Gattai, Valeria

Working Paper
A Tale of Three Countries: Italian, Spanish and Swiss Manufacturing Operations in China

Nota di Lavoro, No. 150.2006

Provided in Cooperation with:
Fondazione Eni Enrico Mattei (FEEM)

Suggested Citation: Gattai, Valeria (2006) : A Tale of Three Countries: Italian, Spanish and Swiss Manufacturing Operations in China, Nota di Lavoro, No. 150.2006, Fondazione Eni Enrico Mattei (FEEM), Milano

This Version is available at:
http://hdl.handle.net/10419/73964

Terms of use:
Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.
A Tale of Three Countries:
Italian, Spanish and Swiss
Manufacturing Operations in China
Valeria Gattai

NOTA DI LAVORO 150.2006

DECEMBER 2006
KTHC – Knowledge, Technology, Human Capital

Valeria Gattai, Bocconi University and ISESAO

This paper can be downloaded without charge at:

The Fondazione Eni Enrico Mattei Note di Lavoro Series Index:
http://www.feem.it/Feem/Pub/Publications/WPapers/default.htm

Social Science Research Network Electronic Paper Collection:
http://ssrn.com/abstract=951459

The opinions expressed in this paper do not necessarily reflect the position of
Fondazione Eni Enrico Mattei
Corso Magenta, 63, 20123 Milano (I), web site: www.feem.it, e-mail: working.papers@feem.it
A Tale of Three Countries: Italian, Spanish and Swiss Manufacturing Operations in China

Summary
In this paper we investigate the choice of FDI versus joint-venture, made by Italian, Spanish and Swiss multinationals in China, as shaped by the risk of Dissipation of Intangible Assets. Probit estimates, based on an entirely new firm-level dataset, constructed by the author, show that FDI is more likely to emerge when know-how easily spills over - namely for firms endowed with more Intangible Assets or belonging to high tech sectors - in line with the theoretical expectations.

Keywords: Intangible Assets, Internalisation, FDI, Joint-venture, China

JEL Classification: F23, C25, O53

I am grateful to Luisella Balestra, Carlo Filippini, Andrea Fosfuri, Gianmarco Ottaviano, Stefan Francini and Sara Ugolini, for helpful comments and assistance in data collection. This paper is part of the project “FDI and Internalisation in Asia: Evidence from Italy and Spain”; financial support from Bocconi University (Ricerca di Base) is gratefully acknowledged. All remaining errors are mine.

Address for correspondence:
Valeria Gattai
Bocconi University and ISESAO
Via Salasco 5, stanza 4
20136 Milano
Italy
Phone: +39 02 5836 3313
E-mail: valeria.gattai@unibocconi.it
1. Introduction

GDP growth rate above 8%, huge market dimension, low cost labour force and a population close to one billion and three hundred thousand inhabitants are just some of the reasons that make the People’s Republic of China (PRC) enormously attractive for production de-localization.

China has grown quite fast since 1978, when the Open Door Policy, promoted by Deng Xiaoping, ushered in a new era of modernization and growth. The transition from a planned to a market economy has resulted in fast development, structural changes and lifestyle improvements, which created new opportunities for Foreign Direct Investment (FDI), and made China the largest recipient of FDI since 2003.
This paper tells the tale of three countries - Italy, Spain and Switzerland – and analyses the manufacturing operations of their multinational enterprises (MNEs) in the PRC. For the purpose of the present work, we have built an entirely new firm-level dataset, through survey interviews; indeed a multiple choice questionnaire has been sent to the whole population of Italian, Spanish and Swiss MNEs with manufacturing affiliates in China. With a reply rate around 80% of the total, our database documents the experience of 165 parent companies with more than 200 FDIs\(^1\) and joint-ventures in the PRC.

The aim of this study is twofold: first, we provide the reader with a basic overview of the survey, to draw a detailed profile of the actors and comment on their strategic choices; second, we focus more specifically on the entry mode decision of Italian, Spanish and Swiss multinationals in China and regress the joint-venture / FDI trade-off on a number of firm, industry and country characteristics, explored through the questionnaire. In particular, we are interested in showing whether the risk of Dissipation of Intangible Asset (DIA) plays any role in orienting such a trade-off.

Intangible Assets (IAs) may consist either in product quality reputation or superior knowledge; compared to physical assets, they are more likely to give rise to FDI because they can be easily transferred back and forth and they enjoy a “public good” nature, being available to additional production facilities at relatively low costs (Markusen 1995). Nevertheless, the same joint-ness feature that makes it easy to employ IAs abroad, exposes the MNE to the risk of dissipating its crucial resources, if shared with local firms. So, the Internalisation issue - namely the choice of FDI versus relying on a local supplier – has been explained by a trade-off between preventing IAs spillover - through FDI, since production takes place in a wholly-owned subsidiary (WOS) – and benefiting from the local firms’ familiarity with their own country, achieved through a partnership (Ethier and Markusen 1996; Markusen 1998, 2001; Saggi 1996, 1999; Fosfuri 2000; Mattoo et al. 2001; Fosfuri et al. 2001; Glass and Saggi 2002a).

Our empirical findings are in line with these theoretical predictions: Italian, Spanish and Swiss multinationals are more likely to invest directly in China, the higher their level of precious resources.

\(^1\) Notice that, throughout paper, we restrict the label of Foreign Direct Investment to wholly-owned subsidiaries, to denote the case of total ownership, as opposed to the partial one, typical of joint-ventures; the term MNE is instead referred to firms engaged in international operations of any kind, from FDI to licensing and joint-venture.
The rest of the paper is organised as follows: in Section 2 we present a brief literature review regarding the theoretical background; Section 3 is entirely dedicated to the empirical analysis: data description (3.1), methodology (3.2) and Probit estimates (3.3); Section 4 concludes and sets future lines of research.

2. Literature Review

In the last 20 years, the economic literature on Multinational Enterprises has basically developed around Dunning’s OLI framework, considering Ownership, Location and Internalisation advantages as an explanation of Foreign Direct Investment (Dunning 1993).

If MNEs were exactly identical to domestic firms, they would not find it profitable to enter the domestic market; since FDI indeed exist, it must be the case that multinational firms possess some kind of advantage easily exploitable through direct investment. Ownership advantages refer to some product, know-how, reputation or production process, to which other firms do not have access. Location advantages crop up when producing locally implies fewer costs than servicing the domestic market via export. Internalisation advantages arise when key resources are better exploited if kept within the boundaries of the multinational firm.

For the purpose of the present paper, we are particularly interested in the Internalisation issue;² economic theories about it can be grouped into three different approaches, which we call: 1) Theory of the Firm; 2) Agency Costs and 3) Dissipation of Intangible Asset.

The first view embraces recent contributions in which the boundaries of a Multinational Enterprise are assessed through the opening up of the “black box” - traditionally explored by the theorists of the firm – and the simultaneous endogenization of the market environment – as in the International Economics tradition (see, among others: Grossman and Helpman 2002, 2003, 2004; Antras and Helpman 2004; Antras 2003; Feenstra and Hanson 2003, 2004; Ottaviano and Turrini 2003, Marin and Verdier 2002, 2003).

