



UNIMORE
UNIVERSITÀ DEGLI STUDI DI
MODENA E REGGIO EMILIA

Dipartimento di
Economia Marco Biagi

DEMB Working Paper Series

N. 182

Should we fear or hope for Chinese acquisitions?

Evidence from Italy

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December 2020

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ISSN: 2281-440X online

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Abstract

In 2016, Chinese outward FDI exceeded inward investment flows, making the country a net exporter of capital, like the large advanced economies. The majority of Chinese investments are M&As, with the aim to acquire strategic assets (advanced technology and know-how) and access to markets (brands). The rapid growth of Chinese direct investments has raised many concerns among the advanced economies. The most important one is the fear that these investments will not produce the positive effects on the host economy typically associated with FDI from advanced countries, but a one-sided transfer of technology and know-how from acquired European firms to China.

However, there does not seem to be any evidence so far of a negative impact of Chinese investors on the acquired companies and the host economies. In particular, accurate studies on the pre and post-acquisition behaviour of European companies acquired by Chinese investors are still lacking.

This research intends to offer a contribution in this direction by providing new and detailed data on Chinese investments in Italy and by trying a first and tentative assessment of the performance of Italian companies recently acquired or controlled by Chinese investors. To this purpose, we have built an original database gathering detailed company information on more than 7.000 Italian companies with Chinese shareholders. Second, we have studied the pre- and post-acquisition performance of 198 Italian target firms.

Overall the results appear quite positive. Roughly 2/3 of the acquired companies have seen an increase in turnover, total assets, and shareholder's funds and 50% has had an increase in fixed assets. Revenues show a decrease soon after the acquisition followed by a steady growth starting from the third year. Employment and profitability results appear more balanced. The number of companies which has registered an increase in employment is roughly similar to the number of those that have experienced a decline, but there is some evidence that Chinese shareholders prefer to avoid layoffs even in front of severe reductions in turnover. This attitude is reflected in profitability, which especially in the first years soon after the acquisition tend to decrease, followed by a recovery in the following years. Overall, the analysis suggest a long term orientation of Chinese acquirers which deserves further investigation.

Keywords: Chinese FDI, Merger and acquisitions, Performance of target firms, Italy

JEL codes: F21, F23, G34, L25, M14

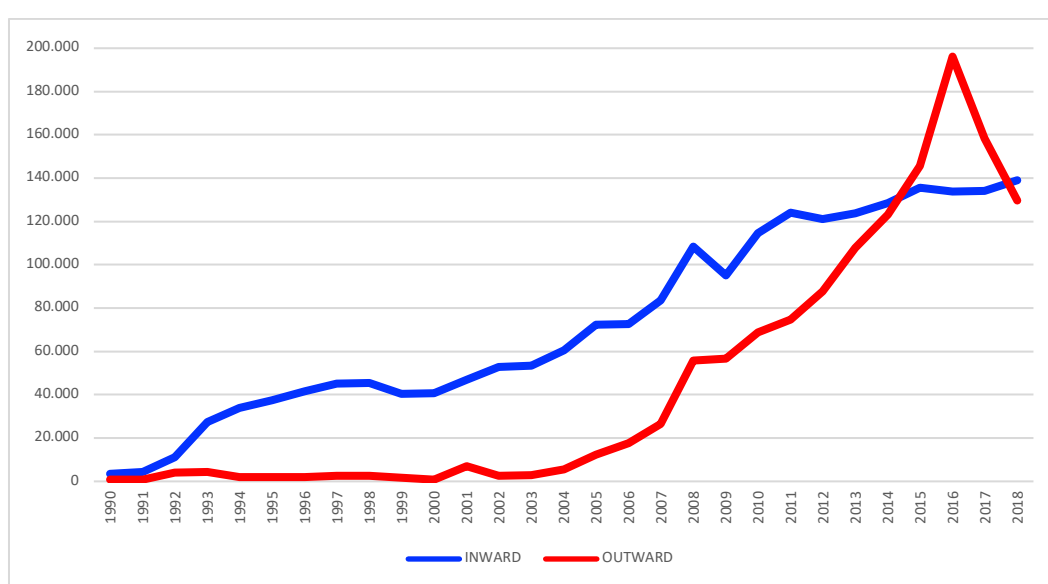
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1. Introduction

Since the economic reforms and “opening-up” policy, the transfer of technology from advanced economies through foreign direct investments and trade has played a crucial role in China, helping the transformation of the weak and backward Chinese economy into a modern industrial power. For a long time, outward foreign direct investment (OFDI) were negligible. Things began to change completely at the turn of the century, when the Chinese foreign investments started to grow exponentially, strongly encouraged by the Government through the so-called “go-out policy, first announced in the Five-Year Plan of 2001, and the accession to WTO in 2001 (Boateng et al. 2008, Knoerick and Miedtank 2018). As a result, in 2016 and for the first time, Chinese OFDI exceeded inward investment flows, making the country a net exporter of capital, like the large advanced economies (Figure 1).

Figure 1 - China Foreign Direct Investment flows: Inward and Outward. US dollars (current prices). Source of data: UNCTAD



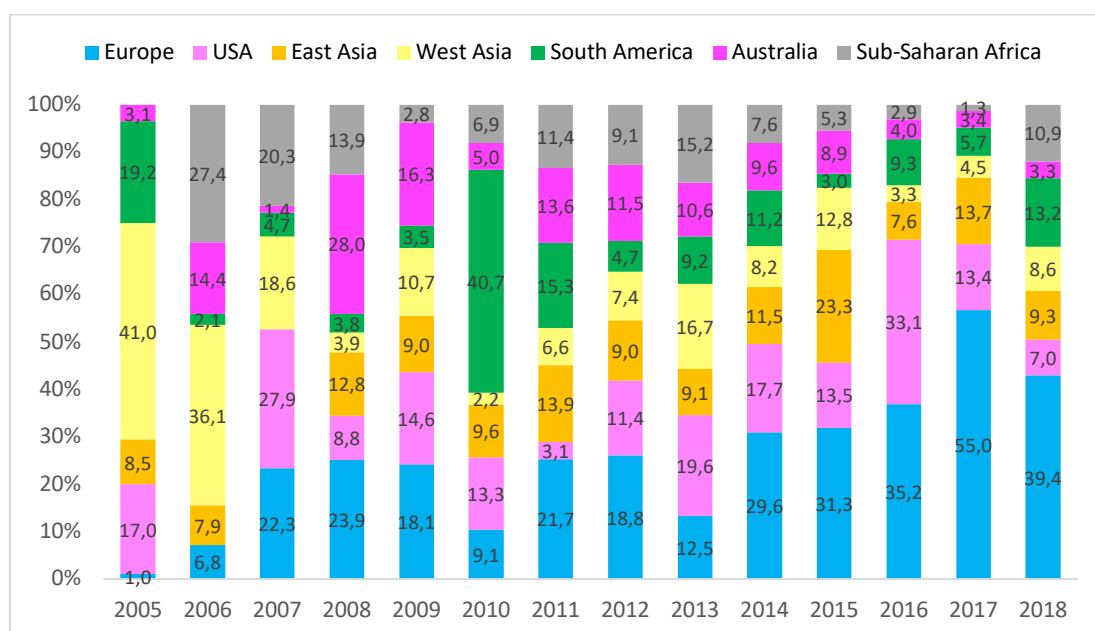
Starting from 2011, Europe has become the main destination of Chinese investors (Figure 2)³. The integrated European Union is indeed highly attractive for foreign companies. First, by investing in a single member State, they gain access to the entire European market. Second, the high level of technology in many European industries forms another very important pull factor for Chinese companies (Brod et al. 2012, Dreger et al. 2017, Ma and Overbeek 2015). Lastly, the EU has one of the world's most open investment regimes, as is testified by the OECD FDI Regulatory Restrictiveness Index. The opportunities to invest in Europe have been greatly favored by the consequences of the global financial crisis (Meunier 2014). Due the weak recovery of many European economies, many European firms experienced a period of troubles

³ Top-down, macro data on Chinese ODI must be managed with caution, particularly with regards to the destination and the sector of activity (see Hanemann 2014). Official data published in China by the Ministry of Commerce (MOFCOM) or the State Administration of Foreign Exchange (SAFE) do not distinguish between the first and the ultimate destination of investments. This explains the prevalence of Hong Kong and tax havens like Cayman Islands, British Virgin Islands, Bermuda as destination countries. More reliable information comes following a bottom-up approach used by different Western public and private sources and think tanks that collect detailed data on individual transactions and M&As involving a Chinese investor in the ultimate destination countries. Some of the most important databases are provided by Rhodium Group's China Investment Monitor and Heritage Foundation's China Investment Tracker. The following data are taken from the latter source.

and difficulty. This created favorable conditions for acquisitions by deep-pocket Chinese foreign investors, helped by the appreciation of the renminbi (Meunier et al. 2014).

In terms of FDI, the relationship between Europe and China is characterized by important differences and lack of reciprocity. The main difference is related to the type of investment. While the majority of European investments in China are greenfield, this typology is on average negligible in Chinese investments in Europe (5.7% on average in the last ten years, according to China Investment Tracker data). Chinese firms entered Europe basically through M&As (see Hanemann and Routari 2018, Hay 2016). The lack of reciprocity is due to the fact that while Europe is an easy and open market for foreign investors, the same is not true for China, which is one of the most restrictive economies in the world for FDI according to the OECD Regulatory Restrictiveness Index. As a consequence, in the last five years Chinese investments in Europe were not mirrored by a comparable amount of European FDI in China. In 2016, Chinese FDI flows were five times higher than European ones (Bickenbach and Liu 2018).

Figure 2 - Flows of Chinese FDI per Region (2005-2018) - % of Total
Source of data: China Global Investment Tracker (Spring 2019)



2. Reaction and concerns

In 2017, the pace of Chinese foreign investment slowed down dramatically, and in 2018 outward stocks were slightly lower than inward stocks (Figure 1). There are several reasons for the decline, some of internal origin, others attributable to the reaction of recipient countries.

On the domestic side, aware of the threat to the country's financial stability in the aftermath of the RMB's unexpected devaluation in August 2015, the Chinese government increased the scrutiny of OFDI to avoid capital outflows and risky operations. According to a new regulation, some strategic OFDI are encouraged (e.g. infrastructure projects that are tied to the Belt and Road Initiative, high-tech and advanced manufacturing enterprises, R&D, energy resources), some are restricted (ODI against the countries' national interests or risky investments, such as real estate, sports clubs, hotels, entertainment and the film industry), some are prohibited, like OFDI that may endanger the national interests or security of China.

On the international side, the rapid growth of Chinese direct investments has raised concerns and fears among the advanced economies, especially in Europe and US. This is for several reasons.

The first is related to technology. China is the world's second largest economy, a strong and ambitious nation, but it is still an emerging economy. It is the first time that a developing country produces a flow of investments of this magnitude to technologically and economically more advanced countries (Meunier 2018). In this case, the positive effects on the host economy typically associated with FDI, in the form of technology transfer and spillovers, are more difficult to realize. On the contrary, there is a fear of a one-sided transfer of technology and know-how from acquired European firms to China (Bickenbach and Liu 2018, Zhang 2014). This is consistent with the Made in China 2025 government program, which explicitly states the goal of promoting the technological catching-up of Chinese companies also through investments aimed at acquiring foreign technologies and brands in strategic industries.

Furthermore, once important technology and brands have been acquired, Chinese companies could downsize or even close their activities in Europe and transfer the assets to China, taking advantage of the better cost and political conditions, with negative effects on European employment (asset-stripping) (Meunier 2018). All this could reduce the competitiveness and technological leadership of Western companies to the benefit of China's economic ambitions.

The second reason is the uniqueness of China's system of government and economic regulation, which is substantially different from those of Western and other advanced economies (Meunier 2018). China is a one-party socialist republic, a capitalist economy with "Chinese characteristics", i.e a system where the State and the Communist Party play an active and fundamental role in the economy. As a consequence, state-owned enterprises (SOEs), supported by the Government, are still very important in some strategic sectors and very active in the field of foreign direct investment.

Even when investments are made by private firms and operators, there is still the suspicion that their decisions are strongly influenced by government strategies and policies, rather than by purely economic or profit motives (Bickenbach and Liu 2018; Meunier 2018). Furthermore, the direct and indirect presence of the State in investment activities through subsidies and political protection gives Chinese companies unfair competitive advantages over European firms. The opacity of relations between Chinese investors and the Chinese government is certainly one of the main causes of the growing diffidence shown by European governments.

The third reason for concern, repeatedly put forward by European and Western governments, is the issue of strategic security. China is not a strategic and military ally of Western countries. Although it is a non-hostile nation, it is a great economic, technological and military power, which exercises increasing geo-political influence in most of the planet. There is the risk that advanced technologies, such as IT and telecommunications, normally applied to consumer products may be developed and used for military purposes (risk of dual-use technology) (Meunier 2018).

The last reason of concern relates to the political and ethical sphere (FDI as political leverage, Meunier 2018, Zhang 2014). Foreign investment may be used as a form of pressure on host governments to support China in particularly sensitive international political issues, such as human rights, Tibet, One-China Policy, Hong Kong's autonomy, as well as to support the geo-political ambitions of the OBOR program. Although this fear is probably more important for weak and developing nations that increasingly rely on China's support for their infrastructures, also advanced countries may be tempted to have a more accommodating attitude towards the Chinese government.

In Europe, USA, and in other advanced countries, the main consequence of all these concerns and fears is the development of measures that provide more tight screening of FDI. The recent EU Commission document (EU-China, A strategic outlook, March 2019) is extremely revealing in this regard. While the changed role of China in the global scenario is recognized, it is emphasized that China should be considered not only a partner in cooperation, but also: “*an economic competitor in the pursuit of technological leadership*”, and, more generally, “*a systemic rival promoting alternative models of governance*.” With regard to China, therefore, the EU must: “*robustly seek more balanced and reciprocal conditions governing the economic relationship*.”

