>Observations</i>	78	78	78	78	78	78

Note: data on penetration of Spanish services in 14 foreign markets for the period 2000-2005

*, **, ***: represent statistical significance at 10, 5 and 1% respectively.

As it can be seen, the three independent variables, considered separately due to potential multicollinearity problems, present highly significant negative coefficients. The real exchange rates created using highly qualified labour force data show the highest (absolute) value, followed by the coefficient of the variable related with the medium skilled and low skilled workers respectively. Some considerations are suggested by this result. First, it has to notice how cost-factors do have an influence on the market performance of Spanish services. This result is in line with previous outcomes explained above. Labour costs are significant when measuring services competitiveness, therefore productivity improvement can have positive impacts on international performance. Secondly, the elasticities of the export market shares are higher with respect to the high qualified workforce than to the low skilled one. Even though Spanish competitiveness was often related in the past with abundance of low skilled workforce, this analysis demonstrates that, at least in the service

sector, its competitiveness is more related with the productivity of the high skilled employees.

These considerations suggest that the efforts aiming at increasing highly qualified workforce productivity could drive the Spanish service sector to a better-off position of its products in international markets, rather than those aiming at the reduction of costs related with low skilled workers.

5.4 – Conclusions

The increasing importance of service trade in the global economy puts service competitiveness at the forefront of business and policy interest. Service international performance may come from either a cost and prices related factor or other non-cost and non-price factors, similar to what happens in goods trade. After defining a measure capable of being a proxy for cost related factors of competitiveness in the service sector, this chapter carries out an analysis capable of understanding their relation with export market share at European and Spanish level. The exercise was twofold. First it was implemented on a database of ten European countries and seven service activities, the period considered running from the year 1992 until 2004. Secondly we made use of data on the penetration of Spanish services in 14 foreign countries between 200 and 2005. All models used for testing the role of cost factors on competitiveness performance follows the approaches already tested for analysing explanatory factors behind manufacturing industries. In most of the manufacturing studies, cost-related factors explain part, but not all, of the trade performance.

The analyses of this chapter showed several results. First of all, we were able to show how cost related factors of competitiveness are related to export performance in the aggregate service sector. Improvement in cost related factors drives forward better export performances. The relationship found between cost related factors and competitiveness is, at aggregate level, more significant in the service sector rather than in the goods one. The impact of cost factors does not seem to be immediate, and the effects of cost factors on competitiveness arise after the one-year period in our analysis.

Furthermore, we were able to appreciate the high heterogeneity of the different tertiary activities. The cost related factors of competitiveness seem to have different impacts on international trade performances depending on the particular characteristics of each service activity. Actually, the trend observed in the aggregate sector is followed by some activities but not all of them. The high heterogeneity in the production and distribution processes is considered at the base of these differences.

However, we demonstrated that cost-related factors can explain only partially and to a very limited extent, trade competitiveness in services. Other factors such as quality, service differentiation or trade barriers across markets may play a more important role. This hypothesis is confirmed in this chapter by the low explanatory power of the cost related factors of competitiveness.

The particularity of the Spanish specific analysis was that we were able to construct three different indicators of cost related factors of competitiveness based on the wages of high, medium and low skilled labour force. It was interesting to notice how the competitiveness of the Spanish services is more elastic with respect to high wages related factors rather than low ones. This means that higher impacts in the penetration of foreign markets would be achieved by improving the productivity of high skilled workers rather than reducing the cost of low skilled labour force.

A possible future line of research may be the comparison between relationships at EU level and at other wider or world levels. Cost factors may be more influenced when distant trade emerges, like that generated by global offshoring between Europe and India or China. Within the main EU countries, the role of cost is minor so other non-cost factors can be much more important and deserve much more research. International trade business can be driven by different explanatory factors depending on the sector, country and commercial area.

Chapter highlights:

Competitiveness is an economic concept that finds in the classical economics roots but not a definition.

Competitiveness is a notion with which a large number of notions have been associated.

A single widely accepted statistical measure of competitiveness has not been elaborated so far. Applied researchers have proposed several indexes toward this concept.

The main factors contributing to competitiveness can be classified under cost-related and non cost-related factors.

The range of indicators that better fits the concept of cost-related factors of competitiveness is the real exchange rate.

Real exchange rates based on labour cost variation do influence the competitiveness performance of services.

The labour costs of highly skilled workers have a greater influence on competitiveness than the costs related with low skilled personnel in Spain. Improvements in productivity of the qualified workforce would therefore lead to competitiveness increases in the service sector.

Chapter 6 – The European internal market of services

Objectives:

Investigate the European Market for Services. Explain the advantages of economic integration and present the service specific features in this field. Examine to which extent the European single market for services exist. Present the Service Directive and its possible impact on European Economy.

Methodology:

A survey of the existing literature on economic integration and benefits of the service markets integration is carried on. An explorative analysis of the trends in trade and FDI in European services is performed while (β and σ) convergence analysis is carried on in order to highlight integration patterns.

Synopsis

The chapter aims at assessing a particular case of services internationalisation: the creation of a European single market. In particular it analyses the integration and policy implications of the European internal market for services. Firstly, it evaluates its integration level through an analysis of key indicators such as trade, investment, prices and wages. Secondly, it discusses the legal framework for the internal market of services. The Service Directive is presented and the economic assessments of its effects are reported. The limited integration of services compared to goods suggests policies beyond the controversial 2006 directive.

Introduction⁵⁶

The European integration process is one of the most significant political and economical projects that has taken place in the continent. The first agreement on the European Coal and Steel Community (ECSC, 1951), shortly followed by the European Economic Community (EEC, 1958) and the actual European Union (UE), which recently adopted the euro as common currency, represent, within modern history, steps of a magnitude without comparison in the rest of the world. The European founding fathers, Schuman, Monnet, De Gasperi, and Adenauer earnestly sought to create stable links between countries in order to guarantee peace and prosperity in Europe. The union of strategic coal and steel industries, essential to the military machine, appeared as the necessary first step for protecting the continent, basically from itself. During its modern history, the old Europe passed through trade integration in order to achieve economic, but also social, political and cultural goals.

In fact, since their foundation in the fifties, one of the most important features of the European Communities had been the trade integration among their members. An essential element of this process is the creation of an all embracing commercial market where people, capitals, goods and services are allowed the freedom to move inside the European border as easy as within their own national frontiers. The Single European Act (SEA, 1987) strengthened the principles of the Treaty with the intention of setting up, by 1993, a single market including services, even though, as it will be seen, these activities remain at the back of the integration process. Due to the importance of the service economy and the actual behaviour of internal trade patterns, the development of an efficient services market is nowadays essential for the competitiveness of the continent and the welfare of its citizens, and therefore becomes one of the most relevant challenges the European political economy has to face.

This chapter presents the situation of the internal market for services commencing from two different perspectives: its necessity and justification on one side and existing barriers and the policy actions to remove them on the other. The following points will be presented: firstly, theories on economic integration and its positive outcomes will be

⁵⁶ This chapter is largely based on the work developed together with professor Rubalcaba realised for his book *The New Service Economy, Challenges and Policy implications for Europe* (see Rubalcaba and Visintin, 2007b) and for the article quotes as Visintin and Rubalcaba (2010b).

introduced, with particular attention to all that concerning services (section 6.1), followed by the actual situation of the services market, which will be shown through a brief empirical analysis in order to present a clear view of the level of integration attained so far and to put forward evidence of its enhanced effects and its weaknesses (section 6.2). It will also be shown how, although the goods market has been consolidating over the years and nowadays shows a high level of association, the same cannot be stated for the tertiary sector, which seems to be lagging behind in integration and displaying a difficult path impeding the emerging outcomes.

An overview of the legal framework regulating the services sector (section 6.3) will help to clarify the complex system of the regulations behind the actual situation, trying to provide evidence of limitations and impediments. This insight is necessary in order to understand the wide array of barriers preventing the achievement of an internal market for services (section 6.4). The recent policy actions are analysed (section 6.5), in particular the *2004 proposal for a directive on services in the internal market*, presenting goals, scope and impact assessments. As the proposal had a controversial reception by the different economic participants, the reaction provoked will be then exposed and commented on. The chapter finishes with some concluding remarks.

6.1 – Economic integration and services

The first reasons justifying the internal market for services come from the advantages of integration processes proved by international trade theories. Initially considered as a secondary branch of the study of international economics, the theory on economic integration experienced increasing interest during recent decades: researchers and stakeholders have made consistent progress in fields such as international macroeconomics, international monetary, international, intra-industry and regional trade theory since the first pioneering works of Viner (1950) on the impact of custom union formation on production. Such progress converted this into what is currently considered a complete research area. At the same time, the interest of the policy makers increased as they started wondering how these processes could be driven or influenced in order to reach higher levels of financial welfare and growth.

The last 50 years of European history are not the only example of economic integration process which deserves the attention of policy makers and researchers, cases of progressions in their *early stages* can be found all over the world⁵⁷. All these cases show

⁵⁷ The Australia and New Zealand trade agreement (Anzcerta) was created in 1983, the North American free trade area (NAFTA) among Canada, US and Mexico has been a reality since 1992, the idea of a South American Common

how economic integration is necessary based on the creation of integrated markets. From a trade point of view, integration processes are the consequence of the establishment of multilateral Preferential Trade Agreements (PTAs) among countries, generally from the same continent or world area and with a comparable level of development. It is interesting to note that, although the PTAs contradict the *non discrimination principle*, jointly with the *reciprocity principle* and the *enforcement mechanism*, one of the pillars of the GATT/GATS-WTO system, a special provision was included to approve the existence of free trade areas and custom unions in GATT's Article XXIV. Moreover, the positive experiences shown in the free trade areas constitute the good examples –or the best practices– for launching multilateral negotiations for further trade liberalisations. The benefits of existing trade agreements among members cause further requests at a global level. The role of geographical examples is particularly important in services, where market segmentation is so remarkable that step-by-step procedures are requested to prove the benefits of liberalisation and this is also the way that advances in GATS are expected to be produced.

Literature distinguishes four different levels of integration characterised by the number and importance of the trade barriers removed among countries, and by other actions taken in order to harmonise the markets involved. The four phases are: *Free Trade Area*, where the countries involved eliminate custom duties and quantity restrictions; *Custom Union*, an integrated group of countries with the same custom and international commerce policy; *Common Market*, the freedom of movement is extended to factor as well as it is for products; *Economic and Monetary Union*, which means a common market implemented by financial integration.

The economic integration theory finds its roots in the first years of the fifties when some models of international commerce were adapted to include the PTAs cases. As these models could only appreciate changes in custom fees and quantity restrictions, the so-called direct effects, microeconomics outcomes of the agreements were the only ones considered. No importance was given to indirect effects like trade and scale economy creation, intra-industry specialisation, redistribution of welfare, pro-competitive results and, more generally, induced growth. These consequences of the integration process will be later be named *dynamic effects*, in contrast with the *static effects*, the ones appreciated in the first models⁵⁸. Some of the dynamic effects like a *production effect*, derived from the larger demands of products in which the country encloses competitive advantages, or a

Market (Mercosur) appeared in 1995, and also Asian countries made their first steps towards more integrated east Asian markets within the Asean intergovernmental organisation in recent years.

⁵⁸ See Viner (1950), Meade (1955), Lipsey and Lancaster (1957).

consumption effect, as a consequence of the trade creation, and a *trade diversion*, a mechanism affecting the allocation of resources, are the main conclusions of the theory conducted on the works of the period from the fifties to the seventies. The trade diversion effect was the object of particular attention.

Trade creation is beneficial for a country basically because it leads to the reduction of the inefficient allocation of resources that could be used more effectively elsewhere in the economy. Trade groups could also lead to distortions within the results of welfare inhibitions for participant countries. PTAs can create comparative intra-regional advantages, but comparative disadvantages if considered at a global level. The magnitude of these effects compensates, in some cases, the positive consequences drawn from the production and consumption effects.

The term *dynamic effects* includes a wide range of outcomes. The scale economies and the learning-by-doing outcomes, boosted by larger markets and by the consumption effect, the FDI consequences on growth and the intensified competition enhanced by the higher number of enterprises acting in the same market are all effects that needed a new theoretical framework to be studied. The first attempt of taking into consideration these aspects was through the models of imperfect competition and scale economies⁵⁹. The progressive opening of this theory in order to include dynamic effects and indirect barriers to trade inhibition was accompanied in following years by empirical studies evaluating, especially under the commercial, welfare and competition points of view, the consequences of the PTAs. Among others the works of Smith and Venables (1988) on the benefits of completing the European internal goods market deserve to be mentioned.

At this point it is a good time to speculate on what the theoretical specific outcomes are to be expected from the increasing market integration, those directly applicable to the services sector and in particular the expected outcomes of the creation of a Single European Service Market. Should this sector integration benefit from the direct and dynamic effects? What would these effects represent in services markets?

The European Union has passed through all the previously-described integration phases since the first steps enhanced in 1951. From an initial free trade area it developed into a custom union with common tariff and quotas during the sixties, to later evolve towards a common market at the beginning of the nineties when factors were formally set free for movement. Finally the economic and monetary Union phase was achieved with the adoption of a single currency by 12 of its members in 1999. The actual debate centres on

⁵⁹ See Krugman (1979), Helpman and Krugman (1985).

the effectiveness of this level of integration and on the positive upshots resulting from its strengthening.

At the time of its adoption, the Euro triggered an animated debate on the single currency with economists sustaining positions both in favour and against the single currency. Some sustained that the Euro zone was not an optimum currency area⁶⁰, due to the rigidity of the markets, the lack of mobility of factors, the great heterogeneity among national economies and the lack of super-national mechanisms devoted to facing asymmetrical shocks. Benefits from economic integration will hardly emerge in a context where distortions affecting the single currency area performance persist. Among these market failures, high rigidity, heterogeneity and lack of mobility can be listed. There is a kind of incompatibility between a European optimum (or sub-optimum) currency area and an unfavourable political and economical reality, in the service sector among others.

What the literature defines as static and dynamic effects is perceived by the economy through phenomena enhanced by different aspects of the integration process. It can be stated that, in the case of services, they are particularly sensitive to improvements on the supply side, where the consumption and the production effects apply jointly. These advances of the supply side owing to the market integration can be appreciated by observing five different changes within the economy:

- a higher capacity of the economy to face asymmetrical shocks;
- increased elasticity;
- higher competition levels;
- the development of more efficient companies (e.g., scale and scope economies) and
- the increase of structural changes leading to sector specialisation.

Trade integration contributes to the consolidation of sectors at a continental level. These new large and continent-integrated sectors are more capable of facing asymmetrical shocks, such as a decrease in the demand side of a single nation or to a regional extent. In fact, in a large integrated market, the hit of a national crisis is received by the full economy and balanced by the stability of the partners reducing, in this way, its magnitude and avoiding a deepening of the problem at a local level. Given the fact that services represent 70% of EU economies and that they are becoming more integrated into the global world, it is likely that more and more asymmetric shocks will be related to services.

⁶⁰ This argument was sustained by both, the followers and critics of the unique currency since the non-existence of an optimum currency area in itself does not deprive of authority the adoption of a unique currency.

Services are rather segmented activities where monopolistic power is important (due to product differentiation, information asymmetries, regulations, or natural monopolistic or oligopolistic structures) and price elasticities are not as high as they would be in wider integrated markets. The single market brings about by itself a higher elasticity of the supply side. This is the result of vertical and horizontal integrations occurring within and among sectors at a continental level and also the result of developing new scale and scope economies. Firms previously hampered by national borders can now act in an integrated way, increasing the overall efficiency of the economy. As changes in demand patterns are absorbed by a non-elastic supply side through changes in the production (and therefore employment) levels, an increased elasticity, due to integration, can shift these tunings towards price adjustments leaving the employment less affected by demand shocks.

A very high importance is always attributed to the advantages consequent to an increase of competition in a sector. When approaching this argument, economists assert that the most relevant effects of this situation are a reduction in general price levels and a rise in the quality of the products. The price reduction brings advantages directly to the consumers but also helps to increase the performance of the economy. This is particularly significant when talking about the services sector, whose relevance in the supply chain has been underlined time and time again by literature. The increase in quality consequent to the integration is experienced by the sector, above all, through an increase in product diversity. Services competition is not, in fact, focusing particularly on price competition since firms are always pledged to attracting customers offering services adaptable, to a greater extent, to the client needs. Another positive outcome derived from a more competitive market which becomes visible during an integration process is the opening to the international competition of sectors traditionally developed within the national borders and affected by distortions of the free market owing to excess of regulations, corporative, monopolistic and oligopolistic situations. The removal or at least the weakening of these barriers creates, due to the harmonisation of rules that normally accompany the integration, in some central sectors like the financial or the transport services, a potential boost for the growth of a large part of the economy.

