

POLITECNICO DI MILANO

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## **Opening the Chinese automotive industry to foreign investors**

*A comparative analysis on the financial and innovative performances  
of Sino-Foreign joint ventures*

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## Abstract

The Chinese automotive market has become the best performer among the worldwide industry in less than twenty years. Characterized by high volumes of production, both for satisfying the domestic demand and exporting, it has seen in the last decades the arrival of foreign multinational enterprises (MNCs) captivated by the potentiality of the market itself. These MNCs, at first, had to overcome the entry barriers -peculiar of Chinese industry- by creating new autochthonous entities through specific legal forms. The Sino-foreign equity joint venture appears to be the most profitable among those latter.

Through the analysis of data from Oriana' database (Bureau Van Dijk) -provided by Filip de Beule (Professor at the university of Louven) and by Stefano Elia (Professor at Politecnico of Milan)- showing various company information across the Asia-Pacific region, it was possible to disentangle the sample and focus specifically on the Sino-Foreign Equity Joint Ventures performances. The main aim of this work is to understand what are the necessary assets to enter in the Chinese automotive market as foreign partner and what is the impact on both the joint venture and the global ultimate owner performances in such a partnership. Thanks to descriptive statistics, by implementing the dataset with programs as GraphPad Prism and real-stats excel, the thesis gives a clearer and wider picture of the Chinese Automotive environment.

Literature analysis on cultural distance in foreign direct investment and on other issues as the knowledge acquirement after the creation of a partnership, was a constant during the work development. Furthermore, in order to complete the funnel process, I focused the attention on the presence in the market of Italian enterprises.

## Abstract

Il mercato automobilistico cinese è diventato in meno di vent'anni il più performante a livello mondiale. Caratterizzato da grossi volumi di produzione, sia per soddisfare la crescente domanda domestica, che per incentivarne l'esportazione, ha assistito, nelle ultime due decadi, all'avvento di aziende multinazionali straniere, attratte dalle potenzialità del mercato. Queste imprese, in principio, hanno dovuto superare le barriere d'ingresso caratteristiche del mercato cinese, creando nuove entità autoctone attraverso specifiche forme legali. Tra queste, le Sino-Foreign Equity Joint Ventures sembrano le più profittevoli.

Tramite l'analisi del database Oriana -fornitomi da Filip de Beule (Professore all'università di Lauven) e da Stefano Elia (Professore al Politecnico di Milano) - che presenta diverse informazioni di compagnie stanziate nel sud-est asiatico, è stato possibile sezionare il campione e concentrarsi particolarmente sulle performances delle Sino-Foreign Joint Ventures. Lo scopo principale di questo lavoro è capire quali siano gli assets necessari per entrare (come entità straniera) nel mercato automobilistico cinese e valutare l'impatto di questo tipo di associazione sulle performance sia dell'entità autoctona (la Joint Venture), sia del gestore ultimo dell'impresa (il Global Ultimate Owner). Grazie alla statistica descrittiva, implementando il database con programmi come GraphPad Prism e real-stats Excel, è stato possibile creare una visione più chiara e più ampia del settore automobilistico cinese.

L'analisi della letteratura sulla distanza culturale negli investimenti diretti all'estero e su altri argomenti quali la conoscenza acquisita nei diversi tipi di forme legali ha accompagnato tutto il lavoro. In ultimo, con l'intento di completare questo processo "a imbuto" è stata analizzata e rimarcata la posizione Italiana all'interno del mercato automobilistico cinese.

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## 1.1 Executive Summary

### Introduction

The Chinese automotive market has always flourished in the last decades. When in 2010 it became the biggest production site of the world, with more than 18 million vehicles produced (+32,6% higher than 2009), no one was astonished. Production volumes were tripled since 2005, giving the possibility to the country to overcome NAFTA and UE. In 2016 China has supplied over than 28.1 million cars all around the world, covering, all by itself, more than 29% of the global production. What's the reason behind this sharp, but, at the same time, constant increase? Does it lay behind the Joint Venture Law of the Peoples' Republic of China (1981)? This law, stated more than 35 years ago, could have been the capstone of the Chinese economic development.

One of the pivotal point of this statute is the obligation, for each new joint venture located in China, of employing a minimum number of Chinese workers, to exploit an economy of learning. US were looking for low labour cost and considered it as a good compromise to gain more profit, undervaluing the capability of Chinese employers to duplicate their business models. Indeed, through experience, China increased its bargaining power, becoming a real competitor to the US firms and seeking for low labour cost and core resources in third world countries (especially Africa).

The main purpose of this thesis is to evaluate the efficiency and effectiveness of Chinese joint ventures compared to other legal forms and to look deeper to find where the competitive advantage lies in.

The international joint venture (IJV) is one peculiar form of foreign direct investment arrangement, where a Multinational Corporation (MNC) jointly controls overseas operations in partnership with other MNCs or local firms. MNCs prefer international joint ventures partnership with local firms to other FDI possibilities, in particular when they have to enter emerging markets, usually to be better prepared if they'll have to face substantial risk and uncertainty. This arrangement is sought by the FDI hosts, strengthening the commitment of the MNCs to local economy development, while enforcing linkages to global production or distribution networks; another aspect that has to be considered is the nature of the international JV, since -differently from other arrangements- it implies certain degrees of cooperation and collaboration between the equity holders, guaranteeing local firms to access knowledge embedded in the hosted investment better than other alternatives.

In the last decades of the 20<sup>th</sup> century, China tried to apply the "exchange-market-for-technology" strategy, and the international joint venture arrangement fits perfect with this new modus operandi. Since 1983, the Chinese government has let foreign automakers to access to its domestic market, as long as they operate China-based joint ventures in collaboration with Chinese firms. One peculiarity of this collaboration, was that the non-Chinese parties combined cannot claim more than a 50% stake for each of their Sino-foreign Joint Ventures, the project itself is renewed every two or three decades, depending on the initial contract.

The entrance of foreign firms into the Chinese market was boosted in 2001, in fact, in the early terms (1980-90), the companies were subject to strict import quota or tariffs. Then, when China acceded to the World Trade Organization, lot of these entry barriers were either repealed or loosened.

By the way, some scepticism has started growing concerning the JV-based catch-up model, since in 2009, 5.7 out of 8.3 million (roughly 69%) units of passenger vehicles sold in China were foreign-branded sedans and recreation vehicles produced by Sino-foreign assembly JVs. <sup><6></sup> This meant that, even a quarter century since the adoption of the model, two thirds of China’s domestic passenger car market are captured by foreign-licensed model. The trade-off between the import substitution and the creation of a technologically competitive local auto producer keeps being one of the bottleneck of this kind of arrangement, leading some companies -as we’ll see in this work- to convert their legal status from IJV to wholly owned subsidiaries.

### Objectives

Before listing the main objectives of my work, is important to contextualize the structure of a generic Sino-Foreign Equity Joint Venture:

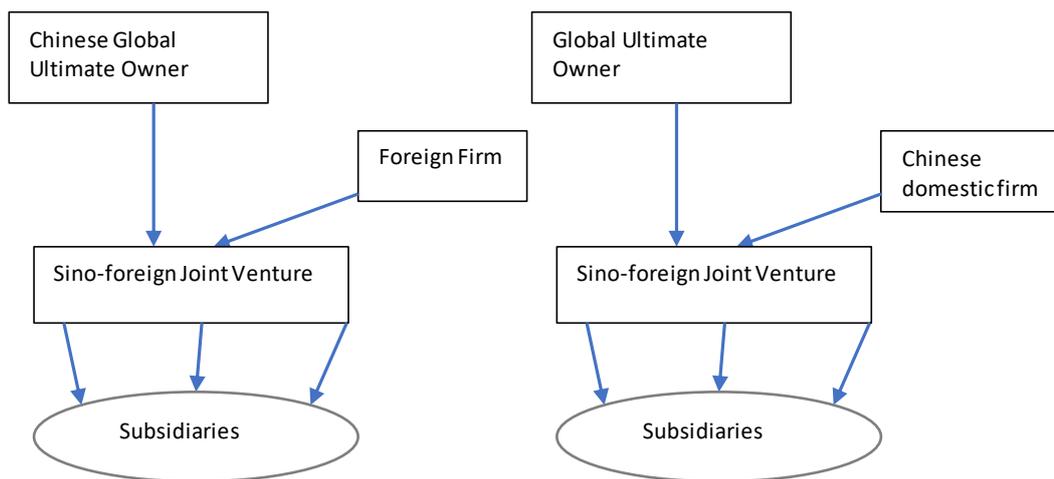


Figure 34: Structure of a Sino-foreign Joint Venture (with foreign GUO & with Chinese GUO). Edited by author.

In the figures above, we can see the two different forms of Sino-Foreign Joint Ventures we will face during this thesis. In the first case we have a generic GUO creating a partnership with a Chinese domestic firm, settling a Sino-Foreign JV in China; whereas in the second typology we have a Chinese Global Ultimate Owner creating a JV in China in partnership with a foreign firm, that, on the other hand, could participate through tangible or intangible assets. Up to now, every time I will mention a “China-China” JV, this will refer to the nationality of the GUO and to the location of the joint venture itself, but the legal form will still be within the Sino-Foreign ones. The database provided, gives information on both the performance of the Global Ultimate Owner and the Sino-foreign Joint Venture, while as concern the subsidiaries, we had not available data regarding the economic performance, but only their number from a quantitative perspective related to the specific firm. The main aim of this study is to understand what are the necessary assets that a firm should have to perform in such a competitive context as the Chinese automotive market itself. Focusing on the nationality of the Global Ultimate Owner, we will try to understand what variables impact more on the financial trend of the company. Do the cultural differences have consequences in the medium-long run? Do they emancipate the innovation? What is the Italian situation in the industry?

## Methodology

The analysis conducted on the Chinese automotive industry cannot apply without a prior, thorough literature analysis, which allowed me to wander between academic papers about general features and theories from the cultural impact of foreign direct investment, until arriving to focused studies about Sino-foreign joint ventures and the knowledge spillover. Often, I found in other master thesis, researches and lessons of my previous academic years, important sources for this work.

At the basis of the literature analysis there is a prioritization of the different documents examined, divided accordingly to the degree of affinity of addressed topics.

The categories of sources rooting this work are the following:

- Academic Papers of different nature, related to the cultural aspects in a Joint Ventures as well as its application for strategic alliances, the knowledge acquirement issues and the ambivalent advantage of spillover.
- Lectures from previous disciplines like: Strategy & Marketing, Economies and Management of Multinational Enterprises, and so on.
- Case Studies concerning the comparison between to Sino-foreign automotive Joint Ventures (one American, the other European) and the different performances within a cross-cultural supply chain in the automotive industry.
- Oriana: a comprehensive database that contains financial information on close to one million public and private companies in thirty countries in the Asia-Pacific region. Oriana combines data from various information providers (IPs), each of which brings local expertise to the information it provides.

## Data analysis

Starting from the database and with the solid assumptions created in the literature analysis, I was able to skim the sample.

- First skim: Using the last available revenues on turnover ratio as comparison tool, I evaluated the performances of each legal form inside the dataset, to pin-point and analyse the best performer in the industry. (Size of the sample: from 6502 industries to 200)
- Second skim: Once selecting the legal form to be analysed (i.e. Sino-foreign equity joint venture), the second step was to identify the most significant variables.

Global Ultimate Owner Cluster	
China	
Asia	<ul style="list-style-type: none"><li>• Japan</li><li>• Korea</li><li>• Hong Kong</li><li>• India</li></ul>
Europe	<ul style="list-style-type: none"><li>• Italy</li><li>• France</li><li>• Germany</li></ul>
United States	

As mentioned, the database has shortages, some data are both not available or equal to zero, so just few variables were taken in consideration; whilst for what concern the grouping of the different entities, since the final aim was related to the geo-cultural distance, the composition of each “cluster” owes its origins to the home-country of the global ultimate owner (see table).

## Statistic Method

Taking in consideration a two levels analysis, by referring to the value at the last available year (2013):

- 1 Joint Venture (Revenues/Turnover, Number of employees)
- 2 Global Ultimate Owner (Revenues/Turnover, Number of employees, Total Assets)

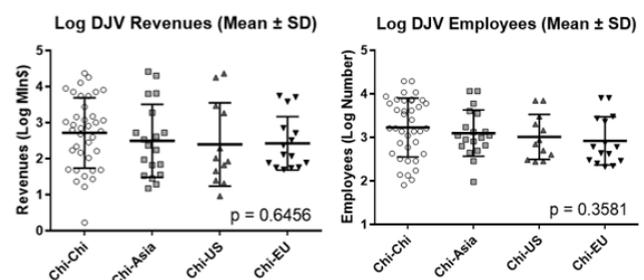
The database did not allow me to add more variables, due to lack of sufficient values to be able to process an analysis, so the total assets referred to the Joint Venture were not considered. The sample presented skewed data, thus not following any gaussian or normal distribution. Once applied a logarithmic transform (in order to shrink the variance of values), some data that at first did not follow a normal distribution, after verifying it with the D'Agostino-Pearson test (useful when there are repetitions of data), started to. As regard the latter, an Analysis of Variance (ANOVA) could be exploited referred to the mean of values and as post hoc test (to compare the different results), it was used the Tuckey-Kramer (since the size of the different sub-groups was different). For what concern the non-normal distributed values, the only significant possibility to compare them was using non-parametric test. Kruskal Wallis satisfies perfectly this need, since can be applied on the median of the values. The post hoc test that could be utilised is the Dunn one. I have computed these tests through Prism, a useful application that provided me also the box-plots to have a figurative vision of the differences.

## Results

### Financial side:

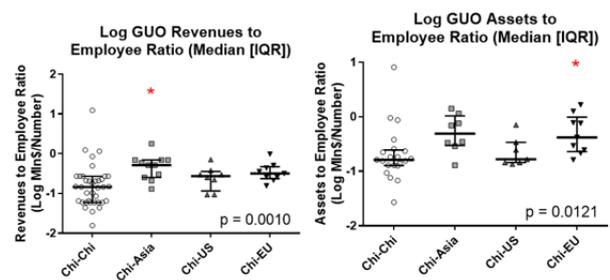
#### Joint Ventures:

From the JV point of view, we can argue that there are no significant differences among the clusters; this could be related both to the wide range of variance between each specific macro-region (Shanghai General motors is the leader of the sector, but the mean value of Sino-American Joint Ventures attests below the average), and to the fact that, since often the foreign presence is related to intangible assets, essentially there are no huge differences in the performance.



Global Ultimate Owner:

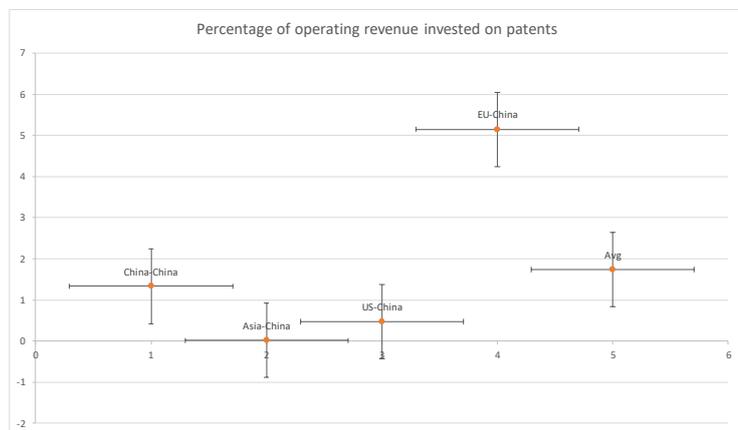
For what concern the GUO, some differences were found. It was at first calculated the ratio of revenues and assets on employees. The distribution of data was not normal, so a Kruskal Wallis test was implemented. In reference to the median we could see how Asian global ultimate owners have to count on great revenues in home-country before entering



successfully in the Chinese market, while, on the other hand, European companies need to focus more on their liquidity even if counting just on lower numbers of employees, as their assets on employee ratio is way higher than Chinese Guo ones. This phenomenon underlines one more time the difficulties in entering in such a competitive market for non-autochthonous firms. A different consideration should be done for the Sino-American joint ventures, where General Motors acts as monopolist in the cluster, absorbing all the “good” financial parameters, thus dilating the range and not making possible a significant comparison with the other clusters.

Innovation side:

Looking at the innovation side, once again the presence of missing or not available data, influence the final output of the research. I tried to focus my research on the number of patents filed, since literature demonstrates how this event impact on innovation and intellectual property protection. It was not possible to use Prism in any form



since the number of patents is often incorporated by few actors in each specific cluster. What we can ascertain through excel calculations, is how European Owners have a greater tendency than other firms to protect their intellectual property before entering in the Chinese market, to prevent themselves from a harmful vertical spillover.

Italian situation:

The presence of firms with an Italian Global Ultimate Owner, according to the database, is scarce. This smallness is in line with the forecasts and the assumptions made. Only Fiat (Italian market leader of the sector) was able to penetrate the Chinese Automotive market, by creating a Sino-Italian equity Joint Venture. Its performances are similar to the other European firms in the market. Even with a lower number of employees, Fiat’ assets guarantee to the Italian company solid basis to face the turbulent Chinese environment. A different consideration should be done for what concern the patents filed (and so the innovative aspect). In the dataset provided there is no patent filed by an Italian Global Ultimate Owner. One more time, it is essential to underline that the sample is very low (just 5 entities have Italian origin in all the sector), but the output is however unexpected. Apparently, Italian companies are not afraid of the potential spillover absorbed by Chinese domestic firms, or, from another perspective, are more interested in acquiring than providing knowledge once penetrated the market.

Finally, I believe that is important to underline three mandatory assumptions:

- 1 The database covers a ten-years period between 2003 to 2013, in five years the market could have drastically changed, new trend appeared on the horizon (one above all the tendency of transforming Sino-foreign JVs into wholly-owned subsidiaries)
- 2 The picture provided is a static one, having values about the last available year (2013). A dynamic analysis should have been exploited to argue more detailed considerations on which type of JV allows better performances
- 3 GUOs' performances could be related to many other factors, that, for a timing issue, were not considered in this analysis.

In conclusion of this work, managerial implication, gap analysis and future developments are addressed under a critical point of view, in order to allow further works on the topic and on the potential of the solution examined.

## 1.2 Sommario Introduttivo

### Introduzione

Il mercato automobilistico cinese è sbocciato nell'ultimo ventennio. Quando nel 2010 è diventato il maggior sito di produzione nel mondo, con più di 18 milioni veicoli prodotti (con una crescita del 32,6% rispetto al 2009) nessuno ne è rimasto sorpreso. I volumi di produzione sono triplicati dal 2005, dando alla Cina la possibilità di sopravanzare macroregioni come il Nord America e l'Unione Europea. Nel 2016 lo stato cinese ha prodotto più di ventotto milioni di macchine in tutto il mondo, soddisfacendo il 29% della produzione mondiale. Quale ragione si nasconde dietro questa netta, ma, allo stesso tempo costante, crescita? È forse da ricondurre alla legge sulle Joint Ventures della Repubblica popolare Cinese nel 1981? Questa legge, stanziata più di trentacinque anni fa, potrebbe esser la pietra miliare dello sviluppo economico cinese.

Uno dei punti cardine di questa legge è l'obbligo per ogni nuova joint venture istituita in Cina, di assumere un numero minimo di impiegati cinesi, per poter usufruire dell'economia di apprendimento. Gli Stati Uniti, avendo l'intento di minimizzare il costo dei lavoratori, hanno cercato di trarne vantaggio sin dal principio, vedendo in essa una possibilità di aumentare il proprio profitto, sottovalutando la capacità degli impiegati cinesi di duplicare i loro modelli di business. Infatti, tramite l'accumulo di esperienza, la Cina ha accresciuto il suo potere contrattuale, diventando un concorrente di mercato per le aziende americane, e, emulando gli Stati Uniti, ha iniziato a ricercare basso costo di lavoro e risorse chiave nei paesi del terzo mondo (specialmente in Africa).

Lo scopo principale di questo lavoro è di valutare l'efficacia e l'efficienza delle Joint Ventures cinesi, confrontandole con altre forme legali e di esplorare questo tipo di partnership a fondo per capire da dove sorge il cosiddetto "vantaggio competitivo".

La Joint Venture internazionale è una specifica forma di investimento diretto dall'estero, dove una corporazione multinazionale (MNC) controlla le operazioni all'estero in partnership con altre multinazionali o con aziende locali. Le MNC preferiscono questo tipo di accordo rispetto ad altre forme di investimento, soprattutto se devono entrare in un mercato emergente, in quanto diminuiscono il rischio e l'incertezza. Anche le aziende locali patteggiano per questa forma di ingresso nel mercato, in quanto rafforza e sancisce l'impegno che le MNC dedicano allo sviluppo economico indigeno, migliorando i collegamenti alla produzione globale o le reti di distribuzione. Un altro aspetto cruciale è la natura di questo specifico accordo, dato che – a differenza di altre alternative- presuppone un certo grado di co-operazione e collaborazione tra i detentori del capitale, esso garantisce alle imprese locali di apprendere la conoscenza intrinseca agli investimenti esteri.

Verso la fine del ventesimo secolo, la Cina ha provato ad applicare la strategia secondo cui apriva il proprio mercato agli investimenti esteri, in cambio di innovazioni tecnologiche importate da quest'ultimi; in questo conteso, l'accordo internazionale per le Joint Ventures appare come la tipologia di partnership più opportuna. Dal 1983, il governo cinese ha dato la possibilità a produttori internazionali di lavorare nel suo mercato domestico, purché operassero da entità con sede in Cina e in collaborazione con aziende cinesi. Un'ulteriore peculiarità dell'accordo sancisce come la somma di tutte le entità non cinesi presenti nella partnership, debba possedere meno del 50% delle azioni

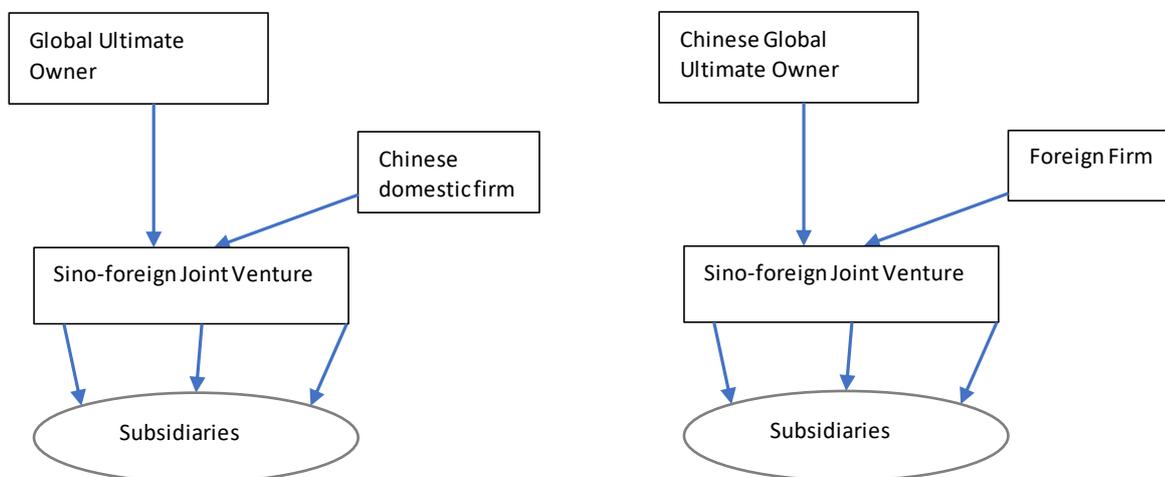
di ogni singola Joint Venture, il contratto viene rinnovato ogni venti o trenta anni, a seconda delle clausole iniziali.

L'ingresso di aziende straniere nel mercato cinese ha avuto un'impennata nel 2001 con l'accesso della Cina alla WTO, infatti, in principio (1980-90), le compagnie internazionali erano soggette a severe tasse d'esportazione e tariffe; dopo il 2001, grossa parte dell'impatto di queste barriere d'entrata è stato rimosso o attenuato.

Nonostante tutte queste premesse, dello scetticismo è iniziato a sorgere riguardo l'efficienza del modello Joint Venture -nello specifico su come quest'ultimo aiuti lo sviluppo delle aziende autoctone- dato che nel 2009 quasi il 69% delle automobili vendute in Cina erano berline di marca straniera. Il trade-off tra la sostituzione delle importazioni e la creazione di un produttore automobilistico locale tecnologicamente competitivo continua a essere uno dei colli di bottiglia di questo tipo di accordo.

### Obiettivi

Prima elencare gli obiettivi principali del mio lavoro, è importante contestualizzare la struttura di una generica Joint Venture Cino-Internazionale:



Nella figura soprastante, si possono notare le due diverse forme di Joint Ventures Cino-Internazionali che analizzeremo in questa tesi. Nel primo caso abbiamo un generico Global Ultimate Owner non cinese che crea una partnership con un'azienda locale del mercato Cinese; mentre la seconda tipologia è caratterizzata da un GUO cinese che stabilisce un Joint Venture in Cina in collaborazione con un partner straniero, che, d'altra parte, può partecipare con risorse sia tangibili che intangibili. D'ora in poi, ogni qualvolta verrà menzionata una Joint Venture "Cina-Cina", si farà riferimento alla nazionalità del Global Ultimate Owner e alla location della Joint Venture.

Il database fornitomi, elargisce informazioni sia sul Global Ultimate Owner che sulla Sino-Foreign Joint Venture, mentre, per quanto riguarda le filiali (subsidiaries), non sono presenti dati riguardanti la performance economica, ma solo i numeri relativi alla loro presenza relativa alle singole entità. Lo scopo principale di questo studio è di comprendere quali siano gli assets necessari affinché un'azienda riesca a garantire buoni risultati in un contesto competitivo come quello del mercato cinese. Concentrando il mio lavoro sulla nazionalità del Global Ultimate Owner, proverò a individuare quali siano le variabili che impattano di più sull'andamento finanziario di una compagnia.

Le differenze culturali hanno delle conseguenze nel medio lungo termine? Quest'ultime emancipano l'innovazione? Qual è la situazione italiana nel mercato?

### Metodologie

Lo studio condotto sul mercato automobilistico Cinese non sarebbe potuto avvenire senza un'analisi approfondita e a priori della letteratura, che mi ha permesso di esplorare articoli accademici di svariato argomento: dalle teorie sull'impatto culturale degli investimenti dall'estero, fino a studi specifici sulle Joint Venture Cino-Internazionali. Spesso ho trovato importanti risorse per questo lavoro in altre tesi di master, ricerche e lezioni dei miei precedenti anni accademici.

Le fonti alla base di questo lavoro sono le seguenti:

- Articoli accademici di diversa natura, legati agli aspetti culturali in una Joint Venture come l'applicazione di quest'ultime per alleanze strategiche, il dibattito sull'acquisizione di conoscenza e il vantaggio ambivalente dei fenomeni di spillover.
- Lezioni da discipline precedenti come: Strategy & Marketing, Economies and Management of Multinational Enterprises, and so on.
- Casi studio riguardanti il confronto tra Joint Ventures Cino-Internazionali e le differenti prestazioni all'interno di catene di montaggio multiculturali nel settore automobilistico
- Oriana: Un fondamentale database contenente informazioni finanziari su circa un milione di compagnie pubbliche e private in trenta stati della regione Sud-Est asiatica. Oriana unisce dati da varie fonti di informazioni, ognuna delle quali aggiunge l'esperienza locale al dato che fornisce.

### Analisi dei dati

Partendo dal database e fortificandolo con le solide premesse fornite dallo studio della letteratura, sono stato in grado di scremare il campione:

- Prima scrematura: Usando il significativo coefficiente dei ricavi sul fatturato come limite, ho valutato le prestazioni di ogni forma legale nel database, con l'intento di isolare e analizzare le migliori aziende nel mercato. (Dimensioni iniziali del campione 6502 unità)
- Seconda scrematura: Una volta selezionata la forma legale da analizzare (le joint ventures Cino-Internazionali), il passo successivo è stato identificare le variabili più significative. Come

Global Ultimate Owner Cluster	
China	
Asia	<ul style="list-style-type: none"> <li>• Japan</li> <li>• Korea</li> <li>• Hong Kong</li> <li>• India</li> </ul>
Europe	<ul style="list-style-type: none"> <li>• Italy</li> <li>• France</li> <li>• Germany</li> </ul>
United States	

menzionato, il database ha delle mancanze, in quanto alcuni dati non sono disponibili o uguali a zero; con queste premesse solo alcuni dati sono stati tenuti in considerazione; mentre, per quanto riguarda il raggruppamento delle diverse entità, dato che lo scopo finale resta la distanza geo-culturale, la composizione di ogni macroregione deve le sue origini al paese di appartenenza del Global Ultimate Owner

## Metodo statistico

Ho deciso di prendere in considerazione un'analisi su due livelli, riferendomi al valore nell'ultimo anno disponibile (2013):

1. Joint Venture (Ricavi sul fatturato, Numero di impiegati)
2. Global Ultimate Owner (Ricavi sul fatturato, Numero di impiegati, Assets totali)

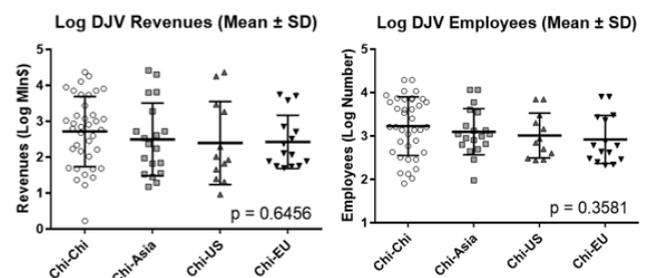
Il database non mi ha permesso di aggiungere ulteriori variabili; la causa è riconducibile all'assenza di un campione significativo per effettuare un'analisi, per cui non sono stati considerati parametri come gli asset totali riferiti alle Joint Venture. Il campione presentava dati che non seguivano una distribuzione normale o gaussiana. Una volta applicata una trasformazione logaritmica (con l'intento di restringere la varianza dei valori), alcuni dati che al principio non seguivano una distribuzione normale, dopo aver implementato e verificato tramite un test di D'agostino-Pearson (utile a fronte di dati ripetuti), hanno iniziato a farlo. Per quanto riguarda questi, si è potuta eseguire un'analisi della varianza riferita alla media dei valori e come post hoc test (per poter confrontare i diversi risultati) è stato utilizzato quello di Tuckey-Kramer (in quanto la dimensione dei diversi sottogruppi era differente). Per quanto riguarda le distribuzioni non normali, l'unica possibilità significativa era compararli tramite test non parametrici. Kruskal Wallis soddisfa perfettamente questa necessità, potendo in aggiunta essere applicato sulla mediana -non sulla media- dei valori. Il test post hoc utilizzato in questo caso è stato Dunn. Ho computato questi test tramite Prism, un'utile applicazione che forniva anche i box-plots delle distribuzioni, per avere un'immagine più chiara delle differenze.