In December 2020, after seven years of complex and difficult negotiations, EU and China signed a Comprehensive Agreement on Investment (CAI). In the words of the President of the European Commission, Ursula von der Leyen, the deal “*will provide unprecedented access to the Chinese market for European investors, enabling our businesses to grow and create jobs. It will also commit China to ambitious principles on sustainability, transparency and non-discrimination. The agreement will rebalance our economic relationship with China*”.

3. Motivation and objectives of the research

Our research is inspired by this big picture, data and discussion. Despite all the concerns and fears mentioned above, often amplified by the media or by specific political or economic interest groups, there does not seem to be any evidence so far that the presence of Chinese companies and investors represents a negative event for Europe as a whole and for the local economies. In this regard, top-down and general data on Chinese FDI cannot help us much. The in-depth investigation of bottom-up data is much more promising.

To our knowledge, statistically accurate studies on the pre and post-acquisition behaviour of companies acquired or participated by Chinese investors are still lacking. Some works analyse the post-acquisition performance of acquired firms by foreign companies in China (Wang and Wang 2015, Liu et al. 2017, Chang et al. 2013). Another strand of the literature focus on the performance of the acquiring Chinese companies, not on the performance of the target firms in developed countries (Edamura et al. 2014). The only exception is the interesting paper by Buckley et al. (2011). This study investigates the impact of FDI from different emerging countries (Brazil, Russia, India, and China) on the performance of firms acquired in Europe, North America, and Japan between 2000 and 2007. However, the scope of this work is too broad and the database used is too old to provide interesting insights on the recent wave of acquisitions by Chinese firms.

We need more and detailed studies on the pre and post- acquisition behaviour of the target companies, on their managerial styles and industrial relations, on their productivity and operational performance, and on the changes in market valuations. It would be interesting to compare these companies with other target firms taken over or controlled by multinationals from other countries. We also need more research on the regional impact of these companies, in terms of employment, technological spillovers, relations with other companies, competitive structures.

It is time to move from analysing aggregate data at the country level to a more specific assessment of individual investment projects. This research intends to offer a first contribution in this direction by providing new and detailed data on Chinese investments in Italy and by trying a first and tentative assessment of the performance of Italian companies recently acquired

by Chinese investors. This assessment discounts the fact that the acquisitions are still a few years old and many of the reorganization processes have probably just started. The idea is to continue monitoring these activities over time, in order to offer a more reliable evaluation of the costs and benefits of the growing presence of Chinese firms in Italy and useful insights for a more general assessment of the impact of Chinese FDI in Europe.

4. Research structure

In the previous paragraphs, we have seen the growing relevance of Chinese investments worldwide and in Europe. As far as Italy is concerned, Table 1 shows the stock of FDI by ultimate investment country.

*Table 1- Italy's inward direct investment stocks by ultimate investing country (Mln €)
Source: Bank of Italy – UIC*

Partner Country	2015	2016	2017	2018	2019	Share 2019
France	47,375	55,481	55,007	61,525	64,769	16.3%
United States	32,227	32,388	38,446	45,416	42,883	10.8%
Italy	30,065	31,429	39,721	38,398	41,708	10.5%
United Kingdom	29,407	31,288	38,995	39,271	38,690	9.8%
Germany	20,544	31,338	33,134	32,458	33,280	8.4%
Cayman Islands	7,475	8,502	8,848	9,921	25,645	6.5%
Luxembourg	17,907	24,386	23,485	24,757	23,699	6.0%
Switzerland	18,101	17,583	21,027	28,874	23,322	5.9%
Netherlands	15,140	18,375	17,940	15,090	12,227	3.1%
Japan	6,525	4,408	9,266	7,883	7,729	2.0%
Spain	5,760	4,712	4,410	4,952	5,060	1.3%
China	573	3,374	4,829	4,930	4,721	1.2%
Austria	4,351	3,758	3,472	3,641	3,722	0.9%
Sweden	2,027	953	2,492	2,283	2,893	0.7%
Belgium	2,451	3,840	3,049	2,074	2,440	0.6%
Denmark	2,887	2,525	2,135	1,938	2,119	0.5%
Canada	714	987	1,358	1,791	1,714	0.4%
Russian Federation	2,198	454	1,851	1,496	1,667	0.4%
Ireland	628	1,316	2,966	1,925	1,494	0.4%
Singapore	188	181	1,373	1,431	1,436	0.4%
Qatar	496	1,303	1,781	1,377	1,267	0.3%
Republic of South Korea	501	566	1,022	1,373	1,028	0.3%
Chinese Taipei	234	317	360	823	743	0.2%
Hong Kong, China	41	657	- 47	12	4	0.0%
Others	6,892	7,399	8,925	9,148	7,516	1.9%
Unallocated and confidential	58,022	47,018	28,308	35,716	44,517	11.2%
Total	312,728	334,537	354,151	378,502	396,294	100%

Official statistics on FDI such as the one shown in Table 1 present several limits, the most relevant being the distortion in flows and stocks due to the increasing relevance of investments made through tax havens and tax friendly countries. The relevance in Table 1 of the small Luxembourg and the presence of Cayman Islands even in statistics that should report the ultimate investment country is a clear evidence of this distortion. Besides, official statistics only measure the relevance of foreign investments and they are of little use to understand the effectiveness of such investments. This is why we decided to study the Chinese FDI

phenomenon with a bottom-approach, aiming to analyze all the Italian companies participated or controlled by Chinese companies or individuals of Chinese nationality, with a particular attention to acquisitions. Besides eliminating the distortion related to tax havens, this approach has enabled us to analyze the results of such investments and to obtain a good quantitative base on which to found a more detailed and qualitative analysis of specific cases.

The objectives of our research can be traced to the following points:

- analyze the trend of Chinese direct investments in Italy over time;
- evaluate the performance of Italian companies acquired by Chinese investors;
- analyze the strategic objectives and management style of Chinese investors.

In order to pursue the objectives above, we articulated our research work into three phases.

First of all, we have built a dataset containing all the Italian companies controlled by Chinese investors, adopting a very broad approach and therefore including all types of investment (acquisitions, greenfield investments, minority stakes, entrepreneurial activities), companies of all sizes and both majority and minority shareholdings. The aim of this first phase is to create a list as complete as possible of Italian companies participated by Chinese shareholders and to classify them along several parameters, the most important of which are the type of investment, the type of shareholder, and the size. The first phase of the research has enabled us to identify subsets of companies controlled by Chinese corporations or individuals on which to carry out a more in-depth analysis.

In the second phase of our research we built a dataset containing the results in terms of turnover, employees, assets, profitability, equity, and financial debts of Chinese controlled companies. At present this dataset has been built only for acquisitions of companies with a turnover of at least €2 Mln, but in the future it will be enlarged to include other categories such as greenfield investments. The two dataset together constitute what we call the “China-Italy FDI Database”.

The third phase of our research consists in a qualitative analysis of the most relevant companies included in the database, with the aim of understanding the management style of Chinese investors and their strategic objectives. We are at the very beginning of this third phase and at the moment we have analyzed 34 cases using secondary data, creating the basis for future structured interviews.

5. The construction of the China-Italy FDI Database

Our China-Italy FDI Database (CI FDI DB) is made of two related datasets:

- CI FDI Profiles Dataset: includes all the relatively stable information for each company, such as Company Name, Legal form, Province, Incorporation year, and so on. This dataset includes companies of all sizes and at present contains 7.379 companies.
- CI FDI Results Dataset: includes all the information that needs to be updated on a yearly basis, such as Employees, Revenues, Total assets, and other financial indicators. At present this datasets covers only the companies with a turnover higher than €2 Mln which have been acquired by Chinese shareholders, therefore excluding greenfield investments and entrepreneurial activities started up by citizens of Chinese nationality living in Italy. At present this dataset contains 198 companies, but only for 173 of these we succeeded in gathering all the financial data starting from one year before the acquisition.

In both datasets, the source for the data is mainly the AIDA database by Bureau Van Dijk, integrated with information obtained from other databases such as Zephyr and SDC Platinum. Besides the information downloaded from AIDA, we added manually other information in order to be able to classify the companies according to several criteria. We refer to Appendix 1 for the list of all the fields downloaded from Aida and to Appendix 2 for the list of the field added manually, which basically are the following:

- size category;
- share controlled (Majority; Minority or Minority <10%);
- most relevant Chinese shareholder name and type (Individuals; Private company or State Owned);
- Global Ultimate Owner (GUO) type;
- investment type (Acquisition, Greenfield, Entrepreneurial Activities or Minority)
- industry classification by sector and by technology (for manufacturing sectors) or knowledge intensity (for service sectors);
- presence of listed companies in the chain of control;
- presence of companies in the chain of control located in tax havens.

As stated above, at present the companies included in the CI FDI Profiles Dataset are 7.379. These companies have been identified as follows:

- we have filtered on AIDA all the Italian companies with at least one Chinese shareholder (including minority shareholdings);
- we have consulted several M&A databases, including Zephyr (by Bureau van Dijk), SDC Platinum (by Thomson Reuters) and Datenna, making the list of all the M&A operations with Chinese acquirers and Italian targets. Almost all the targets were already in the AIDA set and we manually added the few companies that were not already included. The reason behind these missing companies was usually the fact that for some investors located in tax havens AIDA had not been able to identify the real global ultimate owner.

From the point of view of the relevance of the Chinese share, our dataset is distributed as described in the following table.

Table 2 – CI FDI Profile Dataset – Companies by relevance of Chinese share

Chinese Share	No. of companies
Majority	5,964
Minority	1,174
Minority <10%	206
Shares sold/Dissolved	35*
Grand Total	7,379

*These are ex acquisitions or greenfield investments which have been sold or dissolved. Including these, the total number of companies with a majority Chinese stake in the present or in the past is 5.999

As far as the representativeness of the sample is concerned, it is important to underline what follows:

- excluding possible mistakes, the dataset includes all the Italian companies controlled by Chinese shareholders, as Aida enables the filtering by the nationality of the Global Ultimate Owner, regardless of the nationality of the direct shareholder. For example, a company directly controlled by a shareholder located in Luxembourg is included if the Luxembourg shareholder is ultimately controlled by a Chinese company.
- Italian companies with a minority Chinese stake are included only if the share is directly owned by a Chinese company, as AIDA allows the identification of the ultimate owner only for majority stakes. Minority stakes are therefore only partially represented in our dataset.

According to the guidelines established by the Organization of Economic Co-operation and Development (OECD), a foreign direct investment is defined by a minimum ownership stake of 10%. However, we decided to include also smaller shares in our dataset, as they may indicate an interest worth of attention. Table 4 shows the largest Italian companies with a Chinese minority stake included in the dataset.

Table 3 – Largest Italian companies with a minority Chinese stake included in the CI FDI Profile Dataset

Company name	Turnover Mln EUR	NACE Rev. 2 description	Chinese investment year	Chinese share	Chinese shareholder name	Chinese shareholder Type
ENI S.P.A.	28,496	Manufacture of refined petroleum products	2020	1.01	PEOPLE'S BANK OF CHINA	Bank
INTESA SANPAOLO SPA	11,418	Other monetary intermediation	2015	2.01	PEOPLE'S BANK OF CHINA	Bank
AUTOSTRADA PER L'ITALIA S.P.A.	3,835	Service activities incidental to land transportation	2017	5.00	SILK ROAD FUND CO. LTD. CHINA	Corporate
SAIPEM S.P.A.	2,382	Construction of residential and non-residential buildings	2014	2.03	PEOPLE'S BANK OF CHINA	Bank
MARR S.P.A.	1,578	Non-specialised wholesale trade	2019	0.21	ANBANG INSURANCE GROUP CO., LTD.	Insurance company
FRENI BREMBO - S.P.A.	948	Manufacture of other parts and accessories for motor vehicles	2017	0.14	ANBANG INSURANCE GROUP CO., LTD.	Insurance company
SAME DEUTZ-FAHR ITALIA S.P.A.	925	Manufacture of agricultural and forestry machinery	2018	10.00	KINGENTA ECOLOGICAL ENGINEERING GROUP COMPANY LIMITED	Corporate
IMA S.P.A.	836	Manufacture of other general-purpose machinery nec	2016	0.20	ANBANG INSURANCE GROUP CO., LTD.	Insurance company
ANSALDO ENERGIA S.P.A.	678	Manufacture of engines and turbines, except aircraft, vehicle and cycle engines	2014	44.44	SHANGHAI STATE OWNED ASSETS SUPERVISION AND ADMINISTRATION COMMISSION	Public authority, state, government
FASHION BOX S.P.A.	190	Manufacture of wearing apparel, except fur apparel	2016	49.00	BIG MEGA DEVELOPMENT LIMITED+HUBB FASHION INVESTMENT LIMITED	Corporate
MAGNI TELESCOPIC HANDLERS S.R.L.	161	Manufacture of lifting and handling equipment	2016	20.00	ZHEJIANG DINGLI MACHINERY COMPANY LIMITED	Corporate
TREVI S.P.A.	137	Other specialised construction activities nec	2007	0.22	INTERNATIONAL FOUNDATION CONSTRUCTION LTD	Foundation/ Research institute
GENERAL MEDICAL MERATE - S.P.A.	90	Manufacture of irradiation, electromedical and electrotherapeutic equipment	2019	31.37	KANGDA MEDICAL EQUIPMENT GROUP CO., LIMITED	Corporate

6. Classification of the companies included in the database

Although our database includes many Italian companies with minority Chinese stakes, our work has been focused mainly on majority stakes. Especially for the latter group, we classified the companies according to the first year of the Chinese investment, investment type, Chinese shareholder type and GUO type.

