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Measuring Foreign Direct Investments' Impact on Triple-bottom line Sustainability

Focusing on Sino-Italian relations

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List of contents:

List of abbreviations

ASEAN - Association of Southeast Asian Nations

B2B – Business to Business

CCP - Chinese Communist Party

CO2 – Carbon dioxide

CSR – Corporate Social Responsibility

DEA – Data Envelopment Analysis

ESG – Environmental, Societal and Governance

EU – European Union

FDI - Foreign Direct Investment

FYP – Five Year Plan

GDP – Gross Domestic Product

HDI – Human Development Index

IFDI – Inward Foreign Direct Investment

ML - Malmquist-Luenberger Productivity Index

MNE - Multinational Enterprise

NGEU – Next Generation European Union

OBOR – One Belt One Road Initiative

OFDI – Outward Foreign Direct Investment

PNRR – Piano Nazionale Ripresa Resilienza

RBC – Responsible Business Conduct

SBM – Slacks-Based Measure of Efficiency

SDG – Sustainable Development Goals

SEZ – Special Economic Zones

SO2 – Sulphur dioxide

SOE – State Owned Enterprises

UN – United Nations

WTO - World Trade Organization

前言

最近几年，世界上发现了一些前所未有的社会和政治现象，比如全球新冠肺炎疫情爆发或者在欧洲乌克兰战争发动。

这种新现象开始对国际贸易和对国家之间合作范围，特别是对外商直接投资的发展造成影响。原因是外商直接投资在全球化的背景下，近几十年的趋势是全球投资总额不断增长，而且，因为一些前所未有的社会和政治现象开始愈发常地发现，最近几年投资的总情况不是那么稳定了，全球投资总额增长趋势开始减缓。由于目前的全球社会和政治情况充满不确定性，所以很难预测投资总额的未来趋势，最可能的是未来的全球外商直接投资将继续面临跟不确定性经济和社会有关的风险。

现代的社会和政治现象也开始引起全球各个国家政府的注意力，其原因是这样的现象很明显地提出全球应该立即对可持续性发展的问题进行更深的研究与了解。全球各个国家的目标应该是提供适合现代问题的解决办法，并且避免全球的每个国家在投资中继续面临有关不确定性的风险。主导原因之一是外投资具有不少潜力。事实上，外投资可能为全球的每个国家提供促进国家之间合作、推动各个国家的经济发展，提高人类生活方式、推动可持续性发展的机会。因此，在外投资充满不确定性的情况下，国际经济、国际贸易、全球每个国家都可能蒙受很严重的经济、社会与环境损失。即使目前的社会和政治情况不太稳定，并且投资范围也不比以前几十年的发展增长，但是，为了实现各个国家的共同目标，目前全球每个国家都急需外投资总额重新启动增长。

这些国际共同目标体现在于 2015 年有联合国的所有会员国一致签订的 2030 年可持续发展议程。这种议程是指全球的每个强国保证了将尽全力通过 2030 年可持续发展一成的十七主要目标推动可持续性发展。主要目标包括三重底线的三个方面目标，也就是经济底线、环境底线和社会底线以便改善所有人的生活与未来、保护地球、消除贫困。把 2030 年可持续发展议程的目标放在第一位强调达到可持续性发展的急需，而且，就是现代社会和政治现象最关键的因素之一。

虽然最近年联合国所有会员国保证将权力试图实现 2030 年可持续发展议程的所有目标，计量一些关键贸易政策，特别是外商直接投资对可持续性发展造成怎么样的影响仍然很难。其原因是学家还无法进行一系列共同、均匀经济、环境、社会底线的指标可能用来计量可持续性发展每个方面的水平。到目前至今，关于外商直接投资的研究一般强调外商直接投资对国家经济增长的影响，相反关于外商直接投资对整体可持续性发展三重底线影响的研究还比较差。事实上，还没有很多专家希望研究外商直接投资可能会对可持续性发展的三重底线，也就是经济底线、环境底线与社会底线三个部分造成怎么样的影响。

此外，关于怎么可能计量外商直接投资对可持续性发展三重底线每个底线有什么影响的研究还没发达，特别是在几个国家或者在社会底线和环境底线的辩论范围内。由于关于这些方面的研究还缺乏，这本论文将试图联合这两不同研究方面，也就是关于外商直接投资的研究与关于可持续性发展可能用影响指标的研究以便更了解外商直接投资对可持续性发展有什么实施影响。

一方面，外商直接投资是在全球遍布的一种现象，所以下面介绍参考文献将指出关于外商直接投资的可持续性，并且将强调怎么计量该贸易政策的可持续性到目前发展的国际学家辩论。

另一方面，一些国家，比如中国，在形成外商直接投资新趋势中扮演了特别关键的角色。此外，从可持续性首次被定义来，中国一直放在全球关于可持续性与可持续性发展的辩论中，因为中国从改革开放提出经济开放政策的最重要目标是通过出口额的提高、跟其他国家合作的促进、中国外商直接投资范围的扩大权力促进经济增长的，而不是达到可持续性发展的三重底线平衡。所以，由于中国在世界上外商直接投资和可持续性发展的特别情况，本论文将强调关于中国外商直接投资对可持续发展三重底线各个部分影响的研究，具体是对可持续性发展的三重底线每个底线造成影响的计量办法与专家采用的经济、环境或者社会指标以便计量外商直接投资的结果。

最近年，还有其他国家也改变了，并且在大程度上影响到外商直接投资的国际平衡与趋势。比如，意大利，为了促进新冠病毒疫情爆发以后的经济与社会复苏提出了一些有效的政策，这些在欧洲成为很有名，因为这些新政策是很有效的，并且很受各个欧洲国家政府的喜爱。因此，意大利在欧洲首次采取这系列政策以便快捷、积极促进意大利和欧洲的复苏，这就让该国成为在疫情以后复苏背景下的最重要国家之一。此外，意大利跟其他强国的贸易关系与外交活动一直很发达，在新冠病毒期间内与在疫情之后的复苏背景下，意大利都不断全力试图加强跟其他国家的合作。跟意大利有良好、密集贸易关系的许多国家之中，中国仍然是最关键贸易伙伴之一。两国家通过多数不同的贸易倡议促进他们之间的合作，也扩大两国家之间的投资范围，所以两国家的合作范围越来越发达。实际上，从 1978 年中国开始采取改革开放的一系列政策以来，中国和意大利的投资范围持续扩大，进出口总额不断继续发展，而且两国家提出的贸易倡议愈发发达，越来越包括更多的经济行业和社会范围。由于这些原因，本论文也将强调意大利与中国合作范围的背景与目前的情况。

除了分析国际、中国和意大利的不同外商直接投资的情况与跟可持续性发展的关系以外，本论文也将把参考文献分为微观经济、宏观经济与众观经济的不同分析层次来分析。这样，可以更了解不同分析层次的区别以便理解有哪些分析的层次还差，还应该更加深，也以便理解有哪些研究的方面和分析的层次已经比较发达。只有了解不同地区与分析层次的研究不同点，才能了解这些不同点的主导原因包括哪些。

本论文分为五个主要部分。第一个部分指出国际外商直接投资的情况，介绍在世界上遍布国际外商直接投资的最近情况与新发现趋势，最终提供意大利跟中国合作历史和目前情况的简单介绍。第二个部分特别是为了介绍可持续性发展目前全球采用的定义，并且为了简单地介绍定义的意思与历史。三重底线可持续性发展的定义就是三重底线的总称，包括经济底线、环境底线与社会底线在内。在中国采用的可持续性发展定义的一个特点是，可持续性也可能称为永续性。这种可持续性或者永续性的三重底线定义就是本文参考文献的基础。同一论文的部分

也包括可持续性和可持续性发展定义在意大利和中国两国家的不同辩论与发展历史。第三个部分介绍本论文关于外商直接投资可能对可持续性发展的三重底线每个部分造成影响计量办法与采用的经济、环境与社会指标的主要参考文献。为了解释这种部分，参考文献将包括国际辩论，也包括特别关于中国背景与目前情况的辩论，还将包括微观经济、宏观经济与众观经济的不同分析程序。第四个部分将包括现代外商直接投资的趋势与依靠参考文献的最终分析和论证。第五个部分就是本文的结论，结论将总结以前介绍的所有题目。

本论文的最终目标是强调，为了达到 2030 年的可持续发展议程的目标，外商直接投资可能扮演关键的角色。所以，本论文也试图强调外投资对可持续性发展的影响可能有哪些，可能采用什么样的指标来计量这些方面的重要性。此外，本论文针对推动把通常不接触、不沟通的研究领域联合在一起，也就是说关于可持续性发展和关于经济的几个话题，比外投资，的两个研究领域。只有把以前通常没沟通的这两个研究领域联合在一起，才能为各个国家的政府提供有效计量外投资对可持续发展影响的工具，并且才能提高目前世界上的每个国家政府具有改善经济、环境和社会条款的可能性，以便立即开始全力试图达到 2030 年可持续发展议程的目标。

Introduction

The development of international commercial relations and of internationalization strategies as Foreign Direct Investments has been recently disrupted by social and political events as the pandemic and the Russian conflict with Ukraine, which are deemed to be among the events which would most heavily affect future FDI flows trends (Zhang, 2022). These recent phenomena have exacerbated the need to face critical aspects shared by contemporary societies globally, among which, sustainability (Ferrannini et. al, 2021). It has been proven that worldwide FDI flows can have an effective role in implementing sustainability objectives in host countries[1]; nevertheless, FDIs have long been studied for their possible impacts on economic growth but there is still little research linking FDI and sustainability, namely research that measures FDI impact on triple-bottom line sustainability using quantitative indexes. Therefore, this dissertation tries to combine two different streams of literature, one concerning FDI and another regarding sustainability.

On the one hand, being FDI a globally widespread phenomenon, the literature review will focus on the international debate developed so far. On the other hand, some countries, as for example China, have had a leading role in setting FDI trends. Furthermore, China has long been at the center of debate about sustainability for its massive economic growth strategies, which have prioritized GDP growth over sustainability. Because of the Chinese peculiar position towards FDI strategies and sustainability issues, the Chinese discussion about measuring impacts of FDI on sustainability will be deepened. Countries as Italy have recently become leading European players for developing FDI strategies that aim at exiting the crisis following the pandemics; moreover, Italy is still one of the most important commercial partners of China; this collaborative attitude can be observed from the trends of FDI that have been occurring between the two countries since the beginning of Chinese opening-up process. For these reasons, the Sino Italian FDI context will be discussed as well.

[1] For a recent and detailed explanation about FDIs possible beneficial effects, see the report from OECD, (2022). FDI Quality Indicators.

On the one hand, initiatives as *yi dai yi lu*, 一带一路, the one belt one road initiative, seem to represent a possibility of business expansion and economic growth enhancement for the involved countries and an opportunity to further expand collaboration through FDIs.

On the other hand, FDIs from Italy to China have been facing a slowdown phase in most recent years because, among other aspects that will be discussed in detail, of the increasing attention paid by the general public, consumers, governments, and institutions on sustainability themes.

Impacts of FDI on sustainability will therefore not be discussed in mainstream terms of economic profit and economic sustainability, but in terms of contemporary values of sustainability; therefore, deriving from the shared notion of sustainability as a series of processes that assure the satisfaction of contemporary needs without compromising the future and next generations' lives (Brundtland, 1987) and from the triple-bottom line definition of sustainability as composed by an environmental, social and economic component (Elkington, 1997), impact is here mainly defined as not merely economic, but also in terms of environmental and social sustainability. Furthermore, when considering the contemporary Asian context, another main component defining sustainability of foreign investments is represented by governance and institutional quality, which could be seen as a political component of sustainability for Italian FDI inflows coming from China (Lampo, 2021).

Researching upon the environmental and social impact of FDI implies a discussion about the definition of sustainability and its role in contemporary scenario: the ways every agent in society, including companies, can be retained responsible for the impact created by their strategies and whether MNEs are the only responsible actors in creating and measuring impact will be discussed from both the Italian and the Chinese perspective. In particular, to discuss the Italian context, the broader influence of Europe and Sweden, as a specific country which has always had a strong tradition in leading European ecologic transition and innovative sustainable practices since Stockholm Conference of 1978 (Melane-Lavado et. al, 2018), will be taken into account through the aid and materials provided by some Professors currently working and researching upon the subjects of sustainability, sustainable marketing and corporate social responsibility at Stockholm University.

The analysis and research about the contemporary and possible future scenario in commercial relations between Italy and China and impact of specific strategies as FDI on sustainable goals aims at prompting further research upon methods for measuring impacts on sustainability and at highlighting the urgent global need of elaborating a common and integrated framework. A common, up-to-date framework encompassing quantitative indexes measuring sustainable goals is an essential element needed in order to achieve the internationally established goals of sustainability and sustainable development.

Recent history of commercial relations between Italy and China

Italy and China have been in close commercial and cultural contact since ancient times thanks to the so-called ancient silk road, merchants' routes and exchanges developing from the XIII century. The relations between the two countries have faced many periods of fluorescence and decadence, shifting from decades of profitable exchanges of goods and cultural interaction to attempts of colonization.[2] The patterns in commercial relations between the two countries that can be observed in the most recent history and in the contemporary scenario have mostly been shaped after 1978. The reason for that has to be traced back to recent shifts in Chinese political economy: before 1978, China was a communist-Maoist country strictly following the Maoist model of development, which took inspiration from the soviet models and which was characterized, among other aspects, by the absolute closure to the external international markets.