## Risultati

### Lato finanziario:

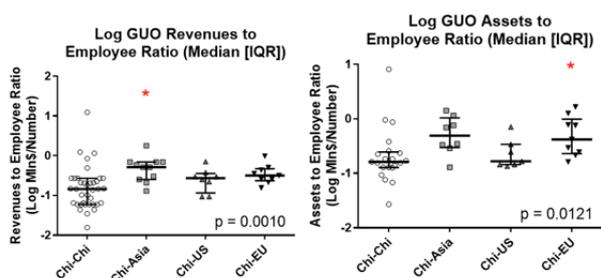
#### Joint Ventures:

Dal punto di vista delle Joint Ventures, possiamo affermare che non ci sono differenze significative tra le diverse regioni, questo potrebbe essere motivato sia dall'ampia forbice all'interno di ogni specifico cluster (Shanghai General Motor è il leader del settore, ma il valore medio delle Joint Ventures Sino-Americane si attesta al di sotto della media), sia dal fatto che spesso la presenza delle aziende straniere è legata solo ad assets non tangibili, essenzialmente non influenzando in maniera evidente le prestazioni.



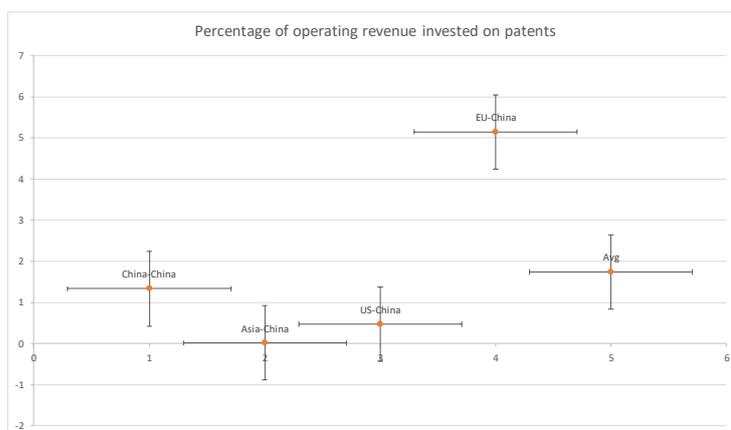
## Global Ultimate Owner:

Alcune differenze sono apparse quando si è concentrata invece l'attenzione sul Global Ultimate Owner. In principio è stato calcolato il rapporto tra i ricavi e gli assets e il numero di impiegati. Dato che la distribuzione dei dati non era normale, è stato necessario implementare un test di Kruskal Wallis. Per quanto riguarda le mediane, si può notare come i GUO Asiatici possano contare su grossi ricavi in madrepatria prima di entrare con successo nel mercato Cinese, mentre, d'altro canto, le compagnie Europee si concentrino di più sulla loro liquidità, pur contando su un numero inferiore di impiegati, in quanto il loro rapporto è di gran lunga maggiore rispetto alle compagnie con GUO cinese. Questo fenomeno sottolinea ancora una volta le difficoltà nell'entrare in un mercato competitivo come quello cinese per le compagnie straniere. Un discorso diverso andrebbe fatto per le Joint Ventures Cino-Americane, nel cui cluster General Motors agisce da monopolista, assorbendo tutti i parametri finanziari positivi, dilatando quindi la varianza dei valori e non consentendo nessuna comparazione significativa con gli altri gruppi.



## Lato innovativo:

Per quanto riguarda l'innovazione, ancora una volta la presenza di dati mancanti o non disponibili, ha influenzato il risultato della ricerca. Ho provato a concentrare i miei studi sul numero di brevetti depositati, in quanto la letteratura dimostra come questo evento abbia un impatto sull'innovazione e sulla protezione della proprietà intellettuale. Non è stato possibile utilizzare Prism in maniera significativa dato che il numero di brevetti è spesso inglobato da pochi attori in ogni specifico cluster. Ciò che si può affermare, tramite un'elaborazione Excel dei dati è come le compagnie Europee tendano maggiormente, rispetto ad altre aziende a proteggere la loro proprietà intellettuale prima di entrare nel mercato Cinese, prevenendo in questo modo i possibili danni di uno spillover verticale.



## La situazione italiana:

Secondo il database a mia disposizione, la presenza di aziende aventi un GUO italiano è scarsa. Questa esiguità è in linea con le previsioni e le assunzioni fatte. Solo Fiat -leader italiana nel settore automobilistico- è stata in grado di penetrare nel mercato cinese tramite la creazione di una Joint Venture Cino-Italiana. Le prestazioni di quest'ultima sono simili a quelle di altre aziende Europee nel mercato. Pur avendo un minor numero di impiegati, gli assets di Fiat le garantiscono ottime e solide basi per affrontare il turbolento ambiente cinese. Un discorso diverso dovrebbe essere fatto su ciò che riguarda i brevetti depositati (e quindi l'aspetto innovativo). Nel dataset fornitomi, non c'è neanche un brevetto depositato da un GUO italiano. Ancora una volta va evidenziato come il campione sia molto piccolo (solo 5 entità presentano proprietari italiani), ma il risultato è comunque

inaspettato. Apparentemente, le compagnie italiane non sono intimorite dal potenziale spillover perpetrato dalle aziende cinesi o, sotto un altro punto di vista, sono più interessate nell'acquisire, piuttosto che elargire, conoscenza una volta penetrato il mercato.

Infine, credo sia necessario sottolineare tre importanti assunzioni:

1. Il database copre un periodo decennale tra il 2003 e il 2013, negli ultimi cinque anni il mercato potrebbe essere cambiato drasticamente e nuovi trend potrebbero apparire all'orizzonte (uno su tutti la tendenza di trasformare le joint ventures in filiali interamente controllate da compagnie multinazionali).
2. Il quadro presentato è di tipo statico, in quanto i valori studiati si riferiscono all'ultimo anno disponibile (2013). È consigliabile un'analisi dinamica per poter trarre considerazioni più dettagliate su quale tipo di Joint Venture garantisca le migliori prestazioni.
3. Le prestazioni del Global Ultimate Owner potrebbero essere legate a molti altri fattori che, per una questione di tempo, non sono stati considerati nell'analisi.

In conclusione, le implicazioni gestionali e i futuri sviluppi sono affrontati sotto un punto di vista critico, con l'intento di consentire futuri studi e ricerche sull'argomento.

## 2.1 Objectives

This chapter is divided in two main parts; the first one introduces the research questions correlated to this work and highlights the goals of this project. The second part illustrates the methods used for both the research part, concerning the literature analysis, and the modelling part, related to the model creation and application.

Thanks to the huge database provided by Filip De Beule – professor at the university of Leuven in the Department of International Business, Strategy and Economics (IBSE)- and the advices of Stefano Elia - professor at the Politecnico of Milan, specialized specifically in multinational firms from emerging countries and the performance implication of foreign direct investments- I was able to verify if the features and the hypothesis defined in the literature could be applied to the Chinese automotive market.

This work was developed with the final goal to look deep inside the world of Chinese automotive market, to understand what differences -cultural or geophysical- can be stated between the various legal forms that characterize it, and what impact these differences have on their performance.

The database provided covers financial and innovation parameters that characterized the Chinese automotive industry between the years 2004-2011. Each firm has its specific BVD number, since the database used was Bureau van Dijk, a subsidiary company of Moody's Analytics, that contains information on around 250 million companies from all countries<sup><9></sup>.

The legal forms that could be analysed were:

1. Collective Enterprises
2. Foreign Enterprises
3. Joint Stock Companies
4. Limited liability Companies
5. Public
6. Private
7. *Sino-foreign equity Joint Ventures*
8. State-owned Enterprises

We will discover in a brief each of them, focusing specifically on the Sino-foreign equity Joint ventures (*see Lit. review*). Along with this quantitative analysis, I decided to perform a comparative study at a qualitative level, by comparing four different clusters:

Global Ultimate Owner country	Joint Venture location
EU	China
US	China
Korea, Japan, Hong Kong	China
China	China

Table 1: *Guo and Joint Venture location. Edited by author*

In conclusion, my objectives can be summed up with the following three research questions that guided me throughout this work:

Research Question 1	Research Question 2	Research Question 3
<ul style="list-style-type: none"><li>• What's nowadays the most performing legal form in the market?</li></ul>	<ul style="list-style-type: none"><li>• What's the financial impact of geo-cultural distance?</li></ul>	<ul style="list-style-type: none"><li>• What's the impact of geo-cultural distance in the innovation process of a jv?</li></ul>

Table 2: Research questions

RQ1: What's nowadays the most performing legal form in the Chinese Automotive market?

The main purpose in this first research question is to understand what are the features that characterize the best performing firms in the industry, tracing analogies and differences between their legal forms or entry modes (if we are dealing with a foreign company). The idea is to understand why a firm decides to enter in a specific way and if theory and practice coincide.

RQ2: What's the financial impact of geo-cultural distance?

The second research question is the one that implies the highest number of calculations in this work. Starting from the Oriana database -Bureau van Dijk database- covering information across the Asia pacific region, I at first analysed the Sino-foreign equity joint ventures, then I focused on the nationality of the global ultimate owner, to understand if there are significant and substantial differences in the economic performances of the different types of JVs.

RQ3 What's the impact of geo-cultural distance in the innovation process of a joint venture?

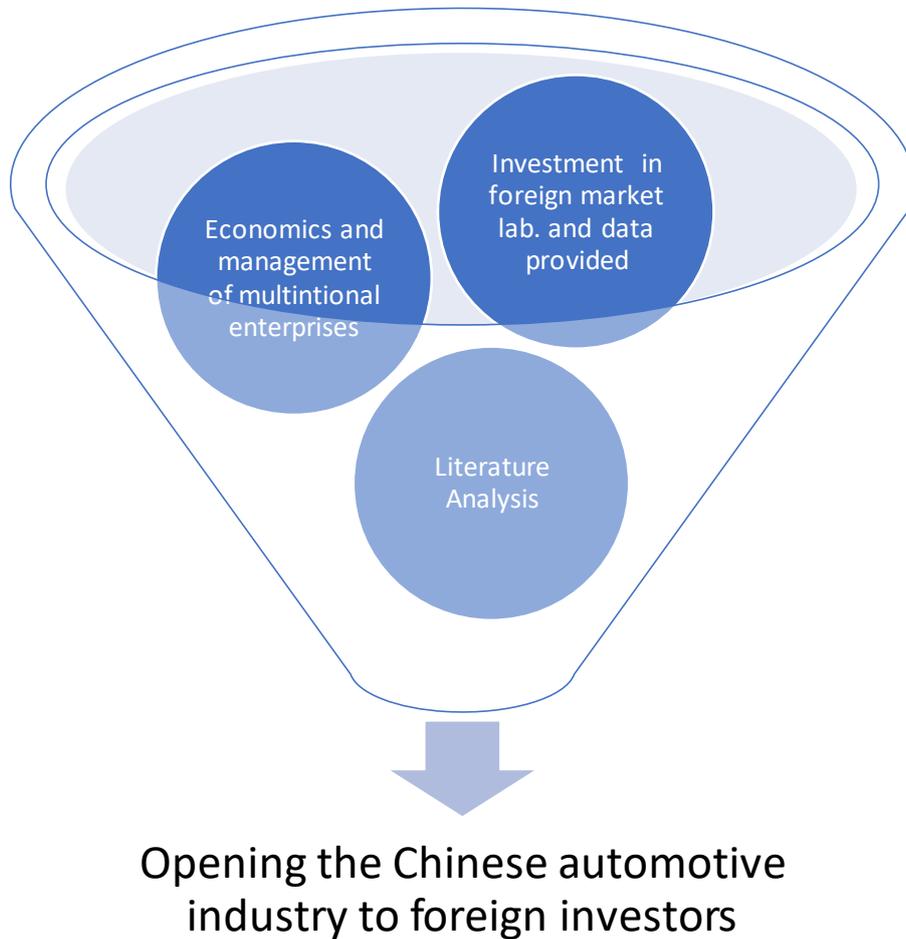
Adopting a similar approach to the one used to answer to the second research question, I have tried to isolate from each cluster the number of patents filed by each company (both JV and global ultimate owner), in order to catch any difference between the economical trend and the innovative one.

The three points above definitely address a quantitative and qualitative analysis in order to understand if the assumptions previously placed are coherent with the data provided.

## 2.2 Methodology

Once defined the research questions characterizing my work, in this section I face up with the methodology, which, by synchronizing efforts, made possible to:

- Build on existing literature
- Understand the effective parameters that influence the performances of the analysed industry



*Figure 1 Funnel of ideas*

The process of Model build-up could be approximated as the funnel in the figure above. Mixing up background knowledge and the experience gained in my last year of studies, I tried to extrapolate the essentials key performance indicators to obtain meaningful results.

### 3.1 Literature Review: factors of complexity

In this short section I highlight the main factors of complexity in carrying out a valuable effort during a serious literature analysis and review:

- Literature about the possible legal forms in a market and the different methodologies of entry modes made by MultiNational Corporations is very broad, especially considering the potential relevance that academic research in this field might bring day by day. There are lot of defined theory on Joint Ventures, all of them valuable applied to their specific context. It is not so easy to skim the most relevant theories and to validate them
- The specificity of certain theories, make this paper elitist at first sight, but the relevant points and conclusions are within reach of all.

#### 3.1.1 Literature Review: The Sources

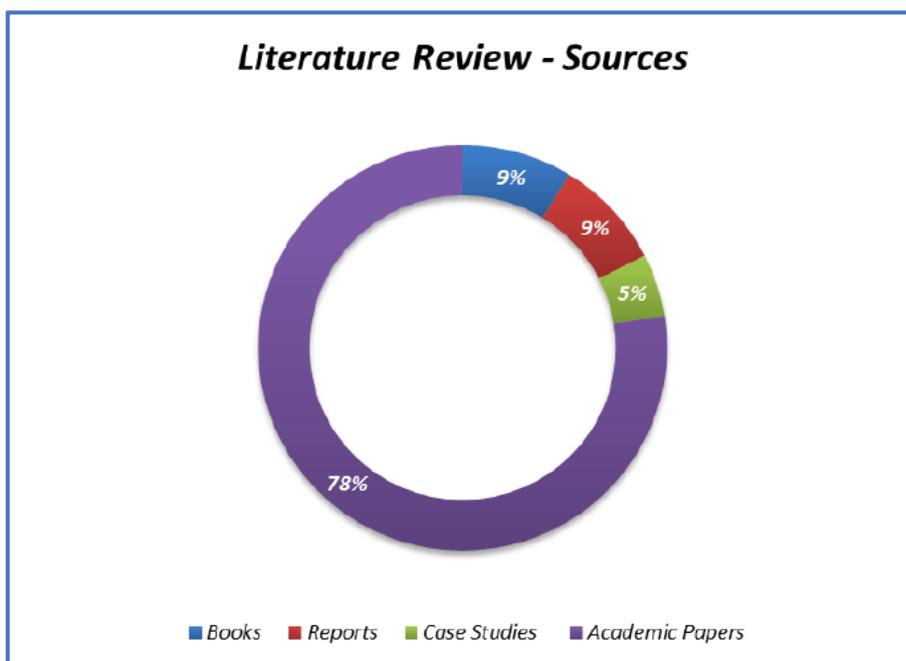


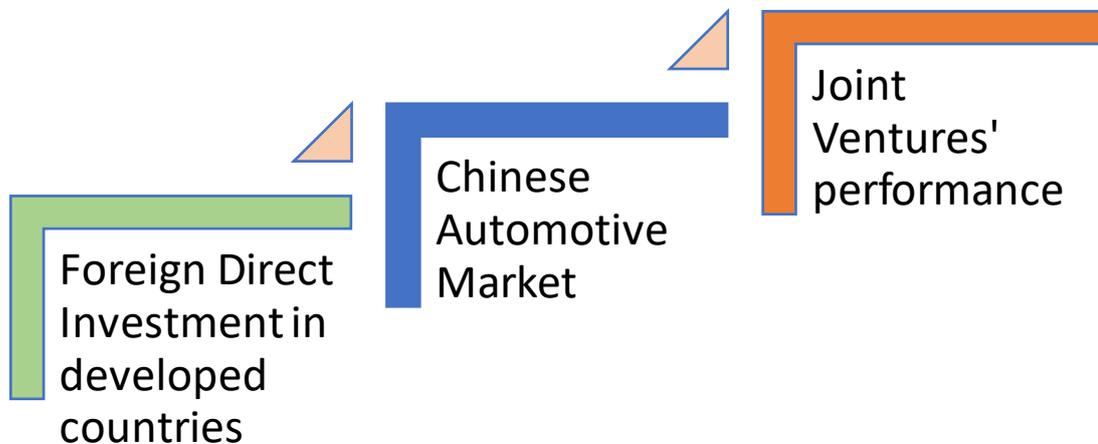
Figure 2: Sources for literature review

In the pie chart it is presented the main categorization of sources. The scale is based on a sum of four direct sources.

Academic papers and book represented the main building block, but I have found brilliant sparks form reports and the case studies:

- Reports: I mention the report from McKinsey that gives the clear big picture of Chinese automotive market, but also Ernst & Young report for year 2015 could be considered as a starting point for this research.
- Case studies: Potential best practices from real world companies which are influenced by geographical or cultural distance (SGM & SWV case)
- Websites: The international economy study centre (interationalecon.com), The Organisation for Economic Co-operation and Development (OECD) portal and Investopedia on top of all.

### 3.1.2 Literature Path: The steps



*Figure 3 Steps for the literature path*

As we can see from the above figure, the path is well defined. In a metaphorical zoom over the Chinese industry, we will start looking to the market and the ways through which it can be penetrated, then we will focus more on the efficiency and effectiveness of the market itself.

Finally, through the analysis of the numbers we have in our database, we will evaluate the performance of each cluster of joint ventures, grouped by their cultural similarities and differences.

We will focus specifically on:

- European and Chinese cluster
- American and Chinese companies
- Asian-Chinese enterprises
- Entities formed both by Chinese entrepreneurs

### 3.2 Literature review -Foreign direct investment in developed countries

A foreign direct investment (FDI) is an investment made by a company or individual in one country to reach a competitive and comparative advantage in another country; it can have different forms, either establishing new business operations or acquiring business assets in the other country, through a merge & acquisition (M&A). FDI are distinguished from portfolio investments, where a random investor merely purchases equities of foreign-based companies. The main feature of foreign direct investment is that it is an investment made that establishes either effective control of, or at least substantial influence over, the decision making of a foreign business.

They are usually done in open economies, as opposed to tightly regulated economies, that offer a skilled workforce and above average growth forecasts for the investor. FDI often involves more than just a simple capital investment, since they usually include provision of management or technology as well.

A FDI can be made in a wide variety of ways, including the foundation of a subsidiary or an associate company in the targeted country, purchasing a controlling interest in an existing foreign company, or through the benefits of a merger or IJV with a non-domestic company.

#### 3.2.1 Why do firms globalize?

The three main reasons that lead a firm to globalize (i.e. to look for an investment somewhere else), can be synthesized in the figure below:

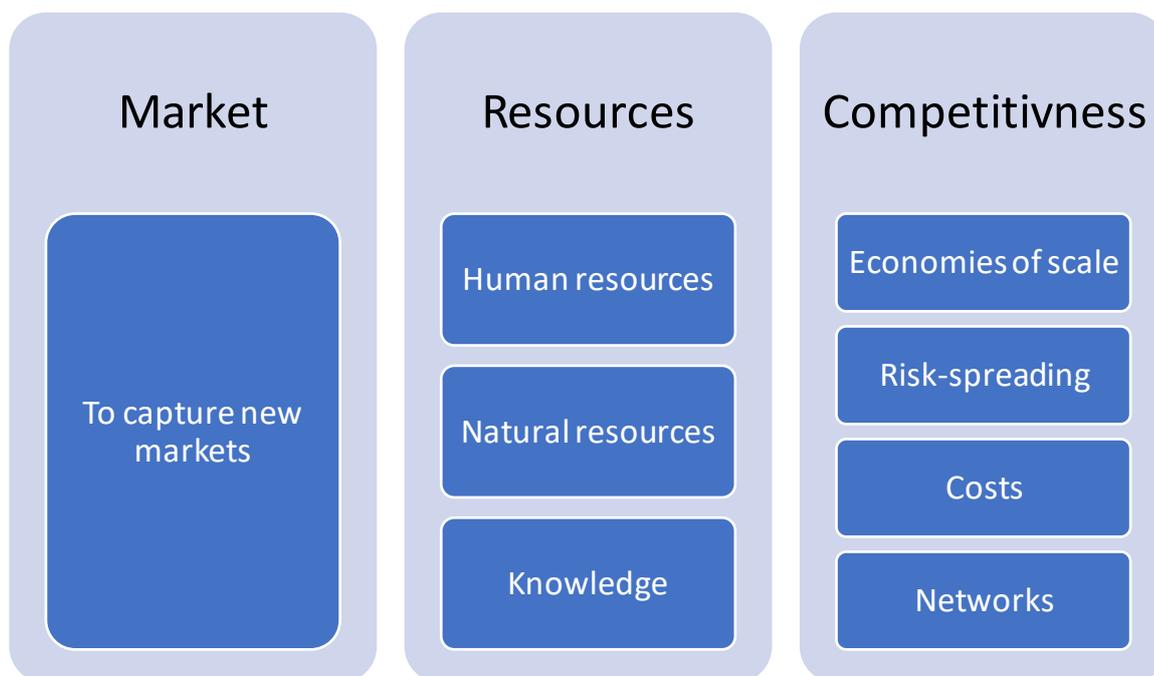


Figure 4: Reasons behind firms' globalization. Edited by author

### 3.2.2 Determinants of international expansion:

1. The expansion of the business could have main intrinsic reasons:
  - Internal markets are saturated → the only way to have customers is to go abroad.
  - Internal markets are too small → demand itself is small, not saturated.
2. Access to resources and production input are considered as a pillar motivation since:
  - Companies need to move abroad to exploit specialized resources that are in other countries
3. Geographical expansion allows to flatten risk for two reasons:
  - Create medium-long term stability and growth, since the same product can be in different stage of lifecycle in different countries.
  - Balance risks related to economic and socio-political cycles in different countries.
4. If the company's demand increases and the company gets bigger, it will look for efficiency, so:
  - Economies of scale.
  - Economies of scope: sharing of some resources in multiple markets.
  - Efficiency in resource purchasing: the company has more power over supplier since it is bigger.
5. Another pillar, as shown in Figure 4, is the market expansion:
  - Because of homogeneity and globalization of customers' preferences, global presence of distribution channels and transferability of marketing campaigns.
  - Companies take advantage of this to sell the same product in different countries (without investing too much in customization).
6. In a world that is moving fast forward, one key feature is the technological innovation:
  - Access to critical technological skills for innovating and sustaining its competitive advantage.
7. Finally, there are some benefits of positioning that must be considered:
  - Some companies need to go abroad because they need it for their image.

Even if we mentioned the benefits of internationalisation, it has to be considered that investing in a foreign market, means more competition and lower industry profitability.

Source of threat	Reason
International competitors	Bigger, since they can collect more information about customer
Bargaining power of buyers	Increases, since customers have more options and a wider range of brands
Entry barriers	Possible quotas imposed by the targeted country, to protect domestic producers
Rivalry among existing firms	Increase with internationalism, as seller concentration decreases, while excess capacity increases.

Table 3. Source of threat and motivation for international expansion. Edited by author

### 3.2.3. Selection of the geographical location:

As literature suggests, selecting the right geographical location is mandatory to reach satisfactory results. Three main reasons can explain the guidelines followed by an MNE to choose the best place to expand its business.

#### Influence of national resources

- If a resource exerts a dominant influence on a firm's competitive advantage, it should locate itself where such conditions are more favourable.

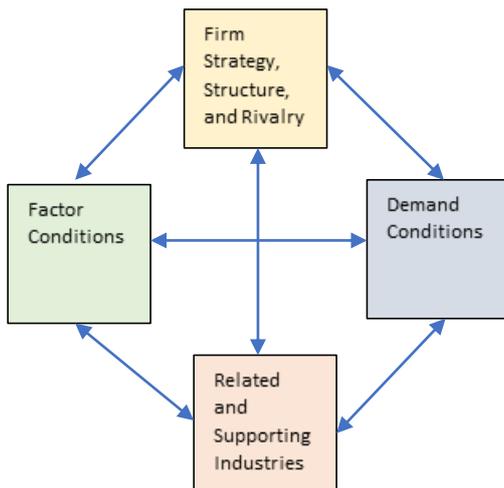
#### Specificity of the competitive advantage

- A company should expand in those countries where it is able to exploit its competitive advantage.

#### Assets transferability

- High transportation costs, pronounced national references of consumers or entry barrier imposed, can push towards local production, since it is better to allocate in the same place firm and demand.

These assumptions are a fundamental foretaste to the Porter's diamond of national advantage:



Comprehensive factors that must be considered before an international expansion

Figure 5 Porter's diamond of national advantage. Source: Strategy and Marketing course. Edited by author

1. *Factor conditions*: Look at some factors of the targeted nation: skilled labour or infrastructure, cost of labour, national resources, and so on.
2. *Demand conditions*: Focus on the demand of the country where the MNC wants to localize the firm/production
3. *Related and supporting industries*: It is main interest of companies to locate where the suppliers' industries are.
4. *Firm strategy, structure and rivalry*: Essentially, the conditions in the nation governing how companies are created, organized and managed, as well as the nature of domestic rivalry.

As we have seen for the SCPR management, a relation between the location decisions and the value chain could be set; indeed, it is possible that each activity of the value chain has its ideal location in a different country. Companies should localize each activity of the value chain in different countries according to the advantage for the specific activity.

Under a financial point of view, the choice of the right foreign market is also driven by the necessity to assess the long run profit potential of each market.

### 3.2.4 Selection of the method of expansion

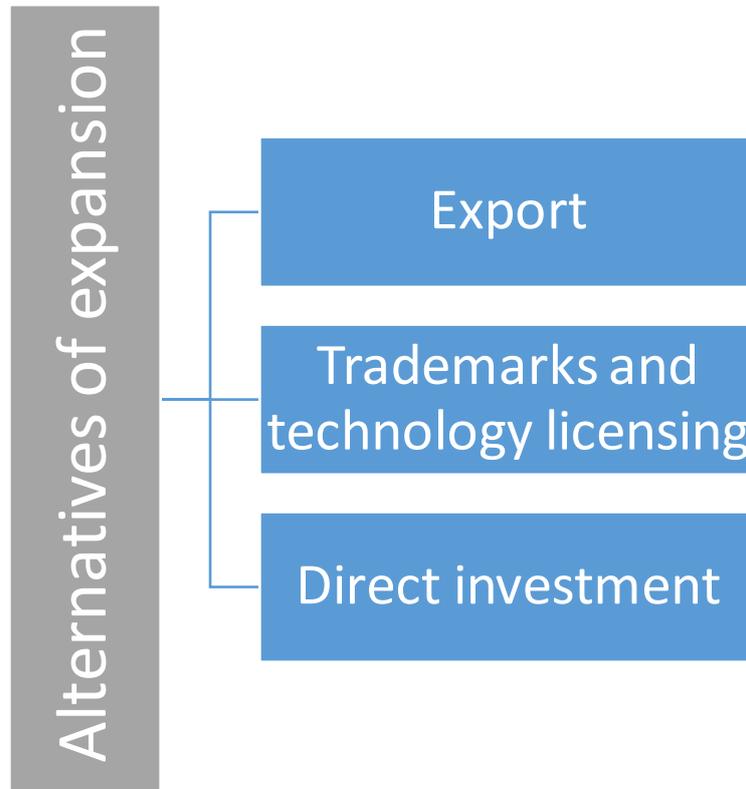


Figure 6: Selection of the best method of expansion. Edited by author

1. *Export*: The simplest and most direct way is to export firm's products in other markets through foreign distributors or agents.
2. *Trademarks and technology licensing*: It consists in giving to foreign companies the right to sell firm's products in their shops, having back a percentage of the total revenues
3. *Direct investment*: It is basically opening a new branch in a different country or develop a partnership with foreign companies that already sell in the targeted country.