The second approach - called Agency-Costs - focuses on the principal (MNE) / agent (local firm) problem deriving from potential diverging goals between the two parties. When designing an appropriate incentive scheme, to induce agent’s effort, becomes too costly for the multinational firm, it may opt for a wholly-owned subsidiary rather than relying on a local company (Horstmann and Markusen 1996).

The third explanation stems from the risk of *Dissipation of Intangible Assets*, namely *reputation*, related to the product quality and *knowledge*, characterized by some technology or managerial techniques.

The term *dissipation* thus entails a different meaning, depending on the asset under consideration: in the case of knowledge, a spillover mechanism is likely to operate, making the local counterpart appropriate production secrets, copy final goods and eventually start a rival firm on the basis of the “stolen” asset; in the case of reputation, dissipation comes because the local counterpart benefits from the MNE’s brand image, but may not put any effort in maintaining and enhancing it.

Irrespective of the asset involved, the main message that comes out from the DIA approach is that the risk of losing any of the firm’s key resources provides a motive for keeping production internal (FDI) rather than partnering with a local firm.

In particular, Ethier and Markusen (1996) show, in a two-period model, that MNEs are more likely to choose Foreign Direct Investment, the more important the Intangible Assets, the lower the discount factor, the larger the wage gap between the source and the host country and the more concentrated the recipient market.

In Fosfuri (2000), a firm endowed with a new technology has to choose among export, licensing and direct investment in order to serve a foreign market. Notice that the MNE can strategically use the vintage of its technology in order to deter imitation by the local firm; as a result, transfers to affiliates might be of later vintage relative to technologies sold to independent local firms.

Mattoo et al. (2001) set up a model in which a foreign enterprise can choose between FDI and the acquisition of an existing domestic firm. Prohibitively high or particularly low technology transfer costs generate a divergence between the MNE and the local government most preferred mode of entry, while for intermediate levels, the preferences are aligned and there is no need for policy intervention.

The debate on the effects of Foreign Direct Investments on the host country is at the core of Markusen (1998, 2001)’s two-period model, where contract enforcement – in the form of IPR protection – is shown to influence FDI inflow to developing countries and host countries welfare. Differently from the other models, in which operating within firm’s boundaries provides a solution against asset dissipation, here the multinational may find it optimal to export, in order to protect its technology.
A similar view is taken in Fosfuri et al. (2001), where export comes without any knowledge dissipation, while FDI involves technology transfer through the training of a local worker. In particular, technological spillovers do not occur if the joint profit of the MNE plus the local firm is highest when the multinational can use the technology as a monopolist; moreover, a low level of absorptive capability by the local firm is shown to reduce the potential for FDI generating spillover.

In Saggi (1996, 1999), the choice of integration, relative to licensing, is motivated by the wish to protect the MNE’s key resources not only in the domestic market, but in all the markets in which it potentially competes with a local firm, adding an element of novelty to the existing literature. As a result, FDI becomes a more preferable option if competition from a licensee in one market erodes the licensor’s profit in other markets, whereas licensing is chosen if competition can be prevented.

This analysis is extended in Glass and Saggi (2002a) where the Internalisation issue is shown to play a role in determining the rate and magnitude of innovation. Notice that the licensing contract, here, is characterized by profit sharing between the foreign and the local firm, rather than having the licensee paying a fee to the licensor and retaining total revenues. In taking the Internalisation decision, MNEs thus trade off the cost disadvantage of operating alone, with the profit retention by the local firm. When the mode choice is fixed, a subsidy to multinational production increases the rate, but decreases the size of innovation; when the mode can switch, the rate and level of innovation both increase, provided that the subsidy is not too large.

To the best of our knowledge, theoretical studies on the boundaries of the Multinational Enterprise, inspired by the Dissipation of Intangible Asset, only consider export and licensing as an alternative to Foreign Direct Investment.

However, given the broadly documented relevance of joint-ventures in China (see, for instance, Luo 2000; Li and Li 1999), in this paper we are rather interested in the comparison between total (FDI) and partial (JV) ownership, based on the risk of knowledge spillover.

We believe that an extension of the DIA approach, to incorporate the joint-venture case, is quite reasonable: although licensing implies a more direct channel for technology transfer - because the licensor has to provide the licensee with the whole set of production

---

3 A different result is obtained in Glass and Saggi (2002b)' product cycle model, stronger IPR protection – through the imitation disincentive and resource wasting effects – decreases both innovation and FDI, because multinational firms feel more secure from imitation.
tools – working side by side in a joint-venture similarly allows the local firm to learn from the MNE, thus exposing it to the risk of losing key resources. A similar approach is followed in many empirical studies on the Internalisation issue (see, among others: Andersen and Gatignon 1986; Gomes Casseres 1989; Hennart 1991; Agarwal and Ramaswami 1992; Erramilli 1996; Buckley and Casson 1996; Smarzynska 2000; Desai et al. 2002) in which integrated production is shown to prevail, compared to JV, when the threat of spillover is high, namely for firms endowed with superior technology or operating in high tech sectors, resembling the theoretical findings on the FDI/licensing trade-off.

3. Empirical analysis

In this Section, we empirically assess the choice of FDI versus joint-venture made by Italian, Spanish and Swiss multinationals in China.

The discussion is organized in three steps: first we present the data (3.1) and the specification (3.2), and then we comment the econometric estimates (3.3) and their matching with the theoretical priors from Section 2.

3.1 Data

The empirical analysis, conducted between 2001 and 2005, builds on a survey questionnaire, exploring the international choices of 165 Italian, Spanish and Swiss manufacturing companies with 265 production affiliates in China. Although relatively small, we believe that this sample is highly representative, since it accounts for 80% of all Italian, Spanish and Swiss investors in the region of interest4.

The questionnaire, based on multiple choice responses, consists of two sections: first we ask background information to derive a general profile of the parent company; then we investigate the Internalisation issue and the major challenges faced in the destination country, for more than 40 questions overall.

Additional balance sheet or industry-level data are derived from AIDA (Analisi Informatizzata delle Aziende), ISTAT (Istituto Nazionale di Stastistica), and AMADEUS. The experiences of European MNEs in the PRC are very diverse. An initial look at the survey results suggests that it is impossible to draw a single profile, because investors differ in many regards.

4 The complete list of investors was obtained through intersection of all the available sources: ICE (Istituto Commercio Estero), Reprint-Politecnico, Italian, Spanish and Swiss Embassies and Chambers of Commerce in China. In lines with the theoretical specification, attention was restricted to manufacturing operations.
Figure 1 displays the composition of the sample: Italy has a predominant position in China, with 78% of total affiliates, followed by Switzerland (13%) and Spain (9%).

*Figure 1: Composition of the sample*

According to their size, Swiss companies tend to be very large, with more than 500 employees, while the Italian and Spanish investors are mainly small – 11-99 employees - and medium - 100-499 employees - enterprises (Figure 2).

As far as sales are concerned, 45% top 50 million Euros, 15% is between 25 and 50 million Euros and 21% below 10 million.