Another way by which the advantages derived from market integration can be perceived within the service sector is from the structural changes that occur in involved economies. It is not merely the case of the change from an industrial economy to a services economy, but also a renovation in the specialisation patterns within the two main sectors. The enlargement of the potential markets facilitates changes in specialisation, which are particularly important if the actual global dimension of the markets and the consequent

necessity of efficient economies acting in a competitive environment are taken into consideration, especially from the low-skilled intensive sectors point of view. Large markets, where services are left free to act, give the European economies the chance to gain new competitive advantages to replace sectors that are not at the head of the markets anymore.

6.2 – The market integration of EU services

The previous section shows what has been the theoretical approach to the economic integration process putting into evidence the expected positive outcomes. This approach has been directed to analyse the case of the services and their integration at a European level in order to appreciate what advantages the Union could gain from the creation of a single market. Now the incumbent questions are: whether a European single market for services actually exists and whether it achieves the expected positive outcomes. For these reasons, the intent of this section is to provide a brief overview of the empirical evidence on the situation and the trends of the Internal Market of Services. Revisiting the empirical literature on market integration, four different aspects of the market will be taken into consideration: trends in trade, FDI, prices and labour costs.

Empirical literature on market integration generally focused on the relationship between intra and extra trade flows as well as price convergence among countries. On these lines, analyses regarding the North American goods market have been carried out by McCallun (1995), Anderson and Smith (1999) and Wolf (2000) among others. Nitsch (2000) and de la Maisonnueve, De Serres and Haller (2001) propose investigations focusing specifically on the European Union goods market, concluding that market integration is higher within the EU than it is among OECD countries.

In services, the benefits of the internal market were empirically enumerated for the first time within the outcomes of the programme named *Cost of Non-Europe* in 1988. In the same year the *Cecchini's report* was presented, that has sought to quantify the potential benefits to be derived from the creation of the European Single Market. In 1996 the Commission published the results of a major study on the benefits of the unified market highlighting the positive effects it had on specific key activities comprehended in the service aggregate. By that time, the financial sector had already increased sharply cross-border branches and capital movements, transport and distribution activities had reduced their costs and had improved in efficiency and telecommunications prices had fallen due to increased competition. Since the 1998 Cardiff European Council, the Commission has presented annual progress reports on the benefits and the necessary reforms of the internal market, including evaluations on the situation of the services sector. These reports evaluated

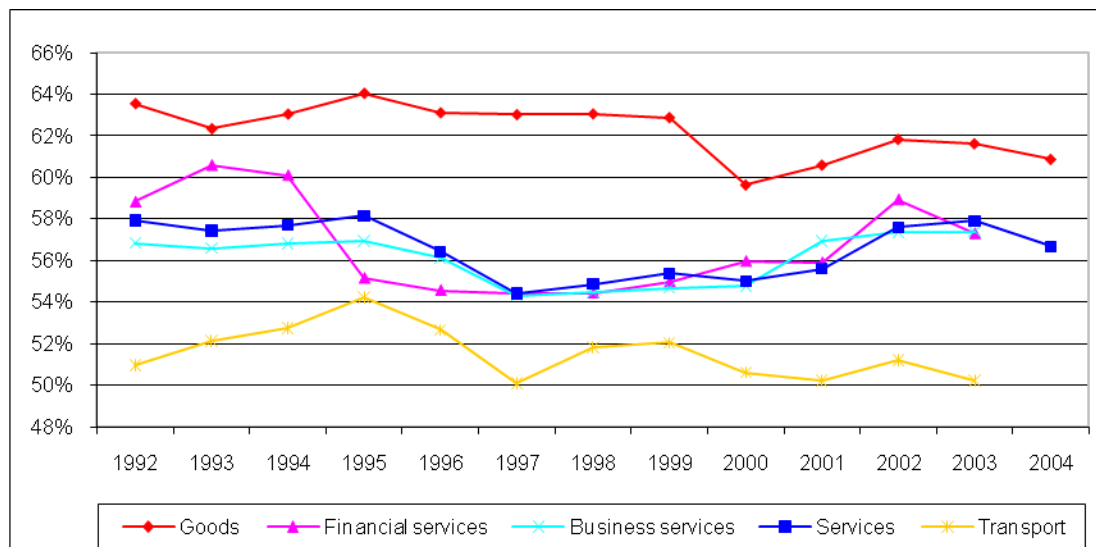
the state of integration of the market following the guidelines of the empirical literature and concentrating their attention on trade, FDI flows and price convergence. The main findings on what concerns the service sector are the improved quality of citizens' lives, perceived and measured, and a general trend of price convergence among members due to the creation of the market⁶¹. Great attention has also been also paid to the evaluation of the potential benefits of the integration, in 2002 the potential positive outcomes of the financial services integration was estimated at a 1% increase of EU's GDP and 0.5% of EU total employment. The so-called *Cardiff reports* on product and capital markets were followed by a series of economics reports focusing on the integration and liberalisation of Services of General Interest, such as electricity and gas supply or telecommunications and postal services. Conclusions remark on the increased performance that accompanies the opening of markets and the good spill-over effects on the rest of the economy. Recent works estimate the benefits of the internal market in the context of the impact assessment of the recent proposal of Services Directive and this subject will be summarised in a later section.

6.2.1 – Trends in trade and FDI statistics

One can expect to observe, as the first effect of an endorsed positive integration, an increasing trend in the volume of continental trade and foreign direct investments. As has been seen in previous chapters, globalisation sharply increased the international trade figures for services and in order to evaluate the effective intensification of the European transactions a comparison between internal and external trade volumes, trends and FDI will be carried out. On the other hand, more dynamic effects of the process will also be taken into consideration, convergence trends in price levels of services in the different countries and in the remuneration of the labour factor will be taken as indexes of the occurred establishment of the market. In these cases a positive result would be attributed to the increased level of competition among enterprises performing in the sector at continental level.

⁶¹ A deeper analysis of this argument is developed in section 8.2.2.

Figure 6.1 Intra on total trade, EU15

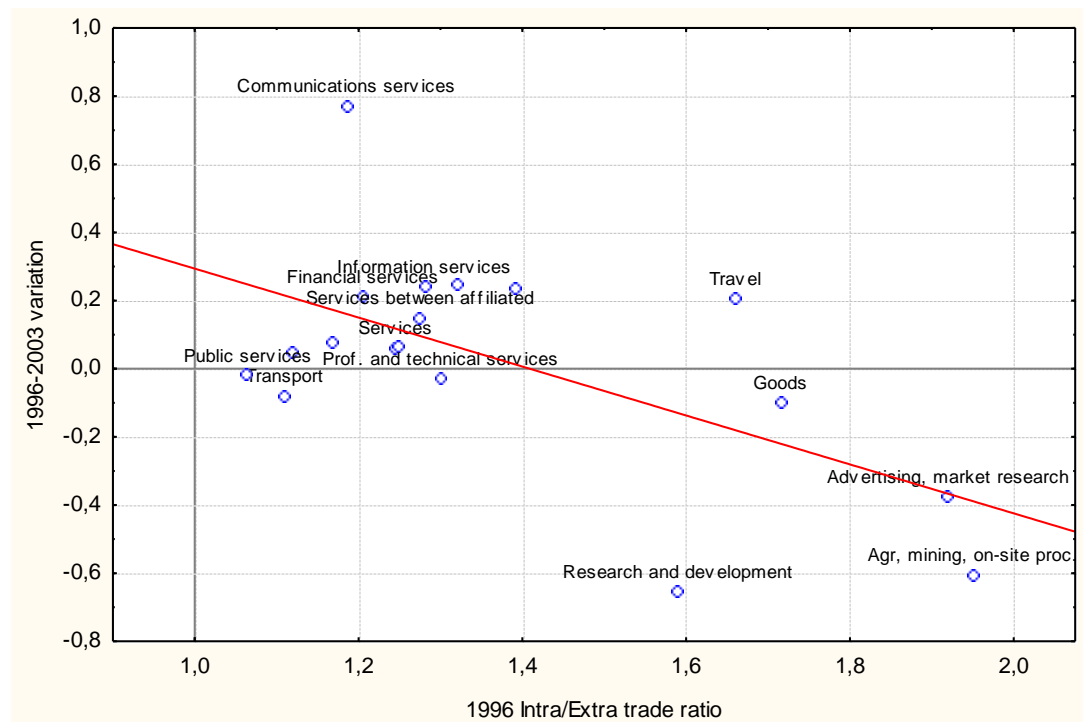


Source: Based on Eurostat data, New Cronos, 2006.

In a single integrated market the level of trade within common borders is supposed to be higher if compared with the levels outside. This is principally due to the fact that companies share the same legal environment, business background and have to cover shorter distances in delivering their products. All these factors contribute to the fall in transaction costs and, consequently, to the rise of the trade level. Our first empirical attempt to answer to the question of the effectiveness of the services market will be to concentrate on the side-by-side analysis between internal and external trade patterns, later seen as *intra* and *extra trade*. To evaluate the efficacy of the efforts engaged by the European and national institutions, owing to the availability, we considered data on service trade, both intra and extra, regarding the aggregate EU15 covering the period from the establishment of the common market in 1992 until the most recent data obtainable. Figure 6.1 is a comparison, not only between intra and total trade, but also between goods and services commerce. It is not surprising that the goods exchange levels are higher than the services ones, since they represent around 70% of the world trade. What results of more interest is the comparison of the differences between intra and extra trade in the two sectors, which suggests that good market integration was already a reality in 1992 and followed a trend of increased integration, while the services sector lags behind in integration presenting a less substantial index. The annual growth rate of the percentage difference between intra and extra trade shows that both internal markets are achieving a greater importance over time with services having a limited tendency to catch-up. Since the institution of the market trade

patterns had been more consistent within the Union's borders than with extra-European Partners, this importance had not experienced any positive pressure despite the institutions' efforts over the considered period. After ten years the relevance of the internal market was the same, measured at the moment of the official institution of the market for most of the considered sectors.

Figure 6.2 Intra / Extra EU trade: 1996 ratios and 1996-2003 variation and cross-sector β convergence



Source: Based on International Trade Statistics, Eurostat New Cronos, 2006.

In a more specific analysis considering different services it can be noticed that, during the first 12 years of the official common market, most of the services tended to slowly increase the importance of the internal trade, but without a clear take off inclination in any of the considered cases with the exception of the Communications services, which seems to be the only sector with strong continental integration propensities. In fact, if we consider the intra/extra trade ratio, the index for the communication services was only 1.19 in 1996 and grew until reaching the value of 2.01 in 2003 (exports). The second best performer when considering the same period is the Travel sector, which moved from the estimate of 1.69 to 2.21(exports). Sectors like transport or financial services showed a modest increase in ratio over the same period.

Figure 6.2 represents a convergence analysis of the so called β convergence. This technique investigates the relation between initial levels and growth rate of an economic variable during a period of time. Convergence among a group of cases studied can be appreciated when low initial values are associated with high grow rates and *viceversa*. In this case we aimed at evidencing if the importance of the internal market within different sectors of the European economy is following a convergent pattern (this means that the importance of the internal market is becoming more similar among sectors as times passes). As Figure 6.2 demonstrates, the annual growth rate of the percentage difference between intra- and extra-trade shows that most service internal markets are achieving a greater importance over time, with services having a (still-limited) tendency to catch up with respect to sectors where the internal market was already a reality at the beginning of the period studied such as the manufacturing sector.

It should be noticed that the exposed weakness of the service market performance is partially due to the effect that globalisation provokes on external trade patterns. The services internal market exchanges, in fact, increased at an average rate of 6.61% per year between 1992 and 2004, demonstrating a particular dynamism considering that the whole European economy in the same period grew at an unexceptional rate of 2.3% per year. This dynamism, that can be considered an effect of the market creation and of all the institutional efforts in this direction, does not appear so favourable when compared with the effects that globalisation had on European *extra* trade in services that increased at an average annual growth rate of 6.81% in the same period. For example, the increasing integration of the global economy (e.g., trade with China and with the Eastern European countries) increased the range of differences between relative and absolute prices and costs, what may explain part of the decreasing share on intra-trade in goods after 1995 and in goods and services between 2002 and 2004. However some services are more committed to the internal market, as already seen in Communications or Travel services, although others are more keen to develop at a global level, as for example Marketing or R&D services, while the service aggregate is a good substitute for most of the other sectors.

Data describing trade patterns suggests than that the common market opportunities do not encourage European service companies to embark in the direct international selling of their products to the same extent as happened in the past with the manufactured and agricultural products; the actual situation seems to describe a stationary state of the market without future perspective of a take-off in the integration levels. Therefore, in short, exchanges are continuing in the intra and extra scenarios, which could signify that the internal market for services is performing effectively, but following different paths and at

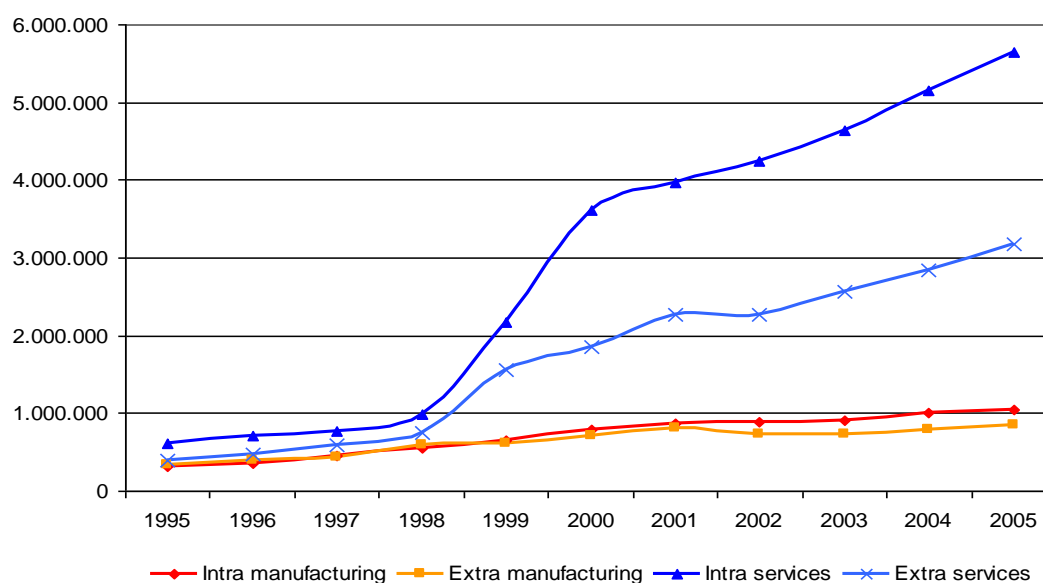
different speeds, and European operators still do not present any noticeable trend towards internal business in respect to the extra continental one.

All the services characteristics influencing their tradability described in previous chapters suggest that the internationalisation of the service sector cannot be made only through the international trade channel and that it is necessary to pass through a combination of direct trade and foreign investments. Within the process of internationalisation, the approach of service enterprises to new markets is normally planned through international strategies blending direct trade with the start-up of local affiliates, greenfield investments or mergers and acquisitions. The analysis presented now focuses on data regarding FDI and the foreign control of European services enterprises. Time series, regarding FDI stocks in the sector of the 15 members of the European Union before the enlargement, are available from 1995 to 2005, while comparable information on the foreign control aspect is obtainable for 9 countries over the period of only one year. Looking at the foreign control of firms' statistics, it can be noticed that the practice of being present in a different market in this way is much more common among services than manufacturing companies. In the EU in 1999, the reference year, the manufacturing companies controlled by foreign operators were, on average, less than 1000⁶², while in the services sector the amount was twice this value.