To close the circle around the several ways of international expansion, we will see the Integration-Responsiveness greed model, introduced to map international approach from companies.

### 3.2.5 IR Grid Model

The model is simply based on two variables: level of integration and level of local responsiveness, we will look deep in details what are the main characteristics of these two parameters.

- **Integration:** Tendency of a firm to arrange its activities globally (being centralized), due to:
  - Presence of key international customers
  - Presence of international competitors → necessity of centralizing to take advantage from economy of scale
  - Investment intensity
  - Technological intensity
  - Needs regarding cost reduction
  - Markets homogeneity and concentration of raw materials sources
- **Local responsiveness:** How close should the firm locate its activities to the local market
  - Differences about consumer needs
  - Differences about distribution channels
  - Presence of substitute local products
  - Markets fragmentation
  - Needs of local governments

It must be underlined that the strategic-organisational model depends on which determinants are dominant for the company.

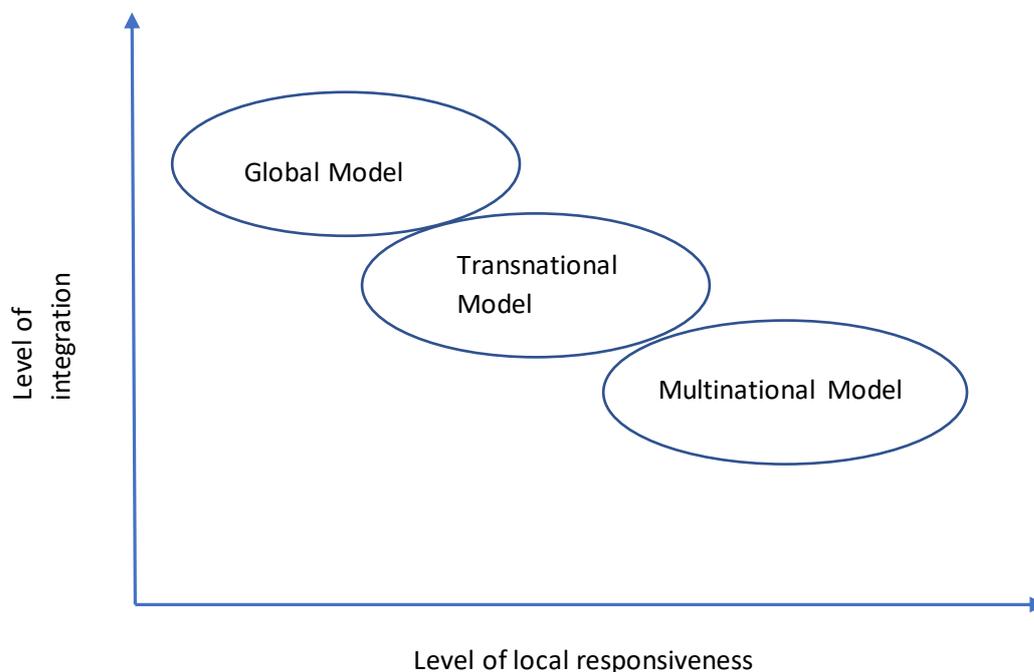


Figure 7: IR grid model. Edited by author

While, if we focus on the specific sector, our IR grid will present itself in this way:

# Integration Responsiveness Grid

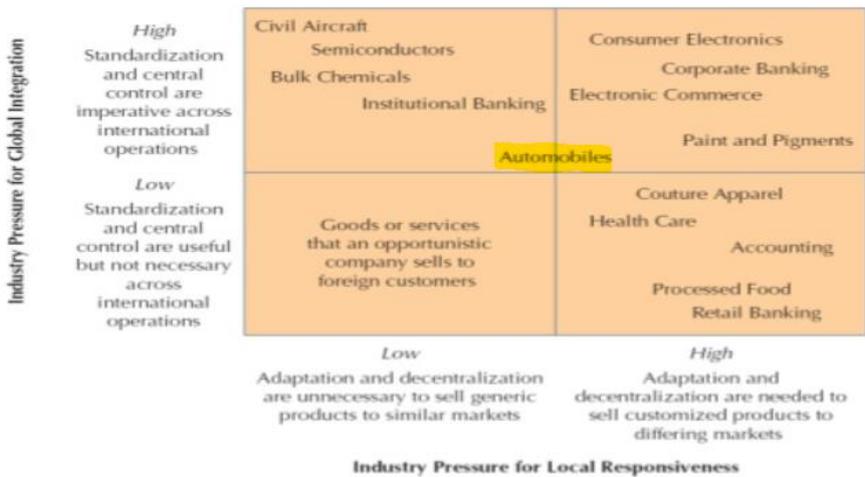
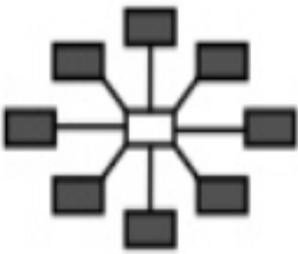
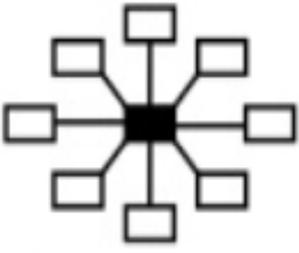


Figure 8: Integration responsiveness grid by sector. Source: Paerson Education, 2011.

Once understood the entity of each variables, one of these models could be adopted to invest in a country, maximizing the efficiency of the action:

MODEL	DESCRIPTION	PROS	CONS
<b>Multinational model</b> 	<ul style="list-style-type: none"> <li>-Leverages in the existing differences among different countries → differentiation of product/process in line with local customer needs.</li> <li>-Localisation of the firm’s BU in different countries with high level of autonomy in the value chain activities → decentralization of responsibilities and decision power.</li> <li>-Headquarter control is mainly related to financial aspects, not operational ones.</li> </ul>	<ul style="list-style-type: none"> <li>-High flexibility and ability to effectively respond to local needs.</li> </ul>	<ul style="list-style-type: none"> <li>-low efficiency: no economy of scale and scope.</li> </ul>
<b>Global model</b> 	<ul style="list-style-type: none"> <li>- BU considered as channels to deliver products in a unified global market.</li> <li>-value chain activities from production to R&amp;D are centralized; just logistics activities, marketing, sale and customer support activities are decentralized.</li> <li>-centralized hub where most of resources and assets are, resp. and decisions are centralized.</li> </ul>	<ul style="list-style-type: none"> <li>-high efficiency, economy of scale.</li> <li>-Maximize efficiency on a global scale, neglecting differences among various countries where it operates</li> </ul>	<ul style="list-style-type: none"> <li>-low flexibility.</li> <li>-risk of protectionist policies and fluctuations of exchange rates.</li> </ul>

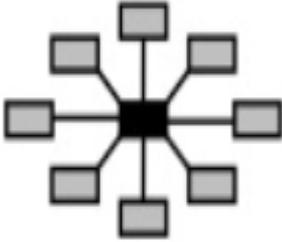
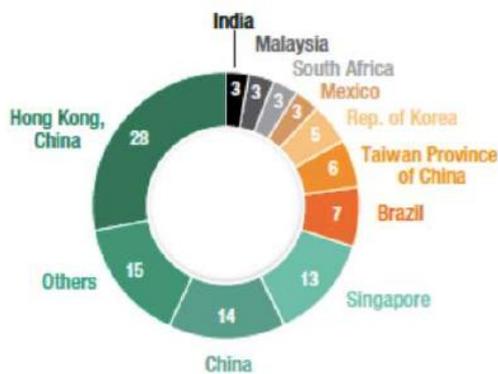
Transnational model			
	<ul style="list-style-type: none"> <li>-is a trade-off of both models.</li> <li>-centrally develop new products which are then exploited on a global scale (adaptation to local needs).</li> <li>-centralization of critical resources, development in foreign countries of resources necessary to adapt the product.</li> <li>-decisions are decentralized, but under headquarter control → formal planning and control systems provide a close link between headquarters.</li> </ul>	<ul style="list-style-type: none"> <li>-take advantage of the wealth of knowledge and expertise of the parent company on a global scale.</li> </ul>	<ul style="list-style-type: none"> <li>-poor flexibility and efficiency compared with the other two models.</li> </ul>

Table 4. Explanation of each model in the IR grid. Edited by author.

### 3.2.6 M&A- Merge & Acquisitions: Types and history

Twenty-five years ago, the number of M&A deals lies at around 10.000 (2% of world GDP), cultural barriers avoid this kind of partnership, it was thought that differences in culture, strengthen by the Berlin wall, would compromise any attempt to reach an agreement. In 2008 the number of deals tripled, and, nowadays its value increases so high that it is around 3.5 trillion. This rise is involving also developing countries, that -now more than ever- are invited to invest outside their neighbourhood.

Major developing-economy sources of FDI



Source: UNCTAD, FDI/MNE database ([www.unctad.org/fdistatistics](http://www.unctad.org/fdistatistics)).

Developing-economy FDI by major destination regions



Figure 9 Developing-economy sources of FDI and major destination regions. Source: UNCTAD, FDI/MNE database

### 3.2.7 Types of M&A transaction:

STRATEGY	ACTION	CONSIDERING PURSUIT IF
Acquisition	Acquire a controlling stake in a company target.	-the opportunity is not going to last. -the target is undervalued. -it will ease entry to a new market. -skills and competencies are complementary. -the target fits and enhances the company's portfolio.
Joint venture	Create strong partnership with another company.	-it will ease entry to a new market. -skills and competencies are complementary. -you are not ready to commit to a full-blown acquisition. -additional resources are needed for compelling project.
Divesture	Sell off a whole BU.	-the unit needs more resources or capital than you can provide.

Table 5: Types of M&A transaction: methodologies, pros and cons. Source: Created by author

### 3.3 The intrinsic advantages of acquisition

Advantages of acquisition compared with internal development

Faster to accomplish: enter in a new market is a faster way to overcome the barriers if the firm does not have the necessary competencies

More information available: developing a new business unit is very risky, since the firm lacks a lot of information on the future development, while with an acquisition the prospective acquirer has more information available to evaluate his move

Failures immunity: a certain percentage of internally developed new business fail, by acquiring the acquirer does not need to pay for any of the failures along the way

The demand factor: if the company develops a new product, there is not a customer's base, while acquiring a company, it is not necessary to develop a new brand and conquer new customers

Table 6: Main advantages of acquisition. Edited by author

We can say that these variables are the ones leading a company to pursue the acquisition strategy more than other possible form of ownership.

### 3.3.1 The 7&7 model: Seven reasons for making acquisitions and problems to deal with

Advantages	Disadvantages
<p>Increased market power:</p> <ul style="list-style-type: none"> <li>• What? When a firm can sell its goods above competitive levels, when the costs of its primary activities are below of those of its competitors</li> <li>• How? <ul style="list-style-type: none"> <li>-Horizontal acquisition</li> <li>-Vertical acquisition</li> <li>-Related acquisition</li> </ul> </li> </ul>	<p>Integration difficulties:</p> <ul style="list-style-type: none"> <li>• Merging two different corporate cultures</li> <li>• Link different financial control system</li> <li>• Building effective working relationship</li> <li>• Problems regarding the status of the newly acquired firm's executives.</li> <li>• Loss of key personnel weakens the acquired firm</li> </ul>
<p>Overcome entry barriers:</p> <ul style="list-style-type: none"> <li>• What kind? <ul style="list-style-type: none"> <li>-Economies of scale</li> <li>-Differentiated products by competitors</li> <li>-Product loyalties with competitors due to enduring relationships with customers</li> </ul> </li> <li>• Acquisition of established company is more effective than entering the market as competitor (cross-border acquisition)</li> </ul>	<p>Inadequate evaluation of the target:</p> <ul style="list-style-type: none"> <li>• Some evaluation process could be ineffective regarding specific issues (differences in culture), it may result in paying excessive premium for the target company</li> </ul>
<p>Cost of new product development:</p> <ul style="list-style-type: none"> <li>• Very high costs are required to a company when develop and introduce new products into the marketplace</li> </ul>	<p>Large or extraordinary debt:</p> <ul style="list-style-type: none"> <li>• Firm may take debt to acquire a company, leading to possible bankruptcy, downgrade in firm rating, preclusion of needed investments</li> </ul>
<p>Lower risk compared to developing a new product:</p> <ul style="list-style-type: none"> <li>• Acquisition outcomes can be estimated more easily than internal development ones</li> </ul>	<p>Inability to achieve synergies:</p> <ul style="list-style-type: none"> <li>• Firms tend to underestimate indirect costs of integration when evaluating a potential acquisition</li> </ul>
<p>Increased diversification:</p> <ul style="list-style-type: none"> <li>• Acquisitions are the quickest way to diversify a firm and change its portfolio of businesses</li> </ul>	<p>Too much diversification:</p> <ul style="list-style-type: none"> <li>• Higher managerial complexity than expected</li> </ul>
<p>Reshaping firm's competitive scope:</p> <ul style="list-style-type: none"> <li>• Faster to accomplish, since the acquired company is "up and running"</li> <li>• More information is available to evaluate the strategic move</li> </ul>	<p>Managers only focused on acquisition:</p> <ul style="list-style-type: none"> <li>• Managers do not know which are the objectives anymore, employees are not so committed</li> <li>• Acquisition process can create a short-term perspective and a greater aversion to risk</li> </ul>
<p>Learning and developing new capabilities:</p> <ul style="list-style-type: none"> <li>• Special technological capability, broaden a firm's knowledge base, reduce inertia</li> </ul>	<p>Too large:</p> <ul style="list-style-type: none"> <li>• Additional costs may exceed the benefits of the economies of scale and additional market power</li> </ul>

Table 7: 7&7 model. Edited by author

### 3.3.2 Value creation in acquisition:

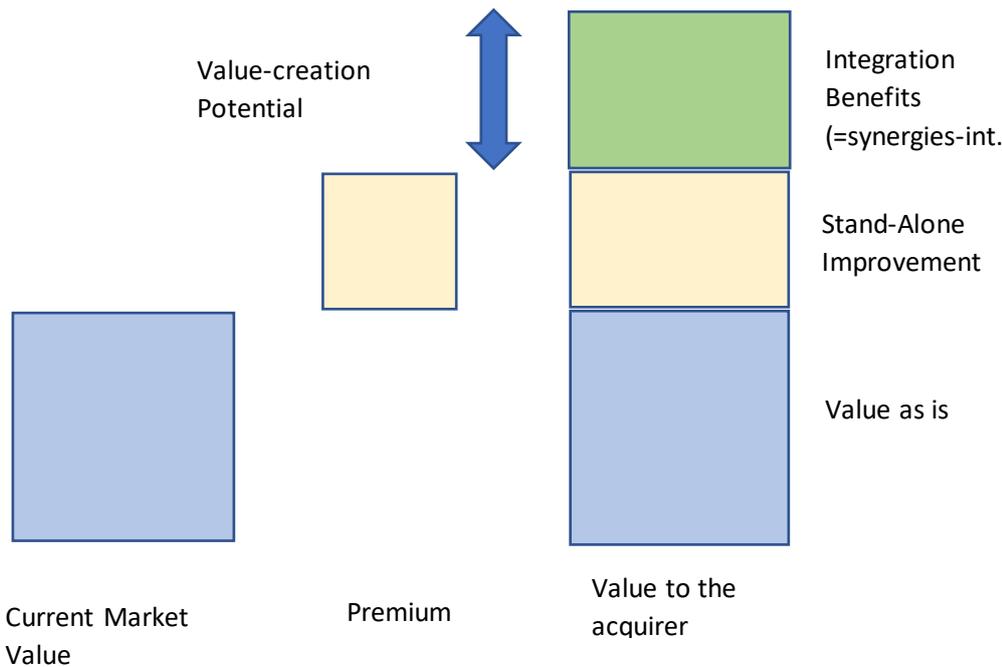


Figure 10 Value creation. Edited by author. Source: Strategy & Marketing course (G. Noci)

The final objective for a M&A is the creation of value for its shareholders. It could be created through diverse ways, the two most important are: stand-alone improvements and synergies.

The major part of these acquisitions fails to create value, destroying the possibility for the shareholders to gain revenue.

The figure above synthesizes perfectly the potential value creation generated by an acquisition; the weak point in this model is the impossibility to estimate internal costs by both entities, emerging the major risk of external growth strategy.

We can now focus briefly on the several types of synergies that could be formed in such a merge:

Cost Saving	Revenue Enhancements	Process improvements	Financial Engineering
<ul style="list-style-type: none"> <li>•Easiest synergy to estimate</li> <li>•Hard synergies</li> <li>•Lean management by eliminating facilities and needless jobs</li> </ul>	<ul style="list-style-type: none"> <li>•Not easy to estimate</li> <li>•Soft synergies</li> <li>•Target and acquirer reach higher level of sales growth together</li> </ul>	<ul style="list-style-type: none"> <li>•Transfer of best practices and core competencies from one company to the other</li> <li>•Mixture between previous synergies</li> </ul>	<ul style="list-style-type: none"> <li>•When the target company has a debt and the acquirer adjust the debt to the lower one</li> </ul>

Table 8: Synergies creation in an M&A. Edited by author

### 3.3.3 The LLL paradigm

The graph below shows us how this mentality nurtured in the main Asian countries.

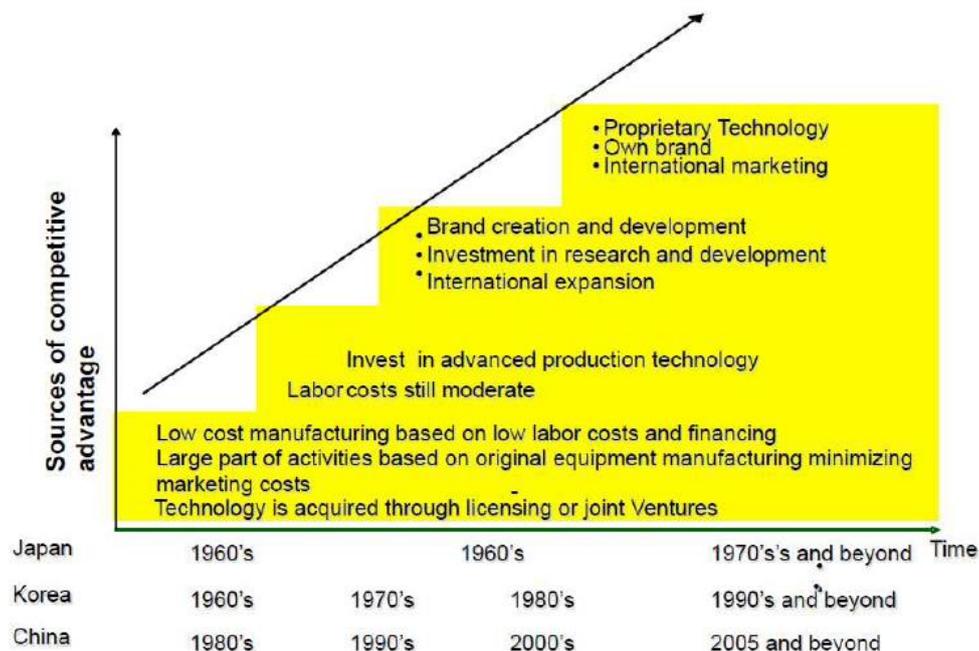


Figure 11: Source of competitive advantages in East-Asian countries. Source: Matthews, 2006.

We can see how the main goal of reaching a competitive advantage overtime, has influenced the economy path of Japan, Korea and China. It is interesting to underline how China has speeded up the process in respect with Korea taking just 20 years to develop from licensing and joint venture to international marketing and proprietary technology. While in reference with Japan' trend, the most populated Asian country, basically shifted the process of 20 years. The main reasons behind this can be found easily knowing the rigid protectionist culture of Chinese government, which waited until 1981 to open its market to Foreign Direct Investment, the initial slowness of the process is simply trackable due to the quota and tariffs that thrived until the entrance of China in the World Trade Organization (2001). The above figure underlines also the LLL paradigm <sup>(1)</sup> according to which, the EMNCs (emerging countries multinational companies) represent a new typology of firms, having almost no ownership advantages when they internationalize. If their mean aim is to go global, EMNCs need to establish Linkages with advanced firms through Joint ventures, M&As and subcontracting, in order to Learn how to compete on the global arena.

### 3.3.4 Timing of entry

After a firm has identified which market to enter, the timing of entry becomes an essential feature. As seems obvious, a firm entry is early, when it enters before other foreign MNC, while, if the latter have already established their presence in the host country, the entry is considered late. The main advantages in being a first mover can be synthesized as follow:

- Pre-empt the rivals
- Establish the brand
- Capture the demand

### 3.4 Entry mode modalities

Firms can enter a foreign market in through:

- Exporting
- Turnkey projects
- Licensing
- Franchising
- Joint ventures
- Wholly owned subsidiaries

We will see briefly the convenience and the reasons behind each choice, as it will be a useful tool to understand the focus done on the joint venture modality and the differences of performance on each specific legal form, that will be shown up later in this work.

The first decision that a company should make is the one regarding whether manufacture:

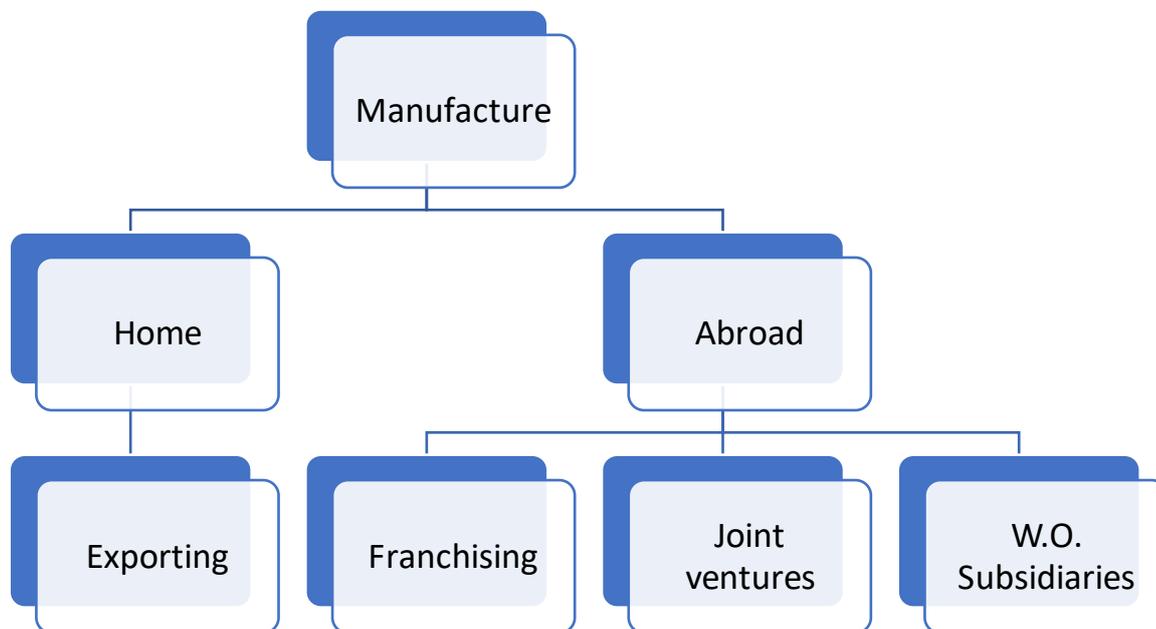


Figure 12: Organigram of a value chain. Entry mode selection. Edited by author

Exporting is often the first method firms use to approach a foreign market. It is attractive since it is relatively low cost, and firms may exploit (in a static or/and dynamic way) economies of scale.

By the way, this specific way of expansion loses its attractiveness when there is the existence of lower-cost manufacturing location, or if the company has to face high costs of transport or tariff barriers. Last but not least, foreign agents that are hired to expand the business, often fail to act in the exporter's best interest.

As mentioned above, there are several instruments of trade control that regulate the expansion to defend the interests of the host country. Those could be tariff or non-tariff barriers:

#### Tariff barriers

- Import tariffs
- Export tariffs
- Transit tariffs

#### Non-tariff barriers

- Subsidiaries
- Tied Aids
- Minimum Sale Price
- Quotas
- Embargoes
- Buy-Local Legislation
- Specific Permission Required

Entry Mode	Description	Advantages	Disadvantages
Turnkey Projects	The contractor agrees to handle every detail of the project for a foreign client	Earning economic returns from the know-how required to assemble and run a technological process	-The firm entering a turnkey project may become a competitor -Risk of losing a source of competitive advantage
Licensing Agreement	A licensor grants the rights to intangible property to another entity for a specific time and, in return, the licensor receives a royalty fee for the licensee	-Firm does not have to bear the development costs and risks associated with opening a foreign market -Firms with intangible property that have business applications can capitalize on market opportunities without developing the process	-Firm does not have the tight control over manufacturing for realizing experience curve -Proprietary assets could be lost -Limits a firm's ability to coordinate strategic moves across countries
Franchising	A specialized form of licensing in which the franchiser not only sells intangible property to the franchisee, but also insists that the franchisee agrees to abide by strict rules as how it does business services	-Avoids many costs and risks of opening a foreign market -Firms can quickly build a global presence	-Inhibit firm's ability to take profits out of one country to support competitive attacks in another -Geographic distance of the firm from its foreign franchisees can make poor quality difficult to detect

Table 9: Entry modes pros and cons, licensing and project. Source: Management of Multinational Enterprises. Edited by author

Entry Mode	Description	Advantages	Disadvantages
Joint Venture	Establishment of a firm that is jointly owned by two or more otherwise independent firms	<ul style="list-style-type: none"> <li>-Allow the firm to benefit from local partners' knowledge of the host country's competitive conditions, culture, language, political and business systems</li> <li>-Costs and risks of opening a foreign market are shared with the partner</li> <li>-Becomes attractive when political considerations make joint venture the only feasible entry mode (China)</li> </ul>	<ul style="list-style-type: none"> <li>-Firm risks giving control of its technology to its partner</li> <li>-The company may not have the tight control over subsidiaries; need to realize experience curve or location economies</li> <li>-Shared ownership can lead to conflicts for control if goals differ or change overtime</li> </ul>
Wholly Owned Subsidiaries	The firm owns 100% of the stock	<ul style="list-style-type: none"> <li>-Reduce the risk of losing control over core competencies</li> <li>-Give a firm the tight control over operations in different countries, necessary for engaging in global strategic coordination</li> </ul>	<ul style="list-style-type: none"> <li>-Firm bears the full cost and risk of setting up overseas operations.</li> </ul>

Table 10: Entry modes: pro and cons of joint ventures and wholly owned. Source: Management of multinational Enterprises.

### 3.4.1 Synthesis of the section

We have seen theoretically the several options that are considered as feasible by the board of directors in a typical multinational corporation. Once decided the geographical scope and the ways to penetrate the market, a firm starts its international expansion following a specific timeline. Apparently, the different entry modes match with the inner structures of a company, since the final decision will be taken in respect of the main goal of the firm itself. Practically speaking, some differences arise, the expansion strategy could change due to unpredictable variables or a turbulent environment. In the following pages we will take a brief look to the Chinese market and its automotive industry in particular, with the main aim to understand the environment we are dealing with and the several reasons behind each specific performance.

An important assumption has to be considered: we are dealing with a static picture, the data will not follow a dynamic model since, with the database provided, there is the risk of the creation of the so-called egg-chicken paradox. We cannot know the specific timing of the transaction when we are dealing both with joint venture ownerships and wholly-owned structures; it is not possible to understand if the global ultimate owner (GUO) has acted a cherry picking (i.e. acquiring the best performers in the market) or if it is the acquisition itself that had an impact on the domestic and acquirer firms.

## 4.1 Introduction to the Chinese market

China has been a sleeping giant in the economic field until the end of the second World war. The vastity of the country and the numerous inland resources were an amazing opportunity that should have been caught up. After a cultural opening, the Chinese government found itself in a very comfortable position: the population of the country was sharply growing, making the potential market comparable to an ocean of opportunities. In the last three decades of the twentieth century the sleeping giant completely woke up, thanks to agreements and new laws (China's law on joint venture, 1979; WTO entrance and so on) the country was able at first to enter in the intimate circle of BRIC (a group counting on Brazil, Russia and India: the fastest developing countries in the globe), then to shine as the most productive nation of the world. We will see in the specific, since it is related to my study, the automotive industry, the diamond tip of the Chinese market.

### 4.1.1 Figurative sum up of Chinese automotive market

Year	\$ billion	CNY billion	€ billion	% Growth
2009	218.1	1,351.0	164.2	
2010	252.9	1,566.5	190.4	16.0%
2011	251.3	1,556.5	189.2	(0.6%)
2012	252.9	1,566.6	190.4	0.6%
2013	296.5	1,837.0	223.3	17.3%
CAGR: 2009–13				8.0%

SOURCE: MARKETLINE

MARKETLINE

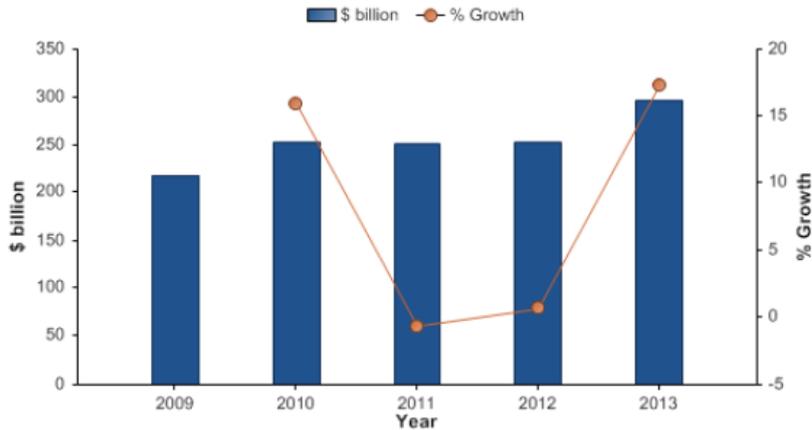
Table 11: Sells in the Chinese automotive market (2009-2013). Source Marketline.