*Figure 2: Size of the parent companies, by number of employees*

Based on the acquisition of technology, firms can be grouped in four categories of technological development (Bell and Pavitt 1993): in traditional “supplier dominated” industries – like textile, leather, shoes, furniture, potteries etc. – technical change comes from supplier of inputs, while technology is transferred in the form of capital goods and components; in “scale intensive” industries – like automobile and chemicals – technical change is generated by the design and operation of complex production systems; in “science based” high-tech industries, technology emerges from corporate R&D and it is heavily dependant on academic research; finally, “specialized supplier dominated” firms
provide high performance equipment in the form of components, instruments or software to advance users.

**Figure 3: Sector of the parent company**

![Sector of the parent company](image)

From Figure 3, we see that the specialized supplier dominated sector is the most important for all the three nationalities, followed by the scale intensive in Switzerland, the supplier dominated in Italy and the science based in Spain.

Interviews reveal that firms pay large attention at the human capital of their employees, as a key IA: many of them require English (70%) and computer (97%) skills to be held by the entire workforce of the parent company, while the percentage of employees holding a degree is higher than 25% in almost half of the cases. As far as training courses are concerned, we found out that they are organized for all the employees by 80% of the Swiss, 60% of the Spanish and 40% of the Italian companies.

The international experience of European MNEs seems to be similar throughout the sample and noticeably elevated. Around 80% has had business activities – from import-export to FDI and joint-venture, from licensing to franchising (2%) - in more than five countries, for longer then 10 years (76%), before the present involvement in the PRC.

The decision to operate in China can be driven by a lot of purposes, from the huge market dimension to the low cost labour force, from the need to avoid tight competition or constrictive laws at home, to the wish to establish a commercial platform in Asia or to take a good chance. According to Figure 4, market seeking considerations played the major role, followed by a good chance for Spanish companies, and the low cost labour force for the Italian ones, while Swiss firms seemed to be equally interested in both dimensions.

---

5 A typical example of “good chance” is the event in which the European firm accidentally meets a partner for a joint-venture during international expositions.
Figure 4: Investor’s purpose in establishing in China

Adding to this, it is worth considering the destination of the goods produced in China: while Swiss firms export most of their production (87%), Spanish companies mainly attempt at satisfying local demand (57%)\(^6\) and Italian enterprises locate middle way between the two extremes, both producing for the Chinese market (48%) and to export abroad (52%).

Figure 5: Major problems crossed by our European investors in China

Figure 5 summarizes the main problems faced by European MNEs in China, showing a good deal of variation across countries: while Italian investors have mostly suffered from cultural distance (25%), the Swiss have complained about the lack of good infrastructures (25%) and the Spanish about the complicacy of bureaucracy (31%). Linguistic difficulties and the absence of a clear and transparent legal system have been met quite often by all

---

\(^6\) Using the terminology of the Knowledge Capital Model (see Markusen and Maskus 2001 for a survey), we call vertical purpose the first case, aimed at saving on production costs – i.e. MNEs produce in the local market, because it is cheaper, but they sell abroad - and horizontal purpose the second one, aimed at accessing the local market – i.e. MNEs produce and sell within the local market.
the three. Notice that only a small percentage of enterprises have not complained at all, suggesting that operating in China is still far away from being simple and straightforward, from a Western perspective.

For the purpose of the present work, it is particularly interesting to consider the mode of entry, selected by European respondents. Figure 6 displays our main findings: while Italian (66%) and Swiss (58%) dominating choice falls on the joint-venture option, the Spanish seem to have a strong preference towards total ownership (78%).

**Figure 6: Internalisation choice in China**

Basing on the survey answers, the reasons to engage in a partnership, rather than operating in wholly-owned subsidiaries, range from gaining local support to risks and costs sharing, from achieving the optimal size to skills and competitive position enhancing (Figure 7). China is still perceived as a difficult and faraway destination, so that operating in a joint-venture seems to be the easiest way to survive and succeed there. Indeed, the need to find a partner, well acquainted with the domestic context, able to speak and negotiate with the Chinese suppliers and customers, and good in dialoguing with the local authorities is particularly stressed by Italian and Swiss respondents.

Among the firms that operate in a WOS, a large majority chooses this mode in order to achieve strong control over technology transfer and high flexibility standards (see Figure 8), in lines with our theoretical expectations: especially high tech companies are very reluctant to invest in developing countries since they do not want to share know-how with a lower skilled partner. Foreign Direct Investment seems the most natural way to avoid this risk, as MNEs simply work alone and they do not need to consult with a local counterpart on management decisions. For about 30%, the wholly-owned subsidiary
represents the evolution from a former JV\(^7\), while 3% chooses to operate alone due to the lack of an appropriate local partner. This evidence seems to be consistent with our extension of the *Dissipation of Intangible Assets* framework: the wish to preserve technology and managerial techniques is stressed as a key driver of FDI, by European firms with manufacturing operations in China.

*Figure 7: Reasons to choice joint-venture over FDI*

![Diagram showing reasons for choosing joint-venture]({})

*Figure 8: Reasons to choice FDI over JV*

![Diagram showing reasons for choosing FDI]({})

### 3.2 Specification

Based on the data, briefly presented in 3.1, we regress the Internalisation decision – FDI versus joint-venture – of Italian, Spanish and Swiss multinationals in China, within the DIA framework reviewed in Section 2.

Our unit of analysis is the production affiliate in China. The econometric specification is as follows:

\[
\text{FDI} = \beta F + \lambda I + \tau C + \sigma + \epsilon
\]

\((nx1)\quad (n\times m)\quad (m\times l)\quad (n\times k)\quad (k\times l)\quad (nx1)\)

\(^7\) Historically, the joint-venture represents the first contractual agreement that allows foreign property of Chinese firms (the Law on Equity Joint-Venture was approved in 1979). Wholly Foreign-Owned Enterprises were introduced only in the 1980s, making MNEs free to choose between partial and total ownership when investing in the PRC. Restrictions to such a choice, depending on the desired business or the sector have been completely abolished year by year (Cavalieri 2003).
FDI is the dependent variable vector, whose elements take value 1 in case of wholly-owned subsidiary, 0 in case of joint-venture.

Explanatory variables are of three types: $F$ is a matrix of Firm-level regressors; $I$ and $C$ are, respectively, a matrix of Industry and Country characteristics; $\alpha$, $\tau$ and $\sigma$ are the parametric vectors associated to firm, industry and country variables and $\varepsilon$ denotes the error term.

Notice that, within $F$, it is worth distinguishing between core and control regressors: core variables are those measuring MNEs’ Intangible Assets, over which we have some expectations (see Section 2); control variables denote other firm-level characteristics that may play a role in shaping the Internalisation decision.

Recall from our previous discussion (Sections 1 and 2) that knowledge covers both human capital and technological aspects, so our core regressors refer to both types. This is an important novelty, compared to the previous empirical literature: although human capital is often mentioned as a key asset, likely to orient multinational activity, it is rarely included in econometric tests, due to the lack of firm-level information. Here, as a proxy for human capital, two different indicators are adopted, such as the extent of the training courses, organized by the parent company, for its employees (TRAINING), and their level of education (GRADUATE).