The classification is based both on information provided by AIDA and other databases, such as Zephyr and SDC Platinum, and on information gathered online, for example by searching for articles about the company and / or visiting its website. As the classification of thousands of companies is very time consuming, first of all we tried to classify the companies in the dataset automatically, on the base of the data downloaded from AIDA. After this first stage, we manually classified all the remaining companies with revenues over 2 million euros.

The following table summarizes the distribution of Italian companies controlled by Chinese shareholders by investment type.

*Table 4 – Chinese controlled Italian companies by Type of Investment and Size (includes 5.964 majority stakes + 35 cases of shares sold/dissolved)
Source: CI FDI Profile Dataset*

Chinese Share	Over 2 Mln	Under 2 Mln or n.a.	Total
Acquisition	198	127	325
Greenfield	67	216*	283
Total Acquisition + Greenfield	265	343	608
Entrepreneurial Activities	259	4,616	4,875
Total classified companies	524	4,959	5,483
Undetected		516	516
Grand Total	524	5,475	5,999

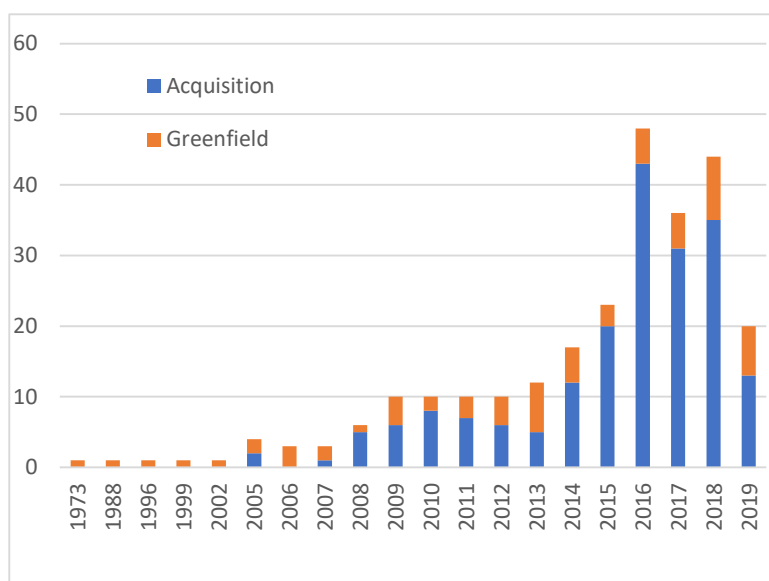
* Greenfield investments in companies under 2Mln are probably overstated compared to acquisitions, as we assumed that companies incorporated from 2017 on and owned by a Chinese company were greenfield, while we didn't check all the companies incorporated before 2017 one by one and this resulted in 516 undetected companies.

We have classified the companies by type of investment according to the following criteria:

- companies have been classified as “Acquisition” if they were not controlled by Chinese shareholders in the year of their foundation;
- companies have been classified as “Greenfield” if they were controlled by Chinese companies in the year of their foundation;
- companies have been classified as “Entrepreneurial activities” if they are directly controlled by a Chinese individual and there are no other companies involved in the control chain.

The analysis of the 265 Acquisitions and Greenfield investments with turnover over 2 Mln € by year shows a strong increase in the number of Chinese investments (especially acquisitions) since 2014 and a sudden decrease in 2019.

*Figure 3 – Chinese Acquisitions and Greenfield investments by year
(265 companies with turnover over 2 Mln)
Source: CI FDI Profile Dataset*



The vast majority of Chinese Acquisitions and Greenfield investments concerns companies headquartered in Northern Italy, especially in Milan (222 investments), while Rome accounts for only 68 investments. Table 5 shows the investments by region. Slightly different is the situation for the smaller entrepreneurial activities, which are more scattered throughout the national territory (Table 6).

*Table 5 – Chinese Acquisitions and Greenfield investments by region
Source: CI FDI Profile Dataset*

Region	Acquisition	Greenfield	Total
Lombardia	131	162	293
Lazio	47	22	69
Emilia Romagna	32	12	44
Veneto	23	21	44
Piemonte	23	19	42
Trentino Alto Adige	27	12	39
Toscana	13	13	26
Liguria	4	8	12
Friuli Venezia Giulia	7	3	10
Other regions	18	11	29
Total	325	285	608

Table 6 – Chinese Entrepreneurial activities by region
Source: CI FDI Profile Dataset

	Entrepreneurial Activities
Lombardy (Milan 905 and Brescia 129)	1,357
Latium (Rome 818)	882
Tuscany (Prato 469 and Florence 244)	840
Veneto (Padova 154)	414
Emilia Romagna (Bologna 81)	299
Campania (Naples 163)	224
Piemonte (Turin 89)	158
Apulia	146
Sicily	140
Other regions	415
Total	4,875

A very interesting analysis can be done on the type of shareholder involved in Chinese investments in Italy. As far as acquisitions are concerned, which represent the focus of our study, the shareholders are usually private companies, followed by government entities and private individuals (Table 7).

Table 7 – Chinese controlled Italian companies by Investment Type, Type of Shareholder and Size (includes 5.964 majority stakes + 35 cases of shares sold/dissolved)
Source: CI FDI Profile Dataset

Type of shareholder (GUO)	Acquisition	Greenfield	Entrepreneurial Activities	Undetected	Total
Over 2 Mln	198	67	259		524
Individuals	12	5	259		276
Private company	146	54			200
State Owned	40	8			48
Under 2 Mln or n.a.	127	216	4,616	516	5,475
Individuals	43	8	4,616		4,667
Private company	68	202		107	377
State Owned	16	6			22
Undetected				409*	409
Total	325	283	4,875	516	5,999

*For these companies we do not have the name of the owner, but most of them are small commercial activities and therefore the owners are most likely individuals.

Tables 8 and 9 focus only on the 198 acquisitions of companies with a turnover higher than €2 mln, showing that even if the state owned companies are fewer than the ones controlled by private companies or individuals, their total turnover is higher. Therefore government entities' acquisitions are less numerous but target larger companies. However, this result is heavily influenced by Pirelli, a very large group controlled by the China's People Republic through the China National Chemical Corporation. Excluding the 5 companies of the Pirelli Group from

the analysis, state owned acquisitions are still larger, but closer to the average size of the other acquisitions.

Table 8 – Chinese Acquisitions (turnover higher than €2 mln only) by Type of Shareholder
Source: CI FDI Profile Dataset

Type of shareholder	No. of companies	Total Turnover (Mln €)	Average Turnover (Mln €)
State Owned	40	5,978	149
Private company	146	6,345	43
Individuals	12	118	10
Total	198	12,441	63

Table 9 – Chinese Acquisitions (turnover higher than €2 mln only, Excluding Pirelli Group) by Type of Shareholder
Source: CI FDI Profile Dataset

Type of shareholder	No. of companies	Total Turnover (Mln €)	Average Turnover (Mln €)
State Owned (Excluding Pirelli Group)	35	2,420	69
Private company	146	6,345	43
Individuals	12	118	10
Total	193	8,883	46

Table 10 shows the industries of the 198 acquired companies with a turnover higher than €2 Mln in our database. Besides the manufacturing of rubber and plastic products (heavily influenced by Pirelli Tyre), Chinese investors seem primarily interested in wholesale businesses as well as in the manufacturing of machinery and equipment.

Table 10 – Chinese Acquisitions (turnover higher than €2 mln only) by Industry
Source: CI FDI Profile Dataset

Industry	No. of companies	Turnover (last year)
Manufacture of rubber and plastic products	4	4,082
Wholesale trade, except of motor vehicles and motorcycles	36	1,892
Manufacture of electrical equipment	6	1,145
Manufacture of machinery and equipment n.e.c.	38	1,135
Wholesale and retail trade and repair of motor vehicles and motorcycles	3	660
Manufacture of other transport equipment	5	526
Manufacture of computer, electronic and optical products	6	396
Manufacture of chemicals and chemical products	5	332
Manufacture of fabricated metal products, except machinery and equipment	7	278
Manufacture of food products	3	251
Manufacture of motor vehicles, trailers and semi-trailers	3	198
Programming and broadcasting activities	1	171
Motion picture, video and television programme production, sound recording and music publishing	11	159
Manufacture of basic pharmaceutical products and pharmaceutical preparations	6	158
Other professional, scientific and technical activities	1	145
Computer programming, consultancy and related activities	5	94
Activities of head offices; management consultancy activities	6	92
Retail trade, except of motor vehicles and motorcycles	2	85
Sports activities and amusement and recreation activities	3	80
Food and beverage service activities	1	71
Manufacture of wearing apparel	3	62
Architectural and engineering activities; technical testing and analysis	4	57
Manufacture of furniture	3	51
Civil engineering	2	48
Scientific research and development	4	47
Other manufacturing	3	35
Manufacture of textiles	3	30
Manufacture of basic metals	1	25
Waste collection, treatment and disposal activities; materials recovery	3	21
Manufacture of leather and related products	3	21
Advertising and market research	1	19
Accommodation	3	15
Human health activities	2	11
Financial service activities, except insurance and pension funding	1	9
Specialised construction activities	2	8
Warehousing and support activities for transportation	2	8
Repair and installation of machinery and equipment	1	6
Manufacture of other non-metallic mineral products	1	4
Rental and leasing activities	1	4
Creative, arts and entertainment activities	1	4
Real estate activities	1	3
Electricity, gas, steam and air conditioning supply	1	3
Total	198	12,441

Table 11 offers a more concise view of the type of sectors Chinese investors are more interested in, grouping manufacturing industries by technological intensity (High, Medium. and Low tech) and service industries by knowledge intensity (Knowledge Intense - KI Services and Less Knowledge Intense – Less KI Services)⁴.

⁴ We have classified the industries adopting the Eurostat's aggregation by NACE Rev.2 at 3-digit level.

*Table 11 – Chinese Acquisitions and Greenfield investments
by type of Industry*

Source: CI FDI Profile Dataset

Acquisitions	No. of companies	Turnover – Mln € (last available year)
High and Medium-high tech	67	3,434
Medium-low tech	16	4,852
Low tech	18	451
KI Services	40	888
Less KI Services	49	2,738
Utilities and Constructions	8	80
Total	198	12,441

Greenfield	No. of companies	Turnover Mln € (last available year)
High and Medium-high tech	9	457
Medium-low tech	6	115
KI Services	5	159
Less KI Services	46	2,027
Utilities and Constructions	1	3
Total	67	2,761

As Table 11 clearly shows, Chinese investors are mostly interested in acquiring companies operating in high tech and medium-high tech sectors. Apparently the medium-low tech sector is also quite relevant, but in this case the turnover is heavily influenced by Pirelli Group, which according to the Eurostat classification belongs to a medium-low tech industry (manufacturing of rubber and plastic products) but in reality should be considered medium-high tech.

For both acquisitions and greenfield investments, less knowledge intense services are mainly attributable to wholesale activities performed by Italian branches of foreign companies (Chinese companies in the case of greenfield investments, foreign companies acquired by Chinese investors in the case of acquisitions).

Finally, we analysed the chain of control of the companies controlled by Chinese shareholders to verify if one or more of the companies in the chain of control were based in tax havens⁵. Tables 12 and 13 show the results of this analysis.

⁵ We identified tax havens on the basis of the rankings published by the Tax Justice Network (<https://www.taxjustice.net>), considering tax havens the jurisdictions with a Tax Haven Score of 64 over 100 or higher. To put this number in perspective, Italy has a tax haven score of 51 and the lowest score in the ranking is 33 (Greece).

Table 12 – Chinese Acquisitions and Greenfield investments (present investments only, shares sold/dissolved companies have been excluded) by involvement in tax havens.