In 1978, Chinese government decided to start a new development phase and to pursue the so-called socialism with Chinese characteristics, Zhongguo *tese shehui zhuyi*, 中国特色社会主义. The new era was defined by structural change and characterized by gradual and experimental openness to foreign trade and export; the new term *open door policy* was coined by Westerns to describe this unparalleled phenomenon in world history. One of the leading personalities in Chinese Communist Party was Deng Xiaoping, who ideated the major economic reforms. The experimentality of this operation was granted by the

[2] For further discussion about Chinese history and relations to Italy and other States, refer to Samarani, G. & Scarpari, M. (2009). *Verso la modernità* in *La Cina* and to Samarani, G. (2017). *La Cina contemporanea*.

confinement of trade-openness strategies in specific areas, denominated Special Economic Zones, where the government could easily exercise supervision and control on development. Control and supervision were further granted using State-Owned Enterprises as main drivers of innovation and as industrial policies implementation tools wished by the government. Both SEZ and SOE thus contributed to the gradual realization of opening-up to foreign trade in specific sectors that were accounted as strategic for the development and growth of Chinese nation (Di Tommaso et. al, 2021). In this context, Italy benefited from cooperation with China in a gradual and conditional way[3]: at the beginning of the reforms, only specific areas and sectors targeted as strategical by Chinese government were open to international trade; moreover, foreign investors had to comply with some limitations, as, for example, with some specific rules for establishing joint-ventures that would protect Chinese employees, know-how and technology. Nevertheless, Italy (and Europe in general) could significantly benefit from this cooperation thanks to the first commercial agreement between European Economic Community (now EU) and China in 1978 and the Cooperation and Trade Agreement of 1984[4], thus gaining access to the Chinese market. The race to reach the Chinese market especially increased after the first successes of ZES in China and the consequent opening of new high-tech, technology and development zones which further attracted foreign investments from 1984 on (Zheng, J., & Sheng, 2017). The positive commercial relations characterizing exchanges between China and Italy since the first era of Chinese opening-up could be explained by the *guanxi* 关系 approach which has long been characterizing Sino Italian relationships and which was largely immune to the typical geopolitical rivalry and confrontation between China and other Western powers (Marinelli & Andornino, 2014). The political and, consequently, commercial relations between China and Europe have had some slow-down phases, especially in correspondence with 1989's violent repression of students' protests in Tian 'An Men and the European public accusation of Chinese brutality, with discussions about human rights improvements, which corresponded to quota or dumping disagreements (Samarani, 2017).

[3] For deepening the topic of Sino Italian commercial relations, see Marinelli M., & Andornino, G. (2014).
[4] For in-dept discussion about Chinese recent history, see Samarani, G. & Scarpari, M. (2009)., and Samarani, G. (2017).

In 2001, China entered the World Trade Organization, thus further confirming its commitment to opening-up to global trade and conforming to international trade norms and arrangements (Salvini as stated in Samarani, 2017:368) by reducing import duties and opening new sectors such as telecommunications, internet, finance, and assurances to foreign investors and further enhancing the possibilities not only for investments and commerce, but also for institutional and cultural cooperation with foreign partners, among which, Italy (Samarani, 2017).

After the global financial crisis of 2008, a new phase characterized the Chinese political economy and, consequently, commercial relations between China and Italy. The financial crisis hit Chinese economy harshly since Chinese export-oriented policy had developed to such a degree that China was almost completely dependent on foreign countries and markets. After 2008, China decided to combine the previous export-oriented policy with a go-domestic policy to mitigate the exposure risk to foreign markets (Di Tommaso et. al, 2021). For the first time in China, in the decade between 2000s and 2010s, other dimensions of sustainability as the environmental, social and governmental ones started to be considered and implemented through new policies which aimed at prompting sustainable development through environmental protection initiatives, poverty reduction and eradication strategies, anti-corruption directives and social welfare amelioration (Fang et. al, 2021).

Despite the crisis, the Chinese process of opening-up to international trade did not stop, conversely, Chinese role in the world economy kept gaining importance. The further development of Sino Italian commercial cooperation has been marked by the Italian participation to a Chinese national Bank, the Asian Infrastructure Investment Bank, in 2015.

In most recent years, China has consolidated its role as a fundamental commercial partner to the European Union and Europe has become China's first commercial partner; the Italian role in moderating the cooperation between Europe and China has been prominent since the beginning of diplomatic relations between the two countries but many discontinuities happened and Italian Foreign Direct Investments in China in the first years of 2000 were low compared to other European countries. Nevertheless, a turning point in the development of commercial relations between Italy and China may be represented by the

Italian commitment to adhere to the OBOR Initiative, *yi dai yi lu*, 一带一路 , signed in 2017 by the President of Italian Republic Sergio Mattarella (Liu, 2017).

Without any doubt, another contemporary trend worth mentioning concerning the contemporary Sino Italian commercial relations is the issue of governance and quality institutions, which could be considered as another dimension of sustainability by itself according to the ESG classification, especially for FDI flows coming from China and directed to Italy. Political sustainability and the quality of governance have already determined the decision of Italian government to block or to allow Chinese FDIs. Italy has indeed recently grown attention towards the issue of politically and nationally sustainable and unsustainable acquisitions; in the last years, many Chinese acquisitions were blocked by Italian government, which decided to exercise its golden power in order to protect some firms or even industrial sectors considered as strategical from a national perspective (Lampo, 2021).

Current context of FDI flows between Italy and China

The development of Italian investments in China has followed the phases of China's opening policies. Since the 2000s, Italy started to invest in China also through small medium enterprises and Italy's yearly direct investments in China hovered around USD 200-300 million, ranking slightly after the amount invested by France and the United Kingdom. Italy, exactly as China, heavily relies on manufacturing and exports, therefore, Italian investments since the 2000s have highly focused on the mechanical sector, representing over 40% of the manufacturing activity of Italian companies in China. Other Italian FDIs in China are characterized by textiles, clothing and electrical machinery sectors (Prodi as stated in Marinelli & Andornino, 2014:186). Being Italian entrepreneurial landscape heavily reliant on small medium enterprises, it is interesting to note that the Italian peculiar small dimension of firms affected the geographical areas of investments. Compared to large enterprises which are more present in other countries, Italian companies in China had to face different challenges and to seek zones where to find better services from logistics to consultancy industries. Therefore, since the earliest start of investments

in China to at least 2005, Italian companies mainly concentrated in the Pearl River Delta, the Yangtze River Delta and the Bohai Rim industrial hubs (Prodi as stated in Marinelli & Andornino, 2014). China started to invest in Italy as well, and the garment and textiles industry in Tuscany is just an example of this trend; although it has been argued that China is often uninterested in investing in Italian companies, which are deemed to be too little and not profitable enough, this seems to be reversed by some political agreements such as the aforementioned OBOR Initiative.

After the already described starting phase of FDI initiatives occurring between Italy and China, the world entered a more sophisticated globalization phase, and both China and Italian inward and outward investments kept growing, although experiencing some up and down phases, especially in outward investments, at least until 2016 (OECD, 2023).

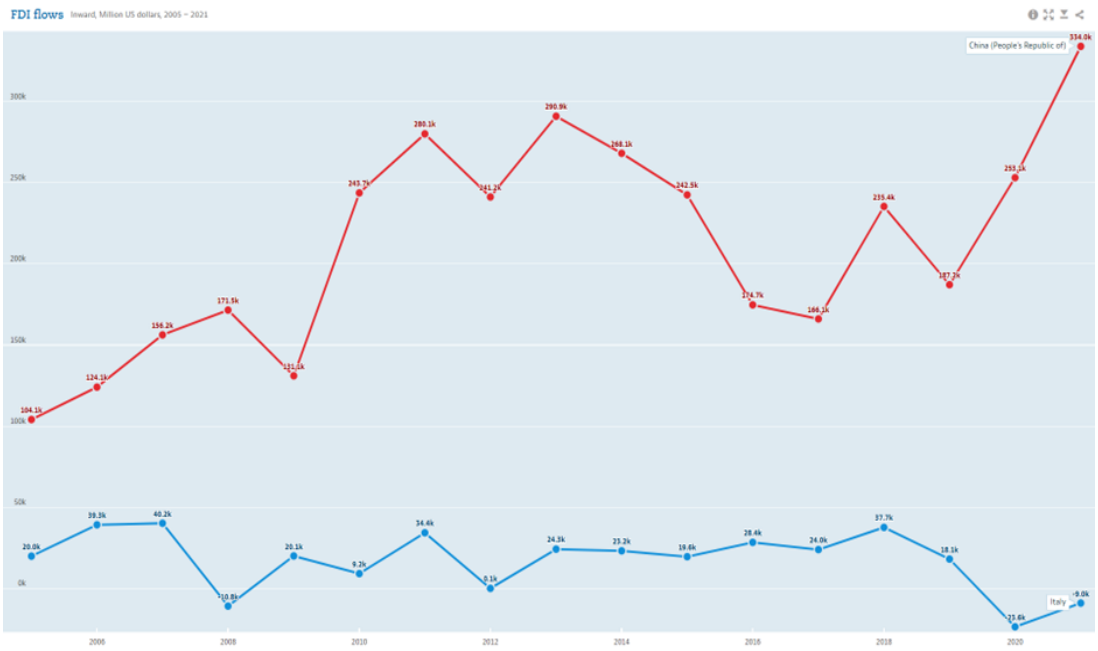

Figure 1: FDI inflows in China and Italy for the period 2005-2021. OECD (2023). FDI Flows (indicator).

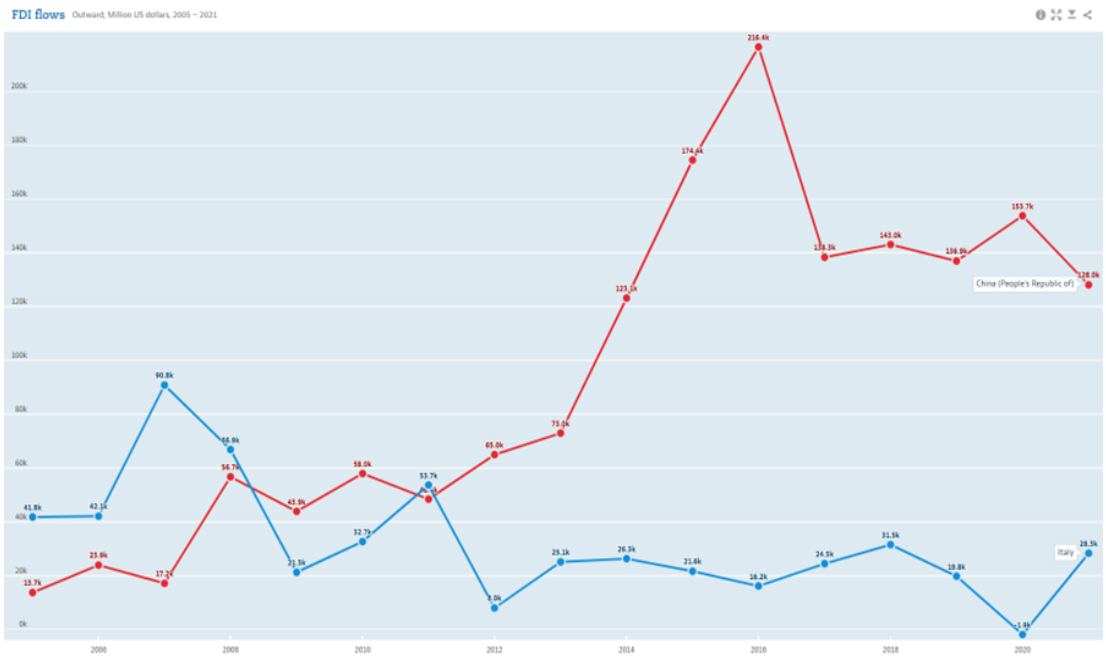

Figure 2: FDI outflows in China and Italy for the period 2005-2021. OECD (2023). FDI Flows (indicator).

Nevertheless, Sino Italian commercial initiatives have been affected by some disrupting events happening in the last years. These events have shocked worldwide investments balance and damaged FDI flows, which thus experienced a new slowdown phase. The pandemics has not been the only component determining a new slowdown phase in the development of worldwide FDI: other main events negatively affecting the development of international commercial relations have been the overall increase in systemic crises which have been leading to political and economic instability. To be more specific, some contemporary events impacting worldwide FDI flows are the war in Europe starting in 2022, food, fuel and finance crises around the world, rising inflation and interest rates, fears of a coming recession (UNCTAD, 2022), increasing nationalistic and protectionist ideologies concerning some investment initiatives as OBOR, and the rising awareness concerning the need to develop sustainable practices in investments.

Research method

The thesis is structured in the following way: after having briefly exposed the overall situation of FDI flows occurring between Italy and China in the contemporary context, the next section aims at providing an overview of current discussion taking place in Italy and China around the definition and realm of sustainability. After providing a definition of sustainability that will be adopted for the remaining of the discussion, a literature review about possible ways for measuring the impact generated by FDI strategies on sustainability is provided. A following section attempts at summing up the main contemporary variables that would most probably affect the development of global FDI strategies and FDI flows occurring between Italy and China, and create a considerable impact on FDI, such as the global pandemic and the war between Russia and Ukraine. Lastly, final remarks, discoveries and conclusions will be presented.