As far as technology is concerned, our measures include: the value of patents (PATENT); the ratio of patents over sales (PATENT/SALES) and, similarly to (Blomstrom et al. 1989; Smarzyinska 2000), whether or not the parent firm belongs to a high tech sector (HIGHTECH), with a particular focus on the TELECOM one; PATENT*HIGHTECH is a measure the value of patent, for firms belonging to HIGHTECH sectors.

These variables strictly refer to the MNE’s Intangible Assets and therefore, based on the DIA framework, we expect an overall positive sign: FDI, induced by the threat of knowledge dissipation, is more likely to emerge when know-how easily spills over – i.e. when firms are endowed with more technology and human capital or they belong to high tech industries.

Firm-level controls include: sales (SALES, as in Blomstrom and Zejan 1991; Meyer 1998; Smarzynska 2000); the number of employees (EMPLOY) and the destination of the goods produced in China (HFDI) – which allows us to distinguish between horizontal and

---

8 Notice that in earlier studies (see, among others: Desai et al. 2002; Smarzynska 2000) R&D expenditure is also employed as a proxy for technology. Due to data missing we preferred to base on patents, at firm-level, while the R&D expenditure, at country-level, is included as a control (RDE).
vertical purposes; similarly to (Herrmann and Datta 2002; Guillen 2003), COUNTRIES is a proxy for the MNE’s experience in running foreign operations. Matrix I contains a few industry controls - such as METAL, PRECISION, SCALE INTENSIVE and HT SUPPLIER DOMINATED – while matrix C covers both home and host country characteristics. In particular, it includes the location of the affiliate in China (SHANGHAI, JIANGSU, GUANGDONG and ZEHIJANG) - to capture the high degree of variation within the destination market; the location of the parent company in Europe (SPAIN); the level of Research & Development expenditure (RDE); the high tech exports, as percentage of total merchandise exports (HTE); and the dimension of the population (POP) in the home country, to take into account potential differences across Italian, Spanish and Swiss investors.

Table 1 summarizes all the information about the variables described above.

Given the binary nature of FDI, regressions are carried out within a Probit framework.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDI</td>
<td>Dummy variable, 1 if FDI, 0 if JV. Type: regressand. Source: interviews.</td>
</tr>
<tr>
<td>GRADUATE</td>
<td>Dummy variable, 1 if the percentage of employees with a degree is larger than 25%, 0 otherwise. Type: firm-level core regressor; it is a proxy for the human capital of the parent firm. Source: interviews.</td>
</tr>
<tr>
<td>TRAINING</td>
<td>Dummy variable, 1 if the parent firm organizes training courses for the employees longer than 6 months, 0 otherwise. Type: firm-level core regressor; it is a proxy for the human capital of the parent firm. Source: interviews.</td>
</tr>
<tr>
<td>HIGHECHTE</td>
<td>Dummy variable, 1 if the parent firm belongs to a “high tech” sector, i.e. a sector in which the average R&amp;D expenditure is more than 500,000 Euro. Type: firm-level core regressor; it is an indicator of technology of the parent firm. Source: personal elaborations from ISTAT (Istituto Nazionale di Statistica ) data.</td>
</tr>
<tr>
<td>TELECOM</td>
<td>Dummy variable, 1 if the parent firm belongs to the TELECOM (NACE REV 1.1, 32) sector, 0 otherwise. Type: firm-level core regressor; it is an indicator of the level of technology of the parent firm. Source: personal elaborations from ISTAT data.</td>
</tr>
<tr>
<td>Variable</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>PATENT</strong></td>
<td>Patents of the parent firm (millions Euro).</td>
</tr>
<tr>
<td><strong>PATENT/SALES</strong></td>
<td>Patent over sales of the parent firm.</td>
</tr>
<tr>
<td><strong>PATENT*HIGHTECH</strong></td>
<td>Patents of the parent firm (millions Euro), belonging to HIGHTECH sectors.</td>
</tr>
<tr>
<td><strong>SALES</strong></td>
<td>Sales of the parent company (billion Euro).</td>
</tr>
<tr>
<td><strong>EMPLOY</strong></td>
<td>Number of employees of the parent company.</td>
</tr>
<tr>
<td><strong>HFDI</strong></td>
<td>Dummy variable, 1 in case of horizontal purpose – i.e. the goods produced in China are addressed to the local market – 0 in case of vertical purpose – i.e. the goods produced in China are exported elsewhere.</td>
</tr>
<tr>
<td><strong>COUNTRIES</strong></td>
<td>Dummy variable, 1 if the parent firm was engaged in international operations with more than 5 foreign countries before the FDI in Asia, 0 otherwise. It is a proxy for the firm’s experience in running foreign operations.</td>
</tr>
<tr>
<td><strong>METAL</strong></td>
<td>Dummy variable, 1 if the parent firm belongs to the METAL (NACE REV 1.1, 28) sector, 0 otherwise.</td>
</tr>
<tr>
<td><strong>PRECISION</strong></td>
<td>Dummy variable, 1 if the parent firm belongs to the PRECISION (NACE REV 1.1, 33) sector, 0 otherwise.</td>
</tr>
<tr>
<td><strong>SCALE INTENSIVE</strong></td>
<td>Dummy variable, 1 if the parent firm is engaged in the scale-intensive sector, 0 otherwise (Bell and Pavitt 1993).</td>
</tr>
<tr>
<td><strong>HT SUPPLY DOMINATED</strong></td>
<td>Dummy variable, 1 if the parent firm is a HIGHTECH company (see above definition) in supply dominated sector, 0 otherwise (Bell and Pavitt 1993).</td>
</tr>
<tr>
<td><strong>SPAIN</strong></td>
<td>Dummy variable, 1 if the parent firm’s headquarter is located in Spain, 0 otherwise.</td>
</tr>
<tr>
<td><strong>SHANGHAI</strong></td>
<td>Dummy variable, 1 if the subsidiary is located in Shanghai, 0 otherwise.</td>
</tr>
<tr>
<td>Source</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-----------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>JIANGSU</strong></td>
<td>Dummy variable, 1 if the subsidiary is located in Jiangsu, 0 otherwise. Type: country-level control regressor. Source: interviews.</td>
</tr>
<tr>
<td><strong>GUANGDONG</strong></td>
<td>Dummy variable, 1 if the subsidiary is located in Guangdong, 0 otherwise. Type: country-level control regressor. Source: interviews.</td>
</tr>
<tr>
<td><strong>ZEHIJANG</strong></td>
<td>Dummy variable, 1 if the subsidiary is located in Zehijang, 0 otherwise. Type: country-level control regressor. Source: interviews.</td>
</tr>
<tr>
<td><strong>RDE</strong></td>
<td>National Research and Development Expenditure of the home country, as a percentage of Gross National Income. Type: country-level control regressor. Source: personal elaborations from <a href="http://humandevelopment.bu.edu/">http://humandevelopment.bu.edu/</a></td>
</tr>
<tr>
<td><strong>HTE</strong></td>
<td>High Tech exports as a percentage of total merchandise exports of the European country. Type: country-level control regressor. Source: personal elaborations from <a href="http://humandevelopment.bu.edu/">http://humandevelopment.bu.edu/</a></td>
</tr>
</tbody>
</table>

### 3.3 Results

Probit estimates are shown in Table 2.