If the analysis moves to foreign investment patterns, it can be noticed that the services sector represents the destination of the major part of the European investments, as can be seen clearly in Figure 6.3, where the manufacturing lags behind services in values and trends. The graph shows a take-off FDI, which took place during the last years of the past decade. It represents a two-ways phenomenon with a single conclusion: intra-EU flows have been more dynamic than extra-EU flows. Since 1998 the gap between EU-directed investment and overseas-directed ones increased sharply so that in 2002, when the take-off decelerated, 65% of the total stock invested, versus 35%, found its destination within the Union's borders. A consistent increase was experienced by the services sector, whose annual growth rate between 1998 and 2002 showed an average of 32%, while up until that year it was only about 18%. The performance of the service operators is even clearer compared with the data coming from the manufacturing sector. In this case the relatively low importance of this channel in the industry appears clearly.

⁶² Personal estimation on Eurostat, New Cronos data, 2006.

Figure 6.3 EU15 FDI stocks – origins and destinations. Millions of Euros



Source: Based on Eurostat, New Cronos, 2006.

From this brief description it can be concluded that the consolidation of the services market at a European level seems to use foreign investments as a preferential channel. The direct presence of an enterprise in a member state market appears to be considered the most appropriate way adopted in the companies' internationalisation/ Europeanization because of the special characteristics of the sector and the barriers to international trade. It can be noted that this way of providing services requires relatively high fix or sometimes sunken costs in some services markets, that require a certain scale of which SME are often limited to cope with.

6.2.2 – Trends in prices, labour costs and productivity

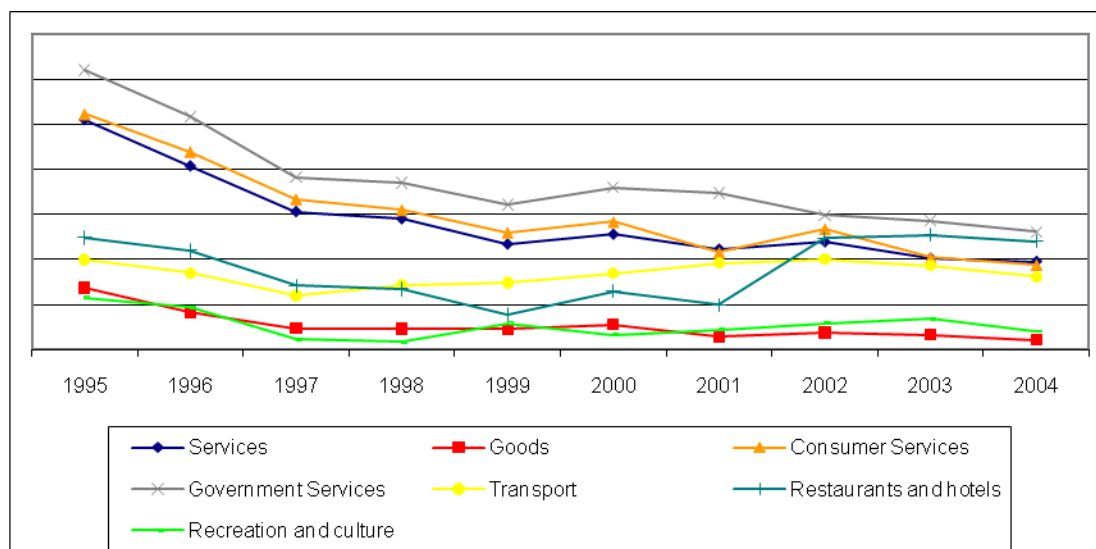
From a company point of view a large integrated market consists of advantages derived from expansion opportunities and the concerned positive externalities, but it also means having to face competition from foreign companies. The most efficient firms, present in national competitive markets, have the opportunity to operate all over the European Union, forcing the enterprises previously performing in a market with low levels of competition, to increase their organisational and productive effectiveness and reduce their mark-up, with the theoretical result of higher product quality and reduced price trends. This brings the features of formerly less competitive markets closer to those of the more efficient markets. Under the European market integration point of view, this can be interpreted as an

empirical convergence of the price levels and cost factors in the tertiary sector. However, convergence will not fully catch up due to several factors regarding country specific differentiations. A sort of price discrimination will persist due to the continuing distinctiveness of each national market. Examples of these factors could be the national differences in local taxes, wage levels, preferences, scope of the national markets, transaction costs, asymmetric information or transport costs. All these reasons slow down the erosion of price and productivity differences.

Price level convergence can therefore be considered as an index of market integration. Several economic reports produced by the DG Internal Market evaluate progress through the analysis of this index⁶³. Time series, covering the period 1995 to 2003, on price levels in the former 15 EU members were used, despite the statistical limitations⁶⁴. According to current literature, Barro and Sala-i-Martin (1991) among others, a measure of the occurred convergence is the decrease in the variance of the data over time; this is referred as *σ convergence*. We interpret a reduction of the variance among prices as one of the consequences of market integration in the considered sector. As shown in Figure 6.4, again, the European goods market shows greater integration patterns; as goods represented three times more trading than services and their internal market is, therefore, supposedly to be more developed, this result is not unexpected. Considering the trends of the variables it can be seen that from 1995 until 1999 the impact of the installation and implementation of market policies can be appreciated in both sectors, while from this year onwards, both sectors seem to present a constant trend. The implementation of these markets goes together in the considered period even in the services sector from 1995 until 1999, where progress was more consistent. The services market had, compared with the goods market, a catch-up outline due to its lagging-behind position. The not complete equalisation of the dispersion levels confirms the presence of a range of factors affecting the service sector, not affecting the goods market, impeding the integration. From now on, we will refer to these factors as barriers.

⁶³ See for example Study on "Price dispersion in the Internal Market" 05/2001, or the more recent Evaluation of the Performance of Network Industries Providing Services of General Economic Interest, 12/2005.

⁶⁴ The difficulty in collecting price indexes and value added defectors in services due to the lack of harmonisation and statistical coverage is widely recognised. In many cases data is estimated as opposed to using real values. Data is adjusted using a EU-15 price average.

Figure 6.4 Price variance in the EU 15 internal market and cross sector σ convergence

Source: Based on Eurostat, New Cronos, 2006.

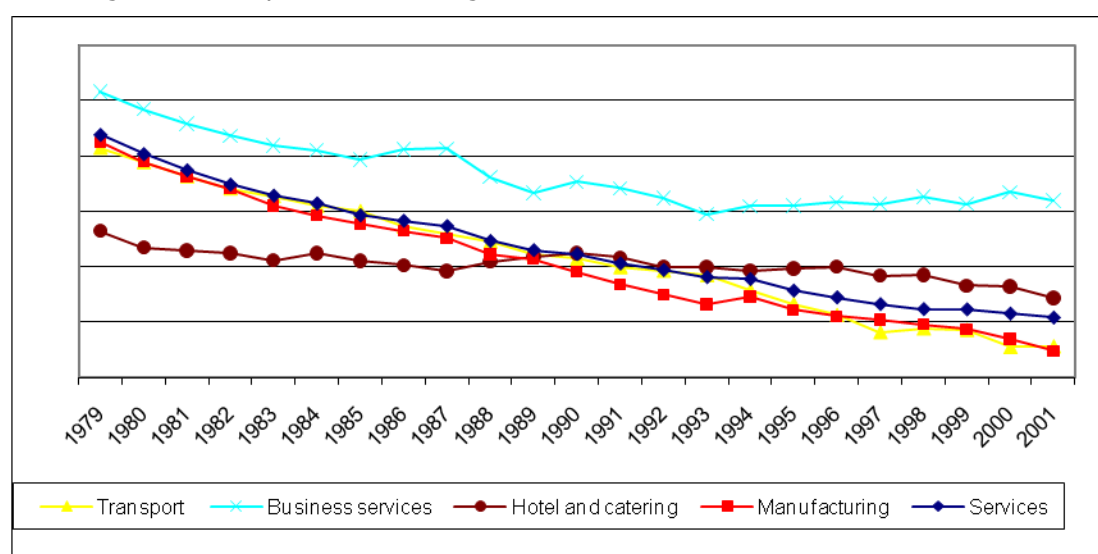
A more specific analysis shows, unsurprisingly, a heterogeneity in the results when different service sectors are compared. Firstly, it can be observed that the convergence of the service aggregate price levels is driven by the convergence of the *Consumer services* aggregate data, since they show strongly correlated patterns, dispersion decreased by 52% in the former case and 54% in the latter. This is not the case of the *Government services*, as these activities are normally out of market and their price convergence within the EU presents the lowest relative value. Below the average variance are two sectors: *Transportation* and *Restaurants and Hotels*. These do not seem to show a high convergence in prices during the observed period, in the case of the latter an unexpected price divergence can be noted occurring over the last four years. The only service sector that presents convergence outlines comparable with the goods market is the aggregate encompassing cultural and recreational services with a low level of dispersion and a 34% decrease over the period.

Since the inauguration of the common market in 1993, labour force and capital have been free to move and circulate within the Union's borders. Economic theories on international trade suggest that once production factors are set free to move worldwide, their costs and returns tend to equalise among countries. In accordance with this theory, the compensation and the productivity of the labour factor should converge within the same sector among the different countries. Employees' compensation levels and labour productivity in different sectors will be observed in order to obtain information on the integration process regarding these factors. The expected result is a decline in the dispersion

of the considered values, which would indicate the internationalisation and the real integration of the examined sector.

When observing this data, one must bear in mind that the integration process can encourage different economies to specialise in sectors where they present comparative advantages. This specialisation is accompanied by a change in productivity that can raise the dispersion value of the specific sector. Furthermore, aggregate data such as the *total services* can include, at the same time, activities where specialisation patterns took place and activities where productivity levels converged.

Figure 6.5 Compensation convergence trends in the Euro Area



Source: Based on Eurostat, New Cronos, 2006.

Data on employee compensation in the Euro-area⁶⁵ countries in different sectors show that the compensation of the labour factor is getting closer in levels among the members. In particular, Figure 6.5 analyses the trend of the variation coefficient of employee compensation in total services, manufacturing and other services sectors in a time series, which goes from the end of the 70s until the beginning of the new century. Following the DG Internal Market economic reports, the chosen variable to measure the dispersion is here the coefficient of variation instead of the standard deviation or the variance because in a series of compensation distributions over time, the latter measures may increase over time with inflation and this could influence the behaviour of the variance. The coefficient of

⁶⁵ The Euro area was chosen due to data availability.

variation avoids this effect, and thus the fundamental inequality observed does not rise because of price increases (under certain assumptions). A CV of 0.64, as it is the service figure for 1979, means that the maximum and minimum prices in the sector vary in a band of 64%; the same figure for 2002 is 0.30 showing that prices across Europe are now 50% closer than they were at the end of the seventies. A good performance in this sense is presented by the transport, capable of reducing the band from 61 to 26% over the period.

The differences in compensation among countries are declining in all the sectors observed. In this analysis, the services and the manufacturing sectors do not present great differences and the convergence seems linear over time. However, when studying economic activities that constitute only the former sector, it appears clear that the process of integration is greater in some economic areas than in others. Sectors like transport, for example, are contributing actively to this convergence. International integration is stronger in this sector due to less technical barriers, low levels of national irregularities or requirements, and there is less possibility of specialisation. Areas like those included in the business services sector data show the lowest levels of convergence. This situation could hide a national or regional specialisation as mentioned previously. Other reasons behind this include the still strong barriers regarding national borders, differences in national market regulation, and companies' diverse needs depending on the country, also language barriers which are especially resistant in these specialised and personalised services.

The results are similar when studying the productivity levels: service and manufacturing levels seem to converge following a similar constant trend, but when the analysis is focused at an intra sector level, disparities are evident. For example the transport sector seems to follow the trend outlined by the goods and services markets, but the business services aggregate shows convergence patterns prior to the market creation and remains substantially unchanged until 2002.

Also common to both tests is that the process of integration from this point of view results being slow and constant in time, with the reduction in the dispersion regarding services compensation of 25% taking around 20 years, although this was without shocks. Another common characteristic is that integration occurs in a few specific economic areas, generally the most homogeneous areas which have low international intra industry penetration. The market integration factor appears to be more gradual in contrast with the other economic fields observed and there is no particular evidence of take-off patterns during the past decade.

In summary, analyses on the convergence of price levels and the remuneration factor reveal that prices and return of the labour factor are converging gradually among European

countries. This convergence seems to be slow and regular especially when considering the former data. Moreover services are less integrated than manufacturing and, even if this process continues, the remaining barriers are still hampering a greater integration. These facts reinforce, to some extent, the lack of integration in services markets previously identified in the section related to international trade. This is partially due to the fact that the majority of this sectors internationalisation passes through the foreign direct investment and foreign control channel. In this field the increase in the intra continental volume with respect to the extra European volume shows evidently that an internal market for services has been taking shape and gaining importance since the end of the 90s.

6.3. – The legal framework of the internal market for services

6.3.1 – From the Treaty up until the Strategy for an Internal Market for Services

Legal bases introducing and sustaining the idea of an Internal Market for services within the more comprehensive concept of services commerce in Europe can be found directly in the *Treaty establishing the European Community*⁶⁶. Indeed Art. 43 sets up the right of establishment in any of the Member States of the Union, applicable to every kind of European service provider. This freedom includes the right, for foreign operators, to take up and pursue activities under the same conditions laid down for its own nationals by the law of the country where such establishment takes place. At the same time Art. 49 states that any kind of restriction on cross-border service provision between Member States is prohibited, should it be a legal act or a *de facto* situation as a consequence of different circumstances and local conditions. These two articles guarantee a complete legal framework for the existence of an Internal Market for services in Europe. In fact, in the international services trade, both operators selling services in a foreign country and providers establishing their economic activity abroad are able to do so according to the principles here recognized. It must be noted that Art. 49 of the Treaty identifies the existence of barriers beyond custom barriers and forces Member States to remove them. Taking into consideration all the articles included in Title I, Chapter II⁶⁷, it can be affirmed that the Treaty forces Member States to modify any internal rule opposing the principles of the Internal Market. In practice, not only rules creating direct discrimination between national and foreign operators, but also all rules

⁶⁶ Signed in Rome on 25 March 1957, last consolidated text published on *Official Journal C 325 of 24 December 2002*

⁶⁷ From Art.28 until Art.31.

applicable to domestic and foreign providers which hinder or render less attractive any kind of cross-border provision of services, are banned by the agreement.

The aim of the entire legal framework sustaining the single market of services is to make the provision of services within the European borders as easy as within an individual country. The Treaty is not the only instrument used for this purpose, which is far too extensive to be achieved by simply putting into action the principles expressed. For example, if legal barriers, obstacles affecting the market development derived from legal constraints of Member States, are directly faced by the rules exposed above, the same cannot be stated for the large series of non legal barriers affecting the process of market unification. Non-legal barriers are those impediments affecting each different stage of the economic provision of services, from the start-up of a company up until the distribution and the after-sales aspects arising from situations not regulated by legal framework. This will be disclosed in more detail later on in this chapter. Cultural and language barriers and the lack of knowledge concerning procedures or formalities are examples of these kinds of impediments. In order to resolve this situation several actions have been put into practice by the European institutions, originally to outline the way the Internal Market for services should be set up and later directed in order to remove all kinds of barriers.

Pressured by the consistent differences between the levels of intra European commerce of services and goods, the actions undertaken by the European Community during the decade of the eighties were focused on the creation of formal rules to develop different strategies for the internal market, paying particular attention to the former sector. The *White Paper on the Internal Market* (1985) was the very first document centring its attention on the services, followed by the *Single European Act*⁶⁸, signed under the Commission presidency of Jacques Delor which, among other institutional reforms, set up the concept of a European market. The Act, in fact, enabled the majority vote on hundreds of necessary directives for the removal of numerous barriers and other regulatory market impediments, becoming the blueprint for achieving free flows of goods, services, labour and capital.

However, due to the individual characteristics of the services sector, the legal framework created by the Treaty and the following acts was not enough to drive and control its complete continental integration. The tertiary sector presents a more complex situation than the manufacturing one. Indeed in some particularly relevant sectors, like transport or financial and postal services, particular policies were created, excluding them from the competences of the general rules. Section 6.3.2 will concentrate on these specific cases.