The qualitative method used to analyze and sum up the materials presented in the thesis has been literature review concerning FDI contemporary trends, FDI impact assessment measurement and indexes, and sustainability. The thesis does not aim at providing an exhaustive analysis of contemporary scenario. The main aim is rather to explain why the recent focus on sustainability and sustainable development is not only legit, but rather the only possible future direction of development, while pointing out the potential of FDIs in enhancing sustainable development goals. To implement FDI's potentiality of prompting sustainable development objectives, it is essential to start closing the existing gaps in the literature on FDI impact measurement, by pointing out the importance of multidisciplinary approaches in building a common framework to measure FDI impact on sustainability not only from an economic perspective, but considering other dimensions and components of sustainability, as the social and environmental ones. The need to combine two different streams of research lies in the necessity to create a new, or adapt to an existing, framework, in order to solve the need for uniformity and homogeneity of indicators which can be used to access the level of sustainability reached on each sustainability dimension. This kind of necessity is present both in research and at corporate level, while homogeneity in the use of measurement indicators is essential to promote the sustainable model of development which the United Nations agreed to implement.

Chapter One

Evolution, definitions and debate about sustainability in Italy and China

Sustainability has been a fast-changing concept when it comes to its definition and perception. The reasons for these changes most probably lie in the differences in world's cultures and stages of industrial development (Zheng & Sheng, 2017). The variations occurred in the notion of sustainability implied different approaches that society at large, institutions and companies applied to their behaviors with respect to sustainability issues. In this dissertation the focus is on Italy and China, therefore the evolution of sustainability's definition and the consequent perspectives on roles that should be assumed by societies, institutions and companies will be discussed in both geographic contexts. It has been discovered that the Italian context around which sustainability theme is developing is quite similar to the international approach, therefore the Italian context will be presented by discussing the common features that characterize nowadays' international debate around sustainability. On the other hand, the Chinese context shares some features with the international debate while presenting some peculiarities that are worth deepening, therefore a further focus on the Chinese context will be provided.

From a commonly shared perspective which was first created by the United Nations and then accepted by all its member States, one of the first definitions of sustainability is based on the principle of persistence and first arouse around the late 1980s; it states that sustainability can been reached through a series of processes that assure the satisfaction of contemporary needs without compromising the future and next generations lives [5]. Nevertheless, this notion of sustainability is not sufficient anymore to face the contemporary scenario from both an ethical and an opportunistic perspective (Van Berkel, 2006; Porter & Kramer, 2011; Charter et. al, 2008).

From an ethical point of view, actions must be undertaken in reaction to climate change, which is getting worse at rapid pace, causing emergency situations and unprecedented human, ecosystem, and economic loss in every corner of the world. From an opportunistic, firm-level point of view, to gain consumers' and stakeholders' legitimacy to operate, the first

[5] See Brundtland, H., (1987). See also the report provided by OECD (1987: 54). OECD Economic Outlook, Volume 1987 Issue 1.

sustainability conception is not anymore fitting contemporary consumers' and stakeholders' rapidly growing expectations towards companies' sustainable action (Van Berkel, 2006; Charter et. al, 2008).

Nowadays, the term *sustainability* has been mostly defined by a triple-bottom line conception, which identifies three principal components of sustainability: economic sustainability, ecological or environmental sustainability and social sustainability (Elkington, 1997). Another aspect that is becoming increasingly important for sustainability and especially for sustainable FDI (see next section) is quality governance. The governance aspect directly affects sustainability in its transparency levels, anti-corruption behavior and overall corporate governance (Kapuria & Singh 2019).

Moreover, the multidimensional definition of sustainability has become a shared value across different agents and territories all over the world (Porter & Kramer, 2011; Mio, 2021). The major implication of sustainability becoming a shared value is that society at large, together with institutions and companies, all have an active role in shaping the future of sustainability and sustainable practices. It has been stated that, from a corporation perspective, companies are expected to assume a sort of political power in actively enhancing strategies that aim at protecting sustainability and at promoting sustainable development; politicization of companies' roles is a trend that has been already observed in worldwide debate (Carroll & Brown 2018, Nonet et. al, 2022). Seeing companies as sort of political entities means attributing to companies' duties aspects like social change and improvement of sustainable development. Another stream of thought supports the idea according to which MNEs' marketing, in order to be effectively reformative, should be supported by public institutions, which also have a powerful role in regulating and promoting the creation of a positive impact. In any case, according to different positions characterizing contemporary debate about sustainability, the role of changing contemporary unsustainable patterns is not assumed to exclusively lye in the hands of public institutions and (or) firms, but also to depend upon consumers themselves, who are deemed to be capable of either reinforcing or deleting specific consumption patterns (Kemper & Ballantine, 2019). It thus seems that sustainability practices and strategies in the international debate derive from an initial bottom-up approach, since the starting point of change towards the shift to and reinforcement of sustainability has been identified in the responsible, green consumer, who is deemed to be willing, capable and completely

responsible for the adoption of sustainable consumption behaviors (Kemper & Ballantine, 2019). Moreover, it has been recently argued that, since the world is not on track to achieve Agenda 2030 Sustainable Development Goals which have been subscribed by United Nations in 2015, the only way to improve the implementation of those objectives is to develop a form of hybrid or transition governance for development, which combines the commitments of representatives of the public, private, not for profit kind of institutions and knowledge institutions (Nonet et. al, 2022).

As far as the Chinese context is concerned, notions of sustainability and harmony between man and nature have been appointed as part of traditional culture, where a specific focus on nature was given (Thornber as stated in Tong, 2019). More interestingly, the cultural heritage and the economic development, together with the peculiar Chinese political context, all resulted in different nuances and approaches to the same debate around sustainability occurring at international level. The concept of harmony between man and nature, expressed by the chengyu *tianren heyi,* 天人合一, also known as *tianren hede*, 天人合德, or *tianren xiangying*, 天人相应, is an ancient Chinese philosophical topic, shared by different philosophical and religious traditions of Confucianism, Taoism and Buddhism, although the Taoist and Buddhist attribution to this conception has been debated (Tong, 2019) and the Confucian attitude towards the environment has been argued to be an anthropocentric one, which perceived nature as a tool to be exploited (Shapiro, 2001). The recent attention devoted to this cultural and religious theme shows a romanticized conception of China's past as a place where man and nature coexisted in harmony, a romanticized vision about the peculiar attention Chinese national culture gave to the relationship between man and nature, about the relationship of man to the natural environment, which has not traditionally been an exploitative one, but rather of an entity in perfect harmony and equilibrium with human presence. The equilibrium condition of *tianren heyi* 天人合一 theory implies that humans have always been belonging to nature and human activities should therefore reflect that harmony (Li & Shapiro, 2022). On the other hand, it has been argued that Chinese view and perception of the relationship between men and nature have always been reflecting a sort of anthropocentric view, although some ancient manuscripts may imply the existence of a possible golden age, during which

savants and philosophers professed the importance of respecting and protecting the environment (Elvin, 2004).

In a more modern era, especially during the Mao period and the following industrial development era, since 1980s, a conception of conflict, conquest and war against nature started to be legitimized (Shapiro, 2001) for the higher end of developing the country's industry and overall conditions by abandoning the Chinese rural phase of development and thus entering a new industrialization phase. Therefore, since the Maoist period on, the philosophical, culturally traditional concept of harmony between man and nature surely has been set apart in practice, thus creating a paradox with respect to the ancient, golden age era characterizing the relations between humans and nature. The reason why harmony between man and nature was thus sacrificed must be researched in the strategical priorities of the national State and mere commercial profit: the State was responsible for a strict planning of corporations' activities, strategies and sometimes, even management. An important aspect to consider in this regard is the stage of development that China was living during the era of opening-up reforms, since the 1980s on. Indeed, in the early industrial development period, the strategic priority identified by the State was catching-up with other, already developed, national States, such as European States and United States (Carter & Mol, 2007). First steps into industrialization process have been made in experimental, Special Economic Zones, which, among other objectives, had the aim of studying capitalism and its processes, among which, the exploitation of natural resources (Barbieri et. al, 2012). Western capitalism at that time did not mature yet the debate about the role of corporate responsibility towards sustainable issues such as environmental or social development (Carter & Mol, 2007); moreover, developed States at earlier stages of their development would pay no or little attention to the topic, which was underrated and extremely understudied if compared to economic profit. In order for China to achieve the massive goal of catching-up in the short term, industrialization processes had to focus on GDP creation, and therefore on efficiency and productivity rather than environmental or social sustainability, exactly as what happened in developed capitalist countries at early stages of their development (Barbieri et. al, 2012). It was in that era, in the late 1980s and 1990s, when slogans such as "pollute first, manage later", *xian wuran, hou zhili,* 先污染，后治理, became popular (Tong, 2019).

On the one hand, China's exponential and continuous GDP growth made it possible for many people to escape a condition of extreme poverty, while, on the other hand, economic growth affected different geographical areas in an extremely unequal way; inequalities were, and are, mostly noticeable between urban and rural areas (Centola as stated in Marinelli & Andornino, 2014: 202). Furthermore, negative impacts have been visible on the environment and landscape at large; mostly affected natural elements have been waters, air, soil, together with pollution given by increase in energy requirements and transportations. Other elements that have been heavily affected by the rapid and exponential Chinese economic growth are the population increase and changes in food consumption patterns. All these new items have to be taken into account for China's future progress (Cann & Shangquan as stated in Day, 2005:11).

After few decades of extraordinary economic growth with no precedents in world history, the national State as well as the citizens feel that the time has come to transform that economic growth into effective, human development that increases the general wellbeing of people, that respects and protects the environment in which people are to live and legitimizes firms' ability to operate (Lau et. al, 2016): first initiatives have been implemented to adjust the management of Special Economic Zones and Specialized Towns development to a more sustainable direction (Barbieri et. al, 2012). As stated, the recent focus on the multidimensionality of sustainability is shared everywhere in the world, and in China the main components of sustainability, *kechixuxing*, 可持续性, are therefore named after the *jingji*, 经济 (economic), *huanjing*, 环境 (environmental), *renlei*, 人类 (social, literally: human) dimensions. Although sustainability and sustainable development aim at combining and mutually improving these different components, at the end of the 1990s it has been observed that a sort of conflict existed among the different sustainability dimensions; this kind of conflict and contradictions have to be addressed and solved in order to entirely fulfill sustainable development objectives (Li & Guo,1999).

This period of public awareness towards the need of sustainable practices has been possible since the role of the State in shaping the exact trajectory of enterprises on the national territory has become less relevant, and general guidelines are provided instead of precise, strict indications (Carter & Mol, 2007:128): this phenomenon is especially to be observed in the evolution of Five-Year Plans. This change towards more generic State guidelines

has probably enabled the revival of discussion and the formulation of new theories and suggestions about sustainability and sustainable development, which were largely neglected by the public at the beginning of 2000s (Lee as stated in Day, 2005:35). Public environmental consciousness was long neglected compared to Western research on the topic; furthermore, also when studied, empirical results showed that the actual degree of public support for environmental protection has been much lower than the interest and care declared (Day, 2005). For these reasons, the concept of *tianren heyi* 天人合一 has been experiencing a renewed interest, particularly coming from the younger, more sustainability-responsive generation of Chinese global consumers. Therefore, as stated in the fourteenth FYP, which is relevant to the period 2021-2026, one of the strategic objectives nationwide is the shift to a circular, environmentally, and socially sustainable economy and to a new high-quality development phase, *gao zhiliang fazhan jieduan*, 高质量发展阶段.[6] Indeed, Chinese consumers are becoming increasingly aware and willing to buy sustainable products that bring social, environmental or health benefits, thus proving the green consumer theory may hold also for the Chinese context. Nevertheless, according to Bain & Company's 2022 report (Lightowler et. al, 2022), sustainability conscious and extremely responsive consumers in China, although exponentially increasing in number, are still pursuing a say-do-gap behavior, meaning that the vast majority of Chinese consumer declares its willingness to commit to sustainability by buying sustainable products, but that some elements still prevent them do actually do so, for instance, price barriers or lack of information.

If the phenomena of State's influence on population's practices and awareness through the definition of FYP guidelines, together with State intervention in accounting transition to circular economy and sustainability are considered, it is evident that the contemporary approach used to face sustainability transition and the definition of boundaries of corporate responsibilities may be somehow different from the one adopted in the Western and European countries. While in the debate characterizing the Western countries, there seems to be a peculiar emphasis on bottom-up approach in the building of sustainable practices and increased awareness about sustainable development, in China, the same bottom-up

[6] See complete English version of the 14th Five Year Plan reported by Xinhua News Agency (新华社), March 12, 2021.

approach that could be observed by the increase in the so-called green consumers is coexisting together with a top-down approach adopted for the suggestion and implementation of sustainability strategies (Lee as stated in Day, 2005:38).

It has been argued that nowadays, the top-down ruling and authoritarian modes applied on environmental governance in China are still accepted by the public since the Chinese population is perfectly aware of consequences of pollution on the environment, and consequently, on their lives. Moreover, the conciliation between State authoritarianism and citizens' scientism and involvement is possible because of the Chinese traditional focus on scientism and technocracy, which enables the public to still entrust the modes the Chinese government adopts in order to enforce environmental governance. Since the Chinese public is well aware of the environmental and sustainability problem, the acceptance of a sort of authoritarian environmentalism implies that the means adopted by the Government, which are authoritarian modes, are justifying the end of reaching sustainable development, especially as concerns environmental pollution related problems (Li & Shapiro, 2022). Another possible reason for the public to be willing to accept the Chinese Communist Party authoritarian ruling concerning the implementation of environmental governance may be the neglection and ineffectiveness in treating the issue coming from other world's powers, as the United States, which temporarily retreated from the Paris Agreement in 2017 (Hsu, 2018). An example of authoritarian environmentalism adopted recently is represented by the definition of a new term in the 14th Five Year Plan: the term ecological civilization, *shengtai wenming*, 生态文明, which should denote a new phase of civilization for the Chinese society; this new era should be reached through massive Governmental-lead initiatives.