Sources: CI FDI Profile Dataset

Present Acquisitions and Greenfield	No	Yes	Total
Over 2 Mln	135	108	243
Under 2 Mln or n.a.	202	130	332
Total	337	238	575

	No	Yes	Total
Over 2 Mln	56%	44%	100%
Under 2 Mln or n.a.	61%	39%	100%
Total	59%	41%	100%

Table 13 – Tax havens involved in the chain of control of present Acquisitions and Greenfield investments. Sources: CI FDI Profile Dataset

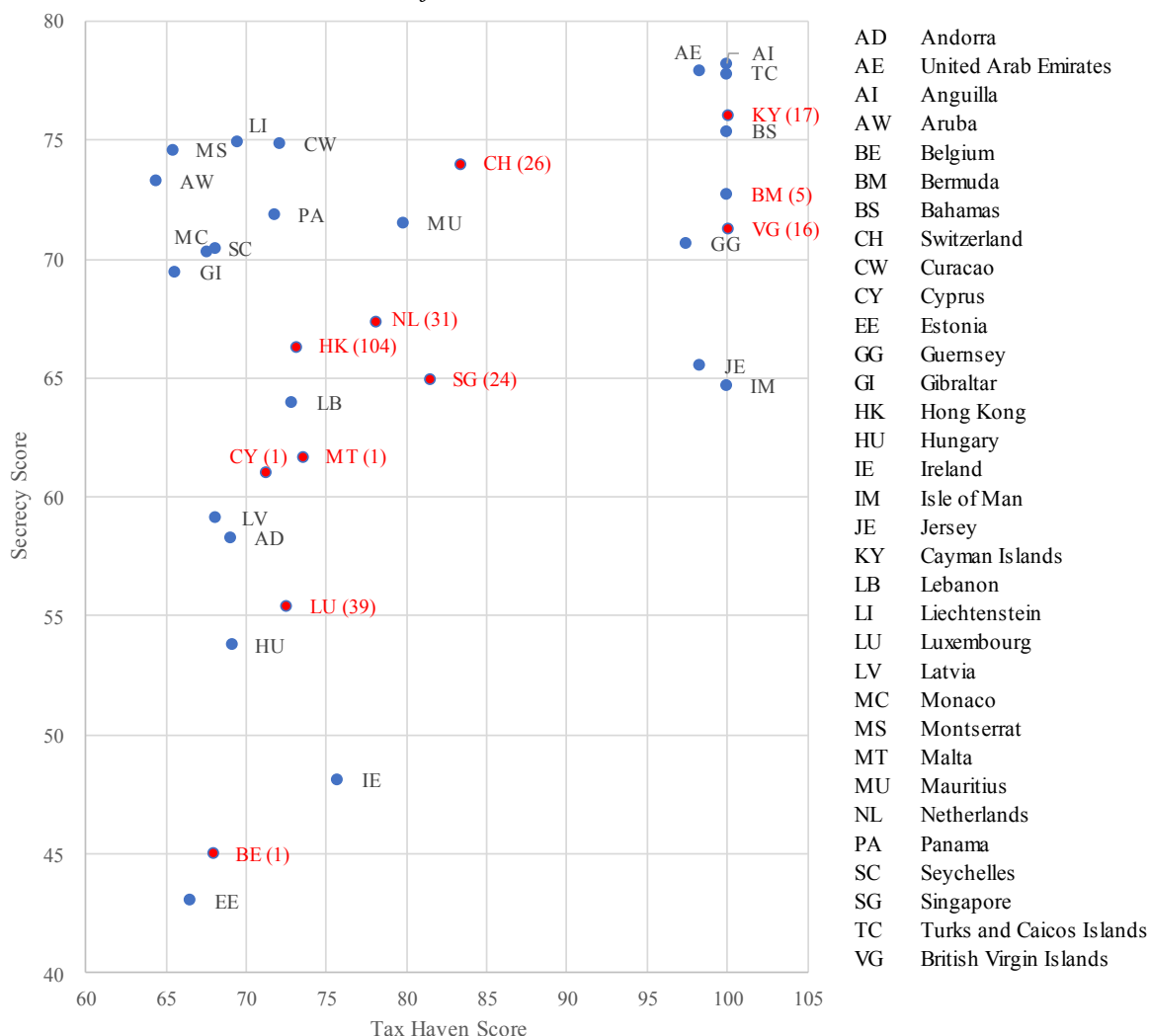
Tax havens jurisdictions	No. of companies
HK	69
LU CH CY KY VG*	38
CH	22
LU	18
HK LU	15
NL SG	14
NL	9
KY	7
HK VG	7
BM	5
VG	4
HK SG	4
HK NL	4
KY VG	3
SG	3
HK KY	3
HK KY VG	2
NL CH	2
LU CH	2
LU SG	2
NL MT	1
LU KY	1
NL KY	1
BE	1
LU SG CY	1
Total	238

* All the 38 companies in this group belong to Suntech Power Holdings, a producer of solar panels which defaulted in 2013. Probably protected by the very long chain of off-shore shareholders, the Italian companies of the group (mostly small solar power plants) are still operational.

The analysis shows a relatively high interest of Chinese companies in tax havens. Even excluding Hong Kong (which is quite a natural basis for overseas Chinese investments) and the peculiar case of the 38 companies controlled by Suntech Power Holding, 131 companies out of 575 (23%) has one or more controlling shareholder based in a tax haven. To make a comparison, a similar analysis made on Italian companies controlled by US shareholders showed that 38% of the companies had one or more shareholders based in tax havens (in this case mainly Netherlands and Luxemburg).

Figure 3 summarizes the results of the tax havens analysis by showing all the tax havens considered and the tax havens used by Chinese-controlled acquisitions and greenfield investments. The tax havens involved are in red and we report in brackets the number of companies with at least one company in the chain of control based in the jurisdiction.

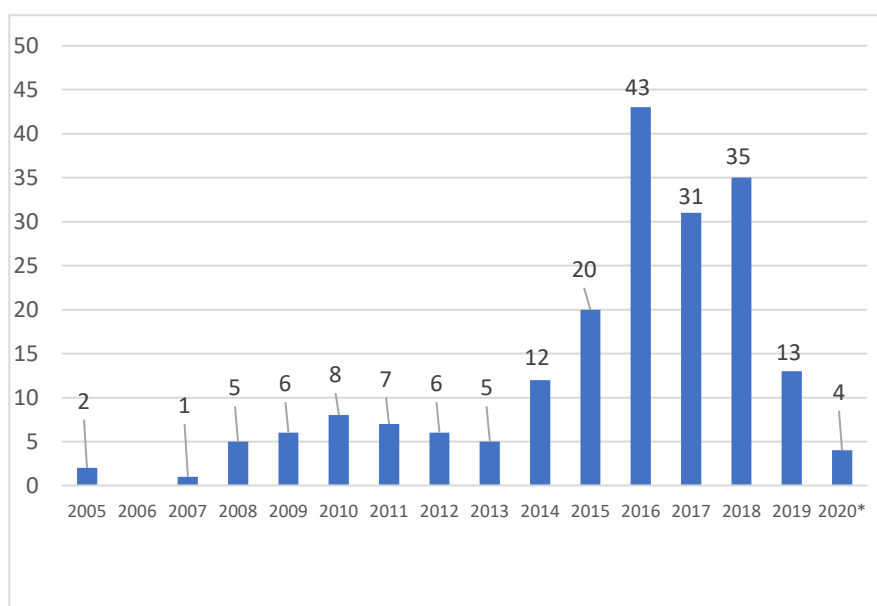
Figure 3 Tax havens considered in our analysis and tax havens used by Chinese Acquisitions and Greenfield companies (present investments only, shares sold/dissolved companies have been excluded) Sources: CI FDI Profile Dataset and Tax Justice Network Scores



7. The results of Chinese acquisitions in Italy

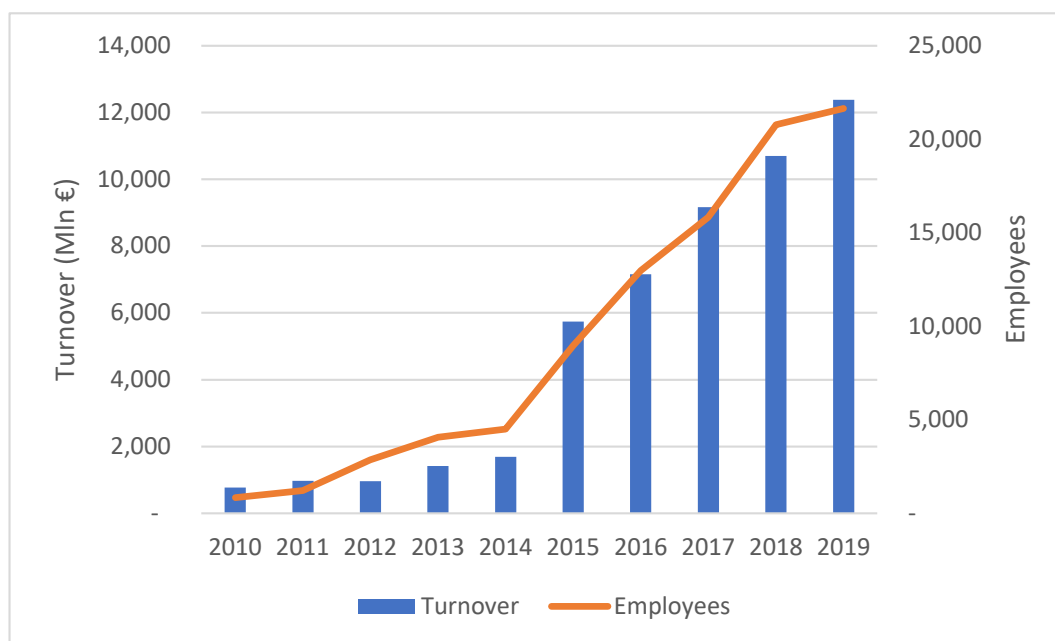
The analysis carried out on the CI FDI Profiles Dataset has enabled us to identify 198 acquisitions with revenues of at least 2 million euros. Figure 4 shows the distribution of these companies by acquisition year, while Figure 5 shows total turnover and employees by year for the same companies: in 2019 they accounted for about 20.000 employees and they generated a turnover of around 12 billion euros.

*Figure 4 – Chinese Acquisitions (turnover higher than €2 mln only) by year**
Source: CI FDI Results Dataset



*The dataset has been built in November 2020 and 2020 data are incomplete.

Figure 5 – Total Revenues and Employees of Chinese Acquisitions (turnover higher than €2 mln only) by year. Companies are included starting from the year of acquisition
Source: CI FDI Results Dataset



In order to assess the impact of the Chinese acquisition on the target companies, we have downloaded from Aida the historical series of the following financial results: Revenues from Sales and Services, Employees, EBITDA, Total Assets, Total Fixed Assets, Total Shareholder's Funds and we have built a series of tables showing such results after 1 year from acquisition, 2 years from acquisition, and so on up to 10 year from acquisition. We downloaded the data on November 2020 and for almost all the companies the data were available up to 2019. Table 14 shows how long the different historical series are and the number of companies we have in our dataset for each period. For example, we have only 10 companies with a series of 10 years of available data (acquired in 2008 or before), and 126 companies with at least a series of 2 years after acquisition. We did not analyze the results of companies with less than 2 years of available data.

Table 14 – Length of data series and number of available companies
Source: CI FDI Results Dataset

Data Availability	No. of Companies
10 years after acquisition	10
9 years after acquisition	17
8 years after acquisition	24
7 years after acquisition	30
6 years after acquisition	33
5 years after acquisition	42
4 years after acquisition	60
3 years after acquisition	94
2 years after acquisition	126
1 year after acquisition	152
Data available for the acquisition year	167
Data available for the year before the acquisition	173
Companies with incomplete historical data	25
Total acquisitions	198

The following Figures show the total results for each variable by length of available data series. Besides companies with less than 2 years of available data after the acquisition, we did not consider series with more than 7 years of available data, as for these series the number of companies was too low.

Figure 6 – Total Revenues of Italian companies acquired by Chinese shareholders
Source: CI FDI Results Dataset



Figure 7 – Total Employees of Italian companies acquired by Chinese shareholders
Source: CI FDI Results Dataset



Figure 8 – EBITDA of Italian companies acquired by Chinese shareholders
Source: CI FDI Results Dataset

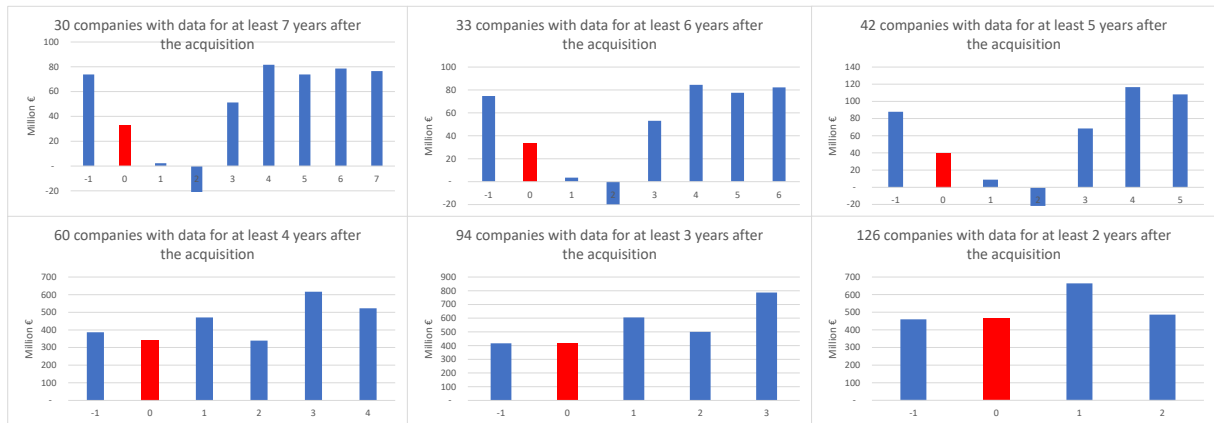


Figure 9 – Total Assets of Italian companies acquired by Chinese shareholders

Source: CI FDI Results Dataset

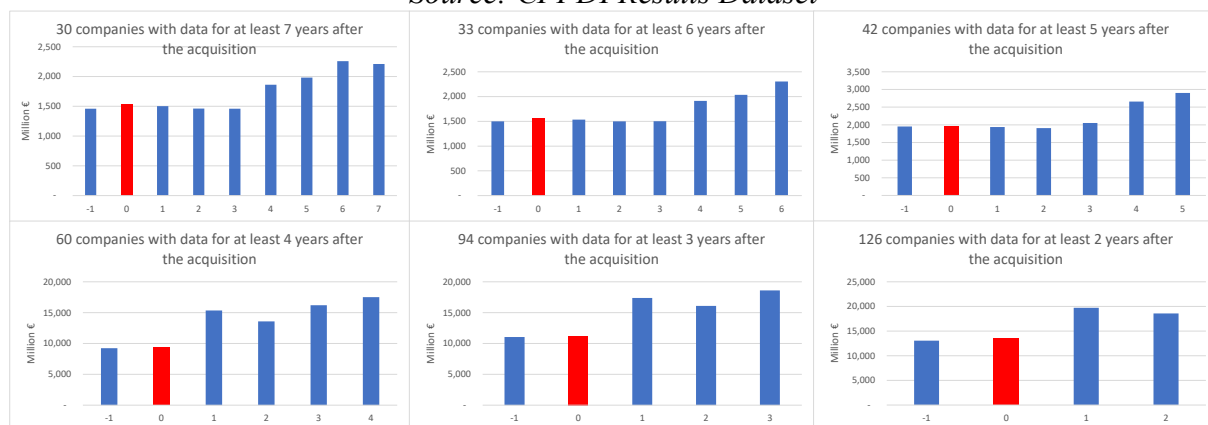


Figure 10 – Total Fixed Assets of Italian companies acquired by Chinese shareholders