⁶⁸ OJL 169, 29.06.1987

Other economic activities presented a strongly regulated situation at a national level, it was considered in some cases impossible and in others difficult and/or expensive for a foreign operator to enter into one of these markets, see the case of telecommunications, energy supply or postal services. The individual ways in which services are traded at an international level creates the necessity of specific, directed and individualised rules to stimulate their commerce and integration. Indeed even if the legal framework shaped during the eighties and nineties, like the White Paper or the Single European Act, put the services at the centre of the attention and set out the bases for a strong harmonisation, especially driven by the affirmation of the mutual recognition principle, only the rules brought into being after the year 2000 managed to secure the policy makers full interest in this Internal Market for services.

As a result of the European Council of Lisbon 2000, the Commission presented a strategy aimed at eliminating the barriers hampering the internal market for services. *The Internal Market strategy for Services*⁶⁹, the first attempt by the European institutions to approach the problems directly and exclusively related to this issue, propelled integration through different legislative and non-legislative measures specifically aimed at problematic matters. The strategy is justified by the need of competitiveness in a society based on technology and information. In order to increase productivity in the European economy, attention was paid by the authorities to any kind of barrier, so as to free the movement of services and their spill-over effects across economic sectors. This strategy yearns for the achievement of the real creation of a market through a horizontal approach. Its principles were: allowing services to move across national borders as easily as within a Member State; guaranteeing companies and consumers the rights to benefit from the advantages of a single market; preserving the dynamic nature of the activities of the sector; maintaining a legislative coherence with other community actions.

Under the supervision of the Council of Lisbon, for the first time since 1962, the Commission also undertook an all-embracing analysis of the existing barriers to the free circulation of services and their aftermath on other economic sectors. The task culminated in the preparation of working papers that focused on some specific cases and on the whole situation of the sector; the *Report on the state of the internal market for services* of 2002. The necessity of a horizontal tactic is considered even more so when the way to liberalisation and integration crosses with several problems such as the delays in which the Member States convert directives in law or the difficult legislative approach to services due to the high number of different sub-sectors that can be distinguished within the sector.

⁶⁹ COM (2000) 888 final.

All the works revealed so far created the necessary background for the most recent legal assessment going in this direction, the "*Draft directive on services in the internal market*", following the same action lines expressed in the former ones. The aim of removing barriers through legal harmonisation, conduction codes, development of measures directed to stimulate quality in services and a stronger collaboration among national authorities is the focus of the directive. Later in this chapter a more in-depth analysis of the draft directive will be presented focusing especially on the principles and challenges of the proposal, how the objectives are planned to be achieved by the simplification of existing rules, the intensification of customer rights and a more effective application of the infringements proceedings, the evaluation of its economical impact and the different reaction provoked.

6.3.2 – Sector specific directives and complementary measures: some examples

As well as the actions directed horizontally to the service sectors, a whole set of specific and complementary measures were created to facilitate the formation and development of an internal market for services. Since these act at a continental level, harmonising the regulations and business habits, they contribute towards the creation of a complementary endowment upon which services can be developed, produced and traded within a European perspective. It is the horizontal and vertical complementary community actions committed to specific aspects of the services economy that, together with the former ones, help in creating a comprehensive framework.

Within the mentioned *Services Strategy (2000)* it was also planned to review the existing directives related to the free movements of services and to give particular attention to the telecommunications framework, the two directives on public service contracts, the directive on postal services, the directive on copyrights in the information society, the strategy on financial information, the takeover directive on public offers and the directive on VAT on online services. Along these same lines are the directives aiming to improve the international environment in which services act, such as the directive on the transparency of regulation or the new directive on the mutual recognition of professional qualifications.

Indeed, the cross-border provision of services is strongly hampered when a professional, whose competence is legally certified to run a function in an MS, presents a qualification that differs from the one owned by the professionals performing the same work in another MS. For this reason great attention was given by the European legislator to the regulations related to the recognition of professional qualifications. In order to create a complete framework extending the possibility of pursuing professional activities, two distinct

methods are used. A series of sectoral directives cover a limited number of professions⁷⁰, providing rules for the automatic recognition of diplomas. The principle sustaining these measures is that if a diploma gives access to a particular profession in a MS, this access is recognised in the other MSs. The other regulated professions attested by diploma recognise qualifications according to the *General Recognition System* (GRS) criteria. The GRS was created in 1989⁷¹ and has been continually enhanced. It shaped a system for the recognition of higher-education non-academic diplomas awarded on the completion of professional education and training of a duration of at least three years.

By 2007 the new directive on the recognition of professional qualifications⁷² will be fully adopted and will replace the GRS and the sectoral directives. The measure, which affects in a prominent way the services sector labour market, means a simplification for the actual framework (there are 15 above-cited directives) and is supposed to lead to a streamlining and to facilitate recognition. Moreover, one of the goals of its application is to contribute to a further liberalisation of services provision across countries.

Harmonising initiatives regarding contract law or the directive centring on the competence of member states in the trans-national posting of workers can also be mentioned within the *horizontal group*. The safety of services or the cooperation in the area of consumer protection was also the centre of the policymaker's attention. The horizontal approach also includes initiatives directed to promote the provision of a high quality of services of general economic interest. A broad set of horizontal policy frameworks, complementary to the regulatory ones, will be presented in chapter 9, many of which are based on the proposed actions for business-related services.

The group of *vertical programs* presents a high heterogeneity and touches a wide range of sectors. Beyond the specifically created regulations for some key sectors, such as financial, postal services and transport, there is another series of vertical actions directed to satisfy the specific needs of some economic areas. As an example, the *e-Europe Action Plan* can be mentioned; a proposal for a directive in line with previous initiatives with the intention of obtaining the highest benefits from the digitalisation of the economy. Some proposals were elaborated in order to regulate some specific questions within the continental framework like the proposal for a directive on the reimbursement of health costs.

As a sector directly related to all the branches of the economy, the financial services always deserved the specific attention of the policymakers. An efficient financial sector

⁷⁰ Lawyers, architects, dentists, doctors, midwives, nurses, pharmacists and veterinarians.

⁷¹ Dir 89/48/EC.

⁷² Dir 2005/36/EC.

characterised by high levels of competition and transparency is fundamental for the good functioning of a modern market economy. Furthermore there will not be a fully integrated market without integration in this sector. For this reason, the European institutions elaborated, during recent years, a full range of initiatives directed towards the several branches of the sector. Generally, all the European policies in the area are structured at two different levels: the wholesale level regarding all the instruments used by banks, insurances and investment companies; the retail level treating all the financial instruments dedicated to consumers, such as accounts, mortgages or pension funds. The common aims of all the policies acting in this field are the same as those for the other services: the establishment of a far-reaching set of rules which would allow companies to establish new branches in different member states, having compatible rules across borders, creating an European market for consumers.

The most important of all the actions endorsed is the *Financial Services Action Plan* set up in 1999. This was a five-year plan made up of 42 legislative measures acting at the financial wholesale and retail level. The measures committed to the former had the scope of promoting the integration of the financial services, as well as integrating the rules on securities and derivative products. The rules created for the latter concentrate on the transparency and the cross-border transactions. From an evaluation undertaken in January 2006 results show that 98% of the measures have been put in place (an expected result after 5 years), but that an effective and real integration of the market is lagging behind, fragmented by several national rules and regulations.

It is relevant to notice, when looking from a single market viewpoint, that a series of initiatives were committed to the harmonisation of payment services. The creation of a market involves not only the creation of an integrated supply side, but also through the harmonisation of the demand side. To this extent, since July 2002, the intention of creating a European regulation in the sector had been put into action. In December 2005, the proposal for a directive on a new legal framework was presented by the Commission. The new five-year agenda is based on various principles and from now on interventions will not be horizontal and all-over embracing, but a set of specific legislations, such as the *Mortgage Credit White Paper* or cross-border banking consolidation. The legislative attention will work jointly with other initiatives like tax harmonisation or competition policies.

As previously mentioned, another sector whose fundamental economic importance made a specific policy endowment necessary is the transport. In fact, the first perception of the Common Transport Policy (CTP) can be found directly in the Treaty of Rome in the articles from 70 to 80. Even though these articles guarantee a framework to make the

transport services part of a large integrated market, not much had been done by the institutions in this respect until the mid-eighties. The *White Paper on the Internal Market* was the first attempt of intervention, pursuing the liberalisation and harmonisation of the sector. During the nineties, the attention passed to the infrastructural development and the creation of the projects of multi-modal transport networks through the continent. The sectoral approach had been left to one side in this period in order to approach a series of integrated policies such as pricing or environmental and social protection. The idea was that in order to enhance the sector, it had to pass through technology and the full exploitation of single market opportunities⁷³.

The actual policy framework finds its bases in the *White Paper on the Future CTP*. Sixty measures were created facing the most problematic topics of the sector at a continental level, such as congestion, pollution and accidents, especially considering the expected development of the sector which will experience, by 2010, a rise of 38% in freight transport, of 24% in passengers transport and increased road congestion.

At this point, the creation of a real single market passes necessary through a harmonisation at a continental level. To achieve the aim of using the transport sector as a support in the complementation of other sectors, the treatment received by operators in the different countries should be more homogeneous than what is currently the situation. To this extent, particular policies are needed in the fields concerning fuel taxation, road charging and sustainable mobility.

6.4 – Barriers to the internal market for services

So far we have discussed the situation of the Internal Market for services in Europe. The conclusions achieved appear clearer when the outcomes for the services are compared with the goods market. The different stages of integration accomplished by the two activities suggest that, from one side, the opportunity of a continental market seems to be less suitable for service operators, and from the other, that there are barriers obstructing the integration process affecting this field intensively. The service sector, due to its multifaceted structure, is subject to complex dynamics, and the different activities which give shape to the sector present more particularities compared to those in manufacturing. This multiplies the number of barriers the whole sector has to face during the market formation process and renders the organisation and application of an integration plan complex and hard to accomplish leaving a limited range of action for the policy initiatives.

⁷³ COM (92) 0494 Communication on the future development of the CTP; COM (95) 0302 CTP Action Plan 1995-2000.

6.4.1 – The Barriers

In this section, barriers affecting the formation of the Internal Market for services will be identified and described in line with the most recent institutional references on the subject. In fact, barriers are filed following a production process stage-level subdivision in accordance with the views expressed by the European Commission in the 2002 report on the situation of the market⁷⁴. As mentioned, part of the 2000 Internal Market strategy consisted of the identification of the impediments within six phases which made up the business process in order to obtain a comprehensive background on which to formulate the possible policy options to improve the benefits deriving from the integration. The six stages making up this scenario are: establishment of the service provider; use of inputs; promotion of the product; distribution; sales of the output and after-sales support. All the barriers can also be classified into two groups, legal and non-legal. All the impediments derived from national legal constraints such as laws or regulations which cause discrimination between domestic and foreign operators belong to the former group, and to the latter belong all the difficulties not directly originated by public act as, for example, cultural and language barriers or lack of necessary information.

Table 6.1 Identification of the business process phases and relative barriers

Phases of the business process:					
Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
SETTING UP	USE OF INPUTS	PROMOTION	DISTRIBUTION	SALES ACTIVITY	AFTER-SALES SUPPORT
Examples of rules impeding the integration process:					
Authorisation regulations,	Administrative formalities	Bans on commercial communications	Specific legal form	Form and contents of the contracts	Difference in civil responsibility systems
Local regulations in the field	Disparity in tax and social protection	Content restrictions	Requirements of professional qualifications	Price regulation	Financial guarantees

The relocation of a supplier implies a total rearrangement of the business model following the limitations present in the new market. These constraints normally consist of national regulations like licences, authorisations, technical or legal requirements, but also the bureaucratic nature of the necessary procedures is a barrier in itself. Barriers in this field are among the highest and are of all different kinds. This is possibly the hardest step to overcome by a firm with international ambitions. Furthermore, all the barriers affecting the

⁷⁴ See COM (2002) 441 final; and SEC (2004) 21.

process of establishment cause an increase in the associated fixed costs and since the high fixed costs are one of the main reasons why small and medium-size enterprises (SME) do not undertake the international path, the described barriers push to exclude these companies from the advantages of the internal market.

Difficulties concerning the use of inputs in providing services are principally related to the personnel recruitment. Obstacles are found in both cases: the mobilisation of a company's actual staff or the engagement of local employees. The complexity of the administrative formalities and the characteristics of each individual law system for everything concerning social security and pension systems renders this phase of the international expansion particularly complicated for firms. The lack of harmonisation at an international level and lack of flexibility at a national level are currently perceived as the greatest impediments by service providers.

The promotion of the product is essential for every kind of business and it is even more important when an operator intends to enter into a new market. In this phase, providers face a high level of regulation. Indeed an increased number of different rules on advertising are present in every country and are often sector specific. In individual countries, for example, some service advertisements may require prior authorisation by local authorities, like financial services, while others are subject to content restrictions, or are totally banned, as is the case of some professional services including law or engineering.

As aforementioned, services are subject to more complex dynamics at the time of distributing them internationally. Normally Member States regulations tend to submit foreign providers to the same requirements applied to domestic suppliers. In most cases, this discriminates against foreign operators that are in a position where they must double their efforts to match both authorities' requirements: those from their country of origin and those in the new market. For example some professional categories require in some MS a registration with the national association, so that professionals occasionally providing services abroad must be registered and pay their contribution in every country in which they pursue the service. Specific legal forms are not agreed at European levels, and professional titles and qualifications are still hardly recognised, especially within high skilled professions. Again the red tape and the high variety among European countries can be pointed out as the responsible for these deficiencies.

Concerning the barriers influencing the sales phase of the business production chain, the poor level of agreement continues to play a central role. Contracts, if compared between countries, often require different features so that firms need to constantly adapt their

standards to the new forms as they confront new markets. Similar problems are found when treating invoicing, accounting principles or VAT payments and reimbursements.

Services characteristics such as the personalisation of a product are particularly relevant in the after-sales phase of production. Barriers in this field are, once more, related to the differences in regulations in the countries' systems. In the cross-border service provision liability insurances, post sale obligations and responsibilities vary noticeably. Minimum insurance coverage, for example, can differ widely from country to country, for the same type of service provider. This means that firms must provide different kinds of services depending on the market they are operating in, with the obvious consequences for costs and quality of performance.

The supply chain is not the only aspect affected by the presence of barriers, the consumer side also faces impediments that slow down integration. Nowadays, the right of European consumers to utilise services from every country in the Union is still partially unknown and seldom respected, so that purchasers still meet restrictions on the cross-border acquisition of services. These constraints make foreign providers more costly and, in general, less attractive reducing notably the level of competition and, consequently, the level of a firm's competitiveness with the well-known effects of high prices and low levels of quality and variety. Moreover, the major impediments from the service-users point of view are, firstly, the lack of information on the possible consumption of services produced in other countries, their availability, typologies and characteristics, and all this contributes to low competition; secondly, a lack of trust in buying cross-border, which is, at this time, due to the low information on consumers rights, rules and modalities.

6.4.2 – Cost of the barriers

Low levels of cross-border activities entail negative effects with harmful consequences on European economies. The large gap between the vision of an integrated market, and a therefore an integrated economy, and the reality as experienced by European citizens and European service providers must be considered with particular attention. The loss of competitiveness enhanced by the actual situation disenables the growth of service companies with potential for expansion, independent of the size or type of activity. The consequences of this gap between the vision of an integrated EU economy and the tangible state of the market do not affect exclusively the tertiary sector. Due to the central role played by the service industries in our modern economies, effects are spread throughout other sectors reducing productivity, growth and influencing the potential for expansion of

firms operating in other sectors affected by high prices and low quality levels of the services necessary to their production activity.

The presence of protectionist barriers for services often damages the same companies it is supposed to protect. They permit inefficiencies, avoid competitive environments and behaviours, close the market to new entrepreneurs, and hamper the development of internationalisation strategies by the “protected” companies. When a country, or a sector, raises barriers it engages a chain effect where other countries or sectors follow the same tactic intensifying their protectionism measures impeding, in doing so, international trade and encouraging the black market. The lost growth pattern affects particularly SME firms since their reduced dimensions do not permit an effortless availability of the resources needed to act at a European level at this stage of the market evolution. As this type of firm accounts for 66% of the workforce and 99% of the total number of enterprises within the European economy, the size of the setback is easily understandable. Barriers also affect final consumers as they pay higher prices for services of a lower quality and variety.