Apart from the authoritarian ruling on environmental governance, it has already been demonstrated that, whenever the directives-targeted local population is considered and involved in the process of implementation, sustainable objectives can be reached not merely from an environmental perspective, but also from a social sustainability perspective (Hsu, 2018). Indeed, the involvement of public society, although different from the one usually seen in Western countries, is present and started to rise in correspondence to increasing pollution levels: some scholars describe this phenomenon as an environmental awakening (Li & Shapiro, 2022).

Considering the triple-bottom line definition of sustainability, the phenomenon of environmental awakening is interesting because it reflects the contemporary need for a more inclusive and multidimensional definition of sustainability, which encompasses the environmental and social dimension together with the economic one. In these terms, the recent environmental awakening is even more interesting if compared to some of the most relevant Chinese recent past experiences. Considering the Chinese post-Maoist period which highly coincided with the era of economic opening-up and reforms after 1978, it has been argued that it has been characterized by a moment of population's disillusionment towards socialism and its values, which has led to a cynical attitude that focused on individual economic gain and thus prompted the development of unsustainable behaviors and practices (Shapiro, 2001). The period of disillusionment after Maoism has often been called the *xinyang weiji* 信仰危机 (crisis of belief); its derived cynicism has been negatively affecting the environmental protection in a variety of ways, as the raising of a new short-term-gain individual vision, the increase in corruption and towards an overall utilitarian approach to relationships and to the exploitation of the natural environment, the increased difficulty in empathizing and deep disillusionment towards the CCP's initiatives and rhetoric concerning the issues related to sustainability (Shapiro, 2001). At the same time, the Government itself enhanced a series of reforms and strategies that, as discussed, exclusively aimed at increasing GDP levels and overall economic growth, while neglecting other dimensions of development. Therefore, it can be stated that, in the first post-Maoist period of opening-up to foreign trade, the exclusive focus of both population's and Government's attention was relying on the economic dimension of sustainability while completely neglecting the environmental and social dimension.

Additionally, it can be stated that, together with a top-down ruling, also the external force of globalization and internationalization processes have been influencing the Chinese evolution on debate and behavior around sustainability (Carter & Mol, 2007:165). These phenomena have been creating pressures coming from developed to less developed countries and have been influencing China since its very appearance. The influential power that such pressures may create is extremely wide: just to provide an example, it can be considered to have been one of the major reasons why China decided to undertake the difficult catching-up process in such a little time. As stated, another relevant contemporary topic concerning the dimensions of sustainability in China, as many other developing

countries, is high quality institutions and governance. Although China has not been a frontrunner in innovations concerning governance enhancing sustainability and especially environmental governance (Carter & Mol, 2007: 165), China recently experienced a new phase, determined by State attention and declarations of commitment towards the topic. The major exemplification of this phenomenon is represented by the Chinese Communist Party announced commitment towards the improvement of still lacking social governance stated in the XIV Five Year Plan, the so-called *shehui zhili*, 社会治理. Concerning the FDI context, China Investment Corporation decided and declared to integrate Environmental Societal and Governance (SDG) factors in their sovereign wealth fund in order to deliver both investment returns and a sustainable performance, according to the new development philosophy appointed in the aforementioned XIV Five Year Plan (Xinhua news Agency, 2021). Governance is gaining increasing importance in the debate and practice concerning the impact created all over the world by Chinese investments. For example, governance and political sustainability has already proven to represent a relevant element determining the acceptation or declination of Chinese FDI outflows in Italy; Italy has already used its right to exercise the golden power to refuse some Chinese acquisitions of Italian strategic firms operating in national strategic sectors in 2021 and 2022, as Iveco and Fastweb.

Chapter Two

Literature review: measuring the impact of FDI on sustainability

After having briefly presented the role and current situation of FDI in the introduction, the definition and evolution of the term *sustainability* and its most contemporary connotation adopted in different territories, the following literature review is about the possible ways that have been used to quantitatively measure FDI impact on sustainability's different dimensions. According to the World Economic Forum report of 2017 (Mann & Sauvant, 2017), sustainable FDI is a kind of investment which is able to contribute to the economic, environmental and social development of the host country in a fair governance mechanism. This definition thus corresponds to the presented triple-bottom line definition of sustainability in its three main dimensions, while stressing out the importance of

governance which has also been discussed, especially for the Chinese investment context. This definition of sustainable FDI is also consistent with what has been long recognized as FDI most important conditions able to make FDI beneficial for host countries' development, namely effective macroeconomic policies, consistent competition rules, environmental standards and social policies and good governance (OECD, 1999).

Impacts of FDI strategies on host and home countries have long been discussed by scholars and lately start to be discussed also among companies' managers. Although the definitions of sustainability, sustainable development, sustainable FDI are all composed by a well-defined multidimensionality, the vast majority of literature and available material concerning impact assessment mostly aims at measuring the economic impact (Ramesh, 1994; Borensztein et. al, 1998; Casson, 2007; Madariaga & Poncet, 2007; Enderwick, 2018), often in terms of economic growth happening in correspondence to FDI strategies, which, in terms of sustainability, can be considered as a partial approach to the measurement of sustainability. Indeed, such an approach is merely partial since it only considers one dimension of sustainability, the economic one. Therefore, this mainstream and commonly adopted approach in research is not compliant with what has been argued about sustainability, sustainable development and sustainable FDI, and is not even complying with the well-recognized conception according to which useful indicators of sustainability have to include at least two different dimensions in order to become comparable and thus provide more effective information about the impact created (Mio, 2021). According to the triple-bottom line definition of sustainability adopted so far, this kind of measurement neglects the environmental and social components of sustainability which should be accessed as well in order to measure the overall impact of FDI on sustainability. Moreover, other aspects or dimensions of sustainability should be accessed because they are recently gaining importance, especially in specific territories, as it is the case for the increasing relevance of quality governance to access the political sustainability of investment flows directed to China. Some research has been conducted to attempt at measuring the FDI impact on environmental and social component of sustainability; for example, especially in the Chinese debate, an important focus has been put to the measurement of FDI impact on the environment.

Given this kind of research and debate background, the literature review presented next aims at identifying the sustainability indicators used by currently available research and

reports. The importance of indicators lies in their ability to depict effectively the impact generated by specific strategies, as in this case, FDI. Furthermore, it can be argued that nowadays sustainability indicators still lack an overall generally accepted and adopted categorization, which reduces the possibilities for all countries in the world to effectively implement policies about sustainability and sustainable development.

Indicators used in the literature are therefore discussed and classified according to the dimension or dimensions of sustainability that they encompass. As said, sustainability indicators should encompass at least two of the three dimensions in order to be comparable; nevertheless, some papers, especially the oldest ones concerning the topic of measuring FDI impact, merely focus on one indicator. Whilst it is true that some research focuses on just one dimension of sustainability, some other research, usually more recent, attempts at providing indicators that could be useful to depict the impact created on all the three aforementioned sustainability dimensions or even on emerging relevant dimensions as governance or quality institutions.

Furthermore, all the literature will be discussed also taking into account the geographical area where research has been conducted or where the focus of analysis lies on, and it will be stated if the discussion and the use of certain indicators are relevant to a specific area or if they are rather shared globally; considerations about identification and use of indicators will also focus on the peculiarities of the Chinese context.

At the same time, another relevant level of analysis used to differentiate the following literature is given by the differentiation between microeconomic, macroeconomic, mesoeconomic -industrial and regional- studies and research. Noticing that the aggregate industrial level of analysis is one of the less commonly researched upon despite its importance in defining both future trends in FDI occurring between the two countries and the possible realization of sustainability objectives, a focus about mesoeconomic industrial data in China and Italy is provided.

The main purpose of dividing the literature review according to these three levels of analysis, namely dimension(s) of sustainability measured, geographical area and economic level of reasoning, is to provide some data that allow comparison and the highlighting of possible differences in the contemporary debates developing globally. Differences that could eventually be found in the use or focus of sustainability indicators could therefore

be meaningful, given the general need that all the world is facing towards the development of more sustainable practices, economies, societies and ecosystems. Indeed, the United Nations Organization and its totality of member States signed the same agreement and sustainability objectives to be reached by 2030 through the 2030 Sustainable Development Goals Agenda.

2.1 The microeconomic perspective

As far as the microeconomic perspective is concerned, companies all over the world are recently beginning to elaborate sustainability reports in order to gain and maintain their legitimacy to operate in a context where consumers are increasingly aware about the need to develop sustainability societies, economies and ecosystems and have increasingly high expectations about the role that companies should play in shaping a new sustainable world. These kinds of corporate reports are flourishing everywhere, but they still lack a systemic scheme or ruling to follow, even if some efforts in the development of common sets of indicators have started to spread recently.[7]

Even before the overall increase in awareness related to sustainability dimensions of environment and society, companies used to elaborate impact assessment that aimed at measuring the economic yield of their operations and therefore their economic sustainability, through the use of specific indicators. For example, Carkovic and Levine (2002) provided some research combining the micro and macro approach and accounting for FDI exogeneous components in order to indagate the possible effects of FDI on host country's economic growth. They found out that there is no empirical evidence supporting the hypothesis that FDI flows may prompt economic growth, conversely, their conclusions suggest that FDI may slow host country's development and its economic growth.

However, with regards to FDI impact assessment from a microeconomic perspective, it is still difficult to find reports or corporate assessments that clearly assess the impact created

[7] For example, in the European context, thanks to new GRIs or the new European Corporate Sustainability Reporting Directives, which were both first proposed in 2021 and now about to get into force.

exclusively by FDI initiatives, since they usually rather evaluate the impact on sustainability of company's overall operations.

Some examples of microeconomic reporting that provide impact assessments specifically addressing FDI strategies are presented below.

An interesting reporting is provided by Better Cotton (2020), which collects data through input and output indicators, and thus compares Better Cotton firms to other firms present in the area of operation, and which are not part of Better Cotton farmers networks, for each nation involved in the project: China, India, Pakistan, Tajikistan and Turkey. The company thus divides its sustainability reporting according to the area of operations and then accounts for indicators relevant to at least two dimensions of sustainability. For example, in the case of the impact assessment relevant to China, sustainability indicators of environmental and economic dimensions are included and are considered as relevant to each other. They consider yield and profitability as indicators of economic sustainability, and pesticide use, synthetic fertilizers use, organic fertilizers use, biopesticide, water use for irrigation as environmental indicators.

Another corporation providing an innovative sustainability reporting is Treedom (2022), which assesses different areas relevant to sustainability and sustainable development as the impact created on rural communities, on education, on environmental sustainability and agriculture, on research and development, on SDGs in terms of output indicators. They conduct this kind of assessment by accounting for the number of trees planted and consequent level of CO2 absorbed in the areas of operations, as Camerun, Colombia, Dominican Republic, Ecuador, Ghana, Guatemala, Haití, Honduras, Italy, Kenya, Madagascar, Malawi, Nepal, Tanzania, Thailandia, Uganda; they also account for the number of species at risk of extinction planted, for the level of compliance to SDG reached thanks to a toll called the SDGs Action Manager, which provides a combination of B Impact Assessment and United Nations Global Compact. Another element that enables a correct impact assessment of social sustainability reached is the B Corporation certificate and company's high score in governance and workers categories.

As far as sustainability impact assessments from a microeconomic perspective and relevant to Chinese outwards investments are concerned, reporting or research about social sustainability is still difficult to produce and therefore access. Nevertheless, a research

worth mentioning has been conducted to assess the impact created by Chinese FDI in the mining sector in Bolivia (López & Quiroga, 2015). Through two case studies and the use of indicators of scenario, of input and output, researchers conducted interviews to local inhabitants and were thus able to provide a bidimensional social and environmental qualitative impact assessment. Indicators included in the environmental assessment are legal compliance to local environmental legislation, water pollution and consumption and air pollution, while indicators used to elaborate the social assessment included employment rate expected improvement in the wellbeing expected, disruption of local activities expected, local population willingness to accept the project, limitations in the enforcement of human and workers' rights. Research results suggest that impact obtained in the two dimensions is not univocal. Indeed, on the one hand, FDIs are discovered to have a negative impact on environmental sustainability, since Chinese tin mining FDI are associated with higher levels of water pollution and conflicts over water use. Interestingly, results also show that one of the two cases studied, namely the case of Jungie, indicates that the Bolivian authorities show a lack of capacity and/or willingness to enforce and upgrade existing environmental laws. On the other hand, the social impacts created by Chinese FDI in Bolivia show more hopeful results. For example, Jungie has actively engaged in community consultation processes and has respected their outcomes, thus enabling ore processing facilities to be located in communities that expressly want them and to be located away from those that do not. Moreover, the firm is operating through a joint venture with a local cooperative, therefore it has been stated that such an arrangement could bring new technology to the cooperative sector and ensure that the local population benefits from mining.

Although all the aforementioned research and reporting is useful to depict impact created on at least two sustainability dimensions, some research attempted at providing a more inclusive set of indicators which encompass all the three dimensions of sustainability from a microeconomic perspective.