Source: CI FDI Results Dataset

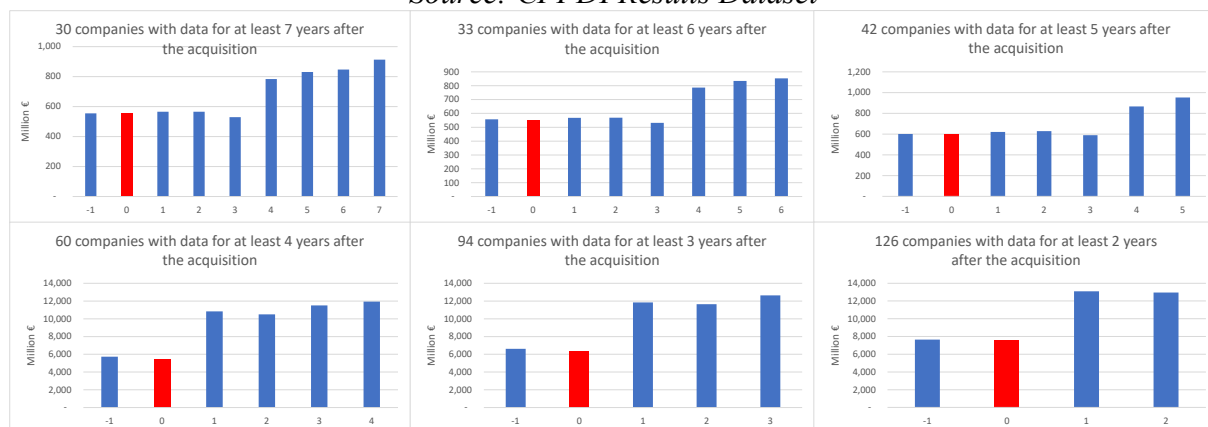
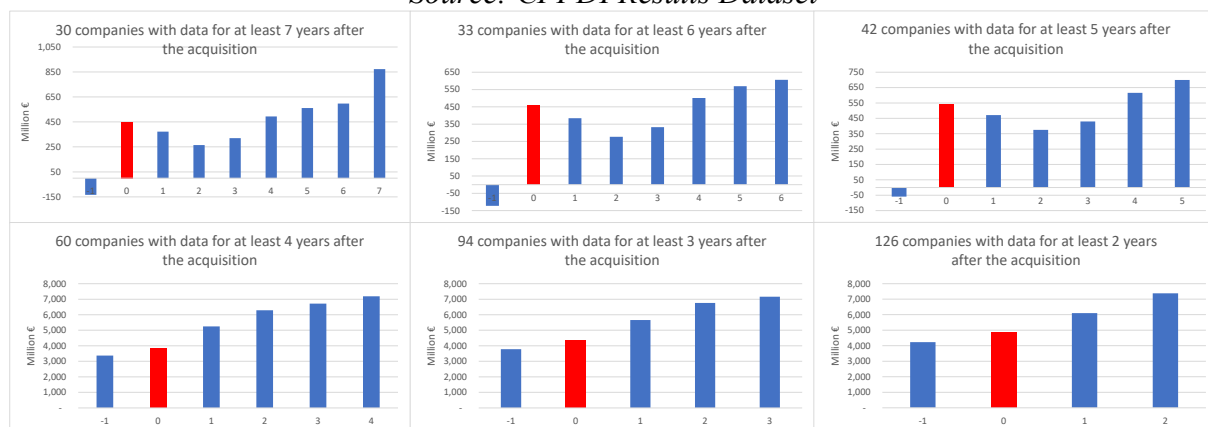


Figure 11 – Total Shareholders' Funds of Italian companies acquired by Chinese shareholders

Source: CI FDI Results Dataset



As total results are heavily influenced by the largest companies in the dataset, in order to offer an analysis of the results not influenced by the size of the observed companies, in Table 12 we show the number of companies that experienced an increase or a decrease in the results considered. The change has been calculated comparing the last available year with the year of the acquisition (year 0).

Table 15 - Results from year 0 to the last available year of Italian companies acquired by Chinese shareholders
Source: CI FDI Results Dataset

Increase/Decrease	Turnover	Employees	EBITDA	Total Assets	Fixed Assets	Equity
Decrease or no change	43	52	71	38	50	38
Increase						
- increase <=10%	11	13	5	12	5	9
- increase between 10% and 30%	12	20	5	22	13	13
- increase between 30% and 50%	9	9	3	15	8	14
- increase over 50%	46	27	37	34	45	47
Total no. of Companies	121	121	121	121	121	121

Observing figures 6 to 11 and Table 15, we can comment the results as follows:

- First of all, we must underline that as most of the acquisitions are quite recent, the number of companies with long historical series of date is small. Even if some trends can be identified, the analysis will be much more interesting in the coming years, when we will have longer time series.
- Overall the results appear quite positive. Roughly 2/3 of the companies acquired have seen an increase in turnover, total assets, and shareholder's funds and 50% has had an increase in Fixed Assets. A significant percentage of companies has obtained increases for these variable higher than 50% and the positive trend is confirmed also by total results (Figures 6, 9, 10, and 11). As far as revenues are concerned, the longest time series show a decrease in revenues soon after the acquisition followed by a steady growth starting from year 3. This phenomenon can be attributed to the inevitable problems that can arise immediately after an acquisition. In addition, in some cases, the acquisition took place in 2008, just before the severe crisis of year, 2009 which saw the sales of many durable goods collapse.
- Employee and profitability results appear more balanced. As far as employees are concerned, the number of companies which has registered an increase almost equals the number of those which has seen a decrease. Figure 7 as well shows a very stable number of total employees, and this is true also when the revenues show a decrease soon after the acquisition year (Figure 6). It seems that Chinese shareholders prefer to avoid layoffs – if possible – even in front severe reductions in turnover.
- The stable number of employees together with weak revenues soon after the acquisition may explain the sharp decrease in the EBITDA in the first years after the acquisition followed by a recovery in the following years. This trend can have several explanations: the target company may have inflated the EBITDA in the acquisition year with short term policies such as the cut of development cost; the target company has been sold because it was on the verge of a severe crisis; adapting to the new ownership and exploiting synergies requires efforts and at the beginning the cost could be higher than the benefits. Another hypothesis which needs further validation could be that Chinese shareholders prefer stability over short term profitability and do not react immediately to a crisis with layoffs and cost reductions.

8. The performance of the acquired firms in the manufacturing sector

The data reported and discussed so far refer to all the companies acquired by Chinese investors, without specific sectoral insights. Furthermore, and above all, the conclusions do not take into account the fact that the performance of Chinese companies is partly affected by the performance of the business sector to which they belong.

In this section we try to fill this gap by evaluating the performance of Chinese companies in relation to more general industry trends. This will be done through the elaboration and use of some simple descriptive statistics. The focus is on the manufacturing sector, the most relevant from the point of view of the potential impacts of Chinese acquisitions on the Italian economy.

Table 16 shows the number of Italian companies controlled by Chinese shareholders in the manufacturing sector, at the NACE 2-digit level, and by technology level, according to the EUROSTAT classification. Only companies with a total turnover of over two million euros in the last year (2018 or 2019) are reported.

Table 16 – Breakdown of acquired firms (turnover higher than €2 Mln only) in the manufacturing industry by sector
Source: CI FDI Results Dataset

NACE Code	Acquisitions - Manufacture Sector only	No. of acquisitions	%
	High and Medium-high tech	67	66%
27	Manufacture of electrical equipment	6	
28	Manufacture of machinery and equipment n.e.c.	38	
26	Manufacture of computer, electronic and optical products	6	
20	Manufacture of chemicals and chemical products	5	
29	Manufacture of motor vehicles, trailers and semi-trailers	3	
21	Manufacture of basic pharmaceutical products and pharmaceutical prep.	6	
30 (no 301)	Manufacture of other transport equipment	3	
	Medium-low tech	16	16%
22	Manufacture of rubber and plastic products	4	
301	Ships and boats	2	
25	Manufacture of fabricated metal prod., except machinery and equipment	7	
24	Manufacture of basic metals	1	
33	Repair and installation of machinery and equipment	1	
23	Manufacture of other non-metallic mineral products	1	
	Low tech	18	18%
10	Manufacture of food products	3	
14	Manufacture of wearing apparel	3	
31	Manufacture of furniture	3	
32 (no 325)	Other manufacturing	3	
13	Manufacture of textiles	3	
15	Manufacture of leather and related products	3	
	Total	101	100%

With regard to manufacturing, Chinese investors are mainly interested in the acquisition of medium-high technology companies (66% of the total), most of which in the machinery and

equipment sector (motors, turbines, pumps, compressors, taps, ovens, burners, machines for industry and metalworking). This is one of the most dynamic and export-oriented sectors of the Italian economy (17.5% of manufacturing export). Most of these acquisitions are probably motivated by the need to acquire valuable know-how and technology. Notice that in Europe, the industrial machinery and equipment, ICT and automotive sectors have been the main targets of Chinese investors over the past decade (see Ktratz et al. 2020). In Italy, however, the first two sectors appear to be relatively less attractive to Chinese companies so far.

Chinese investors are also interested in buying low-tech companies producing traditional Made in Italy products in the textile, clothing, leather and footwear sectors (18% of the total). In this case, it is likely that investors aim to achieve greater market access or take advantage of an established brand.

In terms of size measured by average revenues in 2017-2019, the acquired firms in the machinery and equipment sector are relatively small. The largest companies acquired are in the sector of rubber and plastics, basically due to the acquisition of Pirelli, followed by other transport equipment and electrical equipment, although in these cases the number of acquisitions is lower (Table 17).

Table 17 – Breakdown of acquired firms in the manufacturing industry by sector and size (number of firms and average revenues 2017-2019, '000 euros)
Source: CI FDI Results Dataset

NACE Rev. 2	Manufacturing sector	N° Acquired firms	%	Average revenues 2017-2019	%	Average revenues 2017-2019 / N° firms	%
28	Machinery and equipment n.e.c.	38	37,62	871.330	35,42	24.895	1,24
26	Computer, electronic and optical products	6	5,94	413.654	5,75	68.942	3,43
27	Electrical equipment	6	5,94	822.249	4,77	137.042	6,81
21	Pharmaceuticals	6	5,94	146.428	6,22	29.286	1,46
20	Chemicals and chemical products	5	4,95	347.136	6,29	86.784	4,31
22	Rubber and plastics	4	3,96	3.928.069	8,91	982.017	48,81
25	Metal products	7	6,93	207.777	5,89	51.944	2,58
10	Food products	3	2,97	274.341	1,95	91.447	4,55
14	Wearing apparel	3	2,97	131.566	3,29	43.855	2,18
15	Leather products and footwear	3	2,97	19.673	0,42	6.558	0,33
29	Motor vehicles	3	2,97	201.975	2,30	67.325	3,35
31	Furniture	3	2,97	49.841	4,16	16.614	0,83
13	Textiles	3	2,97	26.467	2,38	13.234	0,66
30	Other transport equipment	5	4,95	581.591	5,25	290.795	14,45
32	Other manufacturing	3	2,97	40.871	2,69	20.435	1,02
33	Repair and installation of machinery	1	0,99	90.170	1,16	45.085	2,24
23	Other non-metallic mineral products	1	0,99	3.991	0,88	3.991	0,20
24	Basic metals	1	0,99	31.537	2,27	31.537	1,57
	TOTAL	101	100,00	8.188.667	100,00	2.011.786	100,00

In the service sector, the largest number of target companies are by far in the wholesale and retail sector. This is clearly a low knowledge-intensive sector, but ownership of an existing distribution network can be crucial for the sale of a large variety of Chinese products in the Italian market. Note that wholesale and retail trade accounted for the vast majority of the entrepreneurial activities of Chinese investors.

We now turn to the analysis of the performance of the target companies after the takeover by Chinese shareholders. To measure the performance, we have selected three main variables.

The first two are employment and revenues, the third, and probably most important variable is the value added per employee, a standard indicator of productivity. For all these variables, we take the value of the year before the acquisition and compare it with the value reported in the last available year (2019 for most companies). We restrict our analysis to the manufacturing sector. We exclude from the sample both the companies acquired in 2019 and 2020, as the period is too short for an assessment, and those with a limited set of data. For this reason, the number of companies in our sample is reduced from 101 to 83.

We must bear in mind that the observed performance is the result of the specific history of each company, which should be analyzed on a case by case basis. However, outside the domain of the company, four major general factors can play a role: the number of years since the acquisition, the size of the company, the technological level and, most importantly, the general trend of the specific industry to which these companies belong.

In order to evaluate the performance of the acquired companies, we identify a control group, for each 3-digit manufacturing industry, consisting of all the Italian companies reported in the AIDA database with turnover exceeding two million euros. Table 18 shows the number of firms in each control group. For each variable, we measure and compare the average performance of the control group over the same period of time considered for the acquired company.