Finally it must be borne in mind that the effort of the administrations in maintaining every single national structure of regulations and laws is a cost at an international level. A simplification in administrations to obtain a higher transparency and standardise procedures across countries will initially have a positive effect and would reduce executive formalities in the mid term. Obtaining such a positive outcome will stimulate the dynamics of the internal market.

Evidently reducing barriers does not consist of the removal of regulations in services, as most of these rules are necessary frameworks in the consumer protection and guarantee the application of the same regime for everyone. The point is to identify a level of heterogeneity and find a compromise for a sustainable protectionism. These are actually two limits of the internal market integration, which is a process in an increasingly globalised economy where services are called upon to compete internationally and to do this they need to operate in the best available environment

6.5 – The Directive on Services in the Internal Market

6.5.1 – The background and the directive

According to the 2000 plan, in the phase following the contemplating of the difficulties hampering the internal market, the Commission’s role was to elaborate a package of initiatives aimed at dismantling the specific barriers and stimulating the development of the services market. The analysis undertaken so far suggests that the central needs on which to

act are not sector specific, but emerging, with similar characteristics from different areas of the service sector. The lack of harmonisation among national regulations, the high costs of establishment in other MS and the low levels of cooperation among different administrations were decided to be faced by a unique horizontal instrument capable of addressing all these barriers using a combination of techniques. To this extent the Commission presented, in January 2004, its proposal for a directive on *services in the internal market*.

This proposal, initially proposed by its promoting commissioner Frits Bolkestein "*...potentially the greatest impulse to the internal market since its establishment in 1993*", intends to apply pressure on the MSs to reduce administrative charges and the unreasonable bureaucracy impeding companies from providing cross-border services or from establishing themselves in other members' territory. In fact, since the internal market is still not exploiting the majority of its potential positive outcomes, all the analyses on the state of the market and the obstacles to its development were addressing the following essential aspects as the focus on which to concentrate their attention: commerce and FDI. Due to the similar characteristics presented by the barriers in the different sectors, a horizontal approach embracing the largest number of services possible was chosen.

At first, the activities covered by the directive were all the services provided as an economic activity not subject to specific communitarian regulation⁷⁵. However, the European Parliament vote of February 2006 reduced the scope of the directive, excluding services such as health care, gambling, temporary work agencies and all kinds of social services. Moreover, since the first version, all the services of a non-economic nature were excluded. In practice, all the services provided by the States accomplishing their public duties such as public administration and justice or basic social, cultural and education services were not included in the scope of the proposal. Finally there is the case of the services of general economic interest. Since their definition is not clear, MSs have the right "*...to define, in conformity with Community law, what they consider to be services of General Economic Interest, how those services should be organised and financed and what specific obligations they should be subject to*"⁷⁶.

The intention of the policymakers is to enhance the previously presented positive effects deriving from the inauguration of the single market for services which means an expansion of the production of the sector, increased employment, a raised level of

⁷⁵ The latter is the case of the studied financial or transport services or the electronic communications and network services.

⁷⁶ Text of one of the amendments introduced by the parliamentary vote.

productivity, lower price levels, higher quality and in general higher levels of welfare. Three are three main challenges endorsed by the directive:

1 - Freedom to establish a business in another MS.

With the intent of eliminating superfluous obstacles impeding and discouraging the operators, the proposal contemplates some administrative simplification such as the creation of *single contact points* (SCP) and an online working, in order for companies to find the complete relevant information on the requirements for becoming established in another MS. Furthermore the directive includes a list of regulations, not compatible with the principles of the single market, to be removed by the MS and a list of regulations that the MS shall examine to guarantee that its employment does not contradict the access of foreign providers to the internal market. The objective is the abolition of complex and costly procedures, which require a high number of authorisations and homologations, through the reduction of entailed documentation and the installation of computerised procedures.

2 - Free trade between MS.

Originally, in order to strengthen the cross-border provision of services, the proposal planned to act by using different instruments among which we find the long debated country of origin principle (CoOP) implying that when a service supplier wants to provide his services in another MS without a permanent presence there, he has to comply only with the administrative and legal requirements of his country of establishment. The principle was removed from the proposal after the vote of the European Parliament, although the directive reaffirms the consumers right to receive/buy cross-border services. The directive also reaffirms the right of users to utilise services from every country of the Union, impeding MSs of imposing restrictions such as the authorisations to use services or discriminating rules raising the cost of foreign services.

3 - Harmonisation process aimed to increase mutual trust between members.

In order to facilitate the establishment of providers and the free trade within the Union, the Commission considers essential the reinforcement of mutual trust among Members. However, there will be no unique market until there is not a unique framework of rules. Moreover such a heterogeneous system of prescripts can create a series of comparative advantages, some of them partially unintentional, without economic justification, but founded on legislative principles. Some of these advantages are actually keeping the European economy away from its optimal situation. The directive proposes here to harmonise legislations so as to guarantee protection for the consumers through common regulations on compulsory insurances, resolution of lawsuits or the information the provider is required to provide at the moment of supplying a service. Another important aim is the

reinforcement of the mutual assistance between national authorities. It is an attempt to exercise an efficient control on the service activities under a clear distribution of competences. Complementary actions should include the development of inputs for companies aimed at increasing the quality of products, such as the introduction of voluntary certifications or cooperation with the chambers of commerce. It also aims to promote codes of conduct on particular questions such as the public advertising of regulated professions.

6.5.2 – The impact of the directive

To understand, in the practice, to what extent these effects will become reality, different evaluation studies were undertaken. The first one to be published was the official impact assessment of the Commission⁷⁷ identifying the main expected outcomes of the application of the directive, from the social implications to the overall effects on competition. Relevant works on the subject had also been presented by the OECD and the IFO Institute for Economic Research⁷⁸. Finally four works, carried out by high standing economical analysis institutions, apply empirical economic models in order to give a clear view of the possible scenarios.

The impact assessment completed by the Copenhagen Economics (2005), at the request of the Commission, is based on general equilibrium models. A series of indexes on the restrictions of the international transactions within the Union's border, based on the discriminating factors previously exposed, had been elaborated and included within the model. After considering the different barriers in several sectors, assigning them corresponding costs and benefits, the model elaborates the impact of their removal in creating different outlines. In the most conservative possibility an increase of 0.8% of Union's GDP is estimated, with a rise in employment of around 600,000 new jobs (0.3% of total) and an expected increase in salaries of 0.4%. Artificially, high price levels will be reduced by 7.2%, improving the service consumption. The countries perceiving more advantages from the application of the proposal will be, on the one hand, those leading the service economy, i.e. the UK or the Netherlands, and, on the other, those presenting the highest levels of regulation, such as Italy or Austria, from the other. These prudent estimations based on two thirds of the services affected by the directive, represent 57% of all the benefits the internal market has produced since its institution in 1993.

⁷⁷ IA COM (2004) 2 final.

⁷⁸ See *The EU's Single Market: at your service?* By Line Vogt, OECD ECO/WKP (2005) 36 and the IFO 2005 project *Chances and Risks of a Modified General Framework for the Service Enterprises from the EU Service Directive*.

After the document was presented, the Dutch presidency of the EU Council requested another study, this time carried out by the CPB Netherlands Bureau for Economic Policy Analysis (2005). This analysis applies gravitational models based on the heterogeneity of the regulations within Europe. Table 6.2 shows that intra trade in services could rise by 30% to 60%, implying an increase of 2-5% of total intra trade (goods and services). FDI could increase between 25% and 30%.

The CPB (2006), in view of the parliament vote, elaborated a second impact assessment, where the effects due to the application of the CoOP are considered separately. Applying a general equilibrium model it is shown that the full implementation of the original Services directive could have increased European GDP by 0.5 to 0.7%, which would mean a boost for the European economy of 32 to 74 billions of Euros. The estimated effect for European consumption is even larger with a forecast of an increase by 0.5 to 1.2%. For what concerns the CoOP, the report concludes that its application would have accounted for more than one-third of the trade increase and about 40% of the expected growth in GDP and consumption.

Table 6.2 Potential impacts of the 2004 EU Services directive on trade and FDI in (commercial) services (percentages)

	Minimum effects	Maximum effects
Total intra EU trade increase	30	62
of which:		
* Increase due to reduced heterogeneity in Barriers to competition	25	51
* Increase due to reduced heterogeneity in Explicit barriers to trade and investment	5	11
Total intra EU FDI increase (including rounding difference)	18	36
of which:		
* Increase due to reduced heterogeneity in Barriers to competition	7	18
* Increase due to less FDI restrictions (level effect) ^{a)}	11	16
* Increase due to reduced heterogeneity in state control	0	2

Source: Kox et al., CPB

a) Assuming that investors from other EU countries experience a 30% reduction in the destination country's level of FDI restrictions.

A third institute, Europainstitut (2005), elaborated a report supplementing the previous studies that uses an econometric approach to estimate the effects the proposal could have on productivity, employment, value added and investments. The results, in line with the previous forecasting, approximate the total derived growth of EU GDP by 0.69% pushed by a value added increase of 1.65% for the services originally covered. The effect on the employment is calculated to be of 612 000 new occupations while the productivity is measured as value added per hour worked. The FDI ratio is supposed to increase by 0.55%.

6.5.3 – Adoption

During its two years of existence, the proposal for a directive encountered difficulties, with an animated debate taking place on some parts. The hardest critics are from the Trade Unions while the strongest support is given by the Industry Federations, all the other political opinions are situated somewhere in the middle. The debate on the proposal was active in the French campaign on the European Constitution. It had been used as an argument by the *No party*. Hardly ever had an economical directive been used as a political argument. In this case it was converted into such a profitable electoral argument that part of the body of “yes” voters assumed a critical stance adapting to the services that the French interventionist ideas had so well considered in other sectors like agriculture. After the failure of the Constitution in France and the Netherlands, few were the optimists still believing in a *happy end* for the directive, nevertheless the British presidency of Tony Blair in the last semester of 2005 brought the proposal to the centre of attention once more. At the time this book was published, the directive passed through the plenary vote of the parliament (February 2006) receiving a consistent watering down of its principles and the Commission presented a new version of the proposal (April 2006) including the major part of the 400 amendments voted on.

With respect to the original version, the scope of the directive had been reduced and the application of the CoOP buried. The original scope of the directive, that was supposed to present a horizontal approach, resulted unclear. The definition of an economic activity was open to interpretation and could create conflicts with other previous EU or MS legislations. Moreover, the large majority of the European Parliament Members wanted the exclusion of a series of services of general interest (education, electricity, postal services, water furnishing etc.) and gambling, health care, temporary work services and social services were finally barred. The veto came even after the Commission clarification on the fact that the directive did not affect MS freedom to define, organise and finance services of general interest at

public level. The result reduces the horizontal harmonisation impulse the proposal originally presented, leaving it less effective.

However, the most controversial argument of the entire proposal was the application of the CoOP. This is not surprising at all as this step is the one that brings with itself the highest number of changes to the actual state of the situation. From the CPB analysis exposed above, its results clarify that it was the application of this principle that was the point where the integration of the market would strengthen. Opponents sustained that the application of this principle would have involved a possible social dumping among MSs, reducing wages and workers protection. More than a direct reaction to the CoOP these opinions seemed to be more a reaction to the creation of the market. It can be noticed, for example, that this principle had been working in the manufacturing sectors since the creation of the internal market and that no downward spiral on social standards happened in Europe in that sector.

Nonetheless the majority of the critics founded their arguments on misunderstanding, a lesser part on conflicts of interests and protectionism traditions and another minor part of the critics on the ambiguity of the directive. For example it was stated that the directive pretends to liberalise public services and open them to competition, while the intention of the directive was to trigger competition in what are already market services and not debate the public character of certain services and the Member States competition in them. The same reasoning can be applied to the services of general economic interest (e.g., health care, postal services, energy) whose financial and territorial control is in MS hands. The proposal intended to improve the cross-border supply of services and the establishment of operators abroad, without initiating liberalisation processes or the suppression of monopolies.

A lesser-debated aspect is the transfer of bureaucracy now charging on companies and supposedly under administrations' responsibility. The simplification mechanism that the directive is enhancing, forces national administrations into vast modernisation, transparency and cooperation efforts that could meet several obstacles. Another less controversial aspect is mutual evaluation. The idea is to create an open and transparent system in order to eliminate disproportionate restrictions undermining the principles of the Treaty. This is actually reducing MS's competence in certain fields and reduces potential future restrictions. The measure is in line with past directives and it is the only way to obtain a truly harmonised sector.

In order to evaluate the proposal several additional observations have to be taken into consideration. The first is that it is not introducing any new principles in respect of the

Treaty of Rome. Basically the directive has the intention of strengthening the accomplishment of the Treaty as it has been done by the strategy on the internal market of 1993. It must also be considered that the directive in its initial form was already “watered down”, with a number of services left out of the scope and several barriers not considered. There is general agreement in the fact that only a full development of the assumptions of the directive, in cooperation with other specific actions, will lead to a total integration of the market. In any case, a major effort will have to be made to obtain a real internal market for services. It is likely that, beyond the Directive, future actions will have to combine the further development of horizontal specific principles with specific actions for specific sectors.

6.5.4 – Implementation

Once it had been approved by the EU institutions, in order to complete the process, the Service Directive had to be brought by MSs into their national law system. According to the text approved, the deadline of the 28th of December 2009 was set to this task. After all the doubts that casted the legislative procedure the question eventually moved toward a new dilemma: when will the MSs finally transpose such a imposing act into national law? The mentioned deadline was actually missed by half of the EU countries.

This fail in the implementation process is described within a policy survey produced by the *European Association of Chambers of Commerce and Industry* (Eurochambres, 2010) in February 2010. In this work representatives of national Chambers of Commerce and Industry in each EU member were interviewed on the implementation process taking place in their country. The study highlights how nearly half of the MSs did not meet the deadline of the 28th of Decembers 2009. Indeed it was clear since the beginning that a punctual and correct implementation of a legislative act covering up to 40 percent of EU jobs would have met several kinds of obstacles. Numerous regulatory systems (e.g. national, regional or local) need to be modified within each country and the competences affected by the proposed changes are not always clear. Since the transposition of this directive is a path composed by several steps, it could be seen how some countries progressed well over the three year and fulfilled the objectives while others lag behind. These differences represent potential cause of comparative advantages (and disadvantages) among countries.

Various typologies of problems stand behind the discouraging performances. Legal (e.g. adoption of horizontal laws) and operational (e.g. setting up of national structures) problems affect MSs. Every step of the process encounters its hampers. For example, the screening of the national laws and regulation to be affected by the Directive, which is one of the first steps of the implementation process, have not yet be completed by all countries by

December 2009. Where the screening had been concluded legal or political reasons hampered the adoption of horizontal legislation. The set up of national structures imposed by the Directive, such as the single contact points is actually perceived as one of the main obstacles in several countries and experimented delays. Even though all member states came to a decision on the modes of setting up these SCP, the process of creation just started by December 2009 in some MSs. Overall, around 25 percent of the countries did not achieved this target. Another problem was met concerning SCP. Half of the implemented PSC offer its services in at least one other language while the other half provide information in their national language only. This is seen as a contradiction since these points are supposed to be a tool capable of break existing barriers, including language barriers. Finally, according to the representatives of the chamber of commerce, the administrative simplification was judged to not receive the adequate attention by national legislator. In addition to the opinion expressed by the representative of the business area, several negative assessments on the implementation process came from all over the continent. Critics expressed certain concerns about the methods used to transpose the Directive into law in several countries. In some cases these methods had been presented as lacking of deadlines or even timetables. Often the laws approved by national parliaments were voted in late December 2009 and were labelled as “too little, too late”⁷⁹.

At the moment this chapter is written (summer 2010) the Commission is in a position where it could start infringements procedures against the offending countries. Given the complexity of the procedure it is more probable that the Commission will respond through a softer approach. In point of fact, the intentions of the Commission are not to punish MSs, but rather to live up its legal obligations to push countries to implement the Directive transposition. A negotiation between the Commission and each single country seems to be the chosen path before binding legal pressure. Nevertheless the Commission stated that most of the member states are at an advanced stage of transposition and are in a position to conclude it before the summer of 2010. Furthermore a new mechanism is helping the transposition. Several states are engaged in a constructive “mutual evaluation” processes. Within these clusters MSs assist each other in moving toward the complete transposition. This tool represents a constructive extension of the three year implementation phase.