Further sustainability assessments that aim at encompassing all different dimensions of sustainability from a microeconomics perspective are also present in mainland China. For example, a study conducted by Xi'an Jiaotong University scholars (Zhang et. al, 2018) and by some governmental agencies such as the United Front Work Department of the Central Committee of the Communist Party of China, All-China Federation of Industry and

Commence, the State Administration of Industry and Commerce, and the Private Economy Research Institute of China collected firm-level data that come from nationwide surveys of privately owned enterprises in China. The surveys have been conducted in 2008, 2010 and 2012. This kind of study attempted at depicting four main areas of sustainability which also related to the triple-bottom line definition, namely a self-constructed output index measuring CSR activities levels, through the measurement of four most acknowledged components of CSR including environmental protection, monetary donation, employee welfare, and product quality improvement. These four components explicitly reflect corporate responsibility for the environment, the public, the employees, and the consumers. The conclusion derived from the study's data analysis is that foreign direct investment could serve as a vehicle for sustainable development and enhance its positive effects through the transfer of corporate social responsibility-related managerial knowledge from foreign firms to local ones.

Focusing on a microeconomic perspective also allowed some scholars to deepen the role of some firms' endogenous capabilities, as innovation, and their eventual role in enhancing and reducing FDI effects on sustainability and sustainable development. Melane-Lavado, Álvarez-Herranz, and González-González (2018) have studied innovation as an output indicator, namely as an indicator of FDI positive spillover effects which would, in turn, enhance company's processes oriented towards sustainability. They considered a panel of 4667 small medium enterprises, spanning a sample period occurring between 2004 and 2013; they attempted at comparing and contrasting small medium enterprises with FDI and equivalent companies without FDI and concluded that FDI is attracted mainly by factors associated with technological supply, which is capable of producing positive spillovers when present in companies also being of medium size and located in a manufacturing sector of medium-high technology. Nevertheless, an important discovery is that positive spillovers depend to a large extent on public funding, which allows small medium enterprises to be more innovative and makes it more likely that they focus their innovative process on sustainability.

2.2 The macroeconomic perspective

As far as the macroeconomic literature on the impact generated by FDI strategies on the economic component of sustainability is concerned, it usually focuses on spillovers effects, on economic growth, on technology spillovers, innovation and on effects on competitivity generated by FDI. This stream of literature is highly variable in its conclusions about generated impact: some researchers deem FDI for causing an overall negative impact on host countries' economies, while others appraise FDI initiatives as occasions for generating positive spillovers effects on foreign host countries (Ramesh, 1994; Borensztein et. al, 1998; Casson, 2007; Madariaga & Poncet, 2007; Enderwick, 2018). The explanation to the different conclusions most probably lies in the diversity of variables and indicators that are considered in each research and analysis model. Most commonly used indicators are those referring to GDP, GDP growth, income growth, profitability ratios and benefits versus costs in economic analysis, exogeneous components of FDI, increase in GDP corresponding to increase in FDI flows, human capital indicators of technological progress, as technological progress is considered the main element affecting economic growth and income increase, employment levels, trade or export increase, productivity growth.

For example, in the research conducted by Madariaga and Poncet (2007), the impact of FDI is accessed in terms of GDP and income increase; the study revealed that FDI generated a positive impact on GDP and income variation also in neighboring areas. Worldwide, most of the literature analyses the impact on economic sustainability by considering GDP level or GDP per capita as main indicator.

As far as the Chinese debate is concerned, GDP is also matter of main focus, but it has been sometimes accompanied by other interesting indicators, as export growth (Whalley & Xin, 2006), which is another main economic indicator together with GDP growth in the Chinese context, especially in the first phase of catching-up and industrialization, when the strategic Governmental attention was exclusively lying on these two aspects to monitor the development and efficacy of the national strategies. Another interesting assessment of economic sustainability from a macroeconomic perspective in the Chinese context has been represented by the study conducted by Chen and Wu (2008). They attempted at accessing economic sustainability by considering the direction and typology of FDI

occurring between China and the United States, concluding that an unsustainable commercial deficit exists. The main reason for that lies in the differences between industrial sectors which are object of international FDI flows, namely manufacturing and primary goods. Indeed, both manufacturing and primary goods industries are usually located in China, while the majority of technology intensive sectors is usually located in the United States.

Although the focus on the impact of FDI on economic sustainability usually focuses on economic dimensions such as GDP growth in macroeconomic analysis, there have been some studies which attempted at enlarging the scope of analysis by including other kinds of economic indicators, which could even be considered as indicators attempting at depicting the level of economic and also social sustainability reached. For example, by considering profit and, more interestingly, the distribution of profit among owners and customers as indicators, as Casson suggested in his work (2007). His conclusions are that overall efficiency may be increased at the expense of extreme inequality in the international distribution of benefit. Nevertheless, the conducted social cost-benefit analysis suggests that the most suitable measure of economic performance is simply profitability. Therefore, the conclusions that Casson drove seem to reflect the widely accepted paradigm of focusing on economic yield, profitability indicators rather than deepening the role of social indicators and their possible correlation with economic indicators.

Other recent attempts of combining economic indicators with other indicators relying on different dimensions of sustainability have been conducted following a macroeconomic perspective. For example, in China, many different studies have tried to combine the economic dimension of sustainability with the environmental dimension. This is the case for the works of Chen (2016) and Cu, Cui and Zhong (2021). In the analysis of Chen, data have been collected in China, accounting for the period between 1995 and 2013, and have been organized according to the different indicators of GDP, employment rate and polluting emissions. Although employment rate may be seen as an indicator of social sustainability, it is rather considered as indicative of economic conditions and therefore of economic sustainability in this study, since it does not actually take into account social instances such as income discrepancies or employment produced inequalities. The main conclusion of this study is that FDI increase may help to create sustainable development if

effectively harmonized with policies relevant to protect the environment and to obtain equal social benefits. In the study conducted by Cu, Cui and Zhong, the indicator utilized to measure economic and environmental sustainability in China in the period between 2006 and 2017 was mainly green total factor productivity, with its variables, such as expected and unexpected outputs, capital, labor and energy inputs that are explained by: GDP deflator index, sulphur dioxide emission of manufacturing industry, annual capital stock of manufacturing industry, annual average persons in manufacturing industry, annual energy consumption. The main discovery of the study involved the leading role of environmental regulation: environmental regulation influences green total factor productivity positively, and FDI has a negative relationship with green total factor productivity. Therefore, strict environmental regulation can improve the environmental threshold of FDI and play a role of screening for FDI. And the positive interaction between environmental regulation and FDI is an important factor affecting the promotion of green total factor productivity.

It is remarkable that some other authors lead research to investigate the impact on macroeconomic level exclusively based on the environmental component of sustainability and its measurement occurring in FDI strategies. Although it is positively noticeable that some research finally started to give more relevance to new dimensions of sustainability that are not exclusively linked to the economic aspect, this approach is still neglecting the other dimensions of sustainability, thus minimizing the actual total impact that FDI may have on overall sustainability. Some examples of this stream of research are presented as follows. As concerns the international debate, some research attempts at depicting the situation at international level, by comparing different countries. For example, Arif, Arif and Khan (2022) provided an insightful analysis of the situation in 123 different nations over the period 1996 to 2018. The study provides a comparative analysis and distinguishes among 45 developing and 78 developed nations, to better understand the environmental impacts of FDI by accounting for output indicators as CO2 emissions, emissions on FDI and GDP per capita, energy consumption, trade openness and urbanization. The overall results differentiate among the global sample and the sample diving developing and developed countries. The study thus concludes that the impact of FDI on environmental emission is negative and significant for the global sample, while the comparative analysis distinguishing between developed and developing countries proves that FDI has the

potential of improving environmental quality in developed nations, as it usually brings a lower level of CO2 emissions. On the other hand, FDI usually leads to adverse environmental impacts in the developing nations as it can cause an increase in the level of CO2 emissions. Therefore, empirical findings for developed and developing countries confirm the so-called pollution haven hypothesis for developing countries and accounts for pollution halo hypothesis confirmation as concerns developed countries. Pollution haven and pollution halo hypothesis are two competing and opposite hypotheses involving the possible effects FDI may have on host country's economy, environment, and society. According to pollution haven effect theory (Mabey & McNally, 1999; Gray, 2002), FDI establishes in those countries characterized by weak regulations, and thus, FDI promotes weaker environmental regulations and standards. A similar hypothesis is called regulatory chill hypothesis, which suggests that host countries prefer avoiding strict environmental regulation in order not to lose competitivity with respect to other possible FDI flows destinations (Fortanier & Maher 2001; Gray, 2002). Conversely, the pollution halo hypothesis suggests that FDI has the potential to spread management practices and technologies that would prompt especially the environmental, but to some degree, also the social component of sustainable development in the host country (Zarksy & Gallagher, 2003; Kardos, 2014).

Considering the possible different outputs of FDI according to different stages of relevant countries development, another study may be of interest. The research lead by Huynh and Hoang (2019) considers 19 Asian developing countries between 2005 and 2015 in its samples and conducts the analysis by considering output indicators of environmental sustainability as country and year, CO2 levels, FDI inflows, and an institutional quality index which is captured by the five indicators of the governance, quality, including voice and accountability, government effectiveness, regulatory quality, rule of law, and control of corruption. Main conclusions of this research are that FDI inflows initially increase air pollution in Asian developing countries. Nevertheless, the adding of an institutional quality index allows the researchers to prove that institutional quality improvement may help reduce air pollution increase until the institutional quality achieves a threshold. After institutional quality is capable of going beyond this threshold level, FDI starts to even reduce air pollution. The findings indicate that the pollution haven hypothesis and the pollution halo hypothesis are not contradictory when the institutional quality is taken into

consideration. The interesting aspects of this research are mainly two: the first is the use of developing Asian countries in the sample, which allows for a further reflection on the role of FDI in developing economies. Indeed, even though FDI in developing countries is usually associated with being providers of negative spillover effects on the environment (as Arif, Arif and Khan proved in 2019), the present study also shows that FDI may also provide benefits to developing countries, given certain conditions. The second interesting aspect is that researchers chose to provide an indicator accounting for institutional quality. Since it has been proven that one of the most problematic aspects in FDI inflows coming to Asian developing countries is represented by the lack of institutional quality and the significant differences in governance (UNCTAD as stated in Sanna Randaccio, 2012) compared to the biggest developed countries economies, accounting for institutional quality in the Asian region seems to be fundamental to provide a complete definition of sustainability of investments. Apart from including this kind of indicator in the analysis, what is even more insightful is probably that this indicator has proved to be the (or at least, one of the most important) element for enabling FDI changing from being a possible threat to environmental sustainability to becoming an active driver of improvement in environmental sustainability levels in developing economies.

Another meaningful attempt of depicting the environmental impact caused by FDI initiatives comparing different countries perspectives has been provided by Randaccio (2012): the author choses to sum up the attempts conducted by UNCTAD and OECD until 2012 to estimate the extend and magnitude of FDI which could be defined as environmentally relevant thanks to a series of environmental sustainability output indicators. These indexes encompass the number of low-carbon products and services, the number of FDI projects in the areas of renewable power generation, the dimension of recycling and manufacturing of environmental technology products like wind turbines or solar panels. The study results show the importance of MNE and their impact as technology providers; therefore, FDI has the chance to finally play a key role in the global effort to shift to an environmentally sustainable low-carbon economy. Multinational enterprises contributions to climate change mitigation and environmental sustainability could be reflected by some initiatives, as providing new technologies which would implement savings of emissions, simply providing financial resources and managerial skills to resource constrained developing economies. Conversely, Randaccio also problematizes

this conclusion by considering the governance aspect of sustainability, and points out that multinational firms are internationally mobile, and that this could limit the possibility to implement unilaterally mitigation measures, due to increasing concerns about competitiveness and leakage, especially in the Asian area. Nowadays, we can state that the author was right in highlighting this problematic aspect that is recurrently occurring nowadays and becoming more and more deserving of attention and study.

Worldwide, the environmental dimension of sustainability is gaining attention, and some other studies relevant to developing countries contexts have been conducted to analyze the possible impacts of FDI, among other aspects as globalization and economic factors, on environmental sustainability.

For example, Khan et. al (2019) conducted a study concerning the area of Pakistan from the period 1971 to 2016. The unique indicator used to depict the impact on environmental sustainability of different economic factors, among which, FDI, has been the level of CO2 emissions in the relevant territory. As far as FDI strategies are concerned in the study, their effect on CO2 emission is proved to be positive in the medium to long run, while they may have a negative effect on CO2 emissions in the country in the short run. The limitations of this kind of study are relevant to the unique reliance on a single indicator of sustainability, even though the choice of using an environmental indicator as single indicator paved the way to further studies considering CO2 emissions as sustainability output indicator.

Another interesting source accounting for environmental sustainability indicators has been provided by Bokpin's research (2017). The author decided to focus on environmental dimension of sustainability and to consider the mitigating effects of governance and institutional quality in contributing to a higher level of environmental sustainability in FDI inflows coming to Africa. Bokpin did so by considering another output indicator, namely environmental degradation. Even though it has already been stated that the use of a single indicator can be a limitation to this kind of impact assessment, here environmental degradation is considered in different forms that include for example the pollution level of water bodies, the level of toxic substances emission and deforestation levels. The author decided to test the Environmental Kuznets curve theory by collecting data for 24 years, from 1990 to 2013, across African countries. The Environmental Kuznets curve theory has been firstly elaborated in 2004 (Stern, 2004), and suggests a link between environmental

indicators and income indicators, which could be analyzed and considered for FDI produced effects on the environment. Through Bokpin research, it has been concluded that there is a direct correspondence between the increase in FDI inflows and the increase on overall environmental degradation; therefore, it can be assumed that FDI inflows coming to African countries during the period analyzed have produced a negative impact on environmental dimension of sustainability. Interestingly, the level of environmental degradation in the post 2010 era is even greater than the one occurring in 1990, which was used as the study's reference point. Nevertheless, there is a possibility for FDI to change from having a negative impact to become active enhancer of a positive impact on environmental sustainability levels and in decrease of environmental degradation: once again, the contemporary relevance of the sustainability dimension of governance and institutional quality has been highlighted. It has been proven that a strong level of governance, together with an improvement in institutional quality, are essential to this transformation in FDIs role in the host country. Indeed, FDI can create a positive impact on environmental sustainability in countries with strong governance and high-quality institutions since these could exert control and supervision of the FDI businesses conduct.