The Chinese automotive manufacturing industry is composed by the full amount of: trucks' production, passengers' cars and moto:

Trucks	
• Light commercial vehicles, heavy trucks and coaches	
Passenger cars	
• Motor vehicles used for passengers' transport (no more than 8 seats)	
Motorcycle	
• On-road racetrack and off-road motorcycles	

Table 12: Chinese automotive industry composition. Edited by author.

The industry has produced an excellent growth in the last years, but, since it is perfectible, it has also faced a period of stagnation, characterizing itself as a market with instabilities. However, as we will see later on, it is expected to produce respectable growth through to the end of 2018. The data shows us how the compound annual growth rate (CAGR) allocates itself at a value of 8.0% between 2009 and 2013, this value is higher to the one of a comparable country like India, where the CAGR settle at 6.8% <sup><4></sup>. The industry grew by 17.4% in 2013, reaching a value of \$296.5 billion.

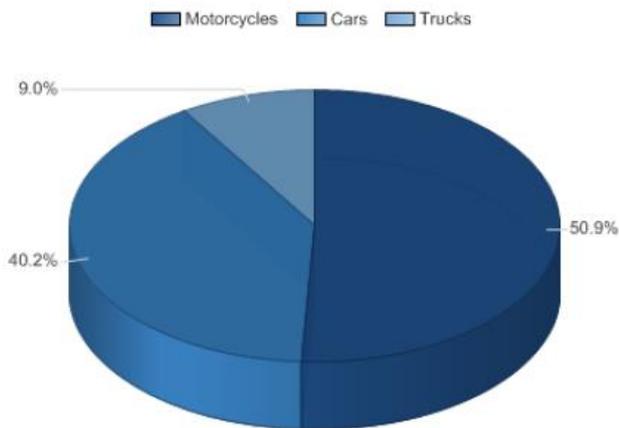


SOURCE: MARKETLINE

MARKETLINE

Figure 13: Bar graph of economic sales and growth within the Chinese market. Source: Marketline

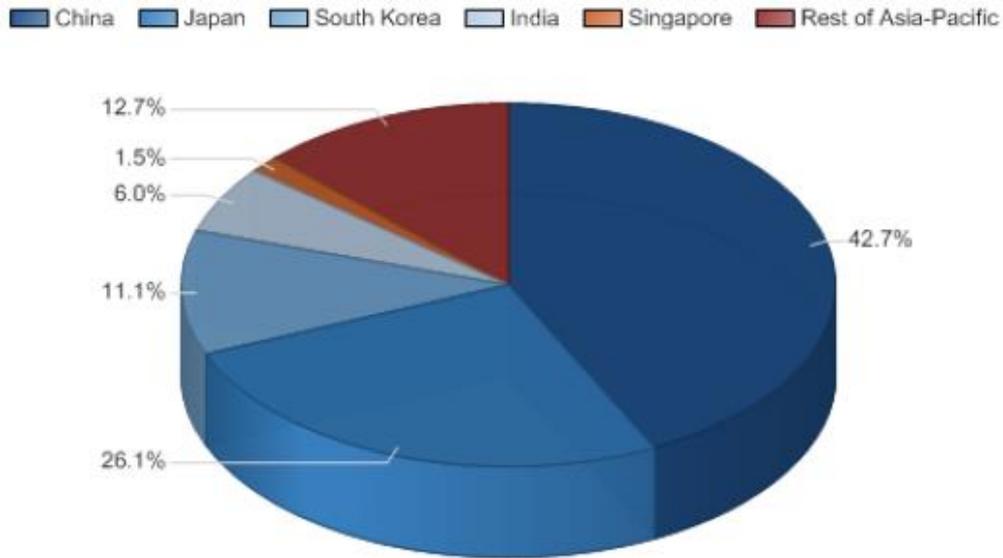
The largest segment of the Chinese automotive manufacturing is Motorcycles, accounting for more than 22,000 thousand units produced per year. It is interesting to underline two particular aspects regarding the sector: the first one is related to the “export-trend” of Chinese enterprises, in fact the 40% of the total production was exported <sup><8></sup>; the second peculiarity is related to the Joint Ventures’ impact on this specific field, ranging from research and development, to production ventures through to distribution, sales and marketing ones. Most famous ventures are the ones related to European and Japanese top brand, for example: Loncin (BMW), Zongshen (Piaggio), Qingqi (Suzuki and Peugeot), Jianshe (Yamaha), and so on.



SOURCE: MARKETLINE

MARKETLINE

As regards the geographic segmentation, it has to be remarked that China accounts for 42.7% of the East-Asian automotive manufacturing industry value. Even if the population of India is slowly reaching the Chinese one, we can see that the monetary impact on the market of these two BRIC countries is not comparable. The second main actor is Japan, thanks to their JIT production model, but its revenues are 16.6% lower than the Chinese industry’.



SOURCE: MARKETLINE

MARKETLINE

Figure 14: Geographic segmentation of Chinese Automotive market. Source: marketline

Since the data we own covers until 2013, it is a useful tool to forecast the market value of the successive 5 years. In 2018 the industry is expected to reach a value of \$576.5 billion, leading to an increase of 94.4% since 2013; the compound annual growth rate of the market is forecasted to be around 14.2%, marking a smooth decrease in reference to the analysed trend, but, even if the market is saturating, growing the industry value of \$300 billion in 5 years, should be considered as an astonishing result.

Year	\$ billion	CNY billion	€ billion	% Growth
2013	296.5	1,837.0	223.3	17.3%
2014	348.9	2,161.3	262.7	17.7%
2015	407.8	2,526.2	307.1	16.9%
2016	463.4	2,870.6	349.0	13.6%
2017	509.4	3,155.4	383.6	9.9%
2018	576.5	3,571.6	434.2	13.2%
CAGR: 2013–18				14.2%

SOURCE: MARKETLINE

MARKETLINE

Table 16: Sell forecasts for the Chinese automotive market. Source: marketline



SOURCE: MARKETLINE

MARKETLINE

Figure 15 Forecast demand in thousand units. Source: Marketline

In Figure 15, we have a quantitative parameter for the market volume. By considering the thousand units produced, the forecasts suggest a slight increase in the first 3 years (2013-15) essentially caused by the financial crisis that overwhelmed all the globalized world, impacting directly on the demand (see fig. 15).

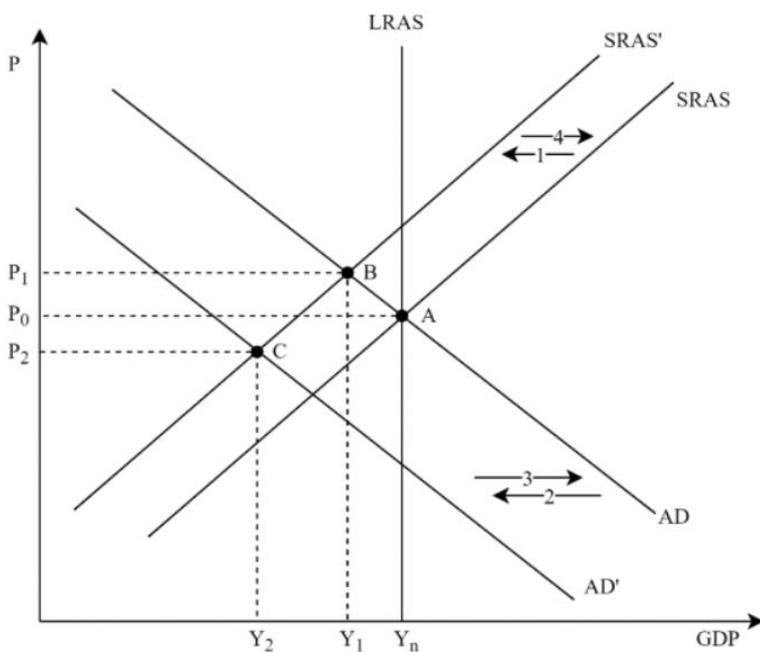
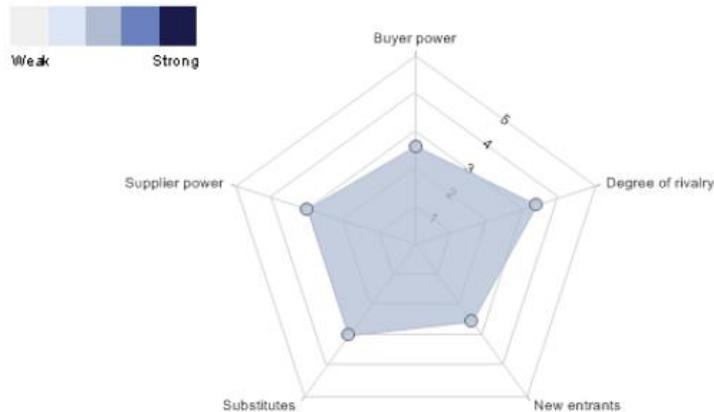


Figure 16 Changes in supply and demand due to the global financial crisis (IS-LM). Edited by author

Through this synthetic, but significant IS-LM graph, we can see how the changes in the Gross Domestic Product impact on both supply ( $SRAS \rightarrow SRAS'$ ) and demand ( $AD \rightarrow AD'$ ) in the short run, explaining why in 2011-12 the aggregate supply slightly decreased.

To contextualize in the best way possible the thesis, it is conceivable to map Porter's five competitive forces for the Chinese automotive market:



SOURCE: MARKETLINE

MARKETLINE

As shown by the perimeter of the pentagon, all the forces attest in an average value, except for the degree of rivalry:



SOURCE: MARKETLINE

MARKETLINE

The industry is characterized by the presence of several firm, from large multinational such as SAIC and General Motors (*see the case study SGM vs SVW*) to domestic players. Last years' strong growth could serve to ease the competition, by the way, to overcome this bottleneck, lot of companies utilize a high level of marketing and design to increase customers' awareness of the product, while some others occupy more than one segment by utilizing different brands. One example could be Shanghai Volkswagen, which services the executive car market through its interest in Audi.

## 4.2 A look at the legal forms in the dataset

1. Collective Enterprises
2. Foreign Enterprises
3. Joint Stock Companies
4. Limited liability Companies
5. Public
6. Private
7. *Sino-foreign equity Joint Ventures*
8. State-owned Enterprises

Since we will focus all our attention on the Sino-foreign equity Joint Ventures, we will see in a while some other forms that characterize the industry:

1. A Chinese collective enterprise is characterized by two main features: property rights are unclear and there is significant involvement of government officials. The weak point of this specific legal form is that the property rights are not clearly defined.
2. Wholly Foreign Owned Enterprise (WFOE) is a usual investment way to establish a foreign business in China. One of the most peculiar characteristics of this methodology is that the involvement of a Mainland Chinese investor is not required. Those enterprises could be considered as limited-liability corporations organized by foreign countries and funded with foreign assets. These assumptions entail a greater control over business venture in China, avoiding a lot of problems related with dealing with a joint venture partner (e.g. not maximisation of the profit, leakage of foreign company' IP, internal competition)
3. A joint stock company is characterized by its hybrid form, a mixture between a partnership and a corporation in terms of shareholder liability. The shares are transferable, so, if we are dealing with a public joint stock company, they can be traded on a registered exchange, whereas privates are transferable between private parties. <1>
4. A limited liability company is a corporate entity with a similar structure to the joint stock company, since it is a combination of the characteristics of a corporation and a partnership. The limited liability feature is similar to that of a corporation, but the accessibility of flow-through taxation of its members is amenable to the partnership forms. <1>

While the difference and characteristics of both public and private firms are quite elementary, the Sino-foreign equity Joint Ventures will be investigated in the next pages. Finally, the features of a state-owned enterprise are pretty simple: it is a legal entity created by the government in order to partake in commercial activities on the government's behalf. It can be either wholly or partially owned by a government and is typically reserved to participate in commercial activities.

## 5.1 Brief introduction to articles' analysis

Once ended with the theoretical and academic analysis of the phenomenon, it is time to look deeper in the turbulent world of Chinese industry, since the final goal of the paper is to analyse the differences in IJVs' performance. By scratching the initial cover, we will face other academic papers, specific for their language, but necessary to create the basic assumptions on which the paper itself relies. Taking back the funnel model (*See fig.1*), we are close to complete all the hypothesis that aim to be pillar of this study.

As we have seen in the previous chapters, joint ventures appear to be the be the most performer entity, basing my analysis on the revenues/turnover ratio (\$million). We will now focus more on this specific entry mode, by looking no more at the theoretical issues behind it, but at the wide literature that accompanies it.

Since my statistical analysis will focus on the nationality of the global ultimate owner (GUO), and its impact on the financial performances of both the domestic entity that he owns and the GUO itself, these following pages will face different academic perspectives about international joint ventures and the cultural issues related to them.

## 5.2 Joint ventures and cultural issues

One of the first definition of joint ventures could be found in the famous article "joint ventures and interorganizational interdependence" where they are defined as legally and economically distinct organizational entities created by two or more parent organizations that collectively invest capital and other resources to pursue certain strategic objectives <sup>(2)</sup>. Up to the twentieth century, joint ventures have been considered as the best mode to enter in a foreign market <sup>(52)</sup>. In the past years a lot of studies have been conducted on this entry mode, contextualizing in the Chinese market. Some of them found a themselves in an impasse essentially for two reasons:

1. Controversy between seeing them as the best mode to enter in the Chinese market <sup>(3)</sup> and their inefficiency in respect to other form of entry mode, like wholly-owned investment subsidiaries <sup>(4)(5)</sup>, since they experience a higher rate of failure
2. Debatable point of view regarding possible advantages for early entry into Chinese market: on one hand a valuable number of academics claim for the benefits of such a move <sup>(5)(6)(7)</sup>, while other have a different opinion arguing that this advantage is volatile or non-existent

In the late nineties a significant review regarding first mover advantage in industrialized countries <sup>(8)</sup>, sustaining that the inconsistency in testing first mover advantage among IJVs in China may be related to the lack of control of important institutional or environmental factors. They argue that some previous studies were debilitated by the approximations of the authors, who were not able to verify the type of industry where the companies were competing, and their results were limited by small sample sizes.

Summing up, even if a lot of researches have been conducted, they did not cover entirely the argument, especially some factors to test explanations of the behaviour and performance of international JVs should have been considered more. One such factor is the societal culture of investor's home country. Some past studies and papers have suggested that there is a moderating effect of societal culture on firm behaviour or performance <sup>(9)(10)</sup>. The effects of a specific business

policy or strategic approach, like early market entry can vary depending on the societal culture of the firm itself <sup>(11)</sup>. While studying IJVs in China, some authors have suggested that the cultural distance between home and host countries could influence overseas investor' selection of JV location or foreign partner <sup>(4)</sup>. In the next pages I will examine the influence of culture by commenting analyses of large datasets.

### 5.2.1 What impact most on a company from a resource-based view

A resource-based view of the company focuses on the resources and capabilities of a firm that enable it to exploit imperfect and incomplete factor markets, and to generate above-normal rates of return and sustainable competitive advantages <sup>(12)</sup>. A resource that is valuable in a specific industry or at a particular moment might fail to have the same value in a different industry or chronological context. The history and organizational culture of firms are heavily influenced by the culture and other institutional environments in which they operate <sup>(13)</sup>. Specifically, institutional environments generate two sets of constraints influencing firm behaviour and performance:

- Formal constraints, including economic, political and juridical factors.
- Informal constraints: culture and ideology in a society.

Both of them have significant effects on firm behaviour and performance. For example, as we see in his five forces' model, Porter claims that institutional elements in a given country affect its international competitiveness <sup>(9)</sup>. During the development of their market economies, the entirety of overseas investors, either from East-Pacific Asia or other developed clusters in the world, have strongly established formal institutional environments. To strengthen up this point, the majority of overseas investors in China are from highly open or internationalized economies where rules and institutional elements have homogenized through years of global competition and co-operation. Summing up all the main foreign investors in China are very similar for what concern formal institutional environments in home countries. On the other hand, if we focus on the informal constraints that North has underlined, their societal culture is different regardless of the economic and political development of their society <sup>(14)</sup>.

Given these assumptions, it seems more appropriate to focus on investors' home-country culture to understand the effects of institutional constraints on the behaviour and performance of the JVs they established. National culture has been shown to have a greater impact on employees than the organizational one of the firm itself <sup>(15)</sup>. These simple informal constraints can influence managerial decision-making on both long and short term, but also the human resources management practices and the leadership style <sup>(16)</sup>. From a more "constructive" point of view, societal culture may be seen as part of a firm's resources, a key to create competitive advantage <sup>(17)</sup> <sup>(10)</sup>. We will see in a while what are their assumptions: while Porter argues that the competitive advantage of the firm rises from the most rapid accumulation of specialized assets and skills, usually due to greater commitment, Dunning (2007) points out that this greater commitment could be based on cultural values specific for some countries, but not universal.

For example, some individualistic countries (like United States), could have an advantage in technological assets, whereas collectivistic cultures, as Japan, could find benefit from the ways in which they organize their workforce and create relations between all the actors of the Joint Venture itself <sup>(10)</sup>. Firms may adopt different strategies with different competitive advantages. It has been

demonstrated that many firms from collectivistic cultures seem to have preference on more labour-intensive activities in their JVs operating in China, characterizing themselves with little investment in equipment or a very low level of technological intensiveness <sup>(21)</sup>. On the other side, different firms from individualistic cultures tend to prefer a technology-intensive approach, investing in production facilities and equipment. Since we are mentioning individualism and collectivism as key performance variables, we can see in a brief what are the characteristics of these two within a country:

Countries outlined by collectivism	Countries outlined by individualism
Individuals are integrated into strong cohesive systems	Individuals look after themselves or their closer ones
The self is viewed as an interdependent figure with groups	Individual goals take precedence over group goals
Communication is indirect	Communication is direct
Duties and obligations are important determinants of social behaviour	Attitudes and personal needs are crucial determinants of social behaviour

In the same way, to contextualize the hypothesis, we can see a rapid sum up in the table below of the main differences between a labour-intensive production and a capital (technological) one.

Labour-intensive	Capital-intensive
Main source of production is human effort	Main source of production is technology
Employees use and improve their skills, gaining a high degree of job satisfaction	Higher volume of identical products furnished, less skills requested to employees
Higher cost per unit, since the wages of skilled workers are higher than in other solutions	Lower cost per unit, but high machinery cost and possible waste due to break downs

*Tables 14-15: Differences between labour and capital intensive, collectivism and individualism. Edited by author.*

Low individualism or high collectivism (driven by high transaction costs) in a home country may lead a firm to prefer JVs rather than other form of internationalization. In accordance with this assumption, firms from collectivistic cultures tend more than individualistic one to select a joint venture instead of a wholly-owned subsidiary. Summing up, a lot of researches during the last decades have argued that culture can be considered as part of company' resources, which, as predicted, can influence the behaviour and the performance of the JV itself.

Since the focus of this work is Sino-foreign equity joint ventures, it is helpful to briefly discuss the major characteristics of oriental cultures and their implications. All major East Asian cultures are characterized by collectivism <sup>(14)(18)</sup> and influenced by Confucian philosophy.

### 5.2.2 The East Asian state of mind

East Asia, as mentioned, is characterized by collectivism, in this context long-term orientation is considered lie a status quo. This feature indicates future orientation, distinguished by the emphasis of education and training (typical of these regions). These factors can influence and explain the preference among Eastern Asians in building long-term relationships, differently from Westerners, more focused on short-term business relationships <sup>(21)</sup>. Tung <sup>(19)</sup> has also observed this long-term

perspective, claiming that "the Chinese have a different concept of time, as compared to that of the Western world, they are interested in building the basis for long-term relationships". Essentially, this means that once a foreign firm has gained their trust and has demonstrated its willingness to aid the country, the Chinese will try to reciprocate in kind, whenever possible. East Asians consider harmony and family relationships as the foundations on which society can be organized <sup>(20)</sup>. They also stress family and kinship relations when doing business. When establishing JVs in China, for example, overseas Chinese firms have been found to follow this tendency. Specifically, over 60% of the JVs funded by overseas Chinese capital have been set up in only two of the 30 provinces in China (e.g. Guangdong and Fujian) where most of the overseas Chinese have ancestral origins (East Asia Analytical Unit, 1995).

### 5.2.3 First approach to the cultural influence on the Joint Venture system

Once got in touch for the first time with the Chinese ideology and the impact of culture on domestic firms, it is interesting to give a look to an important study published in the Journal of International Business <sup>(21)</sup>, whereas the initial model is extended through the adoption of objective statistics. Independent and dependent variables of two industries (electronics and clothing) were collected in a similar approach to the one that will be followed in this thesis.

#### Independent variables

- Cultural condition
- Industry condition
- Firm location

#### Dependent variables

- Equipment commitment
- First mover tendency
- Preference for a joint venture
- Home-country ownership
- Debt ratio
- Firm profitability
- Productivity

Due to the fact that a lot of variables were ignored or separately tested by past research, the results of this study had improved the understanding of the relative importance of these factors bearing on the performance of overseas investment in China.

Therefore, the study improves the understanding of the relative importance of those independent factors bearing on the performance of overseas investment in China. For example, some past studies showed wholly-owned overseas investments performed better than JVs in China. Data reached in the paper, suggest that this variance may merely be the effect of technological difference. Specifically, a wholly-owned entity allows better protection of intellectual property. As regards the influence of firm timing of entry, the study showed evidence supporting a late entry strategy, which is different from some past studies on this issue <sup>(6)</sup>, and with some previous research conducted in the West <sup>(22)</sup>. First mover strategy might have had some positive effects on firm performance when the Chinese market first opened up in late 1970s. However, after decades of economic reform, in the mid-1990s China had already become a buyers' market. Consistent with earlier arguments about societal culture, this study shows evidence supporting some effects of firm cultural resources. Specifically, the data suggest that Oriental culture is valuable for East Asian firms in terms of

efficiency and rapid market entry. Also, JVs established by partners from East-Asian cultures might find it easier than their East-West counterparts to manage human resources in China. This may partially explain why many East-East JVs showed significantly lower capital commitment, which suggests that they had more labour-intensive operations than the East-West JVs. However, the effects of societal culture seem to be moderated by the technological resources of the investors. Other studies suggest that technological resources of firms should not be over-looked when studying the effect of societal culture on the behaviour and performance of JVs <sup>(23)</sup>. Once developed the model, surprisingly, JVs that were established by firms from East Asian *collectivistic cultures* failed to achieve a better performance than those from *individualistic cultures*. This suggests that a similar culture was not always the most valuable resource affecting firm performance. Despite their larger cultural distance compared to Chinese partners, JVs established by firms from Western individualistic cultures possessed other resources, and thus had their own competitive advantages in China, especially in technology-intensive industries. However, these findings should be explained with caution because the data was collected in 1996. If data had been collected in the early '80s the influence of technology would have been lighter, while if we would analyse the environment nowadays, the impact of the latter would have been spread. Last implications that can be taken from this work regards East-West JVs, as they can overcome the difficulty of large cultural distance by sending to China talented and dedicated managers who understand both cultures well. Using these expatriate managers may improve communication with local partners, and help build strong networks. According to the resource-based perspective of the firm mentioned before, this can be seen as an approach where foreign firms obtain and increase their cultural resources.

### 5.2.4 FDI and its impacts on host economies

Foreign direct investment (FDI) is an expenditure made by a company or an individual in one country in business interests of another country, in the form of either creating business operations or purchasing business assets in the importer country.

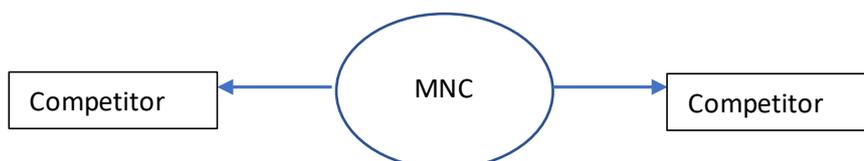
From a host economy's perspective, it is a double-edged sword as potential positive and negative dynamics coexist in it <sup>(24)</sup>.

Advantages	Disadvantages
Local presence of foreign firms can promote the improvement of productivity of domestic ones through transfer of technology	Risk of encroaching by MNC's market entrance on domestic firms' market share
Unintended positive spillover	Crowd-out impacts on host economies
Improvement in intermediate sectors' competitiveness in terms of scale and quality of the output	Contracted market share can push local firms into operation at a sub-optimal scale, thus weakening their market position

Table 16: Ambivalent impact of a FDI on a domestic firm. Source: Javorick and Spatareanu, 2005

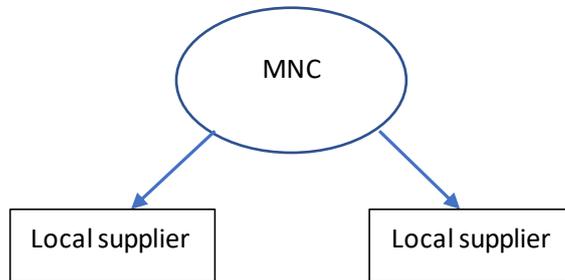
We can find two kinds of spillover effects: horizontal and vertical.

Horizontal:



Local firms may be able to improve their productivity or product quality by imitating multinational corporations' (MNCs) production technology or marketing skills <sup>(56)</sup>, or accelerating market research by labour mobility between domestic players and foreign firms <sup>(25)</sup>. By the way this specific phenomenon is limited practically, since MNCs try to minimize the possibility of horizontal spillover by applying strict controls over their intellectual proprieties <sup>(26)</sup>, through the activity of patent filing.

Vertical:



The multinational corporations could be also interested in providing local parts suppliers with technical assistance or professional training, if they are related through value-creation linkages. Another critical issue is the one related to the possibility of achieving higher economies of scale for local firms thanks to the domestic demand generated by MNC in the hosting country <sup>(27)</sup>. In synthesis, vertical spillover is more suggested and constructive, since the former create more benefits both to local firms and foreign investors

Practically speaking, vertical spillovers, for the reasons explained, are more frequently to be found in real world than horizontal ones. Before getting to the conclusion of the specific argument, it is important to underline that whenever a statistically significant positive relationship exists between FDI stock and local productivity, is hard to understand whether more foreign firm enter the sector where local productivity is already high enough (cherry picking) or the local productivity is high due to the presence of foreign firms <sup>(28)</sup>.

Lastly, we can say that Foreign direct investment creates larger positive externalities when host economies share similar socio-economic conditions with MNCs' home base <sup>(29)</sup>. If the gap between these actors is too large in terms of productivity or technology, local competitors risk to be crowded out of the market even before taking advantage from the spillovers generated.

### 5.3 The joint venture for strategic alliance

The Joint Venture is an institutional means by which multiple business entities form a strategic alliance to create synergy <sup>(30)</sup>. It can take either a nonequity coalition form or an equity-sharing collaboration form, as the one we will investigate in a while. Overall, the latter type of alliance, is more preferable, since the sharing of fiscal interests reduces the possibility of opportunistic behaviours and increases the level of each party's commitment to the partnership. Thanks to these assumptions, it is considered as one of the most effective institutional ways to form a solid interfirm partnership <sup>(31)</sup>. A lot of firms use the JV arrangement to increase their learning capabilities. The JV allows its equity holders to exchange their mutually complementary assets and to internalize external knowledge and skills. The technology transfer in a joint venture is usually more effective than other arrangements based on market transactions, since it is more "private", endogenous to the entity. The outcome of this sharing depends on several factors, like the degree of synergy between alliance partners. When the complementary core competences are democratically distributed within a partnership, JV partners are more interested in sharing their exclusive resources with each other. Given the fact that we are dealing with the automotive sector, could useful to underline that this tendency is more strengthen for a manufacturing JV, essentially thanks to the horizontal technology transactions involved <sup>(32)</sup>.

To synthetize the argument, an alliance with unbalanced core competencies results fragile, since competition tends to overcome cooperation within the partnership. The Joint Venture is likely to generate more positive outcomes when its partner firms are very similar in terms of similarity in culture, organization, and knowledge base between JV partner firms <sup>(33)</sup>.

#### 5.3.1 China's automotive sector in brief

Up to the end of the twentieth century, the Chinese government has granted foreign automakers access to its domestic market only through one specific form of FDI arrangement – international joint ventures in partnership with Chinese automakers, where the upper threshold of the total foreign equity share in each IJV is strictly controlled at 50%. This arrangement, was chosen with the aim of gaining advantage through the access to advanced skills and knowledge (SDPC, 1994), thus by implementing a vertical spillover. This controlled inward globalization model was effective in the stage of import substitution. Import substitution industrialization (ISI) is a theory of economics typically promoted by developing countries that aim to decrease dependence on developed countries and to increase self-sufficiency <sup><1></sup>.