⁷⁹ Opinion expressed by Jacek Adamski from the Lewiatan party of Poland about the transposition process in his country.

6.6 – Conclusions

An integrated and structured European service market means an efficient economy where potential macroeconomic shocks are smoothed out and competitive levels are high. This provides the EU with stable growth patterns in terms of welfare and employment and benefits to consumers who can take advantage of a variety of high quality and low priced services.

Since its foundation, the actual EU has understood the magnitude of the profits derived from the internal market and worked to construct, using the Treaty, horizontal measures such as the service action plan, and sector specific measures such as the directives on transport or financial services.

In order to present a clear view on the state of the market a brief explorative analysis on the figures regarding trade, FDI, prices and productivity was continued. It can be seen that the formation of the market is driven more by the FDI than by cross country service trade and that so far the process of unification has been slow and is still incomplete.

Nevertheless, there are several barriers impeding the free movement of services within Europe and these affect every phase of the business process. One of the principal causes of the barriers is the high heterogeneity of the national service regulations.

The strategy adopted by the Commission was to support the rules imposing respect of the principles of the Treaty, with a horizontal directive aimed at harmonising and stimulating the internal market. Even if this measure is criticized and its strength reduced, several complementary instruments can be utilised so as to continue in the process of the creation of a single European service market.

Chapter highlights:

A single European market for services contributes to greater economic stability, lower prices and higher welfare.

The consolidation of the service market at European level seems to use foreign direct investment as a preferential channel.

In terms of European integrations services lag behind with respect to the goods sectors.

Due to the market implementation prices and labour costs are converging gradually among European countries.

Service specific as well as horizontal measures are implemented by authorities in order to improve and accelerate the process of integration.

The full implementation of the Service Directive, which is presently taking place, can improve European GDP and employment.

Chapter 7 – Conclusions

I started this book with a brief description of how all along the history of economic thought erroneous ideas were created around the concept of services activities. The literature produced during the last fifty years helped in giving up most of those “myths”. Indeed services are nowadays considered by academics and policymaker as a consistent aggregate of activities producing the greatest part of the value added and employing the great majority of the workforce in developed economies. In addition their high contribution to total productivity has been studied and demonstrated by several researches.

Low implication of services within the processes of internationalization was one of those myths. In fact services had often been considered as mainly local activities with low propensity to cross national borders. Some specific characteristics common to most tertiary activities, such as their intangibility or their simultaneity, were considered hampering their potentialities in crossing boarder and expand to foreign markets. Therefore, the first wave of globalisation that took place during the 80s was perceived as almost exclusively featured by the goods economy. Low cost factor seeking investments and increasing volumes of international shipping were the leading characters of the process leaving only a marginal role to the internationalization of tertiary activities. This view was backed up by the limited empirical evidence of service internationalisation. In effect, for several years statistical limitations in the collections of data combined with the idea that internationalisation merely meant international trade backed the impression that services were just a contingent sector of the globalization process.

This thesis was written to contribute to give up this myth. Throughout the entire book I demonstrated that services are at the centre of the globalisation process. Their role within the structure of economic global relations is of great importance when their internationalization processes are considered properly. I have shown how the internationalisation of the tertiary sector is a complex process that needs a proper framework that goes well beyond the straightforward consideration of trade flows. Once the different modes of international provision are understood and taken into consideration services gain importance and their role becomes more suitable to their importance in terms of value added and employment levels.

The value added of this thesis is not limited to these considerations. Going through these arguments several new questions arose. The feeling of travelling through an unexplored field was perceived and numerous research opportunities appeared clear. As a result I found myself involved in several different researches where the application of

diverse empirical methodologies drove to interesting results on the role played by services within globalization and the functioning of their internationalisation process. Actually the role of services within the process of globalisation, the functioning of the services internationalisation, the factors contributing to it and the consequences provoked are all subjects that resulted to be of great economic relevance and, to some extent, weakly explored by applied economists.

This thesis represents for the reader an insight into the complex process through which services cross national borders. All the main aspects of the internationalisation of the service sector are treated through a research approach founded on three pillars: analytical framework, explanatory factors and consequences. "Helicopter views" as well as deep specific analysis are proposed around these pillars. The first one presents both kind of analysis while the remaining two are investigated through studies on specific arguments. The aim was giving to the reader the necessary knowledge on the theoretical and empirical backgrounds in this field, as well as performing sound analysis on specific arguments. The "general" view is mainly presented in Chapter 1 and Chapter 2 under the form of an exploratory analysis on the relations between services, their internationalisation and the globalisation processes.

These processes were, at the same time, explored and deeply investigated so that to understand their functioning, their particular characteristics as well as their impact on national and world economy. The "inside" look is given by the work developed all over Chapter 3 on the modes of internationalisation and their interaction, Chapter 4, which offers a complete view on the body of relations composing the structures of the internationalisation process, Chapter 5 on the factors contributing to service competitiveness and Chapter 6 developed around the policy implications of services internationalisation and on the integration of the European markets of service activities in particular.

As it was already stated in the introduction chapter, taking into account all the aspects of a subject of such magnitude goes beyond the possibilities of a single thesis. Therefore, further research lines following the work realised so far are listed at the end of this chapter. Nevertheless, the other side of the coin is that this work tried, at least, to touch each one of the main field of research about this argument. Insights were produced on three main areas that cover a large portion of the internationalisation of the services sector.

Several conclusions can be drawn from this work. In first place I tried to answer to the question about how this process takes place. It is shown how services are not just receivers of globalisation outputs, but also active agents. Business services and consumer services promote the current globalisation wave and its effects, shortening distances,

supporting activities regarding business internationalisation, making the diffusion of international consumption and leisure products possible. Furthermore, when the internationalisation of services is understood from a multidimensional perspective, where cross-border trade has a lower position compared to direct investment and other ways of globalisation, services demonstrate that they are not just collateral activities rather than leading characters of the process.

These conclusions prepared the field for a deeper analysis on the functioning of the internationalisation process and the various modes through which it takes place. On one hand it was demonstrated that the presence of national companies installed in a country promotes export of national services to that market. On the other the positive influence of export on foreign direct investment operations was confirmed. For what concerning the analysis of the spanish case, we demonstrated how the export of spanish services to one specific country has a positive influence on the FDI realised by spanish companies in the same market. We did not observe here the effects of FDI on trade.

Since social network analysis is a method that can deal with the challenge of studying complex systems and processes, its application had been the tool to explore the international economic relations maintained by different economies in the services sector. It was found that the largest trade flows and FDI stocks are maintained between the most developed economies. It was also clear that the great majority of the international economic relations consists in a thick network of relatively low value exchanges. Graphical and geographical representations suggest that countries show different behaviours within the process: some economies seem to play central roles while others are less involved. Indeed, there is a group of countries performing high centrality scores so that the networks of international relations appear centralised. In other words, this means that there is a subgroup of countries playing a central role and various peripheric subgroups or isolated economies. The network of trade relations in the service sector is dominated by USA, United Kingdom, Germany, France, Netherlands, Italy and Belgium while Luxemburg, Spain, Japan and Ireland play a secondary role. For what concerning the network created by the investment relations, the same countries, with some exception, are the central ones: United Kingdom, USA, Netherlands, Germany, Luxemburg, France and Italy. A Nordic cluster formed mainly by Scandinavian countries is evidenced in both cases.

The question about the functioning of the factors is approached through an in-depth research on competitiveness, its measurement and the factors influencing it. The demonstrated increasing importance of services trade in the global economy puts their competitiveness at the forefront of business and policy interest. In this work it was shown

how cost related factors of competitiveness are related to export performance in the aggregate service sector. Improvement in cost related factors drives forward better export performances. The relationship found between these factors and competitiveness is, at aggregate European level, more significant in the service sector rather than in the goods one. Furthermore, we were able to appreciate the high heterogeneity of the different tertiary activities. The high heterogeneity in the production and distribution processes is considered at the base of this diversity. However, we demonstrated that cost related factors can explain only partially trade competitiveness in services. Other factors such as quality, service differentiation or trade barriers across markets may play an important role. The particularity of the spanish specific analysis evidenced how the competitiveness of the spanish services is more elastic with respect to high wages labour force rather than low ones. This means that higher impacts in the penetration of foreign markets would be achieved by improving the productivity of high skilled workers rather than reducing the cost of low skilled labour force.

Finally the consequences of the internationalisation process were approached through the study of a particular case. In fact, the attention moved to the actions devoted to the development of economic integrated areas and in particular to the case of European services market. An analysis of the economic literature indicated that an integrated and structured European service market means an efficient economy where potential macroeconomic shocks are smoothed out and competitive levels are high. Since its foundation, the actual EU has understood the magnitude of the profits derived from the internal market and worked to construct, using the Treaty, horizontal measures such as the *services action plan*, and sector specific measures such as the directives on transport or financial services. Empirical analysis presented how the formation of the market is driven more by the FDI than by cross country services trade and that, so far, the process of unification has been slow and is still incomplete. Indeed, there are several barriers impeding the free movement of services within Europe and they affect every phase of the business process. The strategy adopted by the Commission was to support the rules imposing respect of the principles of the Treaty, with a horizontal directive aimed at harmonising and stimulating the internal market.

The legacy of an investigation does not only consist in the conclusions achieved, but also in the directions showed. All the conclusions presented above naturally open the door to new research opportunities. This is demonstrated by the fact that at the end of each chapter some words were spent in order to present the possibilities that arose from the investigation carried on. One of the limits of this thesis is that it contributed with no more than one step in each direction to the creation of knowledge in the treated fields. The other side of the

coin is that the large range of arguments treated correspond to a high number of fields touched and therefore of new opportunities of research.

Several works can be carried on following the outcomes of this work. For example, when treating the presentation of the role of services within the globalisation process, other ways can be chosen to give a clearer idea of the extent of the participation of tertiary activities to the economic international relations, beyond the innovative point of view presented here,. This field of research is backed by the increasing availability of figures on the argument. The scarce availability of data was a sever limit in the elaboration of the empirical researches proposed. All along the thesis I mainly had to rely on figures describing trade and FDI. As it was expressed more than once in this work, the internationalisation of the tertiary activities is made up by a complex system of modes of internationalisation that interact with each others. Figures better describing the volume of interchanges taking place under these modes would notably increase the quality of the presentations of the subject. In particular it seems that data on the volume of business maintained by foreign affiliates will be available. This could represent an important step in the empirical determination of the role of services in the international arena. Furthermore it has to be taken into consideration that all the work carried on in this thesis was realised on data up to the year 2008. The effects of the current crisis on the internationalisation of the services sectors are not considered in this work.

The availability of new figures could also open the door to new investigations on the relations the modes of internationalisation exert on each others. As it was seen in the chapter specifically devoted to this argument, sector specific bilateral trade figures on the relations maintained by different countries are still missing. The role maintained by some specific activities, e.g. communications or ICT in general, could and should be investigated. The results of this kind of research would be much more precise and therefore useful for policymakers once this step is undertaken.

The chapter in which SNA is applied to data on service international trade and FDI is the best example of an open door to new exciting researches. As it was stated more than once, the presented analysis represents just a first exploratory network analysis. It can actually be considered as a seminal work in this field. The opportunities here are numerous. In particular, one of the most interesting aspects is that the outcomes of this and more elaborated analysis realised through this techniques can be combined with econometric techniques in order to implement new empirical researches. But the possible evolution of the application of SNA to services internationalisation is not limited to their interaction with econometric techniques. SNA can be a useful tool to detect the channels of information

flows. Therefore, all the information flows that can be associated with the provision of services, e.g. the spreading of innovations, can be investigated through this technique.

Frankly, the chapter dealing with the role of cost factors in competitiveness, beyond being a sound analysis in the field, leaves more question marks than doubts solved. Competitiveness and its factors represent such a vast field of research that several full theses can be written on the subject. The importance of non cost-factors should be the first step to be undertaken, as suggested within the chapter. Innovation, institutional background, service quality or differentiation are all variables which need to be measured and included in the kind of models here presented.

The policy implications of the internationalisation process are a field in continuous evolution. The present economic crisis will definitely play a role in the process of policy creation. Moreover the policy tool described in the chapter, the service directive, is still an ongoing process. Beyond the achievements of its implementation at national level, in few years it will be of great interest to measure its effective impact, at least in terms of international flows.

Few more words need to be spent to conclude this investigation. Due to the central role played by services sector within developed economies and the high importance of the globalisation process the study of the internationalisation of tertiary activities is, beyond shadow of a doubt, a field of rich of opportunities and questions to be solved. Several relevant publications and the creation of specific policies demonstrate how this argument is nowadays at the centre of attention of academics and policymakers. This thesis tried to contribute to the creation of knowledge in this field as well as opened the door to new, interesting and necessary researches.

References

- Aharoni, Y. (1993) (Ed.) *Coalitions and competition: the globalization of professional business services*. Routledge, London and New York.
- Aharoni, Y. (2000) "The role of reputation in global professional business services", in Aharoni, Y. and Nachum, L. (Ed.) *Globalisation of Services: Some Implications for Theory and Practice*, Routledge, London, 125-41
- Aharoni, Y. and Nachum, L. (2000) *Globalisation of Services: Some Implications for Theory and Practice*, Routledge, London
- Amendola, G., Guerrieri, P. and Padoan, P.C. (1992) "International patterns of technological accumulation and trade", *Journal of International and Comparative Economics*, Vol.1, 173-97
- Anderson, J. (1979) "A theoretical foundation for the gravity equation", *AER*, 69, vol.1, 106-16.
- Anderson, M.A. and Smith, S.L.S (1999) "Do National Borders Matter? Canada-US Regional Trade reconsidered". *Review of International Economics*, 7(2).
- Ansari, M. and Ojemakinde, A. (2003) "Explaining asymmetry in the US merchandise and service account balance: does the service sector hold the key to the US current account woes?", *The International Trade Journal*, vol. 17, n. 1, 51-80.
- Aviat, A. and Coeurdacier, N. (2006) "The geography of trade in goods and assets holdings", ESSEC Centre de Recherche, DR 06012.
- Balassa B. (1975) *European economic integration*. North Holland, Amsterdam, Lipsey and Lancaster.
- Banga, R. (2005) Trade in Services: A Review, *Global Economy Journal*, vol.5, iss. 2, article 3
- Barro R. J. and Sala-I-Martin X. (1991) "Convergence across States and Regions", *Brookings Papers on Economic Activity*, no.1, pp.107-82

Baumol, W. (1967) "Macroeconomics of unbalanced growth. The anatomy of urban crisis", *American Economic Review*, vol.57, n.3, 416-26

Benassy-Quere, A., Schwellnus, C. and Unal-Kesenci, D. (2006) "Echanges internationaux : services compris", *La Lettre du CEPII*.

Beyers, W. B. (2004) "Current Trends in Outsourcing in the Producer Services in the United States", Proceedings of the XIVth International RESER Conference, Toulouse, France, September 2004

Bhagwati, J. (1987) "International trade in services and its relevance for economic development" in Giarini, O. (Ed.), *The emerging service economy*. Pergamon Press, Oxford.

Bhagwati, J. (2004) *In Defence of globalisation*. Oxford University Press

Bhattacharya, Mukherjee, K., Saramäki, G. J., Kaski, K. and Manna, S. (2008) "The international trade network: weighted network analysis and modelling" *Journal of Statistical Mechanics: Theory and Experiment*, 02

Blonigen, B. (2001) "In search of substitution between foreign production and exports", *NBER Working Paper Series*, n.7154

Brainard, L. (1993) "A simple theory of multinational corporations and trade with a trade-off between proximity and concentration", *NBER Working Paper Series* n.4269.