Reminding the theoretical priors, summarized in Section 2, it is worth noticing that all the core variables are significant with the expected sign and they remain so across different specifications; this provides a first important result and suggests quite a good matching between the theory and the data, making sense of our DIA extension to the case of joint-venture.

In particular, moving from the simplest specifications on the left – where FDI is regressed only on core-type variables – to the richer specifications on the right – where controls are also included - we see that with an increase in the European firms’ Intangible Assets, the probability of internalising production, rather than operating in joint-venture, increases as well.

These results are broadly consistent with the existing empirical literature (see, among others, Smarzynska 2000; Desai et al. 2001; Brouthers 2002; Chen and Hu 2002) and they add precious information about the role of human capital, as a key resource driving the Internalisation choice of Italian, Swiss and Spanish companies in China.

The size of the parent company – measured by EMPLOY and SALES – does not turn significant in any specification.
Moreover, from Table 2, it seems that investors coming from Spain (SPAIN) are more prone to operate in wholly-owned subsidiaries, while experience in running foreign operations (COUNTRIES) and horizontal purpose (HFDI) push towards joint-venture establishment. Indeed, being used to manage foreign operations might help to protect Intangible Assets more effectively and to avoid the risk of knowledge dissipation. At the same time, it is clear that investors wishing to penetrate the local market – horizontal purpose - are more eager to do so in joint-venture, to take advantage of the partner knowledge of her own country.

As far as industry variables are concerned, METAL and PRECISION turn out to be significant, with a positive sign, meaning that parent firms engaged with production of metal goods or precision instruments, watches and optical appliances have higher probability to operate through FDI. At a broader level, we can observe that scale intensive multinationals (SCALE INTENSIVE) prefer the JV contract, while technological leaders in the supplier oriented sector (HIGHTECH SUPPLIER DOMINATED) have a clear propensity for the integrated solution. This is not surprising, since scale economies are often associated with large companies, characterized by strong bargaining power, whereas supplier dominated firms are generally smaller and might have problems avoiding IAs spillover.

Among the country variables included in our regressions, it is interesting to see that manufacturing operations in Shanghai (SHANGHAI) tend to be conducted via FDI, while the opposite is true for JIANGSU, GUANGDONG and ZHEJIANG. No evidence has been found related to the dimension of the home country (POP), while the level of national R&D Expenditure (RDE) and the percentage of high tech exports (HTE) proved to play some role, the former pushing towards FDI, the latter towards JV, although the marginal effect is very low, compared to core variables.

---

9 Other country variables (not shown) were included in our econometric tests but, given the geographical proximity and the economic similarity of Italy, Spain and Switzerland, they resulted insignificant, because of the lack of cross country variation.

10 Notice that Spain is the country with the lowest level of high tech exports as a percentage of total merchandise exports, in our sample, and indeed it shows the wicker tendency towards joint-venture establishment.
Table 2: Probit estimates\textsuperscript{11}

<table>
<thead>
<tr>
<th></th>
<th>FDI</th>
<th>FDI</th>
<th>FDI</th>
<th>FDI</th>
<th>FDI</th>
<th>FDI</th>
<th>FDI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GRADUATE</strong></td>
<td>0.181</td>
<td>0.166</td>
<td>0.161</td>
<td>0.152</td>
<td>0.155</td>
<td>0.170</td>
<td>0.159</td>
</tr>
<tr>
<td></td>
<td>(0.022)**</td>
<td>(0.034)**</td>
<td>(0.048)**</td>
<td>(0.071)*</td>
<td>(0.069)*</td>
<td>(0.050)*</td>
<td>(0.062)*</td>
</tr>
<tr>
<td><strong>TRAINING</strong></td>
<td>0.333</td>
<td>0.337</td>
<td>0.271</td>
<td>0.291</td>
<td>0.395</td>
<td>0.319</td>
<td>0.351</td>
</tr>
<tr>
<td></td>
<td>(0.007)***</td>
<td>(0.006)***</td>
<td>(0.039)**</td>
<td>(0.035)**</td>
<td>(0.004)***</td>
<td>(0.022)**</td>
<td>(0.017)***</td>
</tr>
<tr>
<td><strong>HIGHTECH</strong></td>
<td></td>
<td></td>
<td></td>
<td>0.119</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.090)*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TELECOM</strong></td>
<td></td>
<td>0.382</td>
<td></td>
<td>0.354</td>
<td></td>
<td>0.405</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.060)**</td>
<td></td>
<td>(0.085)*</td>
<td></td>
<td>(0.043)***</td>
<td></td>
</tr>
<tr>
<td><strong>PATENT</strong></td>
<td>0.070</td>
<td>0.054</td>
<td>0.118</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.045)**</td>
<td>(0.098)*</td>
<td>(0.029)**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PATENT*HIGHTECH</strong></td>
<td>0.127</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.026)**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PATENT/SALES</strong></td>
<td>0.454</td>
<td></td>
<td></td>
<td>0.406</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.002)***</td>
<td></td>
<td></td>
<td>(0.013)***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>EMPLOY</strong></td>
<td>0.026</td>
<td></td>
<td></td>
<td>-0.009</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.683)</td>
<td></td>
<td></td>
<td>(0.176)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SALES</strong></td>
<td>-0.020</td>
<td>-0.122</td>
<td>-0.148</td>
<td>-0.138</td>
<td></td>
<td>-0.312</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.440)</td>
<td>(0.099)*</td>
<td>(0.039)**</td>
<td>(0.051)*</td>
<td></td>
<td>(0.002)***</td>
<td></td>
</tr>
<tr>
<td><strong>HFDI</strong></td>
<td>-0.112</td>
<td>-0.129</td>
<td>-0.003</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.051)*</td>
<td>(0.099)*</td>
<td>(0.286)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>COUNTRIES</strong></td>
<td></td>
<td></td>
<td></td>
<td>-0.321</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.002)***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>METAL</strong></td>
<td>0.220</td>
<td>0.281</td>
<td>0.305</td>
<td>0.279</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.082)*</td>
<td>(0.022)**</td>
<td>(0.017)**</td>
<td>(0.022)**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PRECISION</strong></td>
<td></td>
<td>0.346</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.073)*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SCALE INTENSIVE</strong></td>
<td>-0.217</td>
<td>-0.238</td>
<td>-0.234</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.070)*</td>
<td>(0.096)*</td>
<td>(0.073)*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>HT SUPPLY DOMINATED</strong></td>
<td>0.456</td>
<td></td>
<td></td>
<td>0.437</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.001)***</td>
<td></td>
<td></td>
<td>(0.001)***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SPAIN</strong></td>
<td></td>
<td>0.500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.001)***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SHANGHAI</strong></td>
<td>0.370</td>
<td>0.351</td>
<td>0.382</td>
<td>0.347</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.000)***</td>
<td>(0.000)***</td>
<td>(0.000)***</td>
<td>(0.000)***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>JIANGSU</strong></td>
<td></td>
<td></td>
<td>-0.361</td>
<td>-0.232</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.000)***</td>
<td>(0.080)*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>GUANGDONG</strong></td>
<td></td>
<td></td>
<td>-0.228</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.011)**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ZHEJIANG</strong></td>
<td></td>
<td></td>
<td>-0.244</td>
<td>-0.268</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.081)*</td>
<td>(0.064)***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>POP</strong></td>
<td></td>
<td></td>
<td></td>
<td>0.034</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.282)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>RDE</strong></td>
<td></td>
<td>0.046</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.019)**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>HTE</strong></td>
<td></td>
<td></td>
<td>-0.051</td>
<td>-0.057</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.085)**</td>
<td>(0.057)*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Obs</strong></td>
<td>236</td>
<td>234</td>
<td>234</td>
<td>236</td>
<td>236</td>
<td>257</td>
<td>234</td>
</tr>
<tr>
<td><strong>p-value</strong></td>
<td>0.000***</td>
<td>0.000***</td>
<td>0.000***</td>
<td>0.000***</td>
<td>0.000***</td>
<td>0.000***</td>
<td>0.000***</td>
</tr>
<tr>
<td><strong>Pseudo R\textsuperscript{2}</strong></td>
<td>0.0916</td>
<td>0.0708</td>
<td>0.1586</td>
<td>0.1962</td>
<td>0.1981</td>
<td>0.2116</td>
<td>0.2117</td>
</tr>
<tr>
<td></td>
<td>0.2405</td>
<td>0.2405</td>
<td>0.2405</td>
<td>0.2405</td>
<td>0.2405</td>
<td>0.2405</td>
<td>0.2405</td>
</tr>
</tbody>
</table>