Moreover, as far as the discussion concerning the Chinese area is concerned, there has been a great amount of studies trying to focus on this specific geographic context and to study the possible impact of FDI on this territory environmental degradation and sustainability; this field of research has attracted great attention since the opening up reforms initiated by China's Government since the late 1970s to nowadays, both among international and Chinese scholars.

Among these studies, many of them have focused on the possible FDI impact on environmental degradation and to a specific aspect of it, which is air pollution. For example, He conducted a study (2011), where the level of air pollution in China was researched according to the level of SO2 emissions reached in each of Chinese 29 regions, in the first 25 years before the first economic reforms, which enabled the access of foreign MNE into China. Therefore, the main indicator of this kind of study has been an output indicator of environmental sustainability. According to this early study about the connection between FDI and SO2 emissions in China, FDI contribution to the overall level of industrial SO2 emission is not relevant, but, at that time, FDI in China seemed to be mainly constituted

by the inflow of foreign capital pursuing a lower pollution regulation compliance cost production platform.

Another attempt of those years in quantifying the amount of air pollution caused by FDI in China collected data since the late 1990s, with the aim of analyzing the environmental output indicator relevant to the relationship between local pollution and the scale of foreign direct investment, industry composition, and level of income (Feng, 2009). By considering these kinds of indicators, Feng even finds a negative relation connecting foreign direct investment and air pollution. This result seems to contradict the aforementioned discoveries of Arif et. al (2022) and Huynh and Hoang (2019), according to which, FDI impact on environmental sustainability may be negative in developing countries if a threshold level of institutional quality and governance is reached. Conversely, this study is even suggesting that the overall effect of FDI on a developing economy as China may have been in the early years of 2000s, may be beneficial to the environment. During the same years, another commonly used indicator for environmental sustainability in China has been the level of CO2 emissions occurring in correspondence with the application of FDI strategies. For example, Golub et. al, as OECD speakers, (2011) tried to define and measure the extent to which green FDI were taking place in the territory of China. They define green FDI by calculating the amount of CO2 emissions coming from these actives, namely as FDI which are encompassing environmental damage from their economic activities, without specifically focusing on industrial sectors that would contribute to climate change mitigation. Green FDI can be bounded using the concept of environmentally relevant FDI. Important discoveries of this research include those concerning the barriers which hinder green FDI, and which are for the most part implicit rather than explicit, therefore difficult to access and measure. Confirming the discoveries of aforementioned studies, institutional quality and high-quality governance matter and have an essential role in allowing developing countries to absorb greater amounts of green FDI and thus making FDI strategy environmentally more sustainable. Kirkulak et. al (2011) also considered some output indicators relevant to the environmental sustainability dimension, including the level of CO2 emissions, but not only. They considered a panel of data spanning across 286 Chinese cities from 2001 to 2007. To access Chinese cities air quality, they adopted CO2 emission increases relevant to GDP per capita and sulfur emissions increases relevant to increase in population as indicators. The study shows FDI

does not have any negative impact on the air quality during the considered years in China, therefore, contrary to any expectations and contradicting aforementioned studies about the possible impact of FDI on developing countries environment, the presence of FDI here actually seems to reduce air pollution levels. This unexpected result may be given by the fact that FDI have a prominent role in China, since they are usually perceived as main drivers and sources of advanced technology which can be later transferred from international enterprises to local enterprises. Less surprisingly, FDI shows to have no significant impact on air quality in the central and western Chinese cities, which could probably be explained by the fact that most of FDI are usually located in the Eastern coastal area of mainland China, especially in the first decades of opening-up policies, which exactly started off from special economic zones located in that area.

Concerning the role of technology and technological transfer happening through FDI initiatives, and usually deemed to lead to an increase in environmental quality levels, by analyzing technology spillovers relevant to FDI initiatives, it has been proven (Wan-Ping et. al, 2008) that technology spillover can represent the rationale allowing for increasing adoption of environment friendly policies in FDI strategies. At the same time, increasing investment in primary and secondary industries usually lead to increasing levels of pollution. Therefore, the impact of FDI in environmental quality may be contradictory: on the one hand, it can be beneficial, on the other hand it can prove itself as harmful, depending on country and typology of traded technology.

Recently compared to the previously discussed literature addressing the Chinese context in macroeconomic perspective of FDI's environmental sustainability, Zomorrodi and Zhou (2017) attempted at expanding the field of environmentally sustainable and environmental quality indicators by including not only an indicator relevant to the level of SO2 emissions in the air and to air pollution, but also another output indicator concerning waters pollutant emissions level. They did so by considering time series and panel data regression, the period they considered was between years 2003 and 2014. Moreover, the impact of FDI on the environmental degradation was studied by distinguishing the provinces of China in four different economic regions, namely the east, center, west and northeast region. Consequently, the study discovered that there is a significant but still weak positive relation between increase in FDI and increase in sulfur dioxide emissions. However, interestingly, the association of increase in water pollutant emission with increase in FDI levels has not

been proven. Furthermore, the eastern region was the only region that has just been proven to contribute exclusively to water emissions. On the other hand, all the other regions have been proven to be contributing both to water waste increase and sulfur emissions increase.

Although the research focusing on the environmental dimension of sustainability has developed since some decades now and has been experiencing an interesting revival in attention especially in the discussion developed in the Chinese academic context, also the social dimension of sustainability has been researched from a macroeconomic perspective at international level. As far as the discussion focusing exclusively on the Chinese context is concerned, an interesting analysis has been provided by Lee et. al (2020). To analyze the level of social component of sustainability, the researchers chose to focus on the dimension of income inequality present in the areas where FDIs are located across 37 countries during the years from 2001 to 2015. Specifically, the indicators for social sustainability are income inequality, FDI levels and the status of financial development relations. The main conclusions of the comparative study imply that FDI usually help to reduce the spread present in income inequality. Nevertheless, the beneficial effect in reducing income inequality may weaken in those countries that have already reached a threshold level of financial development. Therefore, it could be noticed that the impact on social sustainability seems to be more beneficial to developing countries rather than to already developed countries.

Another relevant study analyses the level of income inequality through the use of the Gini coefficient as indicator of social sustainability level achieved through FDI initiatives. The Gini index has been formulated as an index accounting for wealth or income inequalities among a nation or social group, and whose values span from 0, which represents perfect equality condition to 1, which represents the highest degree of inequality (Gini as stated in Ceriani & Verme, 2012). Rezk et. al (2022) collected national level data coming from Egypt in the period from 1975 to 2017. They discovered that for the area and period considered, an increase in inflows of FDI resulted in a significant decrease of Gini coefficient, therefore in a more equal distribution of incomes across the nation. It thus seems that FDI can produce some positive effects in developing countries as regards the social component of sustainability.

Labour effects were also considered previously, as for example in the study which has been provided by Rajasekaran (2002). The study has been conducted focusing on the Malaysian national level. Effects on labour taken into consideration are mainly retrenchment, reduction in wages, unemployment, overall negative effects on social security, impacts on health care, freedom of association, workers' rights and development. The main takeaway from the conducted research is that, whether local enterprises fail to take advantage from foreign MNEs, then the national economy could become known as a labour-intensive export-manufacturing platform for foreign multinational companies. Large inflow of foreign investment is indeed producing a strong reviving effect for the FDI recipient economy. However, FDI does not represent a univocal long-term solution to economic development. FDI has indeed to be enhanced by the adoption of domestic strategies, such as those incentivizing technology transfer from multinational to local enterprises. Technological development and technology transfer would in fact become responsible for the implementation of some beneficial effects on the host country economy, such as enabling the development of local production capacity and sourcing, together with an overall development of local employees and human resources.

Another recurrent focus while researching upon social components of sustainability is on host country changes in welfare conditions after the implementation of FDI strategies. For example, Lehnert et. al (2013) have provided a study in which they consider as indicators country welfare and knowledge infrastructure of host country. Dependent variables are for example those relevant to Host Country Welfare indices, as the Human Development Index, the Life Expectancy Index, the Education Index as measured by the adult literacy rate and gross school enrollment ratio, and GDP Index as measured by GDP per capita in purchasing power parity terms, together with a proxy for Knowledge Index. The considered sample involved five-year panel data of 175 countries; the main study results show that FDI can have a positive influence on both host country welfare and knowledge infrastructure. Moreover, the host country national governance positively mediates these relationships between FDI, knowledge infrastructure and host country welfare. Therefore, once again, the prominent role of national governance and its quality in enhancing positive effects of FDI on sustainability has been proven, here specifically concerning social sustainability.

Recently, Forte and Abreu (2022) also conducted research considering the level of overall welfare obtained through FDI initiatives. The research involves 146 countries for the period from 2002 to 2019. The indexes utilized can be traced back to the discourse on social component of sustainability, since the impact created on host country social welfare is accounted through variables as FDI, FDI stock/GDP, net official development assistance and official aid received (on % of GDP), Government expenses on final consumption over GDP, (exports+imports)/GDP, unemployment rate, political stability index, population growth, percentage of population with internet access, human capital index. The main conclusion that could be driven is FDI impact on social welfare heavily relies on the relevant host countries' human capital, which in turn, is able to reflect host countries' absorptive capacity. Another relevant conclusion is that government has a prominent role as concerns expenses in consumption, political stability, and quality of technological infrastructures. Consequently, it can be observed that countries should generally focus on improving their local human resources, on assuring a political stable environment, and policies focusing on technological infrastructures progress to enhance positive effects on social welfare caused by FDI.

Lazreg and Zouari (2018) provided an insightful country level research considering the environmental and social dimensions of sustainability compared to the level of FDI in Tunisia in mainstream economic terms. Their research articulated accounting for one main output indicator for each dimension of sustainability: to measure the economic entity of FDI they considered the so-called LIDE variable, while they considered Gini index as indicator of social dimension and the CO2 emissions level to account for the environmental impact. They intentionally adopted these multi-dimensional indicators in order to depict the possible impact of FDI on poverty and sustainable development at national level; the period considered spanned between 1985 and 2015. The main finding is that FDI has a negative impact on CO2 emissions, which, in turn, have a significantly negative impact on poverty. This kind of research is interestingly confirming the aforementioned research suggesting the presence of a negative impact of FDI on the environmental and social dimension of sustainability in developing countries, while unequivocally reporting the interrelation and reciprocal impact of different dimensions of sustainability on each other. Research linking indicators of environmental and social sustainability can also be found in the debate focusing on the Chinese territory and context. For example, Jing et. al (2012)

considered FDI levels in China in economic terms and other indicators of sustainability in different dimensions as overall pollution levels and human capital. Once again, the conclusion suggests that different dimensions of sustainability are heavily interrelated since the impact of FDI on Chinese territory and its environmental quality highly depends upon the existing level of human capital and polluting emissions, thus reflecting what has been discussed so far about the possible negative impacts of FDI on developing countries.

The three main components of sustainability identified by the shared-value of triple-bottom line sustainability have all been studied to access how it is possible to measure the impact of FDI strategies on sustainability. The existing literature thus aims at improving the measurement possibilities to better access FDI impact on sustainability but still has not fully developed an integrated framework that considers all the three dimensions of sustainability and the increasingly important aspect of governance and institutional quality. Lately, some institutions of private market research and analysis have attempted at providing some tools to evaluate the multidimensional sustainability reached by firms and their internationalization strategies (Hinrich Foundation, 2021). An example worth mentioning is represented by the Hinrich Foundation, which elaborated a system of indicators referring to the main three pillars of sustainability and trade sustainability, thus comparing the level of sustainability reached by the trade initiatives promoted by the 30 largest economies in the world. The so-called trade sustainability index is composed by 70 trade indicators which include 7 indicators and 29 subindicators accounting for economic sustainability, 8 indicators and 9 subindicators of environmental dimension of sustainaibility focusing on air pollution control and share of natural resources, 4 indicators and 13 subindicators of social sustainaibility, with a specific focus on education and labor standards, as well as political staibility. Provided that the study concerns the worlds' 30 largest trading economies, Italy has not been included but China has, and the conclusions relevant to its territory are interesting for the debate around sustainability reached by FDI initiatives, although the indexes employed are not exclusively relevant to FDI but encompass different trade initiatives. The reason for this interest is that conclusions are able not only to suggest the overall impact created by FDI in China, but also to specify which components of sustainability are less or more impacting. Indeed, according to the overall sustainability ranking, China ranks 13th out of the 30 involved countries. Nevertheless, China's ranking in the environmental (13^{th}) and social (24^{th}) dimensions of

sustainability and trade sustainability are significantly lower than the level of Chinese economic sustainability (8th). These results are thus confirming what has been observed so far, namely that the environmental and particularly the social dimension of sustainability are often still unconsidered in the literature and sacrificed for reaching economic performance and sustainability in the practice.