Table 18 – Number of firms by 3-digit manufacturing sector. Sample and control group
Source: CI FDI Results Dataset

NACE	NACE Rev. 2 description	N° firms in the sample	N° firms in the control group (year 2019)	NACE	NACE Rev. 2 description	N° firms in the sample	N° firms in the control group (year 2019)
1041	Manufacture of oils and fats	1	120	2620	Manufacture of computers and peripheral equipment	1	140
1061	Manufacture of grain mill products	1	216	2660	Manufacture electromedical equipment	2	172
1071	Manufacture of bread, fresh pastry goods and cakes	1	237	2751	Manufacture of electric domestic appliances	2	100
1310	Preparation and spinning of textile fibres	1	236	2752	Manufacture of non-electric domestic appliances	2	33
1330	Finishing of textiles	1	232	2790	Manufacture of other electrical equipment	2	502
1396	Manufacture of other technical and industrial textiles	1	186	2822	Manufacture of lifting and handling equipment	3	366
1410	Manufacture of wearing apparel, except fur apparel	2	853	2825	Manufacture of non-domestic cooling and ventilation equip.	1	372
1413	Manufacture of other outerwear	1	380	2829	Manufacture of other general-purpose machinery nec	7	945
1511	Tanning and dressing of leather and fur	1	442	2840	Manufacture of metal forming machinery and machine tools	3	571
1520	Manufacture of footwear	1	717	2849	Manufacture of other machine tools	1	210
2010	Manufacture of basic chemicals, fertilisers	1	437	2892	Manufacture of machinery for mining, quarr. and construction	1	143
2016	Manufacture of plastics in primary forms	1	169	2894	Manufacture of machinery for textile, apparel and leather prod.	3	209
2059	Manufacture of other chemical products nec	1	340	2895	Manufacture of machinery for paper and paperboard prod.	3	96
2100	Manufacture of basic pharmaceutical products	1	310	2896	Manufacture of plastic and rubber machinery	1	181
2110	Manufacture of basic pharmaceutical products	1	68	2899	Manufacture of other special-purpose machinery nec	7	333
2120	Manufacture of pharmaceutical preparations	3	208	2931	Manufacture of electric. and electronic equip. for motor vehicles	1	41
2211	Manufacture of rubber tyres and tubes	3	29	2932	Manufacture of other parts and accessories for motor vehicles	2	368
2219	Manufacture of other rubber products	1	316	3011	Building of ships and floating structures	1	84
2370	Cutting, shaping and finishing of stone	1	303	3012	Building of pleasure and sporting boats	1	92
2410	Manufacture of basic iron and steel and of ferro-alloys	1	92	3030	Manufacture of air and spacecraft and related machinery	1	49
2511	Manufacture of metal structures and parts of structures	2	865	3091	Manufacture of motorcycles	2	53
2562	Machining	1	923	3101	Manufacture of office and shop furniture	2	287
2573	Manufacture of tools	1	639	3109	Manufacture of other furniture	1	535
2611	Manufacture of electronic components	1	151	3212	Manufacture of jewellery and related articles	1	277
2612	Manufacture of loaded electronic boards	1	98	3220	Manufacture of musical instruments	1	10
				3299	TOTAL	83	14736

On the basis of this approach, we try to answer the following question: compared to the average performance of the control group, is the acquired company improving or worsening its performance? We construct a simple index given by the ratio between the value of the

performance variable of the acquired firm over the corresponding value of the control group. If the index is greater than 1, the acquired firm performs better than the industry average, while if it is less than 1, the firm loses ground to its peers. We compute this index for the year before acquisition -the starting point- and for the last reported year (2019 for most firms).

Figure 12 reports the results of the analysis in terms of added value per employee. The figure compares the performance of the acquired company in the year preceding the acquisition (on the X axis) with the last reported year (on the Y axis), again in relation to the performance of the control group (see the index described above). Looking more closely at the figure, six different groups of firms can be identified.

In general, more than half (46 firms, 55.4%) of the acquired companies did better than the control group in the years following the acquisition. These firms are indicated by the points above the 45° degree line in the graph. On the top right triangle of the figure we find the *Best Performers* (BP), the firms that already performed better than the control group in the year before the acquisition and that improved their relative position after the acquisition (10 firms, 12%). *Best improvers* (BI) include the firms that were performing below average before the acquisition but that improved the productivity compared to the control group in the years following the acquisition (13 firms, 15.7%). These firms are indicated in the upper left square of Figure 12. The *Improvers* (IMP), on the left of the lower square of the graph, is the largest group in the sample. These firms improved their performance under Chinese control but performed worse than the industry average both before and after the acquisition (23 firms, 27.7%).

Figure 12 – Value Added per Employee (VAE) Last reported year and Year before acquisition (Ratio Acquired firm / Control group)
Source of data: CI FDI Results Dataset

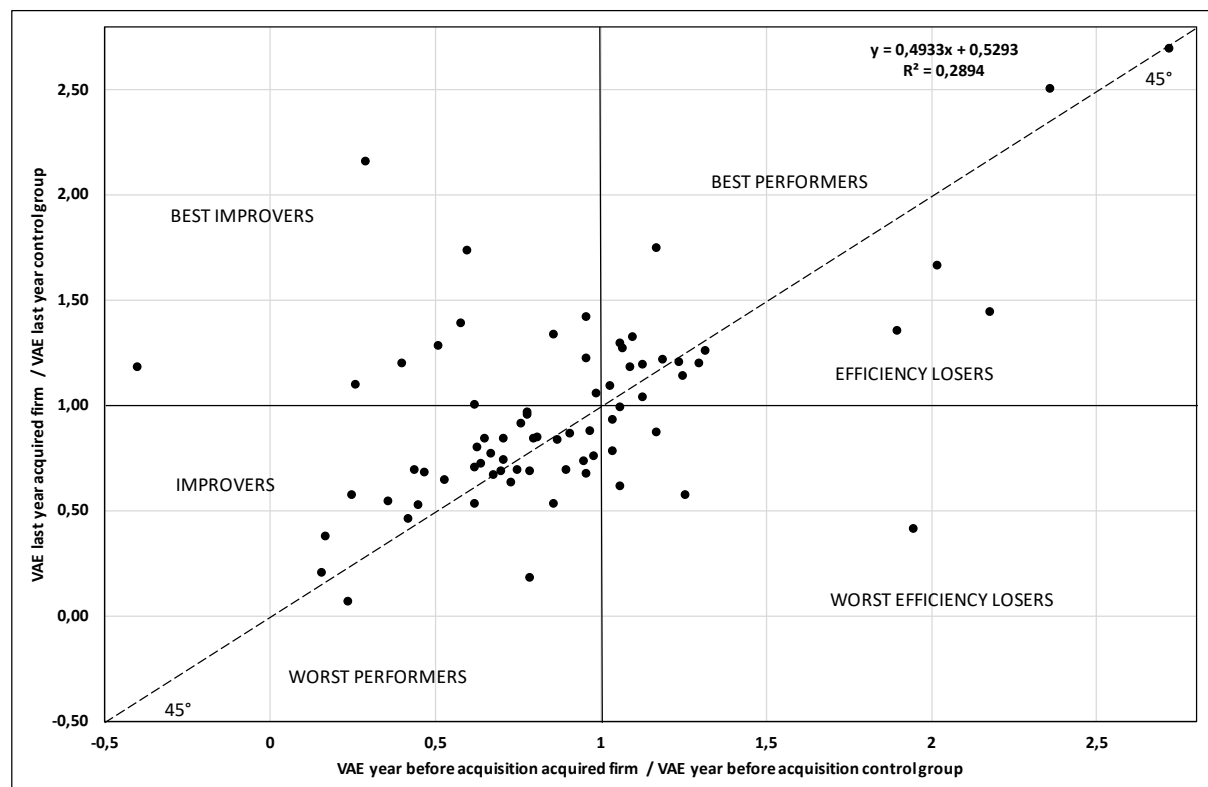
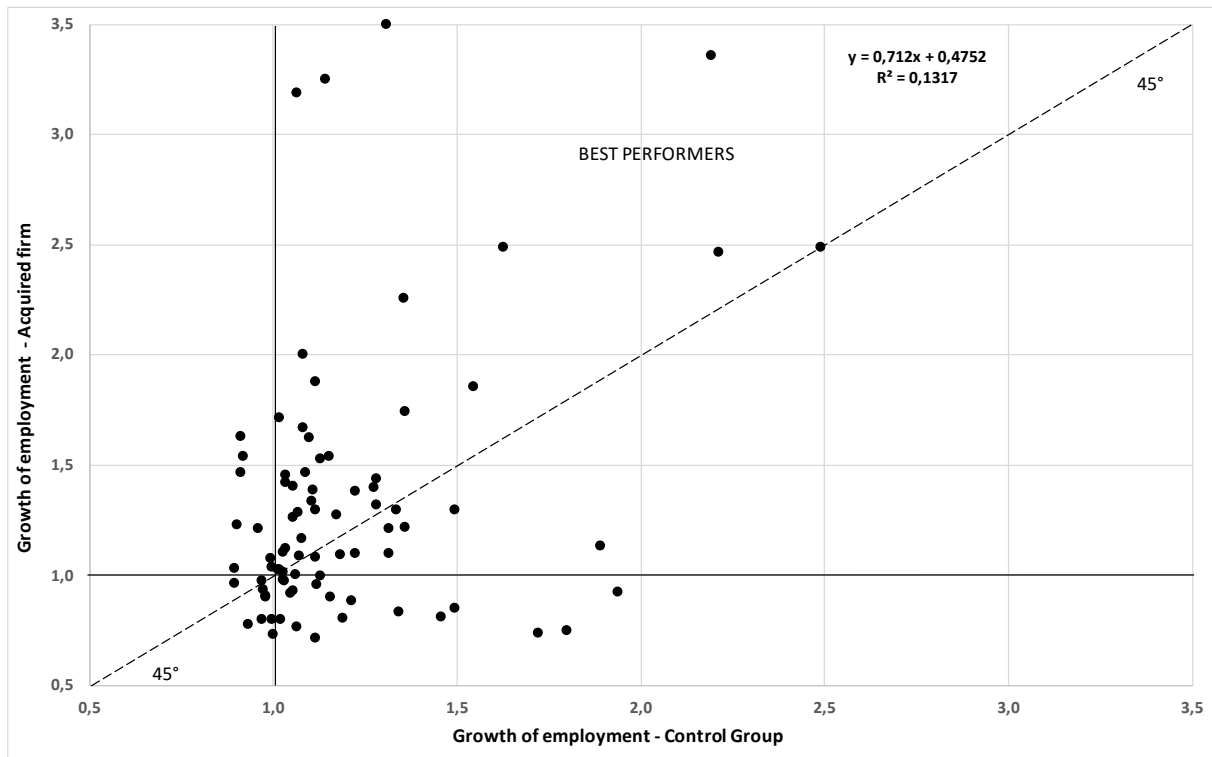


Figure 13 – Gross growth rate of Employment (EMP) since acquisition.
 Acquired firms and control group (EMP last reported year / EMP year before acquisition)
 Source of data: CI FDI Results Dataset



The firms in the last three groups worsened the productivity during the period following the acquisition. In the lower triangle at the top right square of the graph, we find the firms with a productivity level above the industry average in both periods but which have worsened their relative position after the acquisition. These companies can be called *Efficiency Losers* after the acquisition (EL) (10 firms, 12%). Another group includes the *Worst Efficiency Losers* (WEL), which started with a productivity above the average before acquisition and ended up underperforming the control group in the last year (8 firms, 9,6%). The last group includes the *Worst Performers* (WP) (19 firms, 22,9%). These firms showed below-average productivity levels before the acquisition and further worsened efficiency in the post-acquisition period.

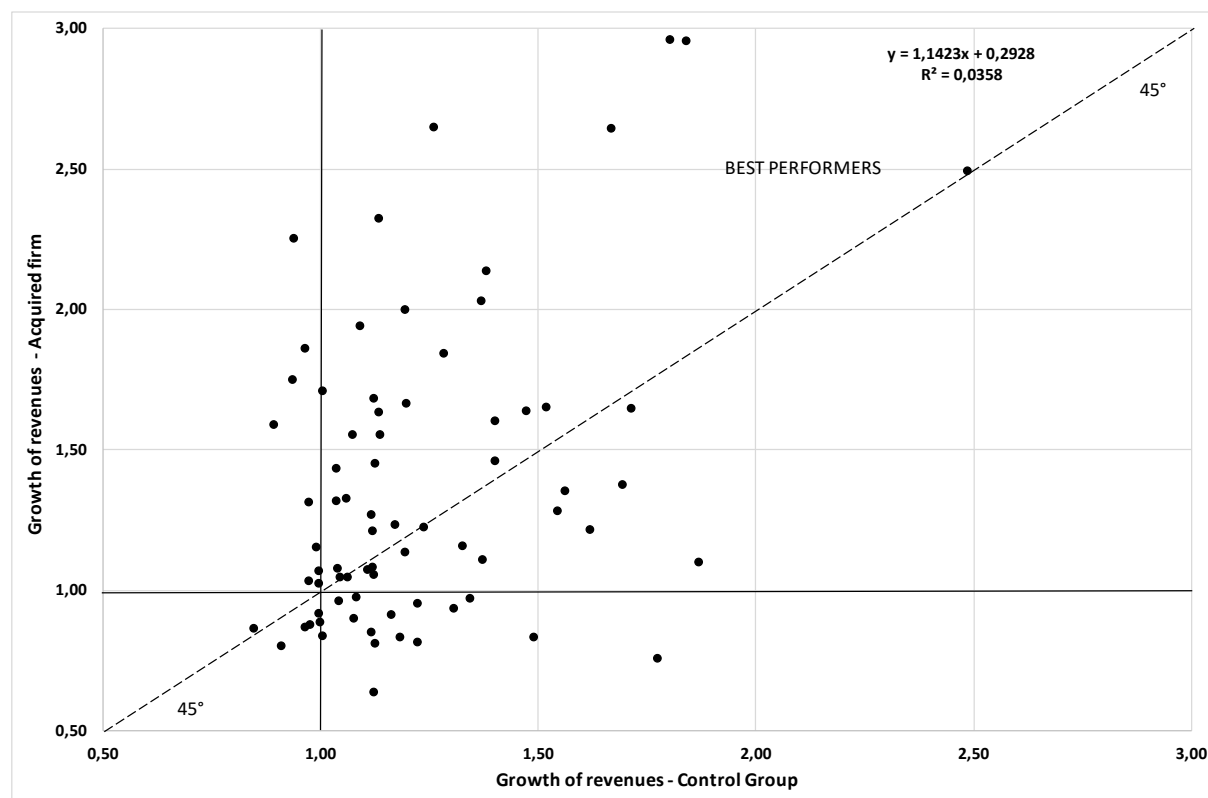
More generally, looking more closely at the data shown in the figure, it is interesting to note that the majority of the firms acquired by Chinese shareholders showed, at the time of the takeover, a lower performance in terms of productivity compared to the industry average. This is the case of 55 companies, the sum of the three groups BI, IMP and WP. However, in the years after the acquisition, a good 65,4% of these firms improved their performance. On the other side, only 28 companies were performing better compared to the control group before the acquisition (groups BP, EL and WEL). Under Chinese control, only 10 of them improved the performance in the following years (35,7%).