4. Conclusion

This paper is an attempt to explore the FDI/joint-venture choice of Italian, Spanish and Swiss multinationals in China, as shaped by the risk of dissipating their Intangible Assets.

\textsuperscript{11} Marginal effects and P-value in round brackets shown. * significant at 10%, ** significant at 5%, *** significant at 1%.
By telling the tale of these countries, we intended to document their experience in the PRC, and discuss to what extent the DIA approach can be applied to the FDI/JV trade-off, adding to the traditional FDI/licensing one.

Basing on survey data, our estimates show that Foreign Direct Investment is the most preferred mode of entry for European firms endowed with superior technology and higher skilled employees, meaning that the threat of knowledge spillover not only drives their choice of total versus partial ownership, but it also plays a major role in orienting such a decision, compared to home country characteristics. Put another way, irrespective of their origin, parent firms characterized by a higher degree of IAs show a clearer preference for total ownership, to secure their resources against a potential Chinese partner. These results are completely aligned with the theoretical predictions derived for the standard comparison between FDI and licensing (Ethier and Markusen 1996; Markusen 1998, 2001; Saggi 1996, 1999; Fosfuri 2000; Mattoo et al. 2001; Fosfuri et al. 2001; Glass and Saggi 2002a).

We believe that these findings, although preliminary, are promising enough to encourage further research on joint-ventures within the DIA field: in theoretical terms, future steps should include the creation of a model to incorporate the JV among the contractual arrangements that MNEs can sign when entering into a foreign market; in empirical terms, further evidence is also needed to add a multiple-host country perspective and control for possible selection bias.
5. References


NOTE DI LAVORO DELLA FONDAZIONE ENI ENRICO MATTEI
Fondazione Eni Enrico Mattei Working Paper Series

Our Note di Lavoro are available on the Internet at the following addresses:
http://www.feem.it/Feem/Pub/Publications/WPapers/default.html
http://www.repec.org
http://agecon.lib.umn.edu

NOTE DI LAVORO PUBLISHED IN 2006

SIEV 1.2006 Anna ALBERINI: Determinants and Effects on Property Values of Participation in Voluntary Cleanup Programs: The Case of Colorado
CCMP 2.2006 Valentina BOSETTI, Carlo CARRARO and Marzio GALEOTTI: Stabilisation Targets, Technical Change and the Macroeconomic Costs of Climate Change Control
CCMP 3.2006 Roberto ROSON: Introducing Imperfect Competition in CGE Models: Technical Aspects and Implications
KTHC 4.2006 Sergio VERRAGLIE: The Role of Community in Migration Dynamics
SIEV 5.2006 Fabio GRAZI, Jeroen C.J.M. van den BERGH and Piet RIETVELD: Modeling Spatial Sustainability: Spatial Welfare Economics versus Ecological Footprint
PRCG 7.2006 Michele MORETTO and Paola VALBONESE: Firm Regulation and Profit-Sharing: A Real Option Approach
SIEV 8.2006 Anna ALBERINI and Aline CHIABAI: Discount Rates in Risk v. Money and Money v. Money Tradeoffs
CTN 9.2006 Jon X. EGUIA: United We Vote
CTN 10.2006 Shao CHIN SUNG and Dinko DIMITRO: A Taxonomy of Myopic Stability Concepts for Hedonic Games
NRM 11.2006 Fabio CERINA (lxxviii): Tourism Specialization and Sustainability: A Long-Run Policy Analysis
NRM 12.2006 Valentina BOSETTI, Mariaaesther CASSINELLI and Alessandro LANZA (lxxviii): Benchmarking in Tourism Destination, Keeping in Mind the Sustainable Paradigm
CCMP 13.2006 Jens HORBACH: Determinants of Environmental Innovation – New Evidence from German Panel Data Sources
KTHC 14.2006 Fabio SABATINI: Social Capital, Public Spending and the Quality of Economic Development: The Case of Italy
CSRIM 16.2006 Giuseppe DI VITA: Corruption, Exogenous Changes in Incentives and Deterrence
CTN 19.2006 Somdeb LAHIRI: The Asymmetric Effects of Oil Shocks on Output Growth: A Frontier Approach
CCMP 20.2006 Massimiliano MAZZANTI and Roberto ZOBOLI: Examining the Factors Influencing Environmental Innovations
CCMP 22.2006 Marzio GALEOTTI, Matteo MANERA and Alessandro LANZA: On the Robustness of Robustness Checks of the Environmental Kuznets Curve
NRM 23.2006 Y. Hossein FARZIN and Ken-ICHI AKAO: When is it Optimal to Exhaust a Resource in a Finite Time?
CCMP 28.2006 Giovanni BELL: Uniqueness and Indeterminacy of Equilibria in a Model with Polluting Emissions
IEM 29.2006 Alessandro COLONNI and Matteo MANERA: The Asymmetric Effects of Oil Shocks on Output Growth: A Markov-Switching Analysis for the G-7 Countries
KTHC 30.2006 Fabio SABATINI: Social Capital and Labour Productivity in Italy
ETA 31.2006 Andrea GALLICE (lxxix): Predicting one Shot Play in 2x2 Games Using Beliefs Based on Minimax Regret
IEM 32.2006 Andrea BIGANO and Paul SHEEHAN: Assessing the Risk of Oil Spills in the Mediterranean: the Case of the Route from the Black Sea to Italy
NRM 33.2006 Rinaldo BRAU and Davide CAO (lxxviii): Uncovering the Macrostructure of Tourists’ Preferences: A Choice Experiment Analysis of Tourism Demand to Sardinia
CTN 34.2006 Parkash CHANDER and Henry TULKENS: Cooperation, Stability and Self-Enforcement in International Environmental Agreements: A Conceptual Discussion
IEM 35.2006 Valeria COSTANTINI and Salvatore MONNI: Environment, Human Development and Economic Growth
Monica BARNI

Measurement and Spatial Effects of the Immigrant Created Cultural Diversity in the Netherlands and Belgium

John J. PEARCE and Andrea REA

Construction and Import of Ethnic Categorisations: “Allochthones” in Belgian School Contexts: Ways and Methodologies for Mapping these Contexts?