As far as the Italian context is concerned, lately, an interesting report has been published in order to attempt at accessing the impact of Italian companies on multidimensional sustainability, accounting for indicators of social dimension as the level of human capital and firm governance, as well as of economic dimension as enterprise size (Confindustria, 2022). Interestingly, in this study, sustainability is considered as defining a new competitivity paradigm to which Italian firms need to comply in order not only to compete, but also to survive. Considering the overall performance of MNE in Italy between 2009 and 2020, the study concludes that, overall, MNE operating in the Italian territory are coherent with the new competitivity need for sustainability. Although the research focuses on performance as main indicator of sustainability in terms of competitivity, an interesting contribution of this study is the consideration about innovation, which is deemed to be essential in order to achieve both competitive advantage and legitimacy to operate.

Another interesting stream of literature trying to combine the different dimensions of sustainability and to calculate the overall impact produced by FDI on these dimensions has been provided in 2011 (Tvaronavičienė & Lankauskienė, 2011). The study's main aim is to retrace the different impacts of FDI on multidimensional sustainability according to the involved countries' different level of development by comparing different countries. The indicators used to capture the level of sustainability reached are GDP, exports and inflation for the economic dimension, population, life expectancy at birth, primary school pupils, infant mortality, total health expenditure per capita, total tax rate, internet users, and residential consumption of electricity as indicators of both social and environmental dimensions. The main conclusion is that developed countries benefit the most out of FDI initiatives, while developing or underdeveloped countries benefit the least, which still reconfirms what has been proven so far about the different impacts of FDI on sustainability according to the country's stage of development.

An interesting attempt to access the overall, multi-dimensional sustainability of FDI has been provided by the FDI Quality Indicators of 2022 formulated by OECD (2022). The FDI Quality Indicators provide an international approach based on Sustainable Development Goals Indicators. Indeed, the list of sustainability indicators mainly focus on four clusters derived from the 17 SDG, namely: productivity and innovation (accounting for the economic dimension), job quality and skills, gender equality (concerning the social dimension), and decarbonization (as environmental dimension impact calculator). What is remarkable in this document is that, on the one hand, OECD strongly asserts that FDI can be used as powerful tools to boost sustainable development indicators; at the same time, on the other hand, OECD is the first international council which openly attempts at universalizing and at providing a homogeneous framework to calculate the impact of FDI on triple-bottom line sustainability. As one of the aforementioned clusters of SDGs is represented by productivity and innovation, it could be useful to consider the impact of FDI on innovation. Innovation is indeed considered as a powerful aspect that may prompt sustainability and implementation of both SDG goals and FDI Quality Indicators by OECD. For that reason, another stream of research, which is focusing on the impact of FDI initiatives on innovation, is here mentioned. Huang (2013) focused on the possibility that innovation may be a positive spillover effect produced by FDI in Taiwan. The author considered case studies at national level, collecting information about Taiwanese information and electronics firms for the period between 1993 and 2008, thus proving that FDI has an inverse relationship with innovation and concluding that FDI can actually create technological barriers and may even displace national companies. A similar study has been conducted by Doruk (2016), who has proven that FDI has not been contributing to innovation in Turkey since the country's implemented trade opening policies; however, it has also been proven that development of innovation attracts FDI inflows.

Overall, it can be observed that macroeconomic perspective is quite often used to access the impact of FDI on sustainability everywhere in the world; as regards the territories which are object to further focus in this dissertation, also in the Chinese context the macroeconomic perspective is quite common, while it is not so common as method used for studying the Italian territory. Furthermore, macroeconomic approach to this topic not only focuses on a national context but often provides a comparison between different countries conditions, as for example to compare the impacts of FDI on countries which are

experiencing different stages of development. Although the economic dimension is the most common kind of research on FDI impact on sustainability, starting from the last decade there has been a growing interest for accessing the impact on environmental and social dimensions as well. Moreover, even if the research and studies trying to access different dimensions of sustainability have to formulate their own indicators, which diverge often, recently, in 2022, a huge attempt has been made by OECD to identify common indicators that would express FDI desirable characteristics, which would have the potential to enhance FDI capacity of promoting sustainable development and triple-bottom line sustainability.

2.3 The mesoeconomic approach: industrial sector perspective

In order to study the impact of FDI on sustainability, considering industrial sectors as unit of analysis may be useful. Thanks to this mesoeconomic approach, it is possible to provide an attempt at mapping which industrial sectors are usually sustainable, and which, conversely, often happen to be unsustainable; this approach may also point out under which conditions or in which geographical areas are these sectors more likely to enhance benefits on sustainable development. Knowing the critical industrial sectors that may enhance or reduce their positive impact on triple-bottom line sustainability is of great importance when considering FDI strategies, since this kind of awareness and knowledge may become a useful tool to access industrial sectors' current conditions, future trends and potentials to further develop FDI-enhanced sustainable effects across different areas. For this reason, in this section about the mesoeconomic approach concerning industrial sectors, two main topics will be discussed. The first is literature review continuation, which specifically focuses upon indicators used to measure FDI impact on sustainability at industrial mesoeconomic level. The second topic that will be deepened consists of a further discussion about which sectors have recently been considered as strategical in the two territories which are object of zooming in in the present dissertation, namely China and Italy: this aspect will be analyzed by considering the official plans Chinese and Italian governments recently published and adopted concerning nationwide strategic industrial sectors.

At first glance, the mesoeconomic perspective relevant to industrial sector also sees a quite wide use of indicators which aim at accessing the economic dimension of sustainability; this happens both in the international context and in the Chinese one. For example, concerning the Chinese debate, Liu (2020) analyzed the innovation capacity relevant to FDI in strategic emerging industries occurring in China's 30 provinces by measuring the level of trade openness and the amount of FDI inflows. The author found out that FDI can have a significant effect in enhancing the innovation ability of strategic emerging industries. Moreover, the positive effect in promoting innovation ability is even higher for those strategic emerging industries with an already advanced level of innovation ability. Another example can be provided by the study of Zhang and Song (2001), who decided to account for FDI impact on economic sustainability by considering the impact on provincial manufacturing export performance calculating the level of GDP, FDI, exports, industrial outputs across provinces of China for the period from 1986 to 1997. The findings were able to show some discrepancies in the considered territory since there have been evident differences in the distribution of benefits, mainly directed towards coastal regions. Moreover, the conclusions support the hypothesis according to which increased levels of FDI can positively impact on provincial manufacturing export performance.

More interestingly, since the early 2000s, some sources coming from the international as well as from the Chinese context started to consider environmental indicators, sometimes as unique referrals for sustainability, but often combined with economic indicators. At international level of debate, an interesting review of unsustainable industrial sectors in FDIs thanks to the employment of environmental sustainability indicators has been provided by Witowska (2011). She adopted the industrial level analysis to access FDI impact on environment in new European member States, namely Slowakia, Poland and Czech Republic in the period from 1997 to 2007; to do so the author considered the industries that are classified as pollution intensive by UNCTAD. Witowska concluded that FDI has a particularly negative impact on the natural environment in the involved States, especially as far as some manufacturing industries and services are concerned, like mining and quarrying, wood industry, publishing and paper printing, refined petroleum, chemical industry, rubber and plastic industry and metals, hotels, restoration sector and transports. As regards the international debate focusing on the Chinese territory, there has long been a strong focus and attention paid to the environmental assessment. For example, Wang and

Jin (2006) have attempted at accessing the environmental performance of Chinese industrial sectors by considering different types of firms' ownership, namely whether the considered enterprises were State Owned Enterprises, Private Owned Enterprises or Collectively Owned Enterprises. They accounted for input and output indicators of environmental sustainability as environmental assets, investments, operational costs, and water waste retreatment facility through plant level surveys collected from Tianjin, Danyang and Liupanshui in 2000. The choice of these three different areas lies in the discrepancies in the economic, environmental, and social level of sustainability reached by each territory. FDI, namely foreign owned firms or joint ventures, surprisingly proved to have lower pollution effects compared to other kind of firms, especially as regards air pollution intensity. Industrial zones have higher polluting emissions levels, which confirms the hypothesis that environmental standards in the industrial zones may be less restrictive. As previously mentioned, also according to this source pollution intensive sectors usually include mining, power, food, paper, and pharmaceutical industries. International debate focusing on the Chinese territory tried to measure environmental sustainability levels reached by FDI also through the assessment of environmental legislation. Di (2007) accounted for environmental legislation levels in Chinese industrial polluting sectors by considering provincial environmental regulatory stringency, air emission, GDP per capita, industrial wage, road density, FDI, state ownership ratio, population, middle school education as main variables. The results suggest that FDI firms operating in polluting industries, as chemical, pulp and paper usually locate where they can benefit from higher savings due to cost abatement and are regulated according to the environmental regulation adopted locally. Therefore, firms operating in more polluting industries would often locate in less developed provinces or provinces with fewer similar industries. On the other hand, firms operating in pollution-intensive industries are usually quite sensitive towards their duty of compliance to environmental regulation. Non-polluting industries in the Chinese context considered by the study usually correspond to control or electric equipment industries. Dean et. al (2009) also considered environmental legislation as main indicator for FDI sustainability; main variables are levies on water pollution and overall national industrial pollution. They analyze the impact by testing the pollution haven hypothesis in China, to check whether it is true that foreign investors follow a location choice model that is uniquely prompted by cost abatements relevant to lower environmental regulations. The

research results suggest that Equity Joint Ventures in highly polluting industries and funded through Hong Kong, Macao or Taiwan are indeed usually attracted by weaker environmental regulations. On the other hand, it is also noticeable that foreign EJV, funded from non-ethnically Chinese sources, are not significantly attracted by weak environmental standards in any kind of industry pollution intensity. The conclusion thus confirms the existence of pollution haven behavior for pollution intensive industries but not by investors from high income countries. Jafri et. al (2022) also conducted their research on the Chinese territory between the period of 1981 and 2019, differentiating among FDI operating in low pollution intensity sectors, the so-called green FDI, and FDI in highly polluting industries. They thus considered the limits of FDI in sectors with greater environmental spillovers, as agriculture, manufacturing, mining, transport, construction, which usually imply a higher use of Energy, Gas and Water sources, by considering the level of CO2 emissions relevant to each industry. The main discovery is that any kind of change in FDI has a positive effect on CO2 emissions in the short run; at the same time, in the long run, a positive change in FDI is more effective on CO2 emissions than a negative change. Another key finding is that, given a change and improvement in governmental policies, FDI could not only enhance environmental policies, but also help to mitigate poverty.

The debate involving the Chinese context has not exclusively been accessed by international scholars but arouse the vivid interest of Chinese scholars as well. Different authors attempted at measuring the level of environmental efficiency, by proving indicators that accounted both for the environmental and the economic level of sustainability. Yue et. al (2016) accessed the level of environmental efficiency, green growth efficiency and economic efficiency over China, basing on FDI on a city-level analysis, which considered 104 cities' conditions from 2004 to 2011. Therefore, the mesoeconomic analysis here adopted is not only referring to the industrial level, but also to the geographic unit of a city. Main conclusions to this study suggest that, first, cities have different green growth efficiency among each other: for example, only Shenzhen has been discovered as an always efficient city in terms of green economic growth. Moreover, FDI has a positive effect on Chinese cities' green growth. If green growth efficiency is considered in its different dimensions of economic and environmental efficiency, it emerges that FDI prompts China's green growth through both dimensions of environmental and economic benefits. Lastly, the impact of FDI is also sensitive to

different sectors and may therefore greatly differ among industrial sectors. FDI in emission intensive sectors has a chance to promote green efficiency, but mainly by improving economic efficiency first, while FDI in sectors that are not polluting intensive usually promotes economic, environmental and green efficiency at the same time. Guo et. al (2021) also provided insightful research attempting at measuring environmental efficiency: as variables to this economic and environmental indicator for sustainability, they considered capital investment, energy and labor input, CO2 emissions and other values relevant to the logistics industry. They did not only consider impact created by FDI but overall impacts of economic FDI and innovation on environmental efficiency in the specific realm of logistics industry. The analysis involved Chinese provinces referring to the One Belt One Road Initiative for a decade, from 2009 to 2018. Empirical results suggest that the average environmental efficiency of the industry in the considered territory is quite low, but both innovation and FDI may have a significant positive impact on the increase in environmental efficiency. Recent Chinese research (Zeng et. al, 2022) on mesoeconomic level investigated the possible spillover effects among 23 main Chinese industrial sectors in order to find the possible connection in the decoupling system between rise in FDI levels and correspondent rise in CO2 emissions. The results show that FDI usually exercises a resistant force against decoupling, while, at the same time, it may exert a driving force in decoupling for the capital-intensive sectors. Another commonly used indicator in FDI environmental sustainability assessment is the level of CO2 emissions: Ren et. al (2014) accounted for the impact created by different international trade initiatives among which FDI, for the period between 2000 and 2010 and concluded that during the period analyzed, Chinese FDI inflows further aggravate CO2 emission levels. Furthermore, FDI inflows usually locate in resource and carbon intensive industries as chemicals, communication equipment, paper, transport equipment and metals. Chang and Ye (2017) calculated the impact of FDI on the level of CO2 emissions on GDP per each Chinese industrial sector in the period from 2001 and 2012 and demonstrated that FDI and technological progress have a varying effect on CO2, according to the different types of industry. The industrial sectors generating the most of CO2 emission and requiring the hugest amount of supply of both energy and electricity are metal, smelt and machinery manufacturing, oil manufacturing, coke and nuclear fuel manufacturing, nonmetal manufacturing and coal extraction.