Figures 13 and 14 report a similar analysis for the other two variables under consideration, employment and revenues. Notice that in this case we can only compare the growth rates of the Chinese firms, from the last year before acquisition to the last reported year after the acquisition, with the growth rates of the control group during the same period. Growth rates of the control group are reported on the X-axis, while growth rates of the Chinese firms are on the Y-axis. For both variables, the majority of firms acquired by Chinese companies and shareholders performed better than the control group after the acquisition: 54,2% for employment and 51,8% for revenues.

As in the former analysis of the value added per employee, it is possible to identify six different groups of companies, with the same labels as before, according to the value and the sign of the growth rates of the acquired firms and those of the control group. It suffices to note that in both figures the group of *Best Performers* (both acquired firms and control group firms grow, but acquired firms at a faster rate) is the largest group. Furthermore, from the linear estimates of the relationship between the two variables reported in the top right of the graph, we can infer that the growth rates of the acquired firms and the control group are positively correlated. This result suggests that the post-acquisition performance of the acquired firms is to some extent affected by the general performance of the corresponding manufacturing sector.

The impact of the new corporate management on the company performance needs time to unfold. It takes time to adapt, restructure and reorganize the plants and the company, possibly investing in new machinery and equipment. This explains why, for the acquired companies, the gross growth rates of all the three variables (employment, value added per employee, revenues) is positively related to the number of years since acquisition. Figure 15 shows the three boxplots, one for each variable, which reports the statistical distributions (mean, median, first and third quartile) of the gross growth rates according to the years passed since the acquisition: 1-2 years (Group 1), 3-5 years (Group 2), more than 5 years (Group 3). For all the variables, the mean and, above all, the median values are greater for the last two groups and firms show a greater variability after more than five years since acquisition (see the detailed descriptive statistics in Appendix 3). In particular, this is the case of employment, where the distribution in the third group is clearly more right skewed compared to the other two groups.

Figure 14 – Gross growth rate of Revenues (REV) since acquisition. Acquired firms and control group (REV last reported year / REV year before acquisition)
Source of data: CI FDI Results Dataset



Applying the same type of analysis with regards to the size class (Figure 16), the evidence is more varied and the differences between groups less pronounced. In the cases of employment and revenues growth (Figure 16-A), it seems that the smallest firms and those with a size between 50 and 99 employees, are the more dynamic, while for value added growth the two central groups show a better performance (see Appendix 3).

The level of technological intensity might have an impact on the economic performance of the acquired companies. There is some evidence of this by looking at Figure 17, which reports the boxplots for the three variables under consideration and four classes of technological level. For employment and revenue growth, firms in medium-high technology sectors look more dynamic. Notice that this class includes the machinery and equipment industry, one of the top target of acquisitions of Chinese companies in Europe in the last decade.

Summarizing the evidence discussed so far, the acquisitions of Italian companies by Chinese investors seem to show an overall positive impact on the acquired companies. Compared to control groups, most Chinese companies perform better in all three selected indicators: value added per employee, employment and revenue growth.

The simple descriptive statistical analysis presented in this paper is the first step in trying to uncover the main drivers of good and successful performance. The three factors highlighted - time since acquisition, size and technological intensity –certainly played an important role. However, the explanation for all these findings is still unclear. More in-depth analysis with the use of an econometric model and multiple control factors is probably needed, as will be done in a related paper, to shed more light on this issue.

*Figure 15 – Boxplots of performance of acquired firms by years since acquisition
(Gross growth rate: ratio Last reported year / Year before acquisition)
Source of data: CI FDI Results Dataset*

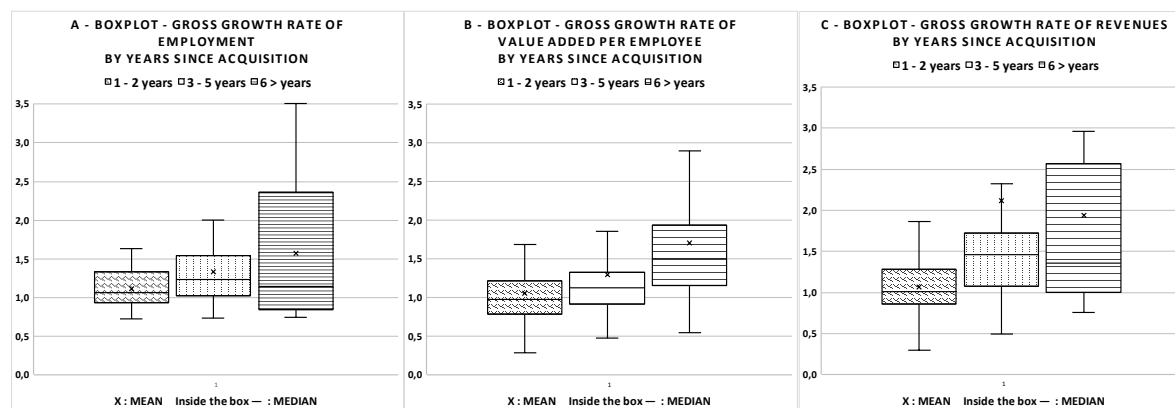


Figure 16 – Boxplots of performance of acquired firms by size group
(Gross growth rate: ratio Last reported year / Year before acquisition)

Source of data: CI FDI Results Dataset

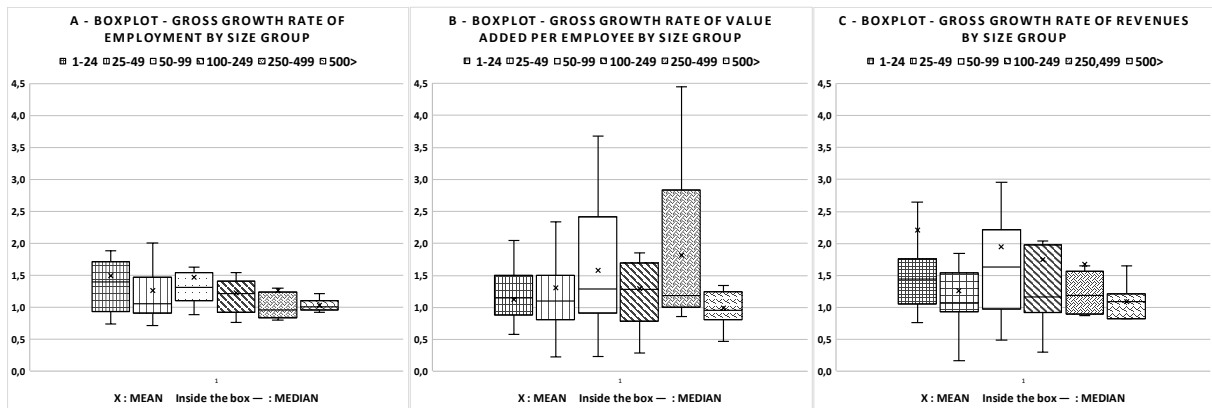
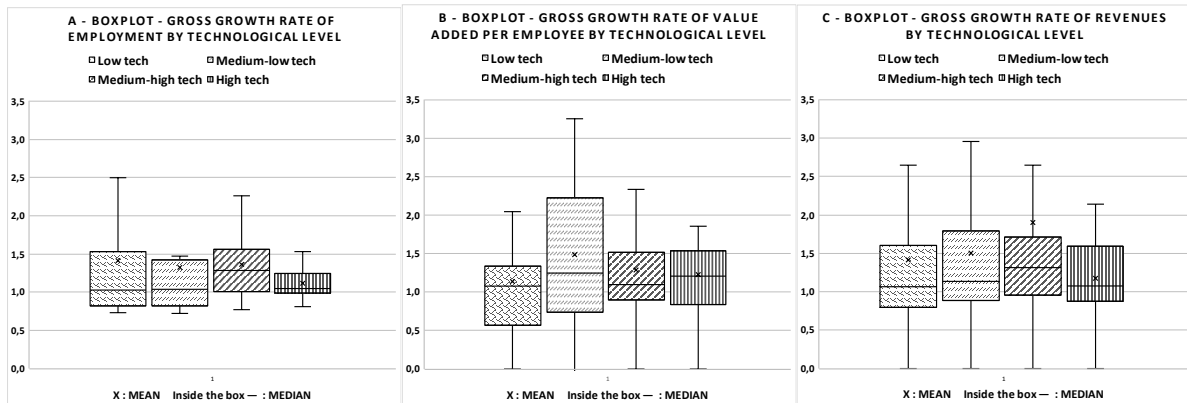


Figure 17 – Boxplots of performance of acquired firms by technological level
(Gross growth rate: ratio Last reported year / Year before acquisition)

Source of data: CI FDI Results Dataset



9. Qualitative analysis

The third phase of our research consists in a qualitative analysis of acquired companies, primarily aimed at understanding the reasons behind the acquisition from the point of view of both the target and the acquirer, the results after the acquisition, the management style and development strategies of acquirers, and post-acquisition processes and cross-cultural issues. The following table summarizes the first results of this type of analysis.

Table 19 – First results of the qualitative analysis on Chinese acquisitions

Target	Acquirer	Acquisition year	Type of ultimate Chinese owner	Industry affinity	Reason for the sale	Management style	Turnover results	Employment results
Ansteel Viganò S.r.l.	Angang Group International Trade Corporation (Powerchina)	2010	State owned	Same	Market Expansion	Hands off	Slightly negative	Slightly negative
Autefa Solutions Italy S.p.a.	China High-tech Group Corporation (CHTC)	2011	State owned	Same	Know-how access	Hands off	Positive	Positive
Benelli Q.J. Srl	Qianjiang Group Geely Group (2)	2005, 2016	Private Company	Same	Failure risk	Hand off	Disappointing until 2016, very good since 2017	Neutral
Blue Engineering S.r.l.	CRRC Tangshan Locomotive and Rolling Stock	2016	State owned	Similar	Market Expansion	Hands off	Positive	Positive
Bp Agnati s.r.l.	Dongfang Precision Group	2020	Private company	Same	Market Expansion	Not yet evaluable	Not yet evaluable	Not yet evaluable
Bucellati Holding Italia Spa	Gangsu Gangtai Holding (1)	2017	Private Company	Same	Failure risk	Hand off	Positive but below expectations (1)	Positive but below expectations (1)
C.B. Ferrari	Jingcheng Holding Europe	2011	Private Company	Similar	Failure risk	Hand off	Positive	Positive
Candy Hoover Group	Haier Group	2018	Private Company	Same	Failure risk	Hand off	Not yet evaluable	Positive (3)
CIFA Group	Changsha Zoomlion	2008	Private Company	Same	High offer	Hand off	Neutral	Positive
Clivet Group	Midea Group	2016	Private Company	Same	High offer	Hand off	Positive	Neutral
CMA Robotics S.p.a.	Efort Intelligent	2015	Private company	Same	Market Expansion	Hands off	Positive	Positive
CMD S.p.a.	Loncin Motor Co., Ltd.	2017	Private company	Same	Market Expansion	Hands off	Positive	Positive
Conceria del Chienti	Jihua Group	2014	Private Company	Same	Failure risk	Hand off	Positive	Positive
Elkem Siliconi Italia S.r.l.	China National Bluestar (Group)	2007	State owned	Same	Market Expansion	Hands off	Positive	Positive
Esaote Group	Consortium of leading chinese healthcare companies	2018	Private Company	Similar	High offer	Hand off	Positive	Neutral
Evolut S.p.a.	Efort Intelligent	2016	Private company	Same	Failure risk	Hands off	Positive	Positive
Ferretti Group	Shig Weichai Group	2012	State owned	Similar	Failure risk	Hand off	Positive	Positive
Fosber Group	Dong Fang Precision Group	2014	Private Company	Same	High offer	Hand off	Positive	Positive
Geodata Engineering S.p.a.	Power Construction Corporation of China	2017	State owned	Same	Market Expansion	Hands off	Positive	Positive
Kollant S.r.l.	China National Chemical Corporation	2011	State owned	Similar	Market Expansion	Hands off	Slightly negative	Slightly negative
Krizia International	Shenzhen Marisfrog Fashion Holdings	2014	Private Company	Same	Failure risk	Hand off	Positive	Positive
Masterwood S.p.a.	Guangzhou KDT Machinery Co. Ltd	2018	Private company	Same	Market Expansion	Hands on	Negative	Positive

MCM S.p.a.	Zhejiang Rifa Precision Machinery Co. Ltd	2014	Private company	Same	Market Expansion	Hands off	Positive	Positive
Meta System	Deren Electronics	2015	Private Company	Similar	Market expansion	Hand off	Positive	Positive
Newchem S.p.a.	Zhejiang Xianju Pharmaceutical Company Limited	2017	Private company	Same	Market Expansion	Hands off	Positive	Positive
NT Majocchi S.r.l	Jihua Group Co., Ltd.	2013	State owned	Same	Failure risk	Hands off	Positive	Positive
OLCI Engineering S.r.l.	Efort Intelligent	2017	Private company	Similar	Failure risk	Hands off	Negative	Neutral
Pamec S.r.l.	Zoomlion	2019	Private company	Similar	Failure risk	Not yet evaluable	Not yet evaluable	Not yet evaluable
Pirelli Group	ChemChina	2015	State owned	Similar	High offer	Hand off	Neutral	Neutral
Salov	Bright Food	2014	Private company	Similar	Market Expansion	Hands off	Positive	Neutral
Salov Group	Bright Food	2014	Private Company	Similar	Market expansion	Hand off	Positive	Neutral
SIR S.p.a.	Wolong Electric Group Co., Ltd.	2015	Private company	Similar	Market Expansion	Hands off	Positive	Positive
Vibemac S.p.a.	Jack Sewing Machine Co. Ltd	2017	Private company	Same	Market Expansion	Hands off	Neutral	Positive
Webb Robotica S.r.l.	Efort Intelligent	2016	Private company	Same	Market Expansion	Hands off	Positive	Neutral

- (1) The ambitious investment plan by Gansu Gantai has been curbed by the restrictions issued by the Chinese Government on investments in the luxury and entertainment industries. Buccellati has been sold to the Richmond Group on Sept 2019
- (2) In 2018 the Geely Group has acquired a major stake in Qianjiang Group.
- (3) Even if it's too early to evaluate the employment results of this acquisition, in 2019 Haier has unexpectedly brought back to Italy the production of washing machines that previous owners had offshored to China, averting the layoff of 135 employees on redundancy pay.