Diana PETKOVA

Ethnic Minorities Rewarded: Ethnostratification on the Wage Market in Belgium

Andranik TANGIAN

David H. GLASS and Ottorino CHILLEM, Benedetto GUI and Lorenzo ROCCO

On The Economic Value of Repeated Interactions

Maria SALGADeO (lxxix): Choosing to Have Less Choice

Justina A.V. FISCHER and Benno TORGLER: Does Envy Destroy Social Fundamentals? The Impact of Relative Income Position on Social Capital

Benno TORGLER, Sascha L. SCHMIDT and Bruno S. FREY: Relative Income Position and Performance: An Empirical Panel Analysis

Alberto GAGO; Xavier LABANDEIRA, Fidel PICOS And Miguel RODRÍGUEZ: Taxing Tourism In Spain: Results and Recommendations

Karti van BIJVERLEK, Dirk Le ROY and Paulo A.L.D. NUNES: An Accidental Oil Spill Along the Belgian Coast: Results from a CV Study

Rolf GOLOMBEK and Michael HOEL: Endogenous Technology and Tradable Emission Quotas

Giulio CAIENELLI and Donato IACOBUCCI: The Role of Agglomeration and Technology in Shaping Firm Strategy and Organization

Alvaro CALZADILLA, Francesco PAULI and Roberto ROSON: Climate Change and Extreme Events: An Assessment of Economic Implications


Walter F. LALICH (lxxx): Measurement and Spatial Effects of the Immigrant Created Cultural Diversity in Sydney

Elena FASPALANOVA (lxxx): Cultural Diversity Determining the Memory of a Controversial Social Event

Ugo GASPARINO, Barbara DEL CORPO and Dino PINELLI (lxxx): Perceived Diversity of Complex Environmental Systems: Multidimensional Measurement and Synthetic Indicators

Aleksandra HAUKÉ (lxxx): Impact of Cultural Differences on Knowledge Transfer in British, Hungarian and Polish Enterprises

Katherine MARQUAND FORSYTH and Vanja M. K. STENIUS (lxxx): The Challenges of Data Comparison and Varied European Concepts of Diversity

Gianmarco I.P. OTTAVIANO and Giovanna PERI (lxxx): Rethinking the Gains from Immigration: Theory and Evidence from the U.S.

Monica BARNI (lxxx): From Statistical to Geolinguistic Data: Mapping and Measuring Linguistic Diversity

Lucia TAJOLI and Luca DE BENEDICTIS (lxxx): Economic Integration and Similarity in Trade Structures

Suzanna CHAN (lxxx): “God’s Little Acre” and “Belfast Chinatown”: Diversity and Ethnic Place Identity in Belfast

Diana PETKOVA (lxxx): Cultural Diversity in People’s Attitudes and Perceptions

John J. BETANCUR (lxxx): From Outsiders to On-Paper Equals to Cultural Curiosities? The Trajectory of Diversity in the USA

Kiftemeriam HAMDE (lxxx): Cultural Diversity A Glimpse Over the Current Debate in Sweden

Emilio GREGORI (lxxx): Indicators of Migrants’ Socio-Professional Integration

Christa-Maria LERM HAYES (lxxx): Unity in Diversity Through Art? Joseph Beuys’ Models of Cultural Dialogue

Sara VERTOMMEN and Albert MARTENS (lxxx): Ethnic Minorities Rewarded: Ethnosegregation on the Wage Market in Belgium

Nicola GENOVESE and Maria Grazia LA SPADA (lxxx): Diversity and Pluralism: An Economist's View

Carla BAGNA (lxxx): Italian Schools and New Linguistic Minorities: Nationality Vs. Plurilingualism. Which Ways and Methodologies for Mapping these Contexts?

Fedran OMANOVIĆ (lxxx): Understanding “Diversity in Organizations” Paradigmatically and Methodologically

Milka PASPALANOVA (lxxx): Identifying and Assessing the Development of Populations of Undocumented Migrants: The Case of Undocumented Poles and Bulgarians in Brussels

Roberto ALZETTA (lxxx): Diversities in Diversity: Exploring Moroccan Migrants’ Livelihood in Genoa

Monika SEDENKOVA and Jiri HORAK (lxxx): Multivariate and Multicriteria Evaluation of Labour Market Situation

Dirk JACOBS and Andrea REA (lxxx): Construction and Import of Ethnic Categorisations: “Allochthones” in The Netherlands and Belgium

Eric M. USLANER (lxxx): Does Diversity Drive Down Trust?

Paula MOTA SANTOS and João BORGES DE SOUSA (lxxx): Visibility & Invisibility of Communities in Urban Systems

Rinaldo BRAU and Matteo LIPPI BRUNI: Eliciting the Demand for Long Term Care Coverage: A Discrete Choice Modelling Analysis

Dinko DIMITROW and Claus-JOCHEN HAAKE: Coalition Formation in Simple Games: The Semistrict Core

Ottorino CHILLEM, Benedetto GUI and Lorenzo ROCCO: On The Economic Value of Repeated Interactions

Andranik TANGIAN

Sylvain BEAL and Nicolas QUÉROU: Bounded Rationality and Repeated Network Formation

Sophie BADE, Guillaume HAERINGER and Ludovic RENOU: Bilateral Commitment

Andranik TANGIAN: Evaluation of Parties and Coalitions After Parliamentary Elections

Rudolf BERGHAMMER, Agnieszka RUSINOWSKA and Harrie de SWART: Applications of Relations and Graphs to Coalition Formation

Paolo PIN: Eight Degrees of Separation

Roland AMANN and Thomas GALL: How (not) to Choose Peers in Studying Groups
Choose an Extremist Position?  

The Impact of Attitudinal Factors in Scope Tests  

Donatella CALABI  
Raphäel SOUBEYRAN

Vincent M. OTTO, Andreas LÖSCHEL and John REILLY  

Carmine GUERRIERO  
Kerstin RONNEBERGER, Maria BERRITTELLA, Francesco BOSELLO and Richard S.J. TOL

Andrea BIGANO, Jacqueline M. HAMILTON and Richard S.J. TOL: The Impact of Climate Change on Domestic and International Tourism: A Simulation Study

KTHC 87.2006  
Fabio SABATINI: Educational Qualification, Work Status and Entrepreneurship in Italy an Exploratory Analysis

CCMP 88.2006  

CCMP 89.2006  
Philippe TULKENS and Henry TULKENS: The White House and The Kyoto Protocol: Double Standards on Uncertainties and Their Consequences

SIEV 90.2006  
Andrea M. LEITER and Gerald J. PRUCKNER: Proportionality of Willingness to Pay to Small Risk Changes – The Impact of Attitudinal Factors in Scope Tests

PRCG 91.2006  
Raphaël SOUBEYRAN: When Inertia Generates Political Cycles

CCMP 92.2006  
Alireza NAGHAVI: Can R&D-Inducing Green Tariffs Replace International Environmental Regulations?