Brams, S. (1966) "Transaction flows in the international system", *American Political Sciences Review*, vol. 60, iss. 04, 880-98

Brams, S. (1969) "The structure of influence relationships in the international system", in Rosenau, J. (Ed.) *International Politics and Foreign Policy: A Reader in Research and Theory*, New York, Free Press, 583-99

Bryson, J. and Daniels, P. (2007) (Ed.) *The handbook of service industries in the global economy*, Cheltenham, UK, Edward Elgar

Bryson, J., Daniels, P. and Warf, B. (2004) *Services worlds: people, organizations and technologies*, London, Routledge

- Camacho, L. Rubalcaba, J. Bryson (2010) (Eds) *Globalisation and Offshoring of Services*. Edward Elgar. (Forthcoming)
- Carlin, W., Glyn, A. and Van Reenen, J. (2001) "Export market performance of OECD countries: an empirical examination of the role of cost competitiveness", *The Economic Journal*, Vol. 111, n. 468, 128-62
- Carr, D., Markusen, J.R. and Maskus, K.E. (2001) "Estimating the knowledge-capital model of the multinational enterprise", *The American Economic Review*, Vol.91, n.3, 693-708
- Cerra, V., Soikkeli, J. and Saxena, S. C. (2003) "How competitive is Irish manufacturing?", *The Economic and Social Review*, Vol. 34 (2), 173-92
- Cheptea A., Gaulier, G. and Zignago S. (2005) "World Trade Competitiveness: a Disaggregated View by Shift-Share Analysis", *CEPII Working Papers*, No. 2005-23, Centre d'Estudes Prospectives et d'Informations Internationales
- Chinn, M. (2006) "A primer on real effective exchange rates: determinants, overvaluation, trade flows and competitive devaluation", *Open Economies Review*, Vol.17, No.1, 115-43
- Clausing, K. (2000) "Does multinational activity displace trade?", *Economic Inquiry*, Vol.38, n.2, 190-205
- Copenhagen Economics (2005) *Economic Assessment of the Barriers to the Internal Market of Services*
- CPB Netherlands Bureau for Economic Policy Analysis (2004-05) *The free movements of services within the EU*, Kox H., Leijour A., Montizaan R.
- CPB Netherlands Bureau for Economic Policy Analysis (2006) *The trade-induced effects of the service directive and the country of origin principles*, de Bruijn R., Kox H., Lejour A.
- Cuadrado, J.R. and Visintin, S. (2008) "Internacionalización de los servicios vía inversiones", *Economistas*, año XXVI, n. 116, 61-8
- Cuadrado, J.R., Rubalcaba, L. and Bryson, J. (2002) (Ed.) *Trading services in the global economy*, Cheltenham, UK: Edward Elgar.

Daniels, P. (2002) "EU services trade, with particular reference to business and professional services", in Cuadrado, J.R., Rubalcaba, L. and Bryson, J. (Ed.) *Trading services in the global economy*, Cheltenham, UK: Edward Elgar

Daniels, P. and Moulaert, F. (1991) *The changing geography of advanced producer services*, London, Belhaven Press

Daniels, P.W. (1993), *Service industries in the world economy*. Blackwell, Oxford.

Daniels, P.W. and Moulaert, F. (1991) (Ed.) *The Changing Geography of Advanced Producer Services*. Belhaven Press, London.

De Benedictis, L. and Tajoli, L. (2009) "The world trade network", *Quaderno di Dipartimento* n. 51, Università degli studi di Macerata, Dipartimento di istituzioni economiche e finanziarie.

Dearforff, A., Hymans, S., Stern, R. and Xiang, C. (2000) "Forecasting US trade in services", *University of Michigan school of public policy discussion papers*, n.467.

Dearforff, (1985) "Comparative advantage and international trade in services" in R.M. Stern (Ed.) *Trade and investment in Services*. Ontario Economic Council.

Di Meglio, G. and Rubalcaba, L. (2007) "La internacionalización de los servicios en España", *Economistas*, año XXV, n.114, 63-71

Dunning, J. H. (1993) "The internationalisation of the production of services: some general and specific explanations", in Aharoni, Y. (Ed) *Coalitions and competition: the globalization of professional business services*. Routledge, London and New York.

Enderwick, P. (1989) *Multinational Service Firms*. Routledge, London and New York.

Eurochambres (2010) *Mapping the implementation of the service directive, the chambers' perspective*, Policy Survey, February

Europainstitut (2005) *The European Single Market for Services in the Context of the Lisbon Agenda: Macroeconomic Effects*, Vienna University of Economics and Business Administration, Breuss F., Badinger H.

European Commission (2003) "The competitiveness of business-related services and their contribution to the performance of European enterprises", COM (2003) 747 final

- Fagerberg, J (1988) "International Competitiveness", *The Economic Journal*, Vol. 98, No. 391, 355-74
- Fagerberg, J., Knell, M. and Srholec, M. (2004) "The Competitiveness of Nations: Economic Growth in the ECE Region", *Economic Survey of Europe*, No. 2/2004, Geneva, UNECE
- Fagiolo, G. (2009) "The international-trade network: gravity equations and topological properties", *LEM working papers Series*, 2009/08
- Fagiolo, G., Reyes, J. and Schiavo, S. (2008) "On the topological properties of the world trade web: a weighted network analysis", *Physica A*, 387(15), 3868-73
- Fagiolo, G., Reyes, J. and Schiavo, S. (2009) "World trade web: topological properties, dynamics and evolution" *Physical Review E* 79(3), 3611-5
- Farrell (2005) "Offshoring: value creation through economic change", *Journal of Management Studies*, vol.42 (3), 675-83
- Farrell, D. (2004), *Can Germany Win from Offshoring?* MacKinsey&Company.
- Forte, R. (2004) "The relationship between foreign direct investment and international trade. A survey", *FEP Working Papers*, n.140
- Francois, J.F. (1993) "Explaining the pattern of trade in producer services". *International Economic Journal*, volume 7, No 3, 23-31
- Gallouj, F. (2002)" Innovation in services and the attendant old new myths", *The Journal of Socioeconomics* Vol. 31, No.2, 137-54
- García, C., Gordo, E., Martínez-Martín, J. and Tello, P. (2009) "Modelling export and import demand functions: the spanish case", *Banco de España Occasional Paper*, n.0905
- Garlaschelli, D. and Loffredo, M. (2004) "Fitness-dependent topological properties of the world trade web", *Physics Review Letters*, 93 (18):188701
- Gómez, E. and Milgram B., J. (2009) "Are estimation techniques neutral to estimate gravity equations? An application to the impact of EMU on third countries' exports", proceeding of the *XI Conference on international economics*, Universitat de Barcelona, June 2009
- Green, W. (2005) *Econometric analysis*, Prentice Hall, Upper Saddle River, NJ, USA.

Griliches, Z. (1994) Productivity, R&D and the data constraint, *American Economic Review*, Vol. 84, No. 1, 1-23

Grosse, R. (2000) "Knowledge creation and transfer in global service firms", in Ahroni, Y. and Nachum, L. (Ed.) *Globalisation of Services: Some Implications for Theory and Practice*, London: Routledge, 217-232

Grubert, H. and Mutti, J. (1991) "Taxes, tariffs and transfer pricing in multinational corporate decision making", *The Review of Economics and Statistics*, Vol.73, 285-93

Grunfeld, L. and Moxnes, A. (2003) "The intangible globalisation: explaining the patterns of international trade and FDI in services", *Norwegian Institute of International Affairs Papers*, n.657

Guerrieri, P. and Meliciani, V. (2005) "Technology and international competitiveness: the interdependence between manufacturing and producer services", *Structural Change and Economic Dynamics*, Vol. 16, 489-502

Gusinger, S. (1992) "Rhetoric and reality in international business: a note of the effectiveness of the incentives", *Transnational Corporations*, 1-2

Hafner-Burton, E., Kahler, M. and Montgomery, A. (2009) "Network analysis for international relations", *International Organization*, vol.63, iss. 03, 559-92

Head, K. and Ries, J. (2001) "Overseas investment and firm exports", *Review of International Economics*, Vol.9, n.1, 108-22.

Helpman, E. (1984) "A simple theory of international trade with multinational corporations", *Journal of political economy*, Vol.92, n.3, 451-71

Helpman, E. (2006) "Trade, FDI and the organisation of firms", *CEPR Discussion Paper*, n.5589

Helpman, E. and Krugman, P. (1985) *Market structure and foreign trade*, Cambridge MIT Press.

Helpman, E., Melitz, M. and Rubinstein, Y. (2007) "Estimating trade flows: trading partners and trading volumes", *NBER Working Papers* 14273, National Bureau of Economic Research

- Helpman, E. and Krugman, P. (1985) *Market Structure and Foreign Trade : Increasing Returns, Imperfect Competition and the International Economy*, Cambridge, Mass., MIT Press.
- Hilgerdt, F. (1943) "The case for multilateral trade", *American Economic Review*, vol.93, iss. 03, 393-407
- Horstman, I. and Markusen, J. (1992) "Endogenous market structures in international trade (natura facit saltum)", *Journal of international economics*, Vol.32, 109-29
- Illeris, S. (1996), *The service economy: a geographical approach*. John Wiley & Sons, Chichester.
- Jiménez, J., and Narbona, A. (2008) "El español en el comercio internacional", *ICEI*, documento de trabajo n.10/08, Universidad Complutense de Madrid
- Kali, R and Reyes, J. (2007) "The architecture of globalisation: a network approach to international economic integration", *Journal of International Business Studies*, vol. 38, iss. 4, 595-620
- Kellmann, M. (1983) "Relative prices and international competitiveness: an empirical investigation", *Empirical Economics*, Vol. 8, 125-38
- Kimura, F. and Hyun-Hoon, L. (2004) "The gravity equation in International trade in services" paper presented at the *European Trade Study Group Conference*, University of Nottingham, 9-11 of September
- Kox, H. and Lejour, A. (2005) "Regulatory Heterogeneity as obstacle for international service trade", *CPB Discussion papers*, n.49
- Kox, H. and Lejour, A. (2007) "Dynamics effects of European services liberalisation: more to be gained", *MPRA Paper*, n. 3751
- Krugman, P. (1979) "Increasing Returns, Monopolistic Competition and International Trade", *Journal of International Economics*, Vol. 9, 469-79
- Krugman, P. (1996), *Pop internationalism*. The MIT Press, Cambridge, MA, USA

Landesmann, and Petit, P. (1995), "International Trade in Producer Services". *The Service Industries Journal*, Vol. 15. No. 2: 123-161.

League of Nations (1942) *The world trade network*, Princeton University Press

Lennon, C. (2008) "Trade in services: cross-border trade vs. commercial presence. Evidence of complementarity", *Paris School of Economics working papers*, n.2008-53

Leo, P.Y. and Philippe, J. (2005) "Business services, the new engine of French regional growth", *The Services Industries Journal*, Vol. 25 (2), 141-61

Leydesdorff, L., and Persson, O. (2010) "Mapping the Geography of Science: Distribution Patterns and Networks of Relations among Cities and Institutes", *Journal of the American Society of Information Science and Technology*, in print

Li, D., Moshirian, F. and Sim, A. (2003) "The Determinants of Intra-Industry Trade in Insurance Services", *The Journal of Risk and Insurance*, vol. 70, n. 2, 269-87

Li, D., Moshirian, F. and Sim, A. (2005) "Intra-Industry Trade in Financial Services", *Journal of International Money and Finance*, vol. 24, n. 7, 1090-107

Lipschitz, L. and McDonald, D. (1991) "Real Exchange Rates and Competitiveness - A Clarification of Concepts, and Some Measurements for Europe", *IMF Working Papers* 91/25, International Monetary Fund

Lipsey, R. and Weiss, M. (1981) "Foreign production and exports in manufacturing industries", *The Review of Economics and Statistics*, Vol.63, 488-94

Lipsey, R. and Weiss, M. (1984) "Foreign production and exports of individual firms", *The Review of Economics and Statistics*, Vol.66, 304-8

Magdeleine, J. and Maurer, A. (2008) "Measuring GATS Mode 4 Trade Flows", *Staff Working paper* ERSD-2008-05, October

Maisonnieuve de la C., De Serres A. and Hoeller P. (2001) "The Width of the Intra-European Economic Borders", OECD Economic Department Working Papers, No.304, OECD Publishing

Mann, C. (2004) "The US current account, new economy services and implications for sustainability", *Review of International Economics*, vol. 12, 262-76

- Mann, C. L (2003), "Globalisation of IT Services and White Collar Jobs: The Next Wave of Productivity Growth", *International Economics. Policy Briefs*. December 2003
- Markusen, J. (1984) "Multinationals, multi-plant economies, and the gains from trade", *Journal of international economics*, Vol.16, 205-26
- Markusen, J. (2005) "Modelling the offshoring of white-collar services: from comparative advantage to the new theories of trade and FDI", *National Bureau of Economic Research, Working Paper* 11827, December
- Markusen, J. and Venables, A. (1998) "Multinational firms and the new trade theory", *Journal of international economics*, Vol.46, n.2, 183-203
- Markusen, J., Venables, A., Konan, D. and Zhang, K. (1996) "A unified treatment of horizontal direct investment, vertical direct investment, and the pattern of trade in goods and services", *NBER Working Paper Series* n.5696
- Markusen, J.R. (1989) "Trade in producer services and in other specialized intermediate inputs", *American Economic Review*, 79: 85-95
- Markusen, J.R. and Maskus, K.E. (1999a) "Multinational Firms: reconciling theory and evidence", *NBER Working Paper Series* n.7163
- Markusen, J.R. and Maskus, K.E. (1999b) "Discriminating among alternative theories of the multinational enterprise", *NBER Working Paper Series* n.7164
- Maroto, A., Di Meglio, G., Rubalcaba, L. And Visintin, S. (2008) "Factores explicativos del comercio de servicios en Europa", *Información Comercial Española*, n. 884, 67-84
- Marsh I. W. and Tokarick S. P. (1994) Competitiveness Indicators: A Theoretical and Empirical Assessment, *IMF Working papers*, WP/94/29
- Mayer-Foulkes, D. (2009) "Long-term fundamentals of the 2008 economic crisis", *Global Economy Journal*, vol. 9, iss.4, art.6
- McCallun, J. (1995) "National Borders Matter: Canada-US Regional Trade Patterns", *American Economic Review*, vol.31, No.3.

McKinsey Global Institute (2003) *Offshoring: Is it a win-win game?*, San Francisco: MacKinsey Global Institute, August

McKinsey Global Institute (2005) *The emerging global labour market*, San Francisco, McKinsey&Company

Meade J. (1955) *The theory of Custom Unions*, North Holland, Amsterdam

Meliciani, V. (2001) *Technology, trade and economic growth in OECD countries. Does specialisation matter?*, Routledge, London.

Melvin, J.R. (1989), "Trade in Producer Services: a Heckscher-Ohlin Approach", *Journal of Political Economy*, 97: 1180-1196.

Mirza, D. and Nicoletti, G. (2004) "What is so special about trade in services?", *University of Nottingham Research Papers*, n.2004/02

Molero, J. and Valdez, P. (2005) "Determining Factors in Service Competitiveness: The Importance of Innovation", *Información Comercial Española Revista de Economía*, July-August, N.0(824), 71-91

Mundell R.A. (1968) *International Economics*. New York: Macmillan,

Neary, J.P. (2006) "Measuring Competitiveness", *IMF Working papers*, WP/06/209

Nicoletti, G., Golub, S., Hajkova, D., Mirza, D. and Yoo, K. (2003) "The influence of policies on trade and foreign direct investment", *OECD Economic Studies*, n. 36, 7-83

Nitsch, V. (2000) "National Borders and International Trade: Evidence from the European Union", *Canadian Journal of Economics*, Vol. 33, No.4

Nooy, W. de, Mrvar, A. and Batagelj, V. (2005) *Exploratory social network analysis with Pajek*, Cambridge University Press, Cambridge, United Kingdom

Nordas H. K. and Kox, H. (2009) "Quantifying regulatory barriers to service trade", OECD Trade Policy Working Paper No. 85

Nusbaumer, J. (1987a) *The service economy: lever to growth*. Kluwer, Boston.

Nusbaumer, J. (1987b) *Services in the global market*. Kluwer, Boston.