Since the arrival of the American Motors Corporation—the first foreign automaker that established a Sino-foreign automotive JV—in 1983, China took only thirty-five years to create the world's largest domestic passenger-car market and to build the world's third largest output capacity. Since 1997, almost the entire local passenger-vehicle demand was fulfilled by domestic-produced volume, and local passenger car makers have carried out a substantially high portion of their value-added activity within China, this number increased sharply in the last ten years providing the results shown in figure 13. The increasing export volume of domestic-produced passenger cars demonstrates that China's passenger car sector has also developed the capability to meet globally competitive productivity and quality standards.

As illustrated by these facts, the Chinese automotive sector achieved an impressive IS outcome within a brief period of time<sup>1</sup>. However, it is uncertain whether the FDI-based model has provided Chinese automakers with an effective vehicle for technological catch-up beyond the IS stage. In its 2004 automotive industry policy, China's central government recognised that its exchange-market-for-technology strategy ultimately failed to meet its aims, given that Sino-foreign JVs functioned as no more than local assembly bases for MNCs, and that the local firms operating the IJVs still lacked in-house technology-development capability<sup>(34)</sup>. The situation is not much different now; foreign firms are necessary for most Chinese automakers due to technology, and foreign-licensed passenger vehicles capture roughly two-thirds of the domestic market<sup><6></sup>. Then, why is it the case that the same IJV-based catch-up model may be less effective in the post-IS upgrading stage than in the earlier IS stage? A primary reason may be that the IJV arrangement by nature is effective in developing local production capability, which is most crucial in the IS stage, but less effective in promoting local capabilities for other dimensions of the overall technological capability such as capabilities for project execution and innovation, which are also essential in the post-IS upgrading stage.

### 5.3.2 The Sino-foreign JV Law

As stated by the Sino-foreign joint ventures law, each Sino-foreign JV is a semi-permanent project that is subject to renewal every two to three decades, with the approval of the Chinese central government. In the renewal process, terms and conditions for each JV are renegotiated by the JV equity holders. Foreign parties combined cannot claim more than half the total equity of each JV. The equity holder has the right to participate in the management of JV's proportionally to its share in total equity. Foreign automakers have accessed China's domestic market under the IJV arrangement, while not being allowed to operate wholly owned assembly subsidiaries. Before China's accession to the WTO in late 2001, the domestic passenger-car market was highly protected against imports through various public measures like quotas and tariffs. Each Sino-foreign JV exists as a separate business entity; it belongs to neither of the JV partner firms. Sino-foreign JVs have their own assets and resources, none of which are under the direct control of each JV partner firm. Their internal assets, including technologies and production equipment/facilities, should be utilized only for the IJVs' own good without being taken advantage of by other business entities, including IJV equity holders. Each Sino-foreign JV also recruits its own people and operates internal training programs for its hires. Human resources are the IJV's own asset; job rotations between each JV and its equity holders are strictly prohibited. JV employees are not allowed to work for other business entities at the same time. The only direct connection between JVs and JV partner firms exists at the top management level. Each Sino-foreign JV's top management board consists of several delegates from each JV shareholder. The number of board members reserved for each JV partner firm is determined according to its share in the total JV equity. Except for top management, official resource-sharing channels do not exist between Sino-foreign automotive JVs and their equity holders. Under this arrangement, technology-related knowledge flows are semi-delinked between each IJV and its Chinese equity holder.

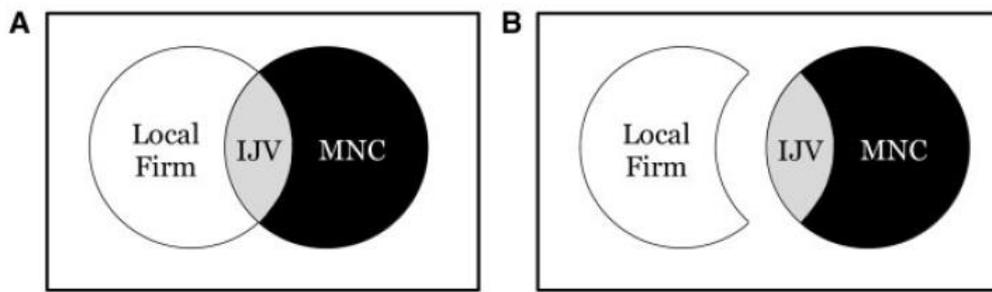


Figure 23 Comparison between ideal (a) and typical (b) Sino-foreign JVs. Source Nam, 2001.

Foreign JV partners transfer their product-specific technologies to their JVs for local production of the chosen vehicle models. In many cases, foreign members of the IJV management board are recruited from their headquarters' development or engineering department to handle such technology transfer processes easily and to manage technical affairs within the JV skilfully. In contrast, the Chinese side typically sends its management or marketing people to the JV. To achieve technology transfer, frequent interactions are necessary between the JV and its foreign JV partner.

The MNC headquarter often sends its own engineers to the JV to assist the JV-hired engineers and shop-floor workers technically so that the transferred technology can be adopted for local production. Human resource exchanges in the opposite direction are not rare, either: JV engineers are often sent to the MNC headquarter for training purposes. Accordingly, each Sino-foreign JV can secure an official learning channel in improving its production capability. This knowledge-transfer process, however, does not leave much room for the Chinese JV partner firm. It has little to offer its JV from a technical standpoint, and it is not allowed to take advantage of the JV's improved technological capabilities, thanks to the technology transfer. The deviation from the ideal model thought by the Chinese government was larger than supposed, since skills and know-how accumulated within the IJVs have remained quasi-external to local firms.

#### 5.4 Case study Shanghai-Volkswagen(SVW) and Shanghai-General Motors (SGM)

These two international Joint Ventures are affiliated with the Shanghai Automotive Industry Corporation(SAIC). The purpose of this case study can be reconducted to two simple motivations:

- Existence of considerable effectiveness gap between alliance partners, thus implying the creation of a "passive" learning mode → the global ultimate owner acts as a teacher, determining itself when, what and how to learn
- International Joint Ventures contribution might be useful to build local production capability, since IJV partners share common interests, but fails in developing local project execution and innovation capabilities → conflict of interest between the actors

If the SAIC case validates the hypothesis, this will mean that the passive nature of the learning mode itself dooms the IJV-based inward globalization model to at best partial success in upgrading local technological capability. SVW and SGM are among the best practices of the Sino-foreign JV arrangement. Both not only have captured a large share of the local passenger car market, but also have developed better, even if incomplete, inner local projects than their competitors.

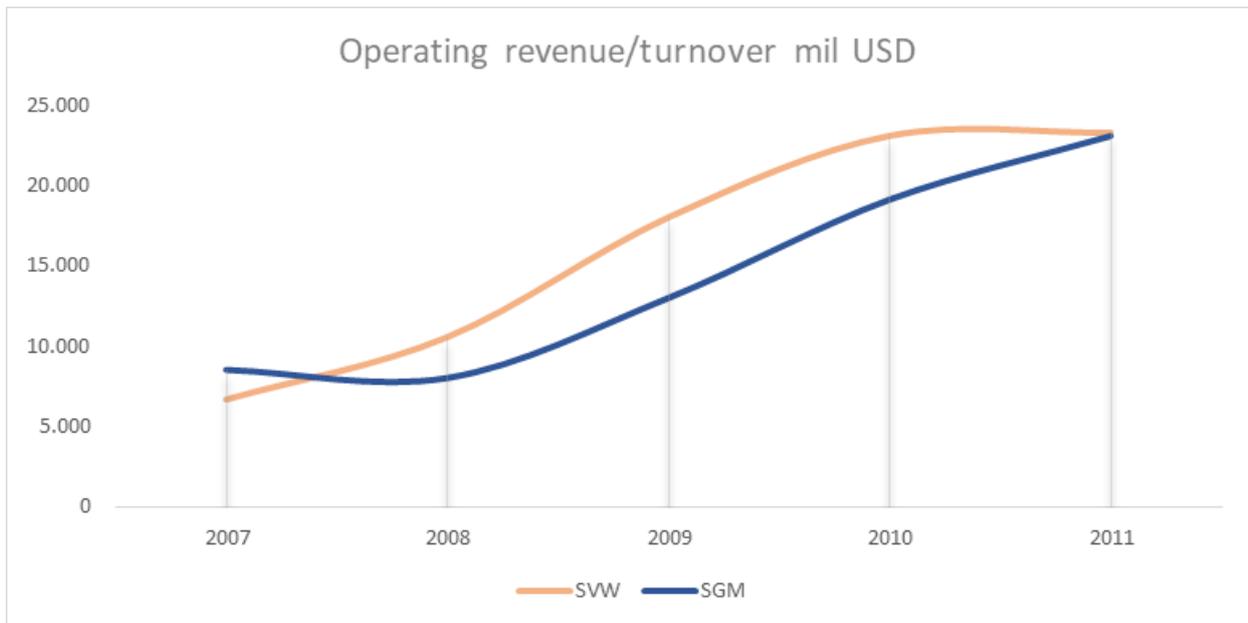


Figure 24 Operating revenue/turnover in million USD of Shanghai Volkswagen and Shanghai General Motors. Source: Oriana

About the operating revenue over the turnover, we can see a similar trend, with a low flection in the year 2008 for SGM, essentially due to the Chinese financial crisis. Firms with more independent boards and higher institutional ownership experienced worse stock returns during the period. Further exploration suggests that this is because firms with higher institutional ownership took more risk prior to the crisis, which resulted in larger shareholder losses during the crisis period, and companies with more independent boards raised more equity capital during the crisis, which led to a wealth transfer from existing shareholders to debtholders. <sup>(35)</sup>

Under the Sino-foreign JV arrangement, Chinese local automotive assembly firms have accessed advanced technologies, transferred by leading global automakers, and local parts suppliers have also benefited substantially from the technology-transfer process. There is no question that the constituents of the Chinese automotive industry have developed better technological capabilities with the sector's IJV practices than in the past. The SVW and SGM case suggests, however, that the IJV arrangement is not capable of developing every aspect of local technological capability. The IJV model's contribution has been most notable in incubating local production capability. MNCs have been active in transferring product-specific technologies and relevant production know-how to their Chinese operations. With their technology transfer, Sino-foreign assembly JVs are fabricating foreign automakers' up-to-date vehicle line-ups in their modern manufacturing production facilities. As part of this technology-transfer process, foreign automakers have provided local engineers and shop-floor workers ample opportunities for official job training and technical assistance to optimize the operation of the introduced process technologies. In addition, the IJVs' growing efforts at local sourcing, incentivized both by public regulations (e.g. local-content regulation, import quota/tariffs, foreign-exchange control) and market factors (e.g. market growth and interfirm competition), have paved the way for the growth of local supply capacity. Interactions with global automakers helped (and pushed) local suppliers to upgrade their manufacturing capability, so that their products could qualify as components of the JV-produced vehicles.

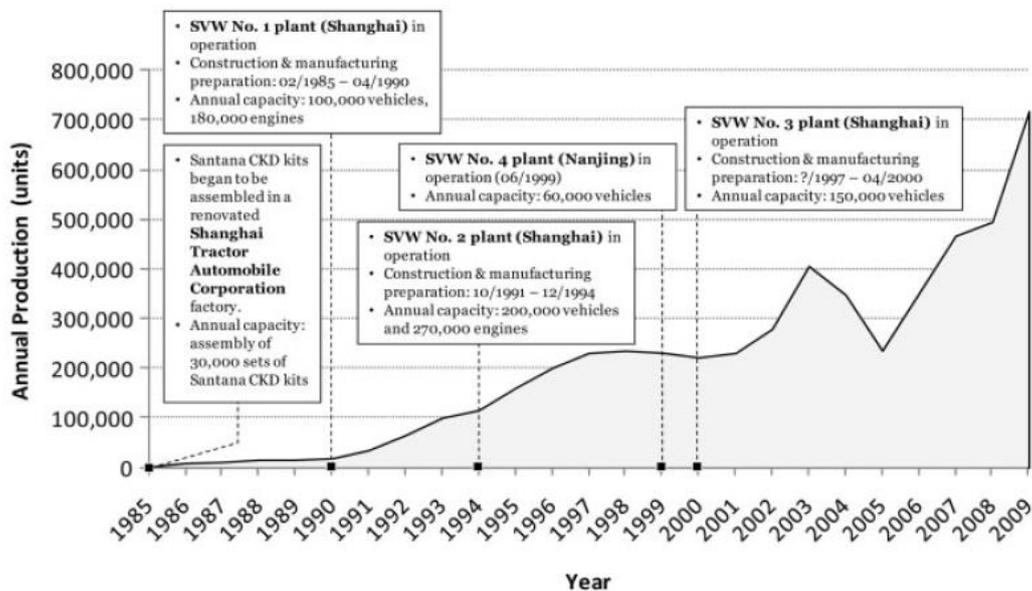
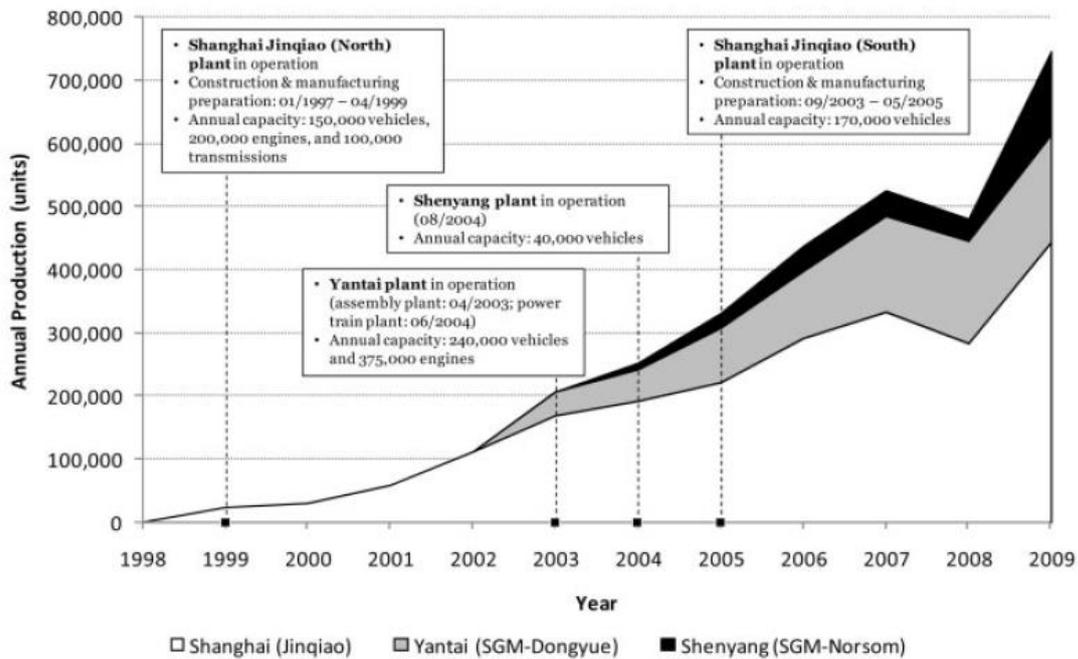


Figure 25-26: SGM and SVW major production capacity expansion (1985-2009). Source: Fourin (1998-2010)

The IJV model may also induce a significant, but partial, improvement in local firms' project execution capability. The more IJV-driven organic growth experiences SAIC accumulated, the better project execution capability it could develop, as evidenced by the fact that SVW and SGM's more recent plant-expansion projects were completed within a shorter time than earlier expansions.

However, the core technical portion of the plant-expansion project was done mainly by Volkswagen and General Motors without SAIC's significant participation. For example, even if the pre-investment feasibility assessment and the actual plant construction work for each project were carried out by the Shanghai Institute of Mechanical and Electrical Engineering (SIMEE), one of SAIC

Group’s wholly owned subsidiaries; VW and GM provided the assembly design to SIMEE for its actual construction, and procured necessary capital goods under their primary control. This practice is a convention under the Sino-foreign JV arrangement, specialized in producing foreign licensed vehicle models: the whole production line design and the required production facilities and equipment for the JVs should reflect foreign automakers’ technologies.

Regardless of SAIC’s capability improvement, asymmetric information about the JV-adopted technologies would keep reserving the core technical portion of the investment project not for SAIC but for its foreign JV partner firms. The final point that the SGM case makes clear is that even the best practice of the IJV model is unlikely to ensure a critical degree of local innovation-capability building.

General Motors is the foreign automaker that has made the largest R&D investment in China, but its Chinese assembly operation, SGM, does not possess significant in-house vehicle-development capability, either, like any other Sino-foreign assembly JVs.

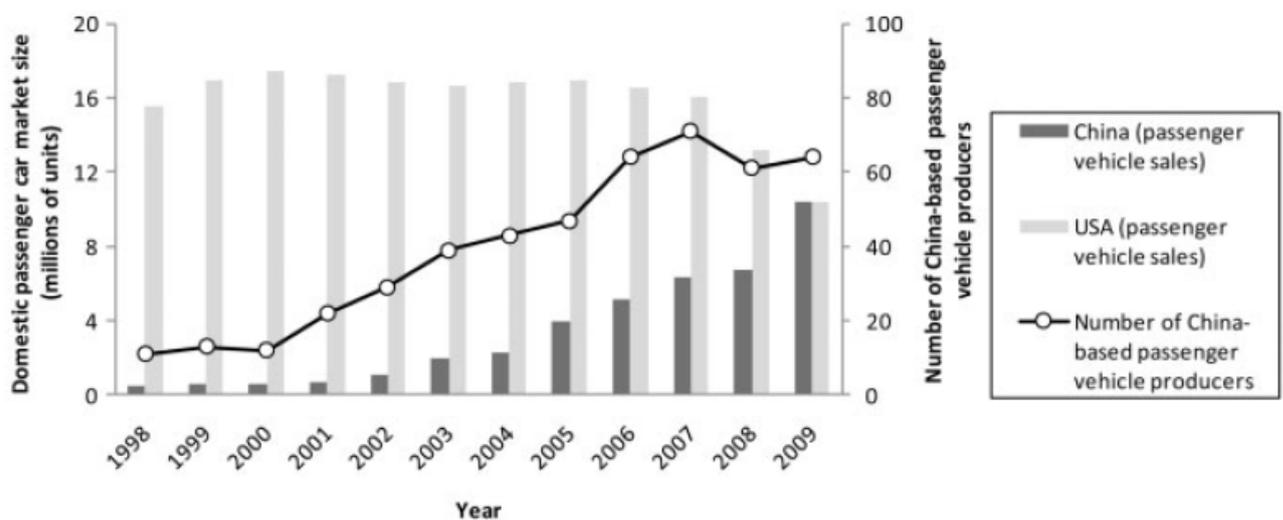


Figure 27: Number of China-based passenger vehicle producers and China’s passenger vehicle market size (in comparison with USA’s). Source: China data from Fourin (1998-2010); USA data from Ward’s Automotive group (2010)

GM’s flagship China-based R&D operation, PATAC, has also defined itself as SGM’s localization-supportive engineering arm, specialized primarily in minor technological adaptation tasks. SAIC, of course, has accessed GM’s up-to-date technologies in the form of vehicle drawings and relevant assembly line designs. The Sino-foreign JV arrangement, however, has not allowed SAIC either to modify such technologies without GM’s consent or to utilize them for SAIC’s discretionary purposes. Innovation is essentially a product of a continuous search process for alternative or complementary uses of existing knowledge, in combination with other various kinds of internal and external assets. The outcome of the search process is a function of the intensity of the firm’s application processes and, on equal measure, of the firm’s pre-existing innovation capability. Simply learning the “outcomes” of others’ innovation does not lead to a better in-house innovation capability, without further subsequent internalizing through application practices or R&D activities.

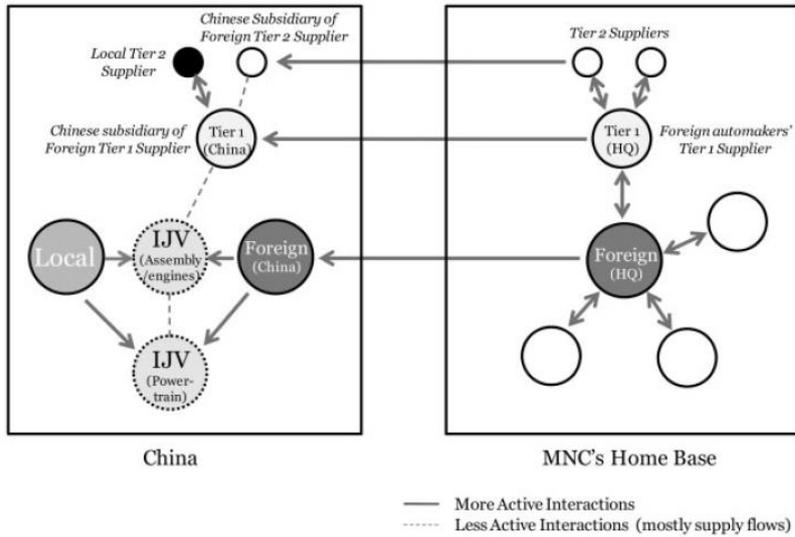


Figure 28: Knowledge flows within localized production ventures. Source: K.M. Nam, 2011

The SGM case suggests that even successful IJV practices in the developing world may not only fail to induce MNCs to bring in their critical technological capability but also may discourage local firms' self-learning process through intensive application practices.

Assembly JVs	Main production base in China	Number of primary suppliers	Mean distance from primary suppliers (km)
SWW	Shanghai	254	542
SGM	Shanghai	145	258
FAW-VW	Changchun, Jilin	240	1736

Figure 29: Mean distance between assembler and primary suppliers. Source: Marukawa, 2004

### 5.4.1 Synthesis of the section

Summing up what we have seen: China's central government decided to pursue the Sino-foreign JV arrangement in the early 1980s, due to two main reasons:

- The arrangement was initially seen as the most feasible way to meet the fast-growing local demand for passengers' vehicles without draining the limited foreign-exchange funds that once were limited.
- To incubate technologically competitive local firms within a short period of time.

By the way, as we have seen in the case of SAIC-affiliated JVs, the first goal was accomplished with success, while, as regards the second one, the technological spillover was difficult to reach due to marked endogenous differences. As the SVW and SGM case illustrates, the IJV arrangement has been effective in building local capabilities for production and part of the project execution task (e.g. project management and construction), but has not been effective in developing other segments of the overall technological capability (e.g. procurement, project engineering, and innovation). Local firms have developed partial segments of the overall technological capability, and the disparity among the technological capability segments has been further deepened in the absence of a mutually reinforcing cycle. Local firms have no effective means to manoeuvre the IJV arrangement to modify its nature in favour of their needs in in-house capability building process.

In this sense, it is not meaningful to discuss whether or not the IJV model is useful for local technological capability-building, from a collective perspective; instead, it is necessary to understand which aspects of the capability-building process in detail the IJV can contribute to, and which other aspects it may not be able to contribute to. The Sino-foreign JV case suggests that the IJV arrangement itself may be at best a partial solution to nurturing the development of local firms as solid contenders in the global market, due to the very basic nature of the arrangement-involved learning mode.

Perhaps the IJV-based learning model may work better when combined with other learning channels that can complement its missing dimensions and ensure that local firms have substantial manoeuvring space for their proactive learning attempts.

### 5.5 The knowledge acquirement issue

Another pillar that influences the final judgment on this work is the acquirement of knowledge by foreign partners from international joint ventures in a transition economy, both in the case study and in the previous articles, we have found out that apparently the knowledge flow is not so immediate, even in a form -the IJV- the by nature should suggest the information sharing. The point of view brought us from Eric Tsang in the Strategic Management Journal <sup>(36)</sup>, cleans up all the doubts, providing a deep analysis on the Chinese automotive JVs that were starting to proliferate in that period.

The management of knowledge has been recognized as a fundamental managerial skill, necessary to reach the competitive advantage <sup>(37)</sup>. Alliances are the starting point for organizational learning; in fact, they open to the sharing or acknowledgment of skills and competences of the partner <sup>(32)</sup>. A lot of studies have been conducted on the technological sharing, with the main aim to investigate on this issue, specifically when the partnership is an international one <sup>(38)</sup>. Tsang’s study is a response to the deficiencies and lacks characterizing previous models, considering different interlinked variables as shown in figure 30.

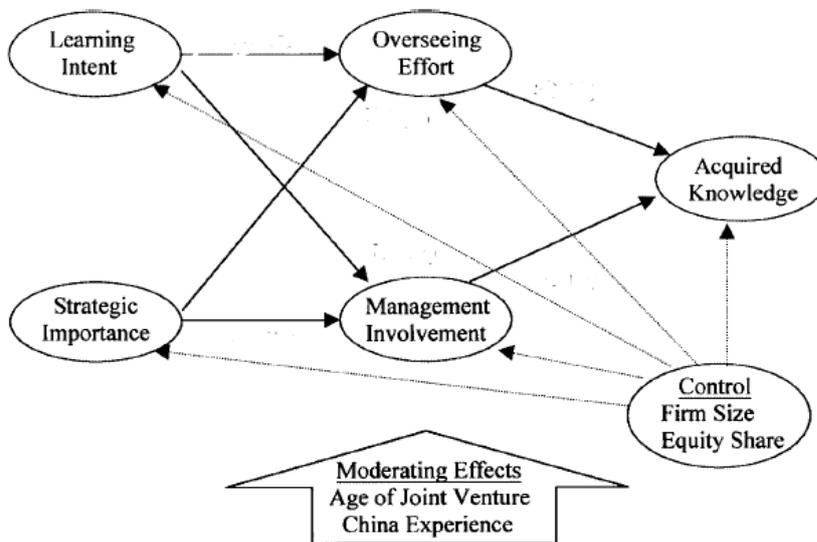


Figure 30: Model of knowledge acquisition. Source: Tseng, 1999.

The six variables listed in the figure, moderated by effects such as the age of the joint venture and parent’s China experience, lead to the existence of two fundamental learning phenomena in the international joint venture context: learning-by-doing and learning myopia.

The natural evolution of the model carries out the distinction between to objects of learning:

1. “Learning from strategic alliance experience”: implementing technological transfer, knowing about the business environment where the IJV is located, capability in handling the strategic alliance. It requires an experiential learning process.
2. “Learning the other partner’s skills”: sort of imitating the strategic plans and the business model of the other partner, without a practical nurture to the imitator itself. Based on an indirect learning process.

Tsang affirms that when we deal with a strategic alliance between a company from a developed country and a company in a developing country, the gap of technical competencies between the two is clean-cut. Sino-foreign joint ventures are a typical example of such alliances. While the Chinese partner is willing to learn the technological and management skills brought in by the foreign partner, the latter would focus a lot more on learning from their business experience in China than acquiring skills from the former. In other words, the two partners engage in different objects of learning. Tsang describes this pattern of learning as asymmetrical.

By focusing again on the arrows in figure 30, we can see how through learning by doing, over time, companies tend to rely more on overseeing effort (i.e. by looking at how the process should be nurtured or implemented) than management involvement (i.e. by entering key actors in top-managerial roles) to acquire knowledge. Those implications at a macro-level needs, nevertheless, an implementation by analysing micro-level mechanism through in depth case study, rather than questionnaire survey, as management involvement is mandatory for indirect learning. Thus, if a firm aims at nurturing its indirect learning, it is plausible to forecast that it will rely on management involvement as an acquisition channel; whereas if it wants to develop the direct learning, focusing on overseeing effort seems the best solution.

National culture is a pertinent factor affecting knowledge transfer and acquisition <sup>(39)</sup>. Child and Rodrigues <sup>(40)</sup> affirm that national cultural differences may encourage feelings of distancing and conflict between expatriate and local staff in an IJV, and delay the transfer of knowledge between the two groups of people.

It is reasonable to expect that the greater the cultural difference between two joint venture partners, the more likely they will rely on management involvement (a more straightforward channel) to acquire knowledge. In conclusion, despite its limitations, Tsang's study significantly contributes to our knowledge of organizational learning in the IJV context, opening to possible implications at a micro-level due to cultural differences between partners.

### 5.5.1 Performance measurement of cross-culture supply chain partnership

Another issue that is very appealing and interesting to underline, is the one brought us by W. Han, Y Huan and Douglas Macbeth <sup>(41)</sup>, since they face a case study in the Chinese automotive market, by focusing on the performance measurement of cross-culture supply chain partnership.

At present, China has the largest automobile production and marketing in the world. The automotive industry has all the characteristics of a manufacturing industry and can therefore be a representative of the manufacturing industry. It is one of the industries with a strong longitudinal correlation effect across all the departments of a typical manufacturing industry. The manufacturing of one car involves the processing and manufacturing of thousands of components, and consequently, the resulting intricate features of the supply chain will lead to the supply chain in the automotive industry becoming much more complicated than that for other products.

Nowadays most enterprises all over the world choose the methods of mergers and acquisitions to realize powerful alliances to improve their own competitive advantages and participate in globalized competition and cooperation. These are undertaken for the reasons of the rapid development of innovative technologies and the integration of the world economy, which through accelerated evolution has led to market competition becoming sharpened. As the internal expansion of the scale of the enterprise can struggle to adapt to the rapid change of the market, enterprise mergers and acquisitions, and especially horizontal mergers, as a model for the rapid expansion of enterprises, has become a vital component in the economic life of the contemporary world.