CCMP 93.2006  
Xavier PAUTREL: Reconsidering The Impact of Environment on Long-Run Growth When Pollution Influences Health and Agents Have Finite-LifeTime

CCMP 94.2006  
Corrado Di MARIA and Edwin van der WERF: Carbon Leakage Revisited: Unilateral Climate Policy with Directed Technical Change

CCMP 95.2006  
Paulo A.L.D. NUNES and Chiara M. TRAVISI: Comparing Tax and Tax Reallocations Payments in Financing Rail Noise Abatement Programs: Results from a CE valuation study in Italy

CCMP 96.2006  
Tino KUOSMANEN and Mika KORTELAINEN: Valuing Environmental Factors in Cost-Benefit Analysis Using Data Envelopment Analysis

KTHC 97.2006  
Dermot LEAHY and Alireza NAGHAVI: Intellectual Property Rights and Entry into a Foreign Market: FDI vs. Joint Ventures

CCMP 98.2006  
Inmaculada MARTÍNEZ-ZARZOSO, Aurelia BENGOCHEA-MORANCHO and Rafael MORALES LAGE: The Impact of Population on CO2 Emissions: Evidence from European Countries

PRCG 99.2006  
Alberto CAVALIERE and Simona SCABROSETTI: Privatization and Efficiency: From Principals and Agents to Political Economy

NRM 100.2006  
Khaled ABU-ZEID and Sameh AFIFI: Multi-Sectoral Uses of Water & Approaches to DSS in Water Management in the NOSTRUM Partner Countries of the Mediterranean

NRM 101.2006  
Carlo GIUPPONI, Jaroslav MYSIAK and Jacopo CRIMI: Participatory Approach in Decision Making Processes for Water Resources Management in the Mediterranean Basin

CCMP 102.2006  
Kestrin RONNEBERGER, Maria BERRITTELLA, Francesco BOSELLO and Richard S.J. TOL: Klum@Gtap: Introducing Biophysical Aspects of Land-Use Decisions Into a General Equilibrium Model A Coupling Experiment

KTHC 103.2006  
Anner BEN-NER, Brian P. MCCALL, Massoud STEPHANE, and Hua WANG: Identity and Self-Other Differentiation in Work and Giving Behaviors: Experimental Evidence

SIEV 104.2006  
Aline CHIABAI and Paulo A.L.D. NUNES: Economic Valuation of Oceanographic Forecasting Services: A Cost-Benefit Exercise

NRM 105.2006  
Paola MINOIA and Anna BRUSAROSCO: Water Infrastructures Facing Sustainable Development Challenges: Integrated Evaluation of Impacts of Dams on Regional Development in Morocco

PRCG 106.2006  

CCMP 107.2006  
Richard S.J. TOL, Stephen W. PACALA and Robert SOCOLOW: Understanding Long-Term Energy Use and Carbon Dioxide Emissions in the Usa

NRM 108.2006  
Cavies MANERA and Jaume GARAU TABERNER: The Recent Evolution and Impact of Tourism in the Mediterranean: The Case of Island Regions, 1990-2002

PRCG 109.2006  
Carine GUERRIERO: Dependent Controllers and Regulation Policies: Theory and Evidence

KTHC 110.2006  
John FOOT (xxx): Mapping Diversity in Milan, Historical Approaches to Urban Immigration

KTHC 111.2006  
Donatella CALABI: Foreigners and the City: An Historiographical Exploration for the Early Modern Period

iem 112.2006  
Andrea BIGANO, Francesco BOSELLO and Giuseppe MARANO: Energy Demand and Temperature: A Dynamic Panel Analysis

SIEV 113.2006  
Anna ALBERINI, Stefania TONIN, Margherita TURYANI and Aline CHIABAI: Paying for Permanence: Public Preferences for Contaminated Site Cleanup

CCMP 114.2006  
Vivekananda MUKHERJEE and Dirk T.G. RÜBBELKE: Global Climate Change, Technology Transfer and Trade with Complete Specialization

NRM 115.2006  
Clive LIPCHIN: A Future for the Dead Sea Basin: Water Culture among Israelis, Palestinians and Jordanians

CCMP 116.2006  
Barbara BUCHNER, Carlo CARRARO and A. Denny ELLERMAN: The Allocation of European Union Allowances: Lessons, Unifying Themes and General Principles

CCMP 117.2006  
Richard S.J. TOL: Carbon Dioxide Emission Scenarios for the Usa
This paper was presented at the Second International Conference on "Tourism and Sustainable Economic Development - Macro and Micro Economic Issues" jointly organised by CRENoS (Università di Cagliari and Sassari, Italy) and Fondazione Eni Enrico Mattei, Italy, and supported by the World Bank, Chia, Italy, 16-17 September 2005.

This paper was presented at the International Workshop on "Economic Theory and Experimental Economics" jointly organised by SET (Center for advanced Studies in Economic Theory, University of Milano-Bicocca) and Fondazione Eni Enrico Mattei, Italy, Milan, 20-23 November 2005. The Workshop was co-sponsored by CISEPS (Center for Interdisciplinary Studies in Economics and Social Sciences, University of Milan-Bicocca).

This paper was presented at the First EURODIV Conference “Understanding diversity: Mapping and measuring”, held in Milan on 26-27 January 2006 and supported by the Marie Curie Series of Conferences "Cultural Diversity in Europe: a Series of Conferences.

This paper was presented at the EAERE-FEEM-VIU Summer School on "Computable General Equilibrium Modeling in Environmental and Resource Economics", held in Venice from June 25th to July 1st, 2006 and supported by the Marie Curie Series of Conferences "European Summer School in Resource and Environmental Economics".

<table>
<thead>
<tr>
<th>2006 SERIES</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CCMP</td>
<td>Climate Change Modelling and Policy (Editor: Marzio Galeotti)</td>
</tr>
<tr>
<td>SIEV</td>
<td>Sustainability Indicators and Environmental Valuation (Editor: Anil Markandya)</td>
</tr>
<tr>
<td>NRM</td>
<td>Natural Resources Management (Editor: Carlo Giupponi)</td>
</tr>
<tr>
<td>KTHC</td>
<td>Knowledge, Technology, Human Capital (Editor: Gianmarco Ottaviano)</td>
</tr>
<tr>
<td>IEM</td>
<td>International Energy Markets (Editor: Matteo Manera)</td>
</tr>
<tr>
<td>CSRSM</td>
<td>Corporate Social Responsibility and Sustainable Management (Editor: Giulio Sapelli)</td>
</tr>
<tr>
<td>PRCG</td>
<td>Privatisation Regulation Corporate Governance (Editor: Bernardo Bortolotti)</td>
</tr>
<tr>
<td>ETA</td>
<td>Economic Theory and Applications (Editor: Carlo Carraro)</td>
</tr>
<tr>
<td>CTN</td>
<td>Coalition Theory Network</td>
</tr>
</tbody>
</table>