Although we are at the very beginning of this phase, some trends such as the preference a hand-off style of management and the interests in companies competing in the same or strongly related industries clearly emerge.

10. Conclusions and some ideas for future work

Should we fear or hope for Chinese acquisitions? After carrying out an initial evaluation of the data and information contained in our database on the companies owned by Chinese investors in Italy, we can give a positive answer to the question posed in the title of our work. Although the presence of Chinese investors in Italy is a relatively recent phenomenon, compared with other foreign investors, the good performance of most Chinese companies in terms of turnover, employment and productivity is certainly an encouraging sign. What seems more important, is that in many cases the results of the Chinese companies are above those of the other Italian firms in the same industry. However, our analysis is only exploratory and preliminary, and it will be necessary in the future to use more robust and sound empirical investigation tools to reach more reliable conclusions.

Our research is still ongoing and we have some ideas on what remains to be done. In order to get more reliable data, the database should be updated for the next 3 years. In the meantime, it is possible to develop a qualitative analysis for all the acquisitions using secondary data and, for some relevant cases, with structured interviews. The qualitative analysis, among other things, could allow us to understand if there is a significant difference in behaviour between private and state owned acquirers.

It would be also interesting to compare the results and management style of the Chinese shareholders with that of foreign investors from other countries, like USA, Germany and Japan.

Despite the limits of our work, our research already provides some interesting hints on the relevance, management style, results, and desirability of Chinese investments in general, and of Chinese acquisitions in particular. For example, some results seem to indicate that Chinese investors may be particularly long term oriented compared to their Western counterparts, and less obsessed with short-term earnings results. This behaviour is consistent with the long term orientation of the Chinese Culture. According to the well known Hofstede's Culture Compass, China scores very high in the dimension "Long Term Orientation", with a score of 87, against a score of 61 for Italy and of 26 for the United States. Using Hofstede's words, countries with high long term orientation "show an ability to adapt traditions easily to changed conditions, a strong propensity to save and invest, thriftiness, and perseverance in achieving results". This supposed greater long-term orientation of Chinese companies deserves further study and it would be interesting to measure its effects (if any) on acquired companies.

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Appendix 1 – Content of the fields in the CI FDI Profile Database downloaded from AIDA

Fields	Comments
Company name	
BvD ID number	It's the number given by Bureau van Dijk (BvD), and it's the same used for a given company in all the BvD databases.
Province	
Legal status	Active; Bankruptcy; In liquidation
Legal form	Consortium; General partnership - SNC; Joint stock company - SPA; Limited liability company - SRL; Limited liability company, simplified; Limited liability consortium; Limited partnership - SAS; One-person company with limited liability - SRL; One-person joint stock company - SPA
Incorporation year	
Last accounting closing date	
No of available years	
Turnover (last year) m EUR Last avail. yr	
Total assets (last year) m EUR Last avail. yr	
Employees (last year) Last avail. yr	
BvD independence indicator	
No of companies in corporate group	
No of recorded shareholders	
No of recorded subsidiaries	
NACE Rev. 2	Industry Classification - Level 4 (Codes)
NACE Rev. 2 description	Industry Classification - Level 4 (Description)
GUO - Name	GUO stands for Global Ultimate Owner. It's this field that has enables us to identify che Italian companies partecipatod or controlled by Chinese individuals or companies
GUO - Country ISO code	
GUO - City	
GUO - Type	Bank; Corporate; Employees, managers, directors; Financial company; Foundation, research Institute; Insurance company; Mutual and pension fund, nominee, trust, trustee; One or more named individuals or families; Public authority, state, government
GUO - Direct %	
GUO - Total %	
GUO - Also a manager	Current manager; Not a manager; Previous manager
CSH - Name	CSH stands for Company Share Holders
CSH - BvD ID number	
CSH - Ticker symbol	
CSH - Country ISO code	
CSH - City	
CSH - Type	Bank; Corporate; Employees, managers, directors; Financial company; Foundation, research Institute; Insurance company; Mutual and pension fund, nominee, trust, trustee; One or more named individuals or families; Public authority, state, government
CSH - Direct %	
CSH - Total %	
CSH - Operating revenue (Turnover) m EUR	
CSH - Total assets m EUR	
CSH - Number of employees	
CSH - Also a manager	Current manager; Not a manager; Previous manager
No of subsidiaries	

Appendix 2 – Content of the fields manually added to the CI FDI Profile Database

Field	Content
Additions / Cancellations	Identifies the companies manually added to or cancelled from the set generated by AIDA. We have added few companies when sure of the Chinese stake, even if not registered in AIDA and companies previously controlled by Chinese investors even if now they have sold their shares or the company has been dissolved/merged, while we have cancelled a few companies controlled by Chinese companies which were controlled by non Chinese shareholder. The total of 7.382 companies includes 233 added companies and excludes 6 cancelled companies.
Size (categories - Mln Euros)	A ->100; B - 30-99; C - 10-29; D - 4-9; E - 3-3.999; F - 2-2.999; G - 1-1.999; H - 0.001-0.999; I - 0; Z - n.a.
Size 2 (categories - Mln Euros)	A ->1000; B - 500-999; C - 100-499; D - 90-99; E - 80-89; F - 70-79; G - 60-69; H - 50-59; I - 40-49; L - 30-39; M - 20-29; N - 10-19; O - 4-9; P - 3-3.999; Q - 2-2.999; R - 1-1.999; S - 0.001-0.999; T - 0; Z - n.a.
Size 3 (categories - Mln Euros)	Over 2 Mln; Under 2 Mln or n.a.
Majority/ Minority	Majority; Minority; Minority <10%; Shares sold/Dissolved
Chinese investment year	Year of the first investment by the Chinese shareholder. The results of the acquired company in the CI FDI Results Dataset are monitored starting from the year before the first investment by the Chinese shareholder.
Chinese share	Total share owned by Chinese shareholders
Chinese Shareholder name	Name of the most relevant company or individual in the shareholders chain of control. For example, for Pirelli it's CHINA NATIONAL CHEMICAL CORPORATION.
Chinese Shareholder Type	Bank; Corporate; Dissolved; Financial company; Foundation/Research institute; Insurance company; Mutual and pension fund, nominee, trust, trustee; One or more named individuals or families; Private equity firm
GUO Chinese Shareholder – Name	Name of the Global Ultimate Owner. For example, for Pirelli it's CHINA-PEOPLE'S REP.
GUO Chinese Shareholder Type	Bank; Corporate; Financial company; Foundation, research Institute; Insurance company; Mutual and pension fund, nominee, trust, trustee; One or more named individuals or families; Public authority, state, government
GUO Chinese Shareholder – Type Synthesis	Individuals; Private company; State Owned, Undetected.
Investment Type	Acquisition; Entrepreneurial Activities; Greenfield; Minority; Undetected.
NACE Rev. 2 description Level 2	Industry Classification - Level 2 (Description). AIDA specifies for each company the NACE Level 4 industry classification, but in most cases this classification is too detailed. For this reason, on the basis of the level 4 classification we identified and added to the dataset the Level 2 classification as well.
Technology intensity	Individuals; Private company; State Owned, Undetected.
Tax havens	Country ISO Codes of tax havens involved
Tax havens Yes/No	Yes, No, Undetected.
Listed	Yes, No, Undetected.

Appendix 3 – Boxplots, descriptive statistics

Boxplot Growth of VALUE ADDED PER EMPLOYEE by YEARS SINCE ACQUISITION

YEARS	Mean	min	Q1	Median	Q3	max	N
1	1,0528	0,28160	0,77955	0,97017	1,2137	3,1071	(n=28)
2	1,2927	0,22321	0,90924	1,1169	1,3216	4,4267	(n=30)
3	1,6984	-0,24114	1,1449	1,4948	1,9293	4,4444	(n=25)

Boxplot Growth of EMPLOYMENT by YEARS SINCE ACQUISITION

YEARS	Mean	min	Q1	Median	Q3	max	N
1	1,1123	0,71429	0,93028	1,05460	1,3233	1,6250	(n=28)
2	1,3296	0,73000	1,01530	1,2234	1,5376	3,1905	(n=30)
3	1,5684	0,73684	0,8387	1,1333	2,3603	3,5000	(n=25)

Boxplot Growth of REVENUES by YEARS SINCE ACQUISITION

YEARS	Mean	min	Q1	Median	Q3	max	N
1	1,0627	0,15406	0,85237	1,00110	1,2729	1,9374	(n=28)
2	2,1136	0,49028	1,07410	1,4534	1,7207	11,0490	(n=30)
3	1,9347	0,75401	0,9969	1,3518	2,5661	6,7248	(n=25)

Boxplot Growth of VALUE ADDED PER EMPLOYEE by SIZE

SIZE	Mean	min	Q1	Median	Q3	max	N
1	1,1229	-0,24114	0,87250	1,13720	1,4948	2,0453	(n=19)
2	1,3047	0,22321	0,80900	1,0933	1,5005	4,4267	(n=20)
3	1,5748	0,23339	0,9118	1,2912	2,4188	3,6718	(n=16)
4	1,2845	0,2816	0,78339	1,2762	1,6911	3,1071	(n=13)
5	1,8081	0,85206	0,99931	1,17520	2,8300	4,4444	(n=8)
6	0,9899	0,47017	0,80920	0,9448	1,2433	1,3313	(n=7)

Boxplot Growth of EMPLOYMENT by SIZE

SIZE	Mean	min	Q1	Median	Q3	max	N
1	1,4920	0,73684	0,92857	1,38890	1,7143	3,5000	(n=19)
2	1,2631	0,71429	0,90174	1,0567	1,4630	2,4900	(n=20)
3	1,4689	0,88421	1,1031	1,3090	1,5362	3,1905	(n=16)
4	1,2196	0,76316	0,92058	1,2095	1,3993	2,2564	(n=13)
5	1,2617	0,79810	0,83064	0,95621	1,2284	3,3553	(n=8)
6	1,0261	0,92092	0,95410	1,0035	1,0972	1,2124	(n=7)

Boxplot REVENUES by SIZE

SIZE	Mean	min	Q1	Median	Q3	max	N
1	2,2054	0,75401	1,04270	1,43010	1,7464	11,0490	(n=19)
2	1,2475	0,15406	0,92486	1,0608	1,5276	2,9560	(n=20)
3	1,9523	0,49028	0,9714	1,6242	2,2199	8,0751	(n=16)
4	1,7351	0,28746	0,90911	1,153	1,9658	7,5182	(n=13)
5	1,6675	0,86336	0,89381	1,17520	1,5561	5,3346	(n=8)
6	1,0786	0,80996	0,81128	1,0806	1,2069	1,6423	(n=7)

Boxplot VALUE ADDED PER EMPLOYEE by technological level group

TECH	Mean	min	Q1	Median	Q3	max	N
1	1,1983	0,22321	0,69330	1,09210	1,3903	3,6718	(n=17)
2	1,6063	-0,24114	0,82670	1,2426	2,6631	4,4444	(n=12)
3	1,3131	0,23339	0,9025	1,1146	1,5250	4,4267	(n=42)
4	1,3269	0,737	0,86605	1,2094	1,5513	2,8899	(n=12)

Boxplot EMPLOYMENT by technological level group

TECH	Mean	min	Q1	Median	Q3	max	N
1	1,4051	0,73000	0,81509	1,02660	1,5278	3,5000	(n=17)
2	1,3174	0,71429	0,81703	1,0322	1,4222	3,3553	(n=12)
3	1,3618	0,76316	1,0007	1,2849	1,5601	3,1905	(n=42)
4	1,1129	0,81132	0,98124	1,0433	1,2378	1,5294	(n=12)

Boxplot REVENUES by technological level group

TECH	Medan	min	Q1	Median	Q3	max	N
1	1,4918	0,28746	0,81614	1,0996	1,6162	6,7248	(n=17)
2	1,6298	0,15406	0,9663	1,1705	1,8636	5,3346	(n=12)
3	1,939	0,49028	0,9676	1,3329	1,7403	11,049	(n=42)
4	1,2648	0,81128	0,91697	1,0713	1,724	2,133	(n=12)