- Nyahoho, E. (2010) "Determinants of Comparative Advantage in the International Trade of Services: An Empirical Study of the Hecksher-Ohlin Approach", *Global Economy Journal*: Vol. 10 : Iss. 1
- OECD (2004) "Globalisation of the ICT sector", *Information Technology Outlook 2004*. Presented at *Eurostat-OECD Expert Meeting on Trade-in-Services Statistics*
- Pain, N. and van Welsum, D. (2004) "International production relocation and exports of services", *OECD Economic Studies*, n.38, 2004/1, 67-94
- Parker, A. (2004) "Two-speed Europe: why 1 million jobs will move offshore", *Forrester Trends* August 18
- Petit, P. (1986) *Slow growth and the service economy*, Francis Printer, London
- Petit, P. (1994) "Formes de services et modes d'internationalisation des économies", in De Bandt J. and Gadrey, J. (Ed.) *Relations de services, marchés de services*, Paris, CNRS Editions
- Pica, G. and Rodriguez, J. (2005) "FDI, allocation of talents and differences in regulation », *CEPR Discussion Paper* n. 5318
- Porter, M. (1990) *The competitive advantages of nations*, London, Macmillan
- Reyes, J., Schiavo, S. and Fagiolo, G. (2007) "Using complex network analysis to assess the evolution of international economic integration: the cases of east Asia and latin America", *LEM Papers Series*, 2007/25, Laboratory of Economics and Management (LEM), Sant'Anna School of Advanced Studies, Pisa, Italy
- Riccaboni, M. and Schiavo, M. (2009) "The structure and growth of international trade", *Document de travail*, n.2009-24, Observatoire Français des Conjonctures Economiques
- Riddle, D.I. (1986) "Service-led Growth, the role of the service sector in World Development", New York
- Robert, D. (2004) "Services in the production line", *Financial Times*, April 14
- Roberts G. and Shines E. (2003) "Service industries go global: how high-wage professional jobs are migrating to low-cost countries", *Financial Times*, August 20 2003

- Roberts, J. (1999) *Multinational Business Service Firms*. Ashgate, Aldershot
- Roberts, J. (2002) "From market to resource-oriented overseas expansion: re-examining a study of the internationalisation of UK business firms", in Miozzo, M. and Miles, I. (Ed.) *Internationalisation, Technology and services*, Edward Elgar Publisher, Cheltenham, UK
- Rubalcaba, L. (1994) *Fairs and exhibitions in the European Economy*, Brussels and Luxemburg, Eurostat and European Commission
- Rubalcaba, L. (1999) *Business Services in European Industry: Growth, Employment and competitiveness*. European Commission, Luxembourg
- Rubalcaba, L. (2001) *La economía de los servicios a empresas en Europa*. Pirámide, Madrid
- Rubalcaba, L. (2002) *Competitividad y bienestar en la economía española*, Ediciones Encuentro, Madrid
- Rubalcaba, L. (2007) *The new service economy, challenges and policy implications for Europe*, Cheltenham, UK: Edward Elgar Publishing
- Rubalcaba, L. and Cuadrado, J.C. (2002a) "Services in the age of globalization: explanatory interrelations and dimensions", in Cuadrado, J.R., Rubalcaba, L. and Bryson, J. (Ed.) *Trading services in the global economy*, Cheltenham, UK: Edward Elgar
- Rubalcaba, L. and Cuadrado, J.C. (2002b), "A comparative approach to the internationalization of service industries", in Cuadrado, J.R., Rubalcaba, L. and Bryson, J. (Ed.) *Trading services in the global economy*, Cheltenham, UK: Edward Elgar
- Rubalcaba, L. and Gago, D. (2001) "Relationships between services and competitiveness: the case of Spanish trade", *The Service Industry Journal*, Vol. 21, 35-62
- Rubalcaba, L. and Maroto, A. (2007) "La internacionalización de los servicios y factores determinantes de su comercio en España", *ICE Información Comercial Española*, n.838, 101-23
- Rubalcaba, L. and Visintin, S. (2007a) "The globalisation of services and offshoring", in Rubalcaba, L. *The new service economy, challenges and policy implications for Europe*, Cheltenham, UK, Edward Elgar Publishing, 126-66

- Rubalcaba, L. and Visintin, S. (2007b) "The internal market for services", in Rubalcaba, L. *The new service economy, challenges and policy implications for Europe*, Cheltenham, UK, Edward Elgar Publishing, pp. 230-62
- Rubalcaba, L., Gago, D. and Maroto, A. (2005) "Relationship between Globalization and Services: Competitive Advantages of European and Spanish Services in International Trade", *Información Comercial Española Revista de Economía*, July-August, N.0(824), 93-115
- Rubalcaba, L., Gallego, J. and Hertog, P. den (2010) "The case of market and system failures in services innovation", *The Service Industries Journal* Volume 30 (4), 549-566
- Sampson, G., P. and Snape, R., H. (1985) "Identifying the Issues in Trade in Services", *The World Economy* Vol.8, Iss.2, 171-82
- Sapir, A. (1993a) "Sectorial dimension". *European Economy*, 3: 23-40
- Sapir, A. (1993b) "The structure of services in Europe: a conceptual framework", *European Economy*, 3: 83-98
- Sapir, A. and Lutz, E. (1981) Trade in Services: Economic Determinants and Development-Related Issues, *World Bank Staff Working Paper*, n. 480, Economic Analysis and Projections department
- Savage, R. and Walsh, K. (1960) "A statistical model of the gross analysis of transaction flows", *Econometrica*, vol. 28, iss. 03, 551-72
- Schumpeter, J. (1946) *Capitalism, Socialism and Democracy*, London; Unwin
- Segal-Horn, S. and Dean, A. (2008) Delivering "effortless experience" across borders: Managing internal consistency in professional service firms, *Journal of World Business*, Vol. 44, Iss.1, 41-50
- Serrano, M. and Boguñá, M. (2003) "Topology of world trade web", *Physics Review*, E 68, 015101(R)
- Serrano, M., Boguñá, M. and Vespignani, A. (2007) "Patterns of dominant flows in the world trade web", *Journal of Economic Interaction Coordination*, vol. 2, 111-24

Shaltz, H. (2003) "Gravity, education and economic development in multinational affiliate location", *Journal of International trade and economic development*, n. 12.1, 117-50

Siggel, E. (2007) "International Competitiveness and Comparative Advantage: A Survey and a Proposal for Measurement", Proceeding from the conference *The Many Dimensions of Competitiveness*, CESifo Venice summer Institute

Smith, A. and Venables, A. (1988) "Completing the Internal Market in the EC : Some Industry Simulations", *European Economic Review*, Vol. 32, 1501-25

Snyder, D. and Kick, E. (1979) "Structural position in the world system and economic growth, 1955-1970: a multiple-network analysis of transnational interactions", *American Journal of Sociology*, vol.84, iss. 05, 1096-126

Stare, M. and Rubalcaba, L. (2005), "Outsourcing of services from the CEEC – current potentials and new challenges", Proceeding of the XV International RESER Conference, Granada, España, Septiembre 2005

Stare, M. and Rubalcaba, L. (2009) "International Outsourcing of Services - What Role for Central and East European Countries?", *Emerging Markets Finance and Trade*, 2009, vol. 45, issue 5, 31-46

Stiglitz, J. (2002) *Globalisation and Its Discontents*, Norton, New York

Stock, J.H. and Yogo, M. (2005) "Testing for weak instruments in linear regression", in *Identification and Inference for econometrics models: essays in honour of Thomas Rottemberg*, Andrews D.W.K and Stock, J.H. eds. Cambridge U y Press, Cambridge, UK

The Economist (2003) "Offshoring: relocating the back office" December 11, 2003

Timmer, M., van Moergastel, T., Stuivenwold, E., Ypma, G., O'Mahony, M. and Kangasniemi, M. (2007) *EU KLEMS Growth and Productivity Accounts, Version 1.0, Part 1 Methodology*, Groningen Growth and Development Centre and National Institute of Economic and Social Research

Tinbergen, J.(1962) *Shaping the World Economy – Suggestions for an International Economic Policy*, The Twentieth Century Fund

- Turner, P. and Van't dack, J. (1993) "Measuring international price and cost competitiveness", *BIS Economic Papers*, No.39, Banc for International Settlements
- UNCTAD (1989) *Services in the world economy. Trade and Development Report*, 1988. United Nations, New York
- UNCTAD (2003) *Service offshoring takes off in Europe – In search of improved competitiveness*, Roland Berger
- United Nations Statistical Division (2002) *Manual on Statistics of International Trade in Services*, ST/ESA/STAT/SER.M/86, Geneva, Luxembourg, New York, Paris, Washington D.C
- Van Ark, B and McGuckin, R. (2002) "Changing Gear"-Productivity, ICT and Services: Europe and the United States", Research Memorandum GD-60, Groningen Growth Development Centre
- Van Welsum D. (2004) "In Search of 'Offshoring': Evidence from U.S. Imports of Services," Birkbeck Working Papers in Economics and Finance 0402, Birkbeck, School of Economics, Mathematics & Statistics
- Van Welsum, D. (2003a) "International trade in services: Issues and concepts", Birkbeck College, School of Economics, Mathematics and Statistics, Economics Working Paper
- van Welsum, D. (2003b) "Foreign direct investment and export of services", *Economics Working Papers*, n.03/03, Birkbeck College, School of Economics, Mathematics and Statistics
- Van Welsum, D. and Reif, X. (2006) "The share of employment potentially affected by offshoring – an empirical investigation", Working Party on the Information Economy, DSTI/ICCP/IE 2005 8/Final. 23-feb-2006. OECD
- Van Welsum, D. and Vickery, G. (2004) "Potential Offshoring of ICT Intensive Using Occupations", paper presented to the STILE conference, Measuring the Information Society, European Trade Union House, Brussels, September 30-October 1
- van Welsum, D. and Vickery, G. (2005) "Potential offshoring of ICT-intensive using occupations", DSTI/ICCP/IE(2004)19FINAL, Paris, OECD
- Viner J. (1950) *The custom union issue*, Carneige endowments for international Peace, New York

Visintin, S. (2009) "Cruzar fronteras: relaciones entre comercio internacional e inversión extranjera directa en el sector servicios español", *Papeles de Economía Española*, n.120, 166-85

Visintin, S. and Rubalcaba, L. (2010a) "Crossing borders: exploring the relationships between different modes of international provision of services", in *Business services, competitiveness and internationalisation*, ed. Rubettino, Roma, Italia

Visintin, S. and Rubalcaba, L. (2010b) "The European market for services: integration and policy implications", *International Journal of Services, Economics and Management*, in publishing

Visintin, S., Di Meglio, G., Rubalcaba, L. And Cuadrado, J.R. (2008) "Competitividad y comercio internacional de servicios en España", *Papeles de Economía española*, n.116, 65-78.

Visintin, S., Maroto, A., Di Meglio, G. And Rubalcaba, L. (2010) "The Role of Cost Related Factors in the Competitiveness", *Global Economy Journal*, The Berkeley Electronic Press, in publishing.

Walsh, K. (2006) "Trade in services: does gravity hold? A gravity model approach to estimating barriers to service trade", *IIIS Discussion Papers*, n.183, Institute for international integration studies

Weyzig, F. and Van Dijk, M. (2008) "Tax heaven and development partner: incoherence in Dutch Government policies", *Munich Personal RePEc Archive* Paper n. 12526

Wilkinson, I.F., Mattsson, L-G. and Easton, G. (2000) International competitiveness and trade promotion policy from a network perspective, *Journal of World Business*, Vol. 35, Iss. 3, 275-99

Wolf H. (2000) *(Why) Do Borders Matter for Trade?*, in: G. Hess and E. van Wincoop (eds.), *Intranational Macroeconomics*, Cambridge University Press

Wood, P. (2001), *Consultancy and Innovation: the Business Service Revolution in Europe*. Routledge. Taylor & Francis Group

Wooldridge, J.M. (2002) *Econometric analysis of cross section and panel data*, MIT Press

WTO (2006) *Measuring Trade in Services a training module for the world bank.* , World Trade Organization

Xiang, L., Yu Ying, J. and Guarnrong, C. (2003) "Complexity and synchronisation of the world trade web", *Physica A*, vol. 328, 287-96

Appendices

Appendix A

List of the 36 countries considered as Exporters /owners of the commercial presence:

Austria, Australia, Belgium, Bulgaria, Canada, Cyprus, Czech Republic, Germany, Denmark, Estonia, Spain, Finland, France, Greece, Honk Kong, Croatia, Hungary, Ireland, Italy, Japan, South Korea, Lithuania, Luxemburg, Latvia, Malta, Netherlands, Norway, Poland, Portugal, Romania, Russian Federation, Sweden, Slovenia, Slovakia, United Kingdom and United States.

List of the 65 countries considered as Importers / consumers of the foreign commercial presence:

Albania, Argentina, Austria, Australia, Belgium, Bulgaria, Brazil, Byelorussia, Canada, Switzerland, Chile, China, Colombia, Serbia and Montenegro, Cyprus, Czech Republic, Germany, Denmark, Estonia, Egypt, Spain, Finland, France, Greece, Honk Kong, Croatia, Hungary, Indonesia, Ireland, Israel, India, Iran, Iceland, Italy, Japan, South Korea, Lithuania, Luxemburg, Latvia, Morocco, Malta, Mexico, Malaysia, Nigeria, Netherlands, Norway, New Zealand, Philippines, Poland, Portugal, Romania, Russian Federation, Sweden, Singapore, Slovenia, Slovakia, Thailand, Turkey, Taiwan, Ukraine, United Kingdom, United States, Uruguay, Venezuela and South Africa.

Appendix B

List of the regulation indexes employed.

reg1 = starting a business (days)

reg2 = difficulty of hiring index

reg3 = rigidity of hours index

reg4 = difficulty of firing index

reg5 = rigidity of employment index

reg6 = registering property (days)

reg7 = credit information index

reg8 = closing a business (cost in percentage)

Appendix C

The results of the estimations of equations [3.2] are here presented.

Table A3.1 Instrumental variable estimation of a gravity model for the stock of Foreign direct investments (outward) in the service sector; equation [3.2]

dep:FDI	2SLS	LIML	H2SLS
<i>IT</i>	2.953***	3.230***	2.891***
<i>gdp i</i>	-.880*	-1068	-.855
<i>gdp j</i>	-1.616**	-1.840**	-1.576**
<i>dist</i>	1.190*	1411	1175
<i>lang</i>	-.985	-1260	-.964
<i>adj</i>	-.462	-.576	-.414
<i>eu</i>	.510	.527	.544
<i>prod i</i>	1.181***	1.087*	1.237**
<i>prod j</i>	-1.713***	-1.802***	-1.673***
<i>reg1</i>	-.122	-.149	-.110
<i>reg2</i>	-.749	-.637	-.823
<i>reg3</i>	-1743	-1515	-1908
<i>reg4</i>	.296	.387	.169
<i>reg5</i>	2324	1963	2644
<i>reg6</i>	-.126	-.109	-.157
<i>reg7</i>	.147	.174	.144
<i>reg8</i>	-.301	-.343	-.244
<i>underidentification (p-value)</i>	.002	.027	.027
<i>weak identification (F stat)</i>	4018	2885	2885
<i>overidentification (p-value)</i>	.549	.74	.708
<i>number of observations</i>	412	412	412

2SLS, two-stages least squares; LIML, Limited information maximum likelihood; H2SLS, heteroscedastic two-stage least square.

* significant at 10%; ** significant at 5%; *** significant at 1%

Appendix D

The results of the regression of the instruments on the instrumented variables are here presented. Fixed and random effects panel techniques are applied.

Table A3.2 Instruments of IT (natural logarithms)

	<i>FE</i>	<i>RE</i>
<i>Prob F-test / Wald (p-value)</i>	.000	.000
<i>corr</i>	2.458***	2.472***
<i>prodhet</i>	0.024	.011
<i>rer</i>	0.033	.102***
<i>rerhet</i>	-.094***	-.142***
<i>hausman test</i>	chi2(4)= 19.63 ; prob .001	
<i>number of observations</i>	3754	3754

* significant at 10%; ** significant at 5%; *** significant at 1%

Appendix E

The results of the k-core analysis are listed in the following table:

Table A4.1 Outcomes of the K-core analysis results per country

trade (5% threshold network)		FDI (5% threshold network)	
	k-core		k-core
at	5	bg	4
au	4	cy	4
be	6	cz	4
ca	3	de	6
cz	5	dk	6
de	6	ee	4
dk	5	es	6
es	5	fi	3
fi	5	fr	6
fr	6	gr	4
gr	4	hu	4
hk	4	ie	6
hu	5	it	6
ie	5	lt	4
it	6	lu	6
jp	5	lv	4
lu	6	nl	6
nl	6	ro	4
no	5	se	6
pl	4	si	3
pt	5	sk	4
ru	5	uk	6
se	5	us	6
sk	5		
uk	6		
us	6		