Foreign direct investment theory has made considerable progress since the 1960s. Vernon <sup>(42)</sup> proposed the international product cycle theory, which seeks to explain the motivation for foreign direct investment, while Hymer <sup>(43)</sup> proposed the monopoly advantage theory. Dunning <sup>(53)</sup> combined the monopoly advantage theory, the internalization theory and the location theory and believed that the enterprise has a potential advantage in cross-border investment, as it can create rich market opportunities and high profit returns for international enterprises. Other economists suggest that the enterprise sufficiently compensates for existing information internalization through the mode of foreign direct investment to guarantee most of its income through information investment. The internalization theory takes forward the traditional monopoly advantage theory and product cycle theory in many aspects and promotes the development of cross-border direct investment theory. Buckley <sup>(44)</sup> introduced the trading internalization principle into cross-border direct investment, and so the internalization theory of international direct investment theory was formed. This theory proposes that market incompleteness is the reason for enterprises to engage in foreign direct investment activities. And these investment theories help to explain the motivation of multinational companies to conduct cross-border production and management activities from different points of view. <sup>(54)</sup>

China's huge auto market has always been a key target for foreign automotive manufacturers, many Chinese automotive enterprises currently have cooperation in the forms of joint ventures <sup>(6)</sup>. There are many cases of holding companies investing in developing countries, and the results of the latter show that the unique technical advantages of multinational companies in the markets of developing countries can be rapidly realized through capital transfer and investment. Many empirical studies <sup>(45)</sup>, have also demonstrated that western direct investment can speed up the technological progress

of cross-border mergers enterprise and the enhancement of market competitiveness, and enterprises' advantages in the international market can be enhanced.

### 5.5.2 Definition of Supply Chain Partnership

It is believed that the partnership is a close cooperative relationship that is formed by two separate enterprises that have compatible strategic objectives, complementary resources, and capabilities. They are compatible in the aspects of enterprise culture, organizational structure, management and operation, and are capable of mutual trust, proficient level of commitment, information sharing, risk sharing, and interest possession. The goals that cannot be independently finished by a single entity should be achieved by joint efforts, and this is generally the key point of supply chain management.

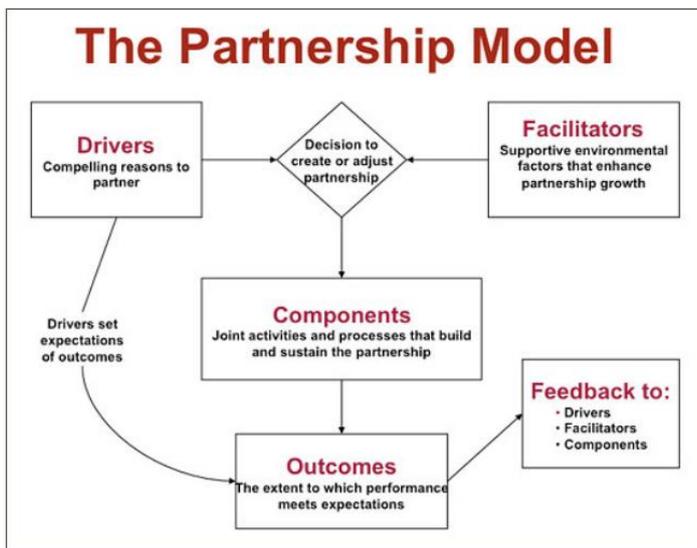


Figure 31: The partnership model. Source: D.M. Lambert, Supply-chain management institute, 2017

The establishment of a partnership through a supply chain is usually based on a long-term and strategic policy, which is often a very long process<sup>(55)</sup>. In reality, the formation of a supply chain relationship has various motivations

It is believed that a good relationship must be formed after a process of knowing, exploration, expansion and commitment. At each stage, there are several critical processes:

Stage	Critical Development Process
Knowing	<ol style="list-style-type: none"> <li>1 Evaluate the qualification of partner</li> <li>2 Investigate the benefits of partner</li> </ol>
Exploration	<ol style="list-style-type: none"> <li>1. Attract</li> <li>2. Communicate and negotiate</li> <li>3. Develop and utilize powers</li> <li>4. Develop regulations and expectations</li> </ol>

Expansion	<ol style="list-style-type: none"> <li>1. Improve the added value from the partnership and enhance mutual reliance</li> </ol>
Commitment	<ol style="list-style-type: none"> <li>1. Loyal</li> <li>2. Share values, objectives and expectations</li> <li>3. Willing to overlook partner's one-time mistakes</li> <li>4. Time</li> <li>5. Future-oriented</li> </ol>

Table 17: Process to generate a successful partnership. Source: Clucomb, 2001

### 5.5.3 Capabilities of Partnership Selection and Implementation

Geringer in 1991<sup>(46)</sup> had selected nine capabilities for partner selection for IJVs:

Capabilities of Partner Selection	Importance
Complementation of technology and resources	Pillar-choice criteria
Mutual dependence	The degree of mutual dependence should be on average (nor too high or too low)
Avoiding anchoring	It has to be assured that the future partner has enough financial resources to maintain the development of the cooperative ventures
Relative scale	There are greater successful opportunities if the corresponding scales are close to each other
Complementation on strategy	Partners with high compatibility of strategy also have the same targets and values
Compatibility of the operation strategy among partners	Partners should clearly understand which kind of operation policy can be operated compatibly
Potential communication obstacles	Includes the communication obstacles cause by language and enterprise culture, due to national, moral and cultural differences
Compatible management team	The personal relationship of the main decision maker is highly important in the process of decision selection
Trust and commitment	The unique ability that the cooperation ventures who involve the core technology and competitive advantages rely on

Table 18: Capabilities for partner selection. Edited by Geringer, 1991.

### 5.5.4 The culture impact of relationship decisions

Cultural characteristics provide grounds for the interpretation of actions within a SCPR performance measurement context. The culture of a business can be defined as the combination of usual qualities that impact on how a group will respond to its environment<sup>(11)</sup>. Organisational culture and national culture consist of different dimensional levels. National culture underpins the culture of an organisation and provides the basis for the norms of organisational behaviour<sup>(47)</sup>. Specific countries and nationalities tend to have their own distinct cultures, and this makes cultural clashes a probable occurrence in the modern economy. It is theorised that a culture gap between business partners

can lead to very different organisational practices, managerial decisions and business ethics <sup>(11)(32)</sup> <sup>(48)</sup>. Accordingly, it is further proposed that culture can impact business performance. Therefore, SCPR performance measurement from a cross-cultural perspective can provide an insight into the performance measurement systems in a partnership.

### 5.5.5 Cross-cultural joint venture: a practical example

W. Han, Y Huan and Douglas Macbeth <sup>(42)</sup> developed this issue- that could be considered as an assumption to explain the different economic performances in our analysis- by interviewing key employees in each “cross-cultural” joint venture, underlining some bottleneck aspects that will be discussed later.

Case company	Supply chain position	Company overview	Interviewee
EA	Europe – China joint venture manufacturer	EA is an international joint venture founded by a European party in the 1990s. EA's production departments including Research and Design (R&D), Vehicle engine production, Vehicle production, Sales, and After-sales services	Purchasing manager; marketing manager; sub-company director; sub-company director assistant
EB	Europe – China joint venture manufacturer	The first joint venture of EB's international party was established in the 1990s and terminated at the end of the 2000s. EB's international party joined another company in the 2010s. EB produces cars in China and designs car models in its European centre. EB's products include Vehicle engine production, Vehicle production, Components Research and Design (R&D), Sales and After-sales services	Investment manager; purchasing manager; supplier relationship manager; strategy manager
JC	Japan – China joint venture manufacturer	JC was established in the 2000s with a Japanese vehicle manufacturer's party. JC engaged in Vehicle Research and Design (R&D), vehicle production, Sales and After-sales service	Purchasing manager; investment manager; supplier relationship manager; strategy manager
UC	American – China joint venture manufacturer	UC's international party is one of the world's largest automakers. UC has four major production base, eight vehicle production plant, UC is one of the leading companies in Chinese automotive industry, which offers the broadest vehicle brands in China	Purchasing manager; quality manager; marketing manager; supplier relationship manager
S1	UC's tier-one supplier	S1 was established at the end of the 1990s, which is IJV and operated by Chinese and America parties. S1 main products include automotive seat belts and airbags. The products are mainly used by famous automotive manufacturers.	Purchasing manager; quality manager; investment manager
S2	EB's tier-one supplier	S2 is an international joint venture by Japanese party and set up by Japanese supplier. S2 is mainly engaged in producing one-way clutch, friction plate/dual disc and clutch components	Purchasing manager; strategy manager
S3	UC'S tier-one supplier	S3 is an international joint venture group. S3 is the best transmission technology product and service supplier in the world	Strategy manager; relationship manager
S4	EA's tier-one supplier	S4 is joint venture supplier, which is jointly invested and established by three parties in China, America and Germany. S4 is specifically engaged in automotive exhaust system production	Purchasing manager; relationship manager; strategy manager

Figure 32: Characteristic of sample cases. Source W. Han et al, 2017

Starting from this samples, they tried to deduce where the criticalities lie into; in order to understand if there was coherence with the literature provided, here we have their results:

Categories	Key criteria	Empirical data refinement						
		EA	EB	JC	UC	S2	S3	S4
Relationship strategy	Strategy orientation	◆	◆	◆	◆	◆	◆	◆
	Management style	◆	◆			◆	◆	
	Interdependence			◆				
	Mutual organisational characteristics			◆				
	Common goals	◆	◆	◆	◆			
Operation measurement criteria	Complementarity							
	Commitment	◆		◆	◆			
	Trust				◆			
	Communication behaviour		◆		◆			◆
	Information sharing	◆		◆		◆		◆
	Participation decision	◆						
	Quality	◆		◆	◆		◆	
	Production performance	◆		◆				
	Delivery	◆						
	Cost			◆		◆	◆	◆
	Supplier strength	◆	◆		◆		◆	
	Attitude <sup>a</sup>		◆		◆			◆
	Compromise <sup>a</sup>	◆			◆			
	High loyalty <sup>a</sup>			◆				

Note: ◆, what is confirmed in empirical research.

<sup>a</sup>what is new finding in empirical research.

Figure 33: Supply chain performance measurement indicators refinement. Source: W. Han et al, 2017

The grouping of key criteria gives a clear picture of what we told up to now. Words like strategy orientation, commons goals and quality are repeated like a mantra by the interviewee; we can see that there are similarities and differences within each group. It is remarkable how, in an Asian Sino-foreign (JC), interdependence and mutual organisational characteristics emerge, underlining the independence and the silent trust (high loyalty) that can be created in Countries closer both for culture and geographical distance.

Some differences arise between European and American IJVs, the first have similar points with the Japanese one, even if participation decision, delivery and compromise are typical of cultures that appreciate each other, without fully trust themselves. The “trust” criterium must be emphasized in what concern the UC partnership: here we can see how Chinese employees feel totally confident with the American management style, but there is still the focus on the compromise and on the attitude, two pillar criteria in a learning-by-doing system.

The culture was a strong theoretical variable impacting the operation of SCPRs and performance of the four manufacturers and their suppliers. The multicultural business environment meant that effective SCPR dimensions existed in practice, regardless of background. Cross-cultural management brought changes to SCPR, and different international parties also displayed individual characteristics in how they deal with SCPR.

From the empirical data, it was found that EA focused on rules, the international party worked rigorously, complying with rules of no racial discrimination, maintaining a fair operation environment and upholding human rights; EB stressed the importance of cultural conflict and the market, JC emphasised technology flows and UC paid attention to communication, although, it is difficult to balance the relationships of personal network (Guanxi) and rules of exchange (Renqing).

Summing up, SCPR performance measurement and cross-cultural characteristics cannot be separated. If cultural differences are apparent in businesses, it becomes probable that disparity will occur regarding a commitment to and satisfaction with the relationship<sup>(50)(51)</sup>.

## 6.1 Data Analysis

The previous chapters, implemented with models and articles, have shown what are the different modalities and motivations that lead a company to internationalise its business. We have also given a quick look to the Chinese market in the specific field of Automotive manufacture in order to better understand the industry we are dealing with. We will focus our attention on the practical phase of this paper: the statistical analysis of data that, on the basis of the hypothesis and assumptions created, could give us a clear view of the endogenous situation within the industry itself.

### 6.1.1 The database

As mentioned above, Filip De Beule -professor at the university of Louvain in the Department of International Business, Strategy and Economics (IBSE)- and Stefano Elia - professor at the Politecnico of Milan, specialized specifically in multinational firms from emerging countries and the performance implication of foreign direct investments- provided me a huge database, full of information about around 3000 Chinese companies.

The database was uploaded by Bureau van Dijk Electronic Publishing, one of the major publisher of business information. The company, founded in 1991, was acquired in 2017 by Moody's Analytics, one of the giant in US economy (3.6 billion revenues in 2016), underlining the enormous potential of the publisher itself.

Bureau van Dijk has a wide range of products focusing on corporate finance, mergers and acquisition, private banks, credit risk, business development and so on. It could be seen below the range of databases owned by the company:

Name	Aim
Oriana	It's the flagship company's database, containing information on companies across the world. It focuses mainly on private company information and presents them in comparable formats. Info on around 250 million companies from all countries.
Amadeus	Pan-European database containing information on over 13 million public and private companies
Osiris	Database of listed companies, banks and insurance companies around the world
Zephyr	Information solution containing M&A, Initial Public Offer (IPO), and venture capital deals. In January 2015 it claimed to have information on over 1.2 million deals and rumours.

*Table 19: Typologies of Bureau van Dijk databases. Edited by author*

The reference database will be Oriana, since it is the one that covers all the financial information about the analysed industry.

### 6.1.3 Primitive variables

The folder that I have received contains files split in four diverse ways:

Name of File	Material covered
Financials	All the financial performances of the companies in the industry: dynamic trend covering a ten years path
Information	All the information regarding ownership, time of acquisition, legal form, listed or unlisted
Subsidiaries	Number of subsidiaries, info on their financial and ownership parameters
Shareholders and GUO	Number of shareholders, number of patents published by shareholders. Info on global ultimate owner, patents published, legal status

Table 20: Typologies of files in the studied database. Edited by author

Since subsidiaries and shareholders' folders present lot of missing data, due to the unfeasibility of tracking all the numbers in a turbulent context like the one we are dealing with, I have decided to focus essentially on financial parameters related to the specific information about ownership and legal form. We can see in the table below what variables were considered in both these files:

Financials							
Operaring Revenue/ Turnover (2003-13)	Profit and Loss before taxes (2003-13)	Profit and Loss for period (net income) (2003-13)	Cash Flow (2003-13)	Total Assets (2003-13)	Return on Equity (2003-13)	Solvency Ratio (2003-13)	Number of Employees (2003-13)

Table 21: Variables faced in the financial file. Edited by author

# Information

Company name	BvD ID number	Date of incorporation	Legal form	Number of rec. shareholders	Number of patents	Global ultimate owner country code	GUO revenues	GUO number of employees	GUO total assets
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Table 22: Variables faced in the information file. Edited by author

## 6.1.4 First Skim

The first step done to increase the systematic order inside this database, was to compare all the financial trends to reach a synthesized version, easier to manage.

One fundamental starting point for the natural nurturing of this thesis, is a comparison between the financial performances of each company. As already mentioned, we are referring to the Oriana database provided by the professor Filip de Beule. Since the analysis of the international joint ventures will be a static one, my trial is to give a dynamic big picture of the financial environment where these companies lie in; the initial focus will be on the operating revenue on turnover, a pillar parameter to understand what are the main outputs of a firm.

Definition: Operating revenue is the one generated from a company's day-to-day business activities, which means revenue gained from selling the company's products. Operating revenue is important for a business to remain viable, because these sales are sustainable from one year to the next.

Formula: In the income statement:

- $Net\ income(\pi) = Total\ Revenues\ (TR) - Total\ expenses\ (TE)$
- $Operating\ profit = Operating\ Revenues(t) - Operating\ expenses\ (t)$

If a manager is performing the financial statement analysis, he will separate operating result from non-operating ones, since the first one is based on the primary business activities of the firm.

Differences of impact between Operating and non-Operating: One of the main reasons behind the separated identification in the income statement of the two activities, could be summed up by the fact that non-operating revenue and income do not produce cash inflows consistent from one year to the next. To fund company operations, the business must generate Operating revenue, firms that drive it, can fund the business each month without the need to seek additional financing, this means operating with a lower cash balance.

Influence of Operating Revenue on Stock price: If we are dealing with a successful firm, operating revenue and income are the main source of EPS (Earning per Share), mandatory parameter to evaluate a firm's stock price.  $EPS = \frac{\text{Earning available to common shareholders}}{\text{Common shares outstanding}}$

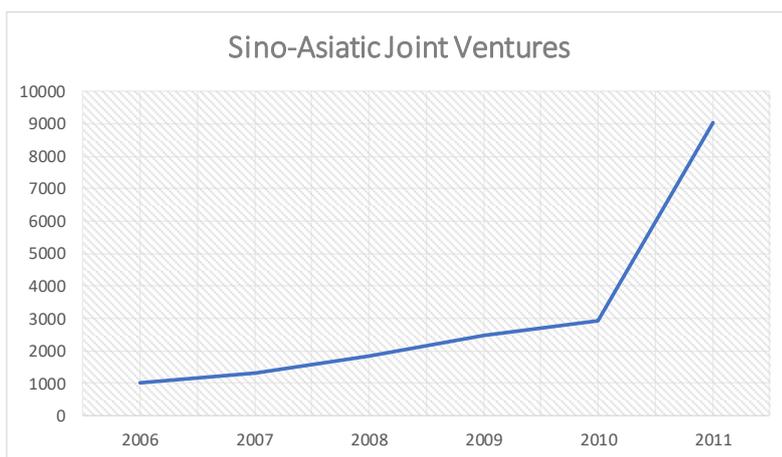
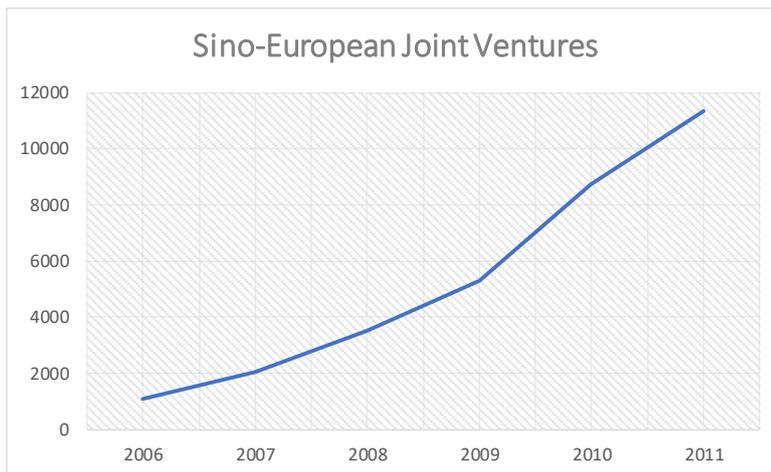
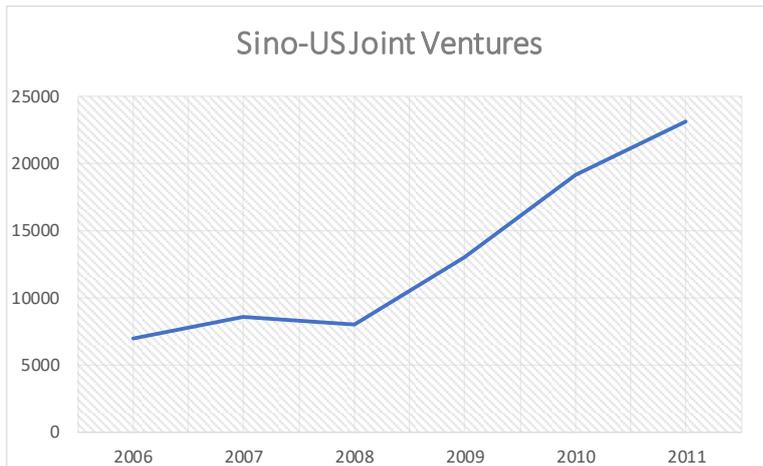
A well-managed business can grow operating revenue and income by finding more customers and moving into new markets, which generate higher earnings. As EPS increases, many investors and analysts consider the stock to be more valuable and the stock price increases.

Let's study now what is the trend of the main forms of entry mode in the Chinese automotive market. I split the categories to have a clear picture of all the context they are in:

Entry mode	Time covered	Last available mean value (revenues on turnover) (2013)
US joint ventures	2006-2013	23.132 \$mil
EU joint ventures	2006-2013	11.127 \$mil
Asian joint ventures	2006-2013	3.066 \$mil
Private enterprises	2003-2013	1.293 \$mil
State-Owned companies	2006-2013	1.922 \$mil
Public companies	2003-2013	1.246 \$mil

Table 23: Quantitative comparison between different legal forms. Source: Oriana. Edited by author

## DYNAMIC OPERATING REVENUE/ TURNOVER



Figures 17-18-19 Cumulative average trend of Chinese IJVs. Source: Oriana

Here we have the financial performance of Chinese international joint ventures. The first one, with the sensational last available value of 23.132 \$mil is the partnership between the two giants of economy: US and China. An important assumption is that this value is boosted by General Motor, leader of the sector.

The second trend is between European firms and Chinese domestic producers. Here the optimal values are explained by the fact that in many of the cases, firms that expand their brand overseas are affirmed brand in the stable European economy (Volkswagen, Peugeot and Fiat), so their know-how impacts positively on the IJV performance.

Last Joint Venture' revenue trend regards Asian joint ventures, since the geographical distance is low, even firms with low financial parameters feels confident in starting their IJV in China, explaining why the results are lower than in other solutions.

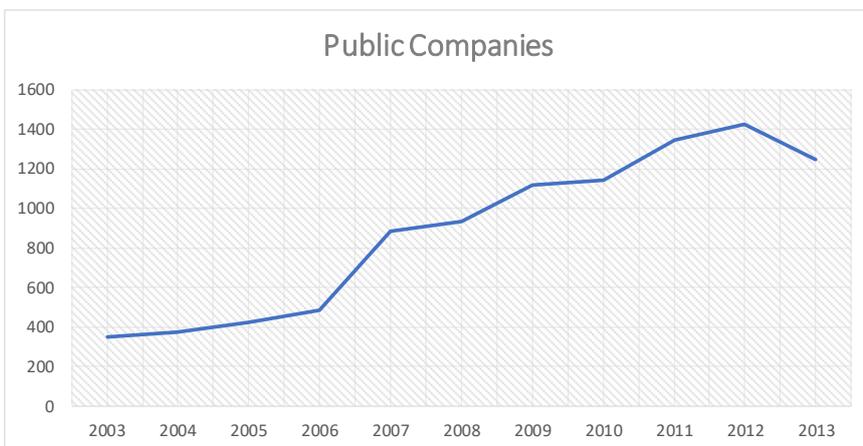
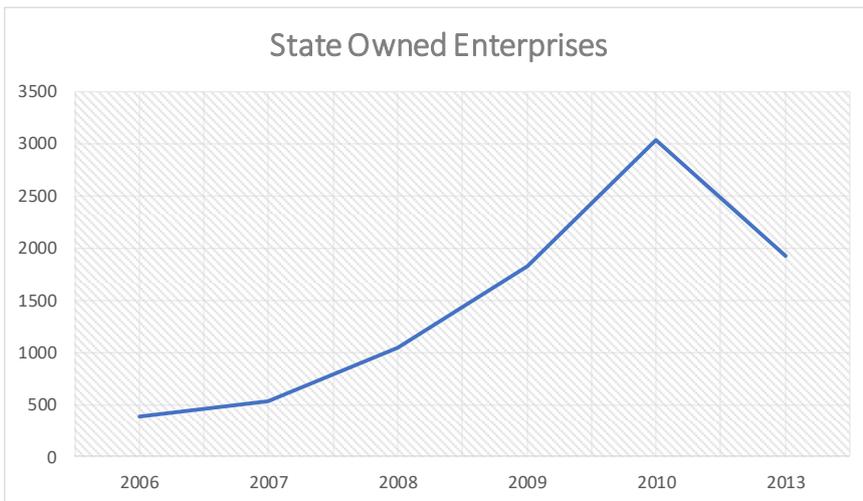
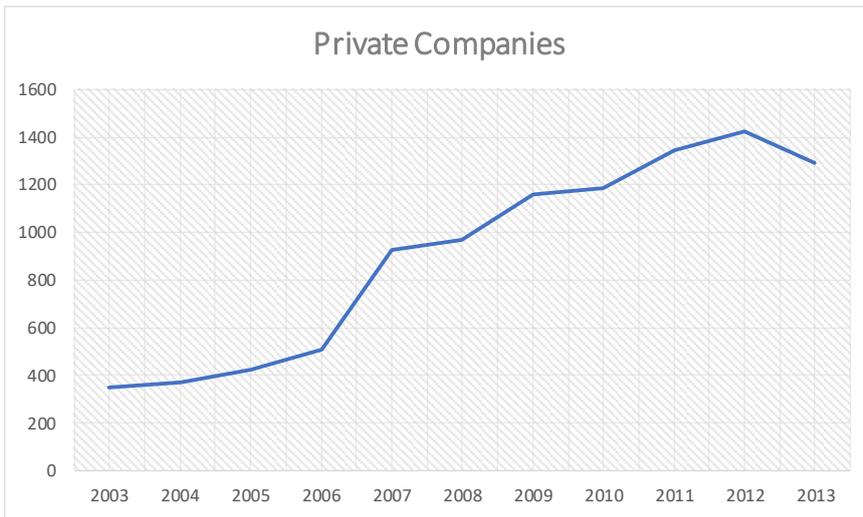
## DYNAMIC OPERATING REVENUE/ TURNOVER

Last three trends include, private, public and state-owned firms.

It is interesting to underline how their value, even if following a substantial different path, in the end settle at around 1.5 \$mil, testifying for a market with the absence of a true monopolist.

In fact, analysing in detail all these three typologies we are dealing with a chaotic environment, where a vast number of actors try to maximize their revenue.

One different issue regard State-Owned enterprises (SOE), since it is well known how they perform poorly in emerging countries (Fan, 2016), but China in 2010 was already a developed country. We will see in a while what is the reason behind these poor performances.



Figures 20-21-22: Cumulative average trend of other typologies of entry mode. Source: Oriana

## 6.2 Deeper comparison: Specific Parameters:

Once defined the entry modes we are dealing with and what are the methodologies with the best performance, it is time to look to other parameters that will complete the initial point of the Chinese automotive market.

### 6.2.1 ROE

One of the misused financial parameters is the Return on Equity (ROE), here exploited as return on shareholder funds. This value is obtained through the formula:

$$ROE = \frac{Net\ Income}{Shareholders'\ Equity}$$

At the numerator we have the net income for the full fiscal year (before dividends paid to common stock holders), while in the denominator preferred shares are not included.

ROE is a very useful tool to understand the profitability of a company in respect of the others within the industry.

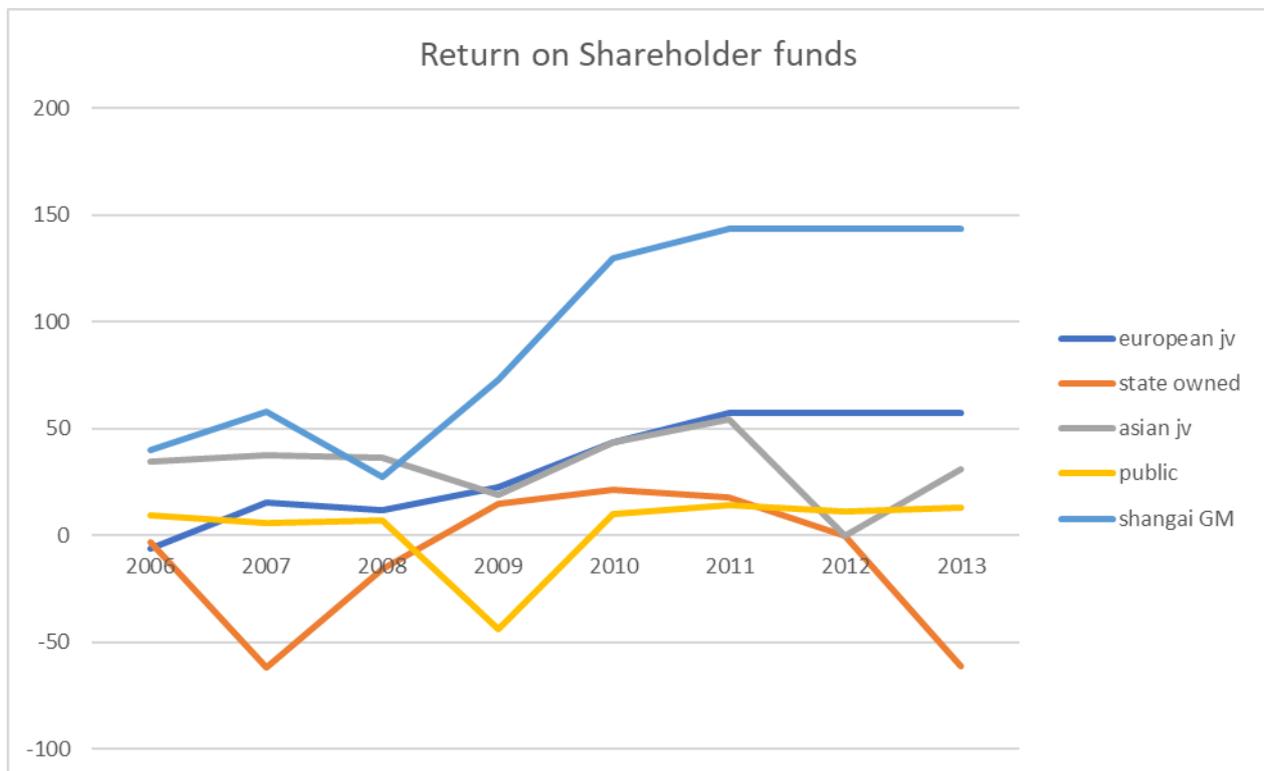


Figure 35: Comparative trend: Return on Shareholder funds. Source Oriana, edited by author

The picture above explains how the industry is characterized by a sort of monopolist (Shanghai General Motors) which will be studied deeply later on. Another important information that derives from the graph is that the Joint Venture enterprises grant to their Shareholder a higher return than any other form of investment; we can also see how state-owned companies deal with the fewer return for their equity.

## 6.2.2 Profit Margin

The profit margin is expressed as a percentage since it measures how much out of every dollar of sales a firm keeps as earnings.

$$\text{Profit Margin} = \frac{\text{Net Income}}{\text{Net Sales}}$$

This parameter is part of profitability ratios consisting as the result of net income on revenue. The numerator can be determined by subtracting all of a firm's costs (Operating, material and tax) from its total revenue.

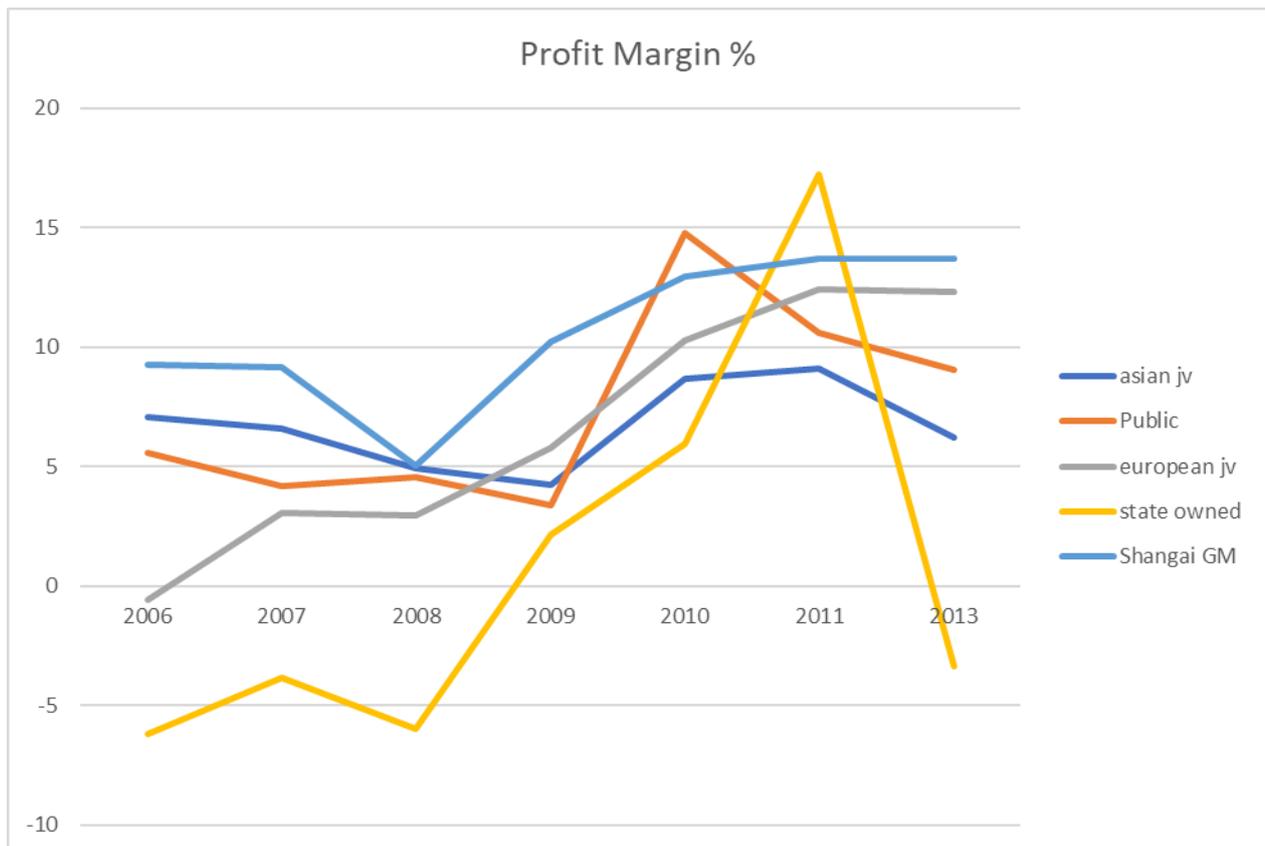


Figure 36: Comparative trend: Profit Margin. Source: Oriana. Edited by author

The trend here is like the one detected with the ROE, with some differences:

1. US joint ventures (SGM) keeps acting as the monopolist of the market
2. Gap between European and American Sino-foreign Joint ventures is significantly decreased
3. Public enterprises have reached better results than both Asian and European Joint ventures, mainly due to the financial global crisis that lowered the overseas demand. By the way if Chin-European JV were able to improve their performances overtime, Asian ones keep struggling
4. SOE trend is unclear essentially due to lack of data in this specific field

### 6.2.3 Solvency Ratio

The solvency ratio explains if a company's cash flow is enough to meet its short and long-term liabilities. The lower is the ratio, the greater is the probability that it will default on its debt obligations.

$$\text{Solvency Ratio} = \frac{\text{Net income} + \text{Depreciation}}{\text{Liabilities}_t + \text{Liabilities}_{t+n}}$$

The peculiarity of the solvency ratio is the one of being a comprehensive measure of solvency, measuring cash flow rather than net income, and including depreciation to evaluate the capacity of a firm to stay afloat. The cash flow capacity is measured in relation to all liabilities-not just debt-including accounts payable (t) and capital lease (t+n).

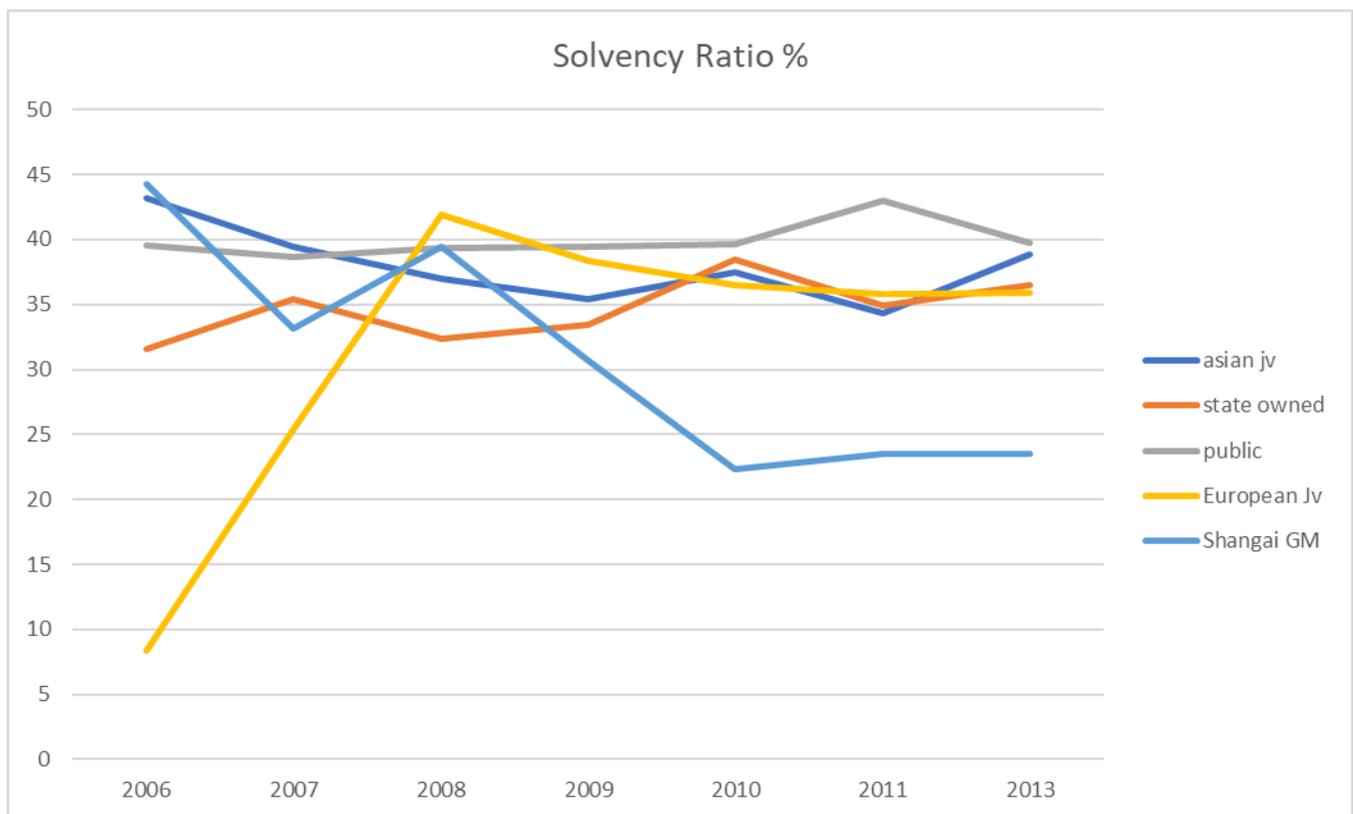


Figure 37: Comparative trend: Solvency ratio. Source Oriana. Edited by author

The trend is clearly different from the ones seen dealing with profit margin and ROE:

1. Apparently the most reliable methodology is the public company, with a solvency ratio settling at around 40%
2. In a range lower than 5% it is possible to find 4 different typologies of ownership, underlining how in the same industry the solvency ratio is quite common
3. State owned enterprises, even if attesting as the worst in the Profit Margin and ROE analysis, seems to have a good capacity to stay afloat
4. American Joint Ventures (SGM in the specific), suffered the impact of the financial global crisis (2007-2008), confirmed by a sharp decrease between the years 2008-2010

The first cumulative comparison (see Figures 17-22) gave us a clear picture of the Chinese automotive industry:

As we can see, joint ventures stand out thanks to their bright economic parameters. The value took as reference was the revenues of each specific firm, since the database covers all the information about this specific KPI. Other variables like the total assets or the current ratio, even if very useful to understand the real state of health of the company, had too much missing data to provide a clear picture of the environment.

When in 1981 the Chinese government stated the law of the People’s Republic of China on Chinese-foreign joint ventures, no one could have forecasted such a success. The elimination of entry barriers took place slowly but constantly, reaching its maximum effort with the entrance in the World Trade Organization (WTO) of the Asian economic giant. The last steps followed to become a global superpower were trodden in 2008, when, after the Olympics Games, China opened its own Silicon Valley, its Shenzhen inventories, to a lot of European firms and start-ups<sup>(62)</sup>.

Since this thesis focuses on joint-ventures, aside from the financial performances’ data (see Tab.24), I focused specific attention to the Joint Venture form of internationalisation.

### 6.3. Second Skim

Once decided the legal form to be investigated and skimmed the sample from 6502 units to 203 entities, the following step was the selection of the most significant variables.

Although some financial parameters would fit perfectly to explain the real trend of the firms -like ROE or solvency ratio- I have decided to concentrate my effort and this study on the cultural impact of a foreign direct investment, so the most relevant variables to be taken in analysis were the one concerning the nationality of the two (or more) entities that compose a joint venture.

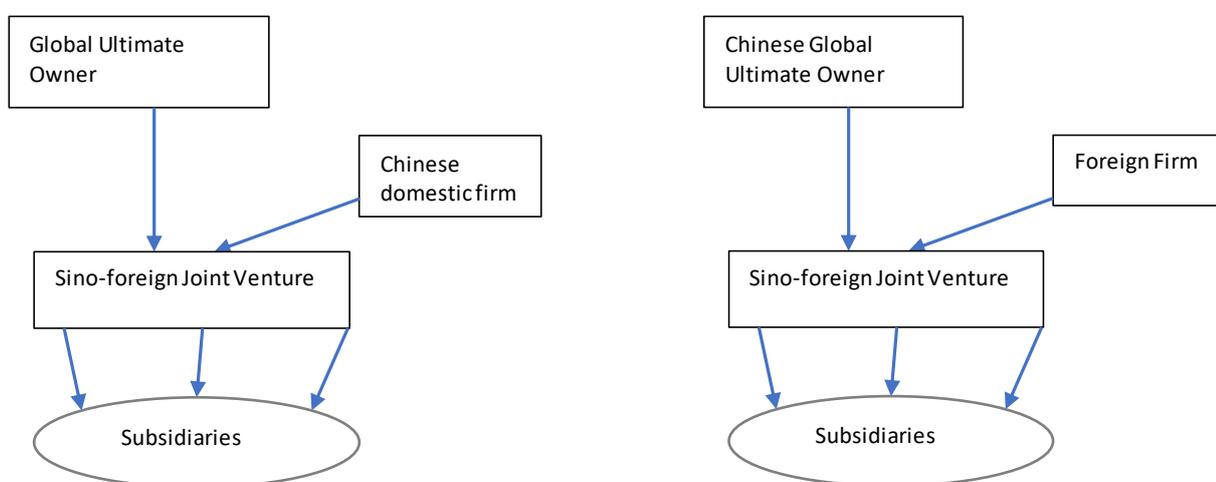


Figure 34: Structure of a Sino-foreign Joint Venture (with foreign GUO & with Chinese GUO). Edited by author.

It has to be mentioned that my study deals with Sino-foreign equity joint ventures, that slightly differs from cooperative joint ventures, the first one is a more long-term orientation structure, characterized by strict form of contracts and obliged to create a physical legal entity autonomous in

respect to the partner. Furthermore, even if the model applied is a static one, our index and parameters will cover what happened after the concrete creation of the Sino-foreign equity Joint Venture.

In order to understand if culture, besides technologies and skills, has an impact on the performances of this particular entry mode, the successive step was the partition of each firm on the basis of the nationality of their global ultimate owner.

The database allowed me to create four different clusters:

Global Ultimate Owner Cluster	
China	
Asia	<ul style="list-style-type: none"> <li>• Japan</li> <li>• Korea</li> <li>• Hong Kong</li> <li>• India</li> </ul>
Europe	<ul style="list-style-type: none"> <li>• Italy</li> <li>• France</li> <li>• Germany</li> </ul>
United States	

Table 24: Clusters created based on the nationality of the GUO. Edited by author

Once separated all the clusters, the next task was finding the most significant parameters. As often told during the nurturing of this work, there was a considerable number of lacks in the database; especially parameters like total assets, cash flow, solvency ratio, return on equity/shareholders miss entirely in the Oriana frame related to the specific Sino-foreign joint venture. Those indicators, even if they could provide a clear picture of the financial state of health of the cluster itself, could not be considered as relevant due to the little number of firms that presents a full dataset. Starting from those assumptions, the main aim of my work was to run a two-levels analysis, considering both the global ultimate owner and the Sino-foreign joint venture located in China. The idea behind this separation was to look at the financial performances and parameters to understand if there are significant differences between Sino-foreign ventures due to their different country origin, and if a good performer GUO means implicitly a good performer IJV.

Actor	Variables considered
Joint Venture	Revenues/turnovers (\$mil)
	Number of employees
Global Ultimate Owner	Revenues/turnovers (\$mil)
	Number of employees
	Total assets

Table 25: Variables considered in the analysis. Edited by author

### 6.3.1 Statistic Method:

Variables extracted from the database were analysed through descriptive statistics, with continuous variables reported as mean  $\pm$  SD or median [IQR], as appropriate. Normality of the distributions was visually inspected by box-plot representation and formally assessed with the D'Agostino-Pearson's test. Homoscedasticity was verified with the Levene's test. Between-group comparisons were carried out by means of ANOVA or Kruskal-Wallis test, as appropriate. Follow-up post-hoc test, including either Tukey-Kramer or Dunn's test, were performed in case of significant differences. Statistical significant differences were assumed at 5% level of probability (if p-value lower than 0,05, we reject the null hypothesis). All the analyses were performed with GraphPad Prism version 7 and implemented by excel (real-stats 2007).

## 6.4 First results: Financial Performances of the joint ventures

I can start my analysis by observing the key parameters of the joint ventures located in China; the year of reference is 2013, the last available in the dataset.

Guo-Partner	JV Revenues (Log Mln\$)	JV Employees (Log Number)
Sino GUO-Foreign	2,71±0,98	3,23±0,68
Sino-Asian GUO	2,50±1,01	3,10±0,53
Sino-American GUO	2,39±1,16	3,01±0,52
Sino-European GUO	2,42±0,74	2,92±0,55
Ho	No difference between means	No difference between means
p-value	0,6456	0,3581

Table 26: Mean values for each JV cluster. Edited by author

### Comments:

**Revenues:** It is mandatory to remark that the p-value for this specific region is way higher than 0,05. This information suggests that there is no a significative difference from a statistical point of view within the four macro-areas. By the way the mean value of the medians underlines a better financial performance for firms lead by a Chinese global ultimate owner. The result proposes an interesting perspective: apparently the geo-physical distance could impact negatively on the revenues of the joint venture.

**Employees:** Even for this variable we are dealing with a p-value higher than the threshold, thus implying no significative distance between the four clusters. The theoretical implications that could be derived are similar to the one seen before: having a Chinese ultimate owner grants -on average- a bigger labour force capacity. Europe is the tail light of the group, essentially due to the fact that the countries involved in the joint venture (Italy, France, Germany), have a lower GDP and bargaining power than the other economic giants (US, Japan and China itself). Another interesting point of lecture of this initial dataset could be related to the intangible assets. The main aim of European countries in the last decades was no more reaching low labour cost forces, but acquiring knowledge and technologies; a low number of employees would be appropriate and coherent if the number of patents filed is satisfactory. Box plots:

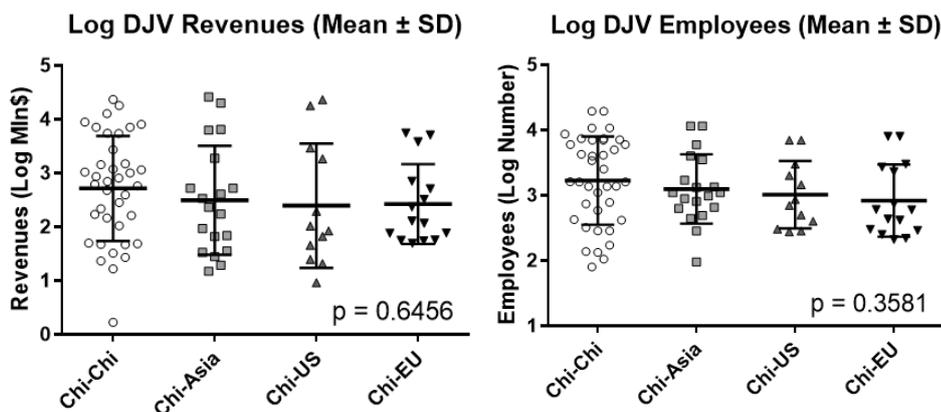


Figure 38: Domestic box plots: Edited by author

### 6.4.1. Second results: Financial performances of the global ultimate owner

Looking then upstairs, I will analyse the performances of the global ultimate owner:

Guo-Partner	GUO Revenues (Log Mln\$)	GUO Employees (Log Number)	GUO Total Assets (Log Mln\$)
Sino GUO-Foreign	3,34 [3,07 3,86]	4,18 [3,89 4,54]	3,29±0,90
Sino-Asian GUO	4,58 [3,66 5,35]	5,27 [4,25 5,51]	4,21±0,93
Sino-American GUO	3,87 [2,86 4,22]	4,40[3,74 4,85]	3,87±0,76
Sino-European GUO	4,64 [4,10 4,81]	5,02[4,72 5,23]	4,65±0,41
Ho	No difference between means	No difference between means	No difference between means
p-value	0,0002	0,0017	0,1319

Table 27: Median comparison and p-value of GUO financial parameters. Edited by author

#### Comments:

**Revenues:** Analysing the different revenues of each specific GUO, we find the first significant differences from a statistical point of view. The p-value is lower than 0,05, thus we can reject the null hypothesis and looking for differences between the medians. As the table shows, after running a Dunn' test, Asian and European global ultimate owners guarantee higher revenues than Chinese ones. The implications of such a difference could be various:

1. When a Sino-foreign equity joint venture present a European GUO, usually we are dealing with a market leader
2. European GUOs that decide to internationalize oversea are confident on their domestic performances
3. Asian and European MNCs have to face tariffs and quotas, differently from a Chinese GUO, thus implying an healthier financial portfolio
4. Shanghai General Motors (Sino-US Joint venture), being the market leader of the sector, skews all the data regarding China and US partnerships acting as a monopolist among them

**Employees:** As for Revenues, the p-value reject the null hypothesis, remarking differences between medians. Without considering Chinese-US partnership (*point 4*), Asian and European ultimate owners can count on a high level of domestic labour force, thus underlining once again how is necessary to have good endogenous indexes before entering in the Chinese market. The opposite speech would be done as regards Chinese GUOs, as both their revenues and number of employees are the lowest in the dataset. These informations remark at first that a Joint venture characterized by a Chinese ultimate owner has a bigger risk propension from a financial point of view, but, on the other hand, the absence of cultural barriers helps to go beyond this initial obstacle.

**Assets:** The assets, differently from revenues (source of income that arises from the sell of goods/service), are the practical economic resource of a company; they usually include cash, inventory and Equipment. Even if they are one of the best variables to be used as reference to establish the real state of health of a company, the database did not provide their value referred to the joint ventures, but just to the global ultimate owner. As we can see the p-value is higher than 0,05, so remarking, even if slightly, no significant difference from a statistic point of view.

Nevertheless, once again the conclusions drawn for revenues and employees are coherent with the data we are dealing with, since European GUOs are characterized by the best value, while Chinese global ultimate owners handle the less performing parameter.

Box plots:

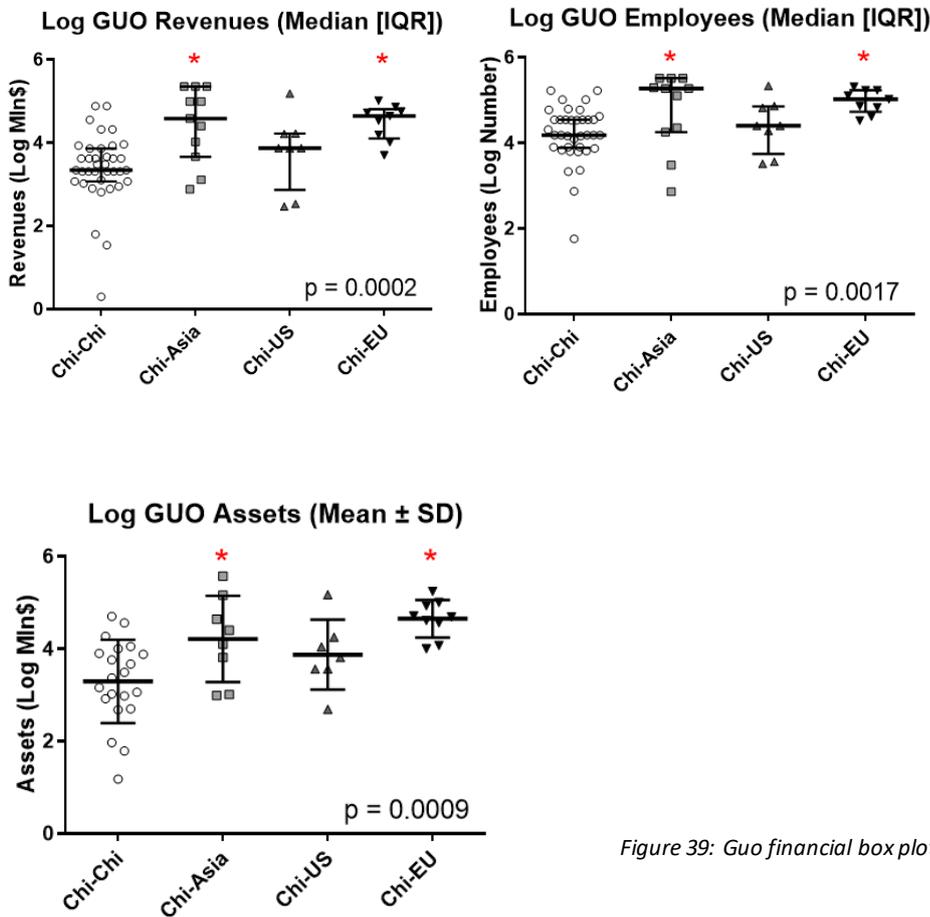


Figure 39: Guo financial box plots. Edited by author

### 6.4.2 Third results: The ratio effect

Once detected what appears to be the most performer cluster in the market, I have tried to parametrize the values, since the distribution of data was way too wide. The final decision was to create a ratio with the main aim to shrink the values and understand what was the value brought to the firm by the single employee. Starting from the assumption that, thanks to the Sino-foreign law, a minimum number of Chinese employee works in each joint venture, it would have been interesting to understand if a different nationality of the Global Ultimate Owner could impact the performances.

Ratio	Literature definition	Formula
$\delta_{DJV}$	Revenue per employee is a ratio that is calculated as company's revenue divided by the current number of employees. It indicates the productivity and the effective use of firm' resources. <sup>1</sup>	$\delta_{DJV} = \frac{\text{Revenues on turnovers}_{DJV}}{\text{Number of employees}_{DJV}}$
$\delta_{GUO}$		$\delta_{GUO} = \frac{\text{Revenues on turnovers}_{GUO}}{\text{Number of employees}_{GUO}}$
$\vartheta_{GUO}$	This ratio indicates assets (equipment, plant size, etc.,) provided to employees to help them improve efficiency. Increase in assets (equipment) usually result in sales and profits. <sup>63</sup>	$\vartheta_{GUO} = \frac{\text{Total assets}_{GUO}}{\text{Number of employees}_{GUO}}$

Table 28: Ratio and Formula related. Edited by author

$\delta_{DJV}$ :

Guo-Partner	JV Revenues to Employees Ratio (Log Mln\$/#)
Sino-GUO-Foreign	-0,51 [-0,87 -0,07]
Sino-Asian GUO	-0,80 [-1,20 +0,04]
Sino-American GUO	-0,90 [-1,14 -0,02]
Sino-European GUO	-0,59 [-0,76 -0,27]
H <sub>0</sub>	No difference between means
p-value	0,7327

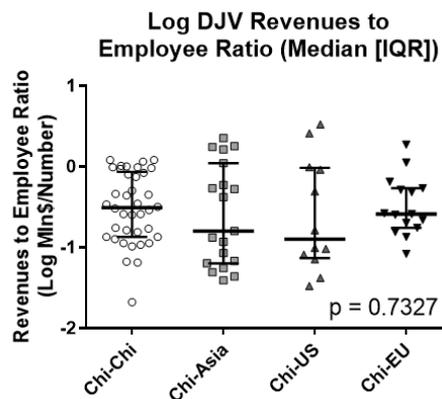


Figure 40 Results and box plots of DJVs ratio. Edited by author

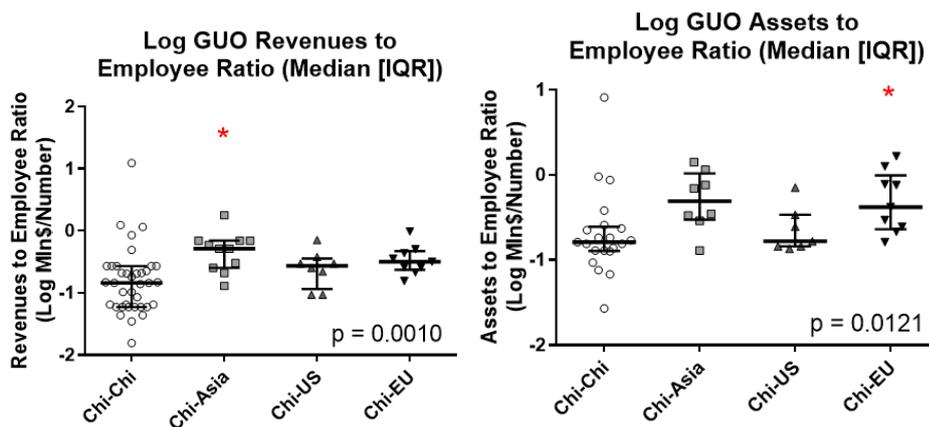
#### Comments:

Even with this ratio, the p-value exceed the threshold limit of 0,05, implying to admit the null hypothesis and suggesting no significant differences between the medians from a statistical point of view. In this scenario, parametrizing the revenues on the number of employees, we have different results for the joint ventures. Sino-European joint ventures, even with a mean lower number of employees and revenues, settle themselves in a better position than American and Asian ones, thus underlining how, even if creating new entities with small sizes in the foreign country, their financial performance is comparable with the one of the other MNCs.

$\delta_{GUO}$  and  $\vartheta_{GUO}$ :

Guo-Partner	GUO Revenues to Employees Ratio (Log Mln\$/#)	GUO Assets to Employees Ratio (Log Mln\$/#)
Sino GUO-Foreign	-0,84 [-1,23   -0,57]	-0,79 [-0,90   -0,61]
Sino-Asian GUO	-0,29 [-0,60   -0,16]	-0,31 [-0,53   +0,02]
Sino-American GUO	-0,57 [-0,94   -0,45]	-0,78 [-0,84   -0,47]
Sino-European GUO	-0,50 [-0,63   -0,33]	-0,38 [-0,64   -0,01]
H <sub>0</sub>	No difference between means	No difference between means
p-value	0,001	0,0121

Figure 41: GUO revenues and assets ratio, results and box plots. Edited by author



Comments:

Both these ratios present a p-value lower than 0,05, suggesting differences between the medians of the groups. The red asterisk shows, in reference to the Chinese global ultimate owner, where these differences lie in:

1. Once again, it is remarked how Sino-foreign equity Joint ventures with an Asian GUO (especially from Japan and Korea), have better financial performances in respect to Chinese ones.
2. Looking at the  $\vartheta_{GUO}$  parameter we can affirm that European GUOs present the best values, thus underlining one more time how, to overcome Chinese entry barriers, is necessary to perform at high levels in the country of origin.
3. Chinese Global Ultimate Owner does not necessarily perform at his best as long as the joint venture guarantees acceptable levels of performance.
4. Apparently seems easier and quicker for a Chinese firm to become global ultimate owner of an entity located in China.
5. The monopolistic behaviour of General Motors, once again create too much bias to provide any kind of significant information (from a statistical point of view) about the financial performances of Sino-US equity joint ventures.

## 6.5 Innovation field

As concern the innovation field the first question that I took into analysis was “Where does innovation come from?”. There are numerous and trigger answers to this first demand but, even if some may debate about it, the main reply would be that inventors are driven primarily by the expectation of profiting from owning the rights to their inventions. In other words, the patent system is the fundamental brick for innovation. There are many detractors of this theory, for example the prestigious financial journal “The Economist” stated that “today’s patent regime operates in the name of progress, instead it sets innovation back.” (2015), but, on the other hand, several studies like the one published by Sokoloff and Khan <sup>(61)</sup> define the U.S patent system as “extremely effective at stimulating the growth of a market for technology and promoting technological changes”. UCLA theory could be summarized with this simple formula:

$$\text{Startups} + \text{Patents} = \text{Job} + \text{Economic Growth}$$

By the way, if we want to focus just on the theoretical heritage that economists left to us, we can find several articles sustaining the strong relationship between patent published and innovation rate, just to mention some of them: Gilbert and Shapiro <sup>(57)</sup>, Scotchmer <sup>(58)</sup>, and Gallini <sup>(59)</sup>. The final remark on these theories happened in 2009, when the Organization for Economic Co-operation and Development declared that “stronger levels of patent protection are positively and significantly associated with inflows of high-tech product and expenditures on R&D” <sup><4></sup>. Finally, it was demonstrated that patents improve the allocation of resources through encouraging rapid experimentation and efficient ex-post transfer of knowledge across firms <sup>(60)</sup>.

### *Patent filings worldwide*

Patent filings are quite full covered by five Intellectual Property offices:

China
United States
Europe
Japan
Korea

These five clusters accounts for four-fifth of the world volume, China filed about 38 per cent of 2016 patents, 20 per cent higher than the ones filed by the U.S. <sup><3></sup> In order to send a strong message to the scepticisms around Chinese lax in protecting intellectual property rights, there was in the last 5 years the opening of a series of specialised IP courts. These courts went beyond the concerns raised over protectionist precedents, ruling not always in favour of domestic businesses, but with impartiality and objectivity.

Another fundamental hypothesis behind the development of the innovation field, was the one related to the fact that in the Oriana database, just the main actors had patents related to their own firm. Lot of company’s patents were not available or equal to zero, while the one associated to market’s leaders were sometimes way over the average, creating bias (e.g in a family of 30 firms, just 3 of them presents a remarkable value in the patent field), so it was not possible to follow the financial performance path, on the other hand, through excel, I was able to reach significant results.

### 6.5.1 Nurturing of Innovation model

Once formulated the main assumptions that sustain my work, I have applied the same macro-regions separation seen in the financial field:

Global Ultimate Owner Cluster	
China	
Asia	<ul style="list-style-type: none"> <li>• Japan</li> <li>• Korea</li> <li>• Hong Kong</li> <li>• India</li> </ul>
Europe	<ul style="list-style-type: none"> <li>• Italy</li> <li>• France</li> <li>• Germany</li> </ul>
United States	

Table 24: Clusters created based on the nationality of the GUO. Edited by author

It is important to underline that While the variables considered were the mean operating revenue (see financial performance chapter) and the number of patents filled by each cluster:

IJV	Number of patents	Mean operating revenue
China-China	3,932	2.952
Asia-China	0,043	3.321
US-China	1,820	3.858
EU-China	5,785	1.123
Avg	2,90	2.813,46
St.Deviation	2,50	1186,76

Table 29: Excel computation of mean values of both patents and operating revenue for each cluster. Edited by author

As table 29 shows, the number of patents in each macro region we can take the first considerations:

1. Sino-foreign Joint Ventures partnerships between Chinese and European firms seems the one that provides a higher rate of patent published.
2. When the global ultimate owner of the Joint Venture is Chinese, there is a significant trend to protect his own intellectual property, that explain partially the number of patents higher than the mean.
3. United States global ultimate owner, even if guaranteeing great financial performances, is reluctant to file patent through the joint ventures
4. The partnership between Japanese, Korean and Chinese firms, apparently seems the one with the lowest innovation rate.

### 6.5.2 Analysis of the ratio

Furthermore, this study tries to focus the attention on a specific ratio, based on the size of operating revenue bond to patents and -as a consequence- innovation:

$$\gamma = \frac{\text{Number of patents} * 1000}{\text{Revenues on turnovers}}$$

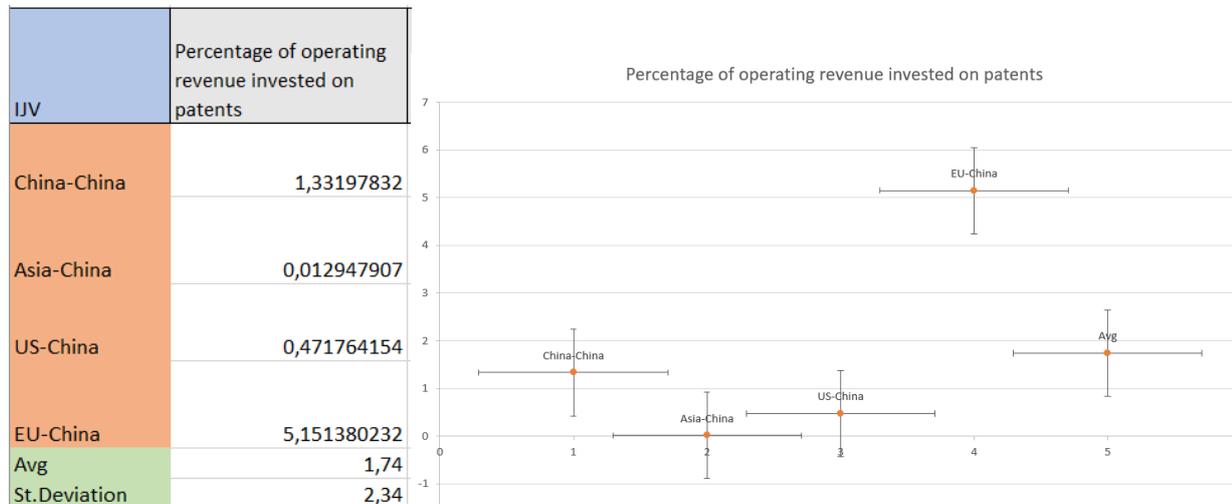


Figure 42: Percentage of operating revenue invested on patents. Edited by author

As told for the descriptive statistic in the financial performances and in the precedent hypothesis, the data do not follow a normal distribution, so conducting an analysis of variance, was considered incorrect rather than senseless. Being coherent with the first assumptions, the trend of the ratio does not underline specific differences from the prior analysis, although some reflections could be nurtured (see fig.42):

1. China-China: When the global ultimate owner is autochthonous, the share of revenues bond to patents settle next to the average. This result was quite expected since it is implied that local actors aim -especially in China- to boost innovation parameters through learning-by-doing<sup>[36]</sup> and certify the knowledge acquired by filing patents.
2. Europe Union-China: Regulators across the world demanded -in the analysed years- auto makers to increase fuel efficiency and lower carbon dioxide pollution levels, a challenge that has required manufacturers to invest in more efficient engines and new lightweight technologies. In October 2013, the European Parliament narrowed carbon dioxide pollution standards. The need to lower CO2 emissions has been particularly tough for German manufacturers, who have relied on making high-powered limousines, forcing them to develop new technologies. The rise in patents comes as car companies are increasingly relying on software and powerful computers to help make cars safer, more entertaining, more fuel efficient and better at solving problems. <5>
3. US-China: As if a counterproof was necessary, the innovation ratio for a Sino-American joint venture does not provide any significant information. This was easily amenable to the fact that General Motors, acting as monopolist in the cluster, absorb all the possible sources of innovation to the other US' GUO Ventures.
4. Asia-China: Further studies will probably investigate on this specific result. In fact, apparently, seems that Asian countries, even if presenting good financial parameters, are

reluctant in filing patents. There could be different reasons related to this phenomenon, one of the most reliable could be that countries like Japan and Korea, closer to China and with a lower cultural distance than the Westerns one, are not afraid of potential knowledge spillover perpetrated by other firms pertaining to the Orient. (see Fig 43)

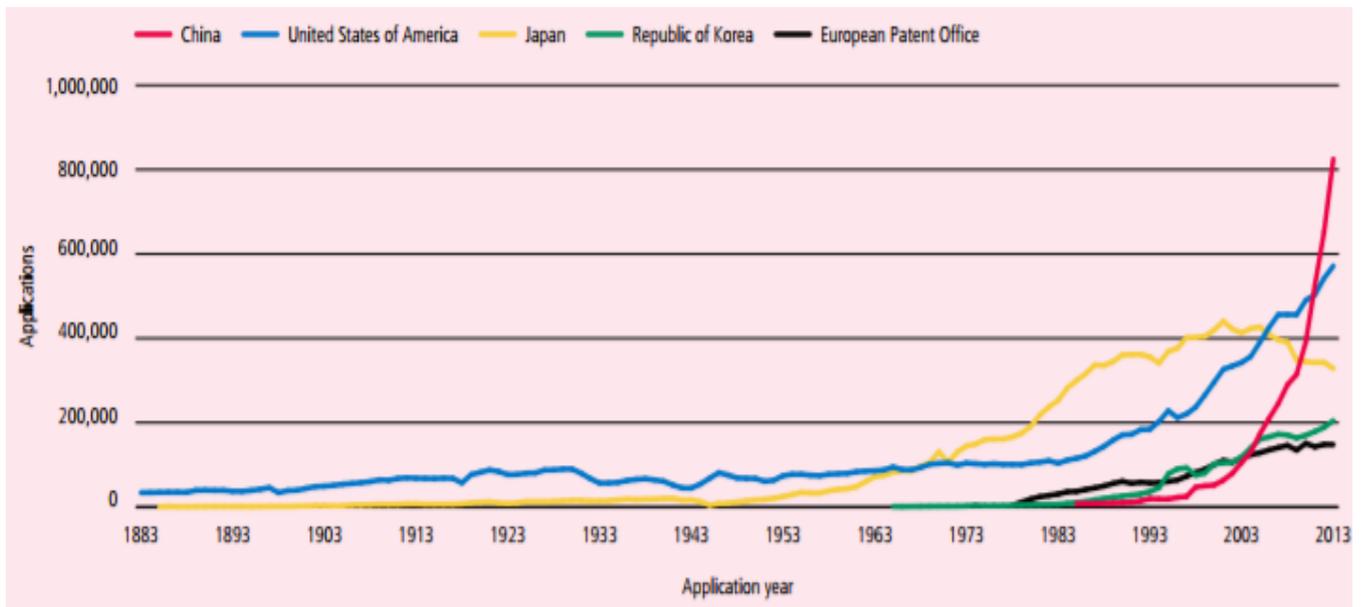


Figure 43: Trend in the patent application by the top 5 offices. Source: World Intellectual Property indicator, 2014.

## 6.6 The Italian Context

The Italian presence, as top-board, in the Chinese automotive market -according to the Oriana' dataset- is poor.

Company name	Legal Form	GUO name
SAIC-IVECO Hongyan commercial vehicle co., Ltd.	Limited Liability Company	FIAT Industrial S.P.A.
Shanghai New Holland Agriculture Machinery co., Ltd.	Sino-Foreign Equity Joint Venture	FIAT Industrial S.P.A.
Marelli Power Systems (Shanghai) co., Ltd.	Foreign Enterprises	EXOR S.P.A.
Magneti Marelli Automotive Components (Wuhu) co., Ltd.	Foreign-Invested Enterprises	EXOR S.P.A.
BREMBO (China) Brake Systems co., Ltd.	Foreign Enterprises	BREMBO S.P.A.

Table 30 Entities with Italian Global Ultimate Owner in the Chinese market. Source: Oriana database

There are just three global ultimate owners with Italian origin (Fiat, Exor, Brembo) in the dataset, thus remarking the main hypothesis of this work on how is difficult for a foreign company to overcome the entry barriers of the Chinese market if it presents low revenues.

It could be observed below if the Italian parameters match with the analysis already pursued.

### 6.6.1 The lack of Sino-Italian Joint ventures

In the Oriana dataset, what appears clear and significant is the absence of a considerable number of companies having an Italian Global Ultimate Owner. The only firm that grants to our country at least a spot is, as forecastable, Fiat. This fact could be substantial per se, remarking how Italian bargaining and purchasing power lessen in an environment characterized by higher GDP countries that face each day a potential market and a cumulate demand way higher than ours. The lone Sino-Italian Joint venture in the market (according to the dataset provided) is Shanghai New Holland Agriculture Machinery co, a listed company founded in 2002 and incorporated in the database in 2003. The entity is born from the partnership between Fiat and the state-owned Chinese company SAIC; it presents four international shareholders among which it stands out a Belgian partner (CNH Asian Holding Limited). As concern the innovation rate, it is significant to see how not just New Holland Agriculture, but all the companies presenting an Italian Global Ultimate Owner, does not present any patent filed. This result is in countertendency with what we have observed in the previous analysis, apparently European innovative trend is been hauled by German companies (Audi, BMW, Volkswagen) and French ones (Peugeot, Renault), that grant at least five patents filed per firm.

Through a figurative and meaningful comparison with the box-plots seen in the precedent pages, we can analyse the financial performances of Shanghai New Holland Agriculture Machinery.

### 6.6.2. Joint Venture Performance

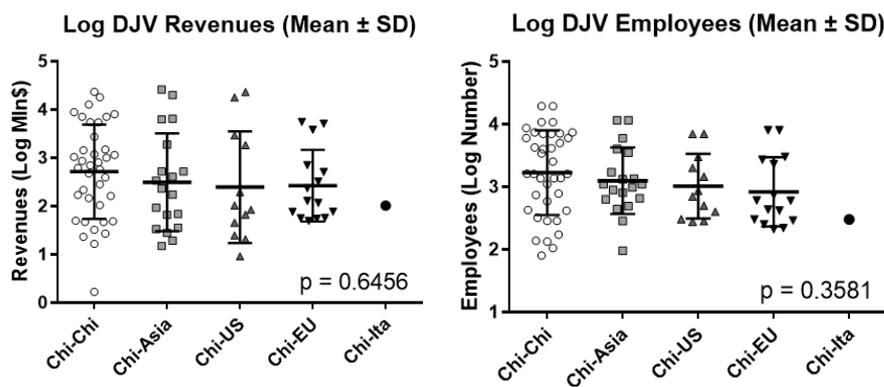
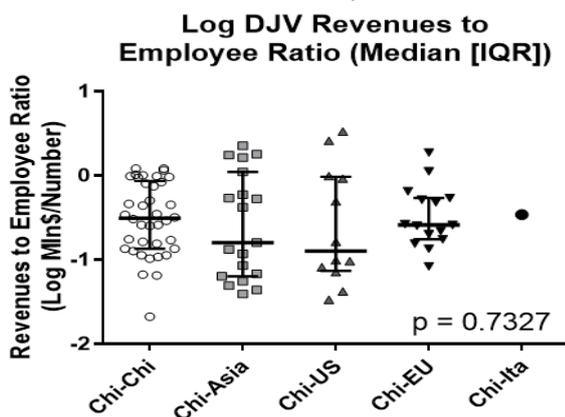


Figure 44: Comparison of Italian JV and other macro-regions. Edited by author

As regards the joint venture performance, we can see how Shanghai New Holland settle its values in the bot-side of Sino-European whiskers; this information draws a picture where the Italian joint venture is a small size firm, with a lower number of employees compared to the other macro-regions,



but if we look at the ratio (Figure 44) the parameters got better. Shanghai New Holland perfectly fits with the average trend of Sino-European Joint Ventures, in fact its revenues to employee ratio surpasses the average slightly. On the other hand, we have to remember that -since the p-value is way above 0,05- there is still no significant variance between each cluster from a statistical point of view.

### 6.6.3 Global Ultimate Owner Performance

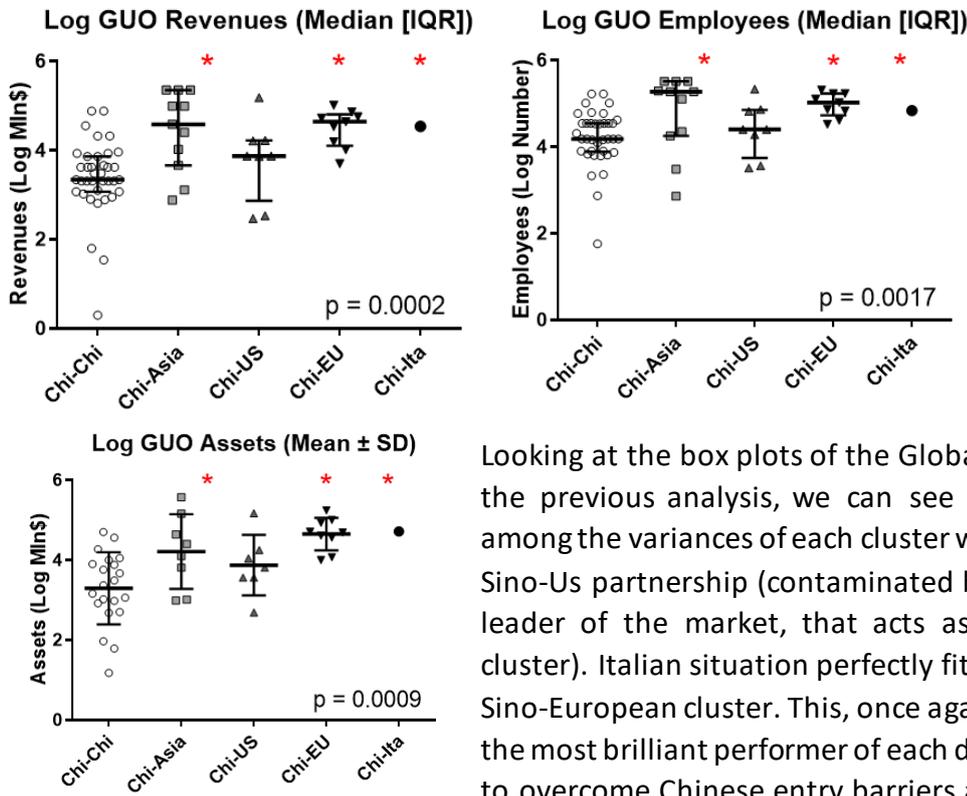


Figure 45: Italian Guo Performances compared to other clusters. Edited by author

Looking at the box plots of the Global Ultimate Owner, as in the previous analysis, we can see a significant difference among the variances of each cluster with the exception of the Sino-US partnership (contaminated by General Motors, the leader of the market, that acts as monopolist within its cluster). Italian situation perfectly fit the mean value of the Sino-European cluster. This, once again, underlines how only the most brilliant performer of each domestic market are able to overcome Chinese entry barriers and form a Sino-foreign

equity partnership. The remarkable fact is related to the entrance in the world trade organization made by China in 2001, thus meaning lowering tariffs and quotas. Our data reflect the situation of the market ten years after that moment, but, even if financial barriers have fallen, there is still a “cultural-shield” that does not give the possibility to low-profit firms to enter in the market.

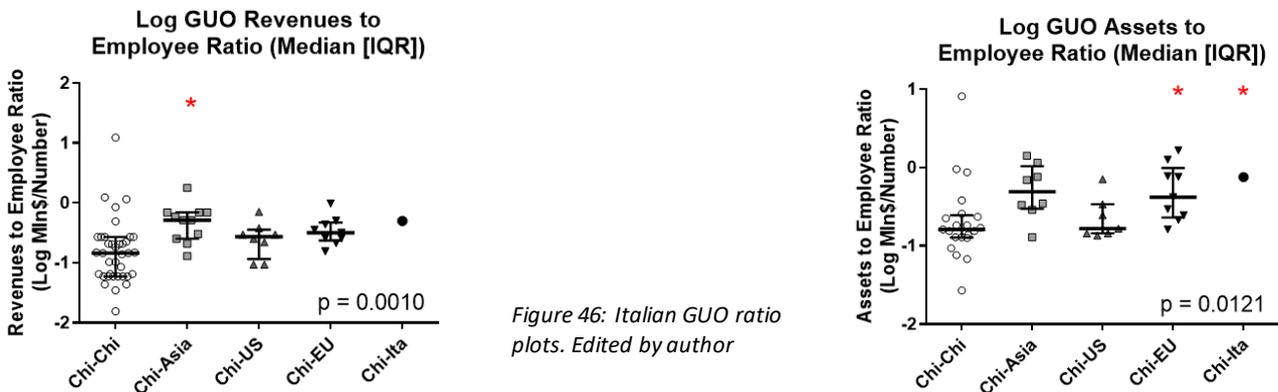


Figure 46: Italian GUO ratio plots. Edited by author

For what concern  $\delta_{GUO}$ , Fiat settle its ratio above the average of the Sino-European macro region, thus underlining how, even with a lower number of employees and smaller plant sizes, its profitability is still one of the best among Europe. However, there is no significative variance between the European cluster and the one characterized by a Chinese GUO. A different speech could be made for what regard  $\vartheta_{GUO}$ , in fact the Dunn test allows us to compare the values of assets to employee ratio between Chinese and European/Italian GUO, whereas the latter show way better results than the former.

## 7.1 Discussion and conclusion

The Chinese automotive market has become the biggest vehicle producer in the world. This path was characterized by fundamental steps: the first one occurred when the Chinese government opened its industry to the globalized countries with the enactment of the Sino-foreign Law of the People's Republic of China (1981), entailing the participation with tangible and intangible assets of foreign firms. We have seen in this work how, through the phenomenon of spillover both learner and teacher had found benefits and advantages in this specific partnership, depicting this particular entry mode as the most profitable in the market, as counterproof of this last sentence Shanghai General Motors (Sino-US Joint venture) is the uncontested leader of the sector. The second peculiar but necessary step, was the entrance of China in the World Trade Organization (2001), thus lowering entry barriers like tariffs and quotas to open the industry to potential new entrants even with lower revenues and less solid financial basis. The main aim of this work was to understand if the numbers provided in the Oriana database (covering all the South-East Asia transactions) confirm the theoretical accessibility of the market and if geo-cultural differences (between Global Ultimate Owner and the Sino-joint venture) have an impact on the financial and innovative performances of both the Chinese joint venture and the GUO. Once again it is mandatory to underline how this work provides a static point of view, as the database covers a short period of firms' history, thus without providing a clear dynamic picture. In brief, we do not know if the Global Ultimate Owner selected the best-performers in the market in what is defined as "cherry-picking", or if the analysed firms found benefits from the partnership, boosting their performances thanks to the entrance of a foreign partner.

The results show how there is no significative difference between the economic performances of the joint ventures, only ventures having a Chinese ultimate owner seems to perform better, probably thanks to the knowledge it has of the market and to the closeness between the two entities. Different and more significant results appeared when I focused the attention on top-side hierarchical levels: while the presence of joint ventures having a Chinese GUO is way more spread than firms with a foreign one, there are significative differences between the median of their revenues and assets. Through a Dunn test I was able to verify that European and Asian firms that are willing to enter or are already entered in the market, present higher value compared to the Chinese ones. In the specific, Asian global ultimate owners have a greater revenue on turnover ratio. On the other line, European global ultimate owners present greater assets and assets on employee ratio, but their presence in the Chinese market is low from a quantitative point of view. This result suggests that just the firms with the highest performances' parameters in their homeland are able to enter with success in the Chinese automotive industry (Audi, BMW, Volkswagen, Peugeot, Renault, Fiat). Furthermore, the main implication could be that, even with the WTO entrance, Chinese market and its entry barriers are often insurmountable obstacles for foreign low-assets firms, but, once overcome these barriers, the GUO could take advantages from being in one of the most profitable market worldwide.

As concern the Sino-US joint ventures presenting an American Global Ultimate owner, we had to deal with equivocal data and we suggest further and deeper studies in the years to come. In fact, the best-performer in the market, among all the legal forms, is Shanghai General Motors (SGM): a partnership between the Shanghai Automotive Industry Corporation (SAIC) and the American General Motors (GM). Apparently seemed plausible that Sino-US ventures would have been the best

legal forms in the market. Data, on the other hand, denied this hypothesis showing no significant differences on the variances of financial performances both of the Sino-U.S. JV and the American GUO. These results were probably influenced by the fact that SGM acts as monopolist in the cluster, sponging itself all the “good” ratios and, by this way, expanding the range of the variances with the other Sino-American entities.

Talking about innovation, the results of this work provide a turbulent context to be analysed: the tendency of incorporating into one single monopolist or few of them the majority of patents, influences the outcome. Lots of patent filed in the dataset, within each cluster, were both missing or not available, thus affecting the final output of the descriptive statistics. There was no normal distribution nor a gaussian dispersion of the data; considering the mean and developing an analysis of variance (ANOVA) seemed erroneous, since they are generally skewed (non-normal). By looking at the raw data, it is plausible to assume that Sino-European Joint Ventures invest more on innovation than the other clusters. This tendency could be matched with the recent trend of internationalize through foreign direct investment in the Research and Development in the Chinese Mainland by the most important European firms. These assumptions lead to a remarkable protection of the intellectual property, usually pursued through patent filing. On the other hand, we have seen how this process does not only prevent the companies from a harmful horizontal spillover perpetrated by Chinese partners, but guarantees a significant level of innovation. The opposite speech could be done talking about Sino-Asian JVs, where the shortage of data results in a very low patent filing rate. Further studies will investigate if the motivation behind this event has geo-cultural roots or if it could be simply amenable to the lack of values in the Oriana’ dataset.

The results obtained underlines the difficulties for a foreign firm to create a partnership as GUO with a Chinese company in the automotive industry. Italian situation is coherent with these assumptions: the only firm that was able to create a Sino-Italian joint venture is the well-known and stable Fiat. Its parameters perfectly fit in the Sino-European clusters, even if it has a lower size than other European giants (Volkswagen and Audi above all), its assets on employee’s ratio are above the mean of the macro region. It is remarkable to show that there are no patents filed by Italian GUO in all the database. Since it is in countertendency on what we have seen for the Sino-EU JVs, this peculiarity could be related to the shortage of data, or, on the other hand, to the indifference of Fiat in protecting its Intellectual Property since there are no autochthonous competitors in the market.

Summing up, the conclusions for my work could be split in reference to each actor:

1. Host country: Considering Chinese market and the firms that operate in it, we had noticed how there are no significant differences among each cluster. This result was unexpected, since literature affirms that when the cultural differences are broader, the financial performances should get worse. However, the picture is static, we are referring to a specific year (2013, the last available data) so we do not know if the output is influenced by external factor, or if the trend analysed reflects the real market one.
2. Global Ultimate Owners: As concern the GUO we have faced the first significant differences. It is important to underline that, since we are analysing one single moment in the past, a dynamic picture would have been more reliable to understand if the creation of a partnership has a real impact on the financial performances of the Global Ultimate Owner, or if it is a tendency of well-performing GUOs to create partnerships. By the way, we can argue that Asian GUOs rely on better revenues on employee ratio than Chinese ones, while European firms can confide on the best assets on employee ratio of the industry.

As concern innovation, three implications could be stated, since we collected data from patent filed by GUO:

1. Filing for joint ventures: European firms enter in the market with a high level of innovation (their percentage of revenues invested in patents is the greater in the sector), thus with a considerable number of patent filed in their background.
2. Filing to protect intellectual property: European firms file patents before entering in the Chinese market in order to prevent the harmful vertical spillover perpetrated by local firms, that could transform co-operation into competition.
3. Filing from joint ventures: European firms file patents once they are entered in the Chinese market. This third options could be the more interesting, since it would imply that it is the partnership itself that creates innovation, and, on the other hand, European firms are the quickest to take advantage by incorporating it.

Dealing with a static picture, it is not feasible to understand which is the most reliable option within the three listed, I suggest further and broader range researches on this issue, since the implications could bring a contribute to the existing literature.

In conclusion, a traditional Chinese proverb says: "China is a sea that salts all the waters that flow into it". Its potential market composed by over one billion customers, the proliferation of new technologies and working processes have become a juicy bait for all the Multi-National Corporations around the world. On the other hand, "all that glitters is not gold", as to enter in such a competitive environment, we have demonstrated that an MNC has to count on solid basis. Lastly, my work was based on a dataset that covers up to 2013, in such a turbulent context, five years are sufficient to change all the initial conditions and the assumptions made, as a consequence I conclude this work with the hope of future studies on this specific subject; in order to understand what, how and where our world is changing.

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