Interestingly, as already noticed for the microeconomic and macroeconomic literature, also in the mesoeconomic literature encompassing industrial sectors there is a minority of sources and research focusing on the measurement of sustainability's social dimension. Moreover, qualitative analysis is preferred over quantitative analysis, which is extremely difficult to find. For example, some sources tried depicting the impact of Chinese FDI outflows by accessing the social sustainability dimensions through questionnaires and by engaging in discussions with the local population. Haglund (2008) focused on the copper mining sector in Zambia, Africa, and qualitatively tried to highlight the differences in the ability of host country regulators and stakeholders to regulate incoming FDI. It is thus stated that all FDI could hinder host country's exercise of business regulation in a weak regulatory context such as the one present in developing African countries. Although the possible weakening of business regulation is common to developing countries accepting FDI coming from every country, Chinese FDI outflows further contribute to improving this risk because of some problematic characteristic relevant to Chinese investors' governance. Zhang et. al. (2018) developed a social impact assessment concerning the territory of Pakistan by qualitatively considering some social risk indicators related to One Belt One Road Initiative and developed from literature review, reality observation and international standards. They thus elaborated a social impact assessment considering some specific sectors involved in the One Belt One Road Initiative, such as hydropower development, infrastructure construction and energy projects. The highlighted social risks have been elaborated dividing the possible risks concerning each involved region on the national territory and have included religious extremism, preserving national parks and reserves and the historical and cultural heritage, disputes, extremisms, clashes due to religious, ethnic, and cultural differences, environmental pressures. The originality of such research lies in the elaboration of possible social risk indicators, together with the attention paid to the social component of sustainability intended also in terms of security and somehow political stability.

Some research could be reconciled with attempts to measure the triple-bottom line sustainability and the aspect of governance at mesoeconomic industrial level; as far as the international European debate is concerned, De Backer and Sleuwaegen (2003) researched upon Belgian FDI inflows in manufacturing industries and the produced spillover effects, like the impact on innovation and on domestic entrepreneurship quality. The research

proves that FDI together with import competition may discourage domestic entrepreneurs' entry and rather stimulate their exit; the empirical results are aligned with occupational choice models, according to which, FDI would even crowd out domestic entrepreneurs because of high competition in the short to midterm. On the other hand, in the long term, FDI would enhance some positive effects on domestic entrepreneurship thanks to FDI spillovers of learning, networking and linkage of firms. Even if considering the social dimension by accessing the conditions of host country's inhabitants and workers, the focus on domestic entrepreneurship may still reveal that the major focus is on economic effects of FDI on the host country and on host country's economy rather than host country's society as a whole. As concerns the Chinese academic debate on the Chinese territory, Shan (2015) studied the context of Henan region and seven strategic emerging industries, namely new material, new energies, automotive, environmental protection, high-level machinery, information technology, biotechnology, and biopharmaceutical industries from 1995 to 2009, thanks to some sustainable development indicators. Sustainable development indicators considered encompass all the different dimensions of sustainability and include GDP, energy consumption, investments dedicated to pollution control on GDP, industry growth, resources efficiency and environmental protection. Shan's research shows that, while not all FDIs contribute to economic growth, FDIs in Henan emerging industrial sectors have contributed to a decrease in energy consumption.

As concerns the Chinese public debate, some efforts have been made by public authorities and corporations in order to provide some useful guidelines for investments' impact evaluation. These guidelines can be considered as strong recommendations and qualitatively impacting investment choices, but it is fundamental to notice that general guidelines do not provide binding obligations to corporations or investors and that these guidelines do not even include some kind of objectively, quantitatively measurable assessment and framework to calculate the effectively created impact through indicators. General guidelines thus allow for a certain ambiguity in realization of stated principles and surely avoid providing corporation and investors with practical tools as indicators, therefore, even if investors may be interested in following the guidelines, it is still difficult for them to implement such recommendations. This kind of behavior and attitude towards the challenge of reaching sustainable development and sustainability in all its different dimensions still represents a main element of distrust of foreign investors towards China

and its governance. For example, the China Investment Corporation (2022) openly states its policy, which consists in respecting and integrating ESG factors in the investment decision process and in paying special attention to the industries with higher levels of investments such information technology, financials, consumer discretionary, healthcare, industrials, telecommunication services, raw materials, energy, real estate, utilities, but, at the same time, provides no specific information about the criteria used to access the process of integrating ESG factors in investment decisions. Another example is provided by the Chinese Ministry of Commerce (2022), which regularly elaborates a list of encouraged (and discouraged) industries for Foreign Investment. In the list published in 2022, some sectors as manufacturing and service industries are considered as fundamental to prompt sustainable development strategies wished by the Chinese Communist Party, but, again, there is no exact specification of indicators or frameworks used to access the sustainability level reached by such industries. These industries appear to be chosen as strategically important because of the role they have been attributed in GDP growth and, generally, for their being representative of China's contemporary priorities.

As previously mentioned, mesoeconomic sectorial analysis, although still quite uncommon, is also useful to access another key element for the current discussion on FDI and possible FDI impact on sustainability, which is the governmental long-term planning of strategic industrial sectors. This is due to the fact that industrial sectors which are considered as strategic from one country's government will likely experience benefits, expansion and thus increase in internationalization strategies such as FDI in the mid-long term. Having discussed the increasing importance and recent commitment shared worldwide to reach a threshold level relevant to the topic of sustainability and how it is becoming a shared value among enterprises, institutions and the population at its large, if the industrial sectors identified as nationally strategical also happen to be sustainable, they could even expect a further, stable growth and expansion in the long term while creating a positive impact. If the strategic industrial sectors of the two countries coincide greatly, this could represent an element of competitiveness; if some of them coincide, this could enhance collaboration, international exchanges and internationalization strategies as FDI. The mid-long-term planning of strategic industrial sectors in China and Italy is here explicated by the analysis of public documents issued recently, both in 2021; the 14th Five Year Plan in China and the PNRR (National Recovery and Resilience Plan) in Italy.

Brief overview of PNRR[8]

The PNRR is a recently issued (2021), national plan, which derives from the European Next Generation EU (NGEU) project. PNRR main aim is to produce a series of guidelines to direct the national recovery after the Covid-19 pandemic. The reason is that in Italy, among all European countries, the pandemic had its most negative impact in terms of economic and human losses. Moreover, the pandemic stressed out many of the already critical aspects characterizing the Italian context, such as the increase in multidimensional and extreme poverty, the social and geographical inequalities, the environmental crisis, the technological and digital underdevelopment and the trend towards the privatization of investments.

The PNRR points out six main missions (PNRR:11): The first is digitalization, innovation, competitivity, culture and tourism, also through internationalization of national enterprises, and through the digital transition, which is seen as a priority that will affect many industrial sectors, among which Public Administration, National Strategy for Digital Competences and cybersecurity. The second mission is represented by green revolution and ecological transition, while the third is composed by infrastructures for sustainable transports and mobility. The fourth mission corresponds to education and research, the fifth to inclusion and cohesion and the last to health.

Looking at the PNRR main missions and considerations about the need of a recovery plan to face the post-pandemic context, it can be observed that Italian strategies that derive from PNRR seem to respect the so far discussed triple-bottom sustainability conception at their core, while openly stating the importance of governance quality and improvement for reaching nationally accepted sustainable development goals.

[8] See the full version of PNRR. (2021). Piano Nazionale di Ripresa e Resilienza.

Brief overview of FYPs

Five Year Plans (hereinafter referred to as FYP) have been used as macroeconomics strategy tools by the Chinese Government and Party since 1953 (Samarani, 2017). At the beginning, FYP were detailed programs which appointed the goals to be met, the organization of production and the setting of overall Chinese economy. In time, FYP have become more like guidelines able to provide some general guidance for Chinese firms and the organization of their operations, and have continuously experienced a process of democratization, where more and more experts, scholars, researchers and entrepreneurs have been involved in identifying national problems and interests to suggest solutions. Nowadays, the Plan still in force is the 14th, which refers from 2021 to 2026 and differs from past plans in that it is not only a general guideline for mid-long-term objectives, but it also includes a short section on long-range objectives for 2035.

Article 1 of 14th FYP opens in the following way (Section 2: 3-4)[9]:

"China's development is still in an important period of strategic opportunity (zhongyao zhanlue jiyuqi 重要战略机遇期) at present and in the coming period, but there are new developments and changes in terms of both opportunities and challenges. The world today is going through a once-in-a-century upheaval. New rounds of scientific and technological revolution and industrial transformation are deepening, and a profound adjustment in the international balance of power is unfolding. […] At the same time, the international environment is growing steadily more complex, with instability and uncertainty increasing significantly. […] China has shifted directions toward a phase of high-quality development (gao zhiliang fazhan jieduan, 高质量 发展阶段). […] The disparities in development and income distribution between rural and urban regions remain stark. We have a long way to go in environmental protection, there are shortcomings in livelihood protection, and weaknesses in social governance (shehui zhili 社会治理). It is necessary to provide overall planning of the entire strategic situation of the great rejuvenation of the Chinese nation […]."

[9] See complete English version of the 14th Five Year Plan reported by Xinhua News Agency (新华社), March 12, 2021.

This short part shows that China shares with Italy, and likely with the majority of other nations nowadays, the concern for the long-term effects of the pandemics on economy and society and therefore declares to give strategic priority to reforms that aim at reducing produced inequalities, which aspect complies with the commitment taken towards the implementation of United Nations' SDG 2030 Agenda, and which inequalities, in the case of China, have also been produced by the fast economic growth. Another declared aim is supporting the national economy and globalization process. Furthermore, China shows its commitment to achieve a high-quality development to face disparities between rural and urban areas, livelihood protection, environmental protection and weaknesses in social governance: even without explicitly stating that the direction of development is following the triple-bottom line sustainability concept, it is quite evident that Chinese high-quality development exactly means achieving sustainability in all its aspects (environmental, social, economic) and also aims at improving the critical governance dimension.

After having provided a brief overview of PNRR and 14th FYP content, a textual analysis has been conducted to confront the strategic industrial sectors appointed by the Italian and the Chinese governments through PNRR and 14th Five Year Plan: in both documents all references to strategic industrial sectors have been identified and the below cage table has been developed to check differences and commonalities. The Italian PNRR has been consulted in its original version, while the 14th Five Year Plan has been consulted in both its original version and its official English translation, provided by Xinhua News Agency (Xinhua she 新华社) in March 2021.

From the textual analysis it becomes clear that some convergences occur in the strategic industrial sectors identified by the two governments.

Before discussing the results of textual analysis and comparison between Italian and Chinese contexts, it can be useful to provide a brief definition of which characteristics strategic industrial sectors are defined by.

What is a strategic industrial sector?

A strategic industrial sector is here defined as a specific industry where the relevant country's government sees a fundamental importance, especially with regards to the overall growth and economic development of the nation. For this reason, these industries usually coincide with industrial sectors that are mostly relevant for the country's development of economy, welfare or security. Different criteria are commonly used to define an industrial sector as strategic. The most used ones are either the industry's capacity to develop a competitive advantage compared with foreign countries or the capacity to prompt an overall economic growth in the country's economy regardless of competitivity level. The first criterion usually characterizes industrial sectors with high innovation capacity, high technological content and high added value, which usually coincide with the most dynamic industries or industries with latent comparative advantage supported by the government (Di Tommaso et al., 2021:536). On the other hand, the second criterion usually characterizes industrial sectors with high interconnectivity level with the other national economy industries, therefore with a high capacity of developing positive externalities and influence other industrial sectors they interact with.

Strategic industrial sectors characterized by this set of peculiarities are often manufacturing sectors, since they are usually high-knowledge-content sectors, subject to quick technological changes, innovation, and positive externalities. As it will be noticed below, the Chinese experience has been showing a great emphasis on manufacturing development for its mid-long-term plans since many years and renewed the interest in manufacturing in the 14th Five Year Plan as well. Some manufacturing industries have been considered crucially strategic for more than twenty years, some of which are: machinery, electronics, automotive, petrochemical products, construction materials and building, ecological vehicles (Di Tommaso et al., 2021:539).

Strategic industrial sectors in the 14th Five Year Plan and in the PNRR

Part 3 of the 14th Five Year Plan concerns the topic of accelerating the development of a modern industrial system and of consolidating while strengthening the foundation of the real economy, *shiti jingji*, 实体经济; through Article VIII, this part appoints and deepens the role of manufacturing sectors (14th FYP, 2021: 20-21), which are reported on the cage below. These industrial sectors are discussed as fundamental for improving innovation, implementing intelligent and green technologies, and can be considered as strategical because of their declared ultimate objective: "enhance the core competitiveness and technological transformation of the manufacturing industry, encourage enterprises to apply advanced and applicable technologies, and strengthen equipment updating and the large-scale application of new products" (14th FYP, 2021:21.). The full list of these strategical manufacturing industries includes Industrial Control Systems, aerospace, shipping and maritime engineering equipment, robotics, advanced rail transit equipment, advanced power equipment, engineering machinery, high-end computer numerical control machines, medical and health equipment. The totality of these sectors implies a structural adjustment of raw material industries such as petrochemicals, steel, nonferrous metals, and building materials, while also implying an expansion of the supply of high-quality products in industrial sectors such as light industry and textiles, and a speed up in the transformation and upgrading of enterprises in key industries such as the chemical industry and papermaking. In Article IX of the same part, strategic emerging industries are directly discussed (14th FYP, 2021:23): these industries correspond to generation information technology, biotechnology, new energy, new materials, high-end equipment, new energy vehicles, green and environmentally friendly products, and aerospace and marine equipment. The strategic aspect of these industries lies in the industries' potential to accelerate the innovation and application of key and core technologies, enhance factor of production assurance capabilities, and cultivate new driving forces for industrial development. In this section, the aim of accelerating the development of biotech and pharmaceuticals, bioengineered breeding, biomaterials, bioenergy, and other industries and increase the size and strength of the bioeconomy is also made explicit. Another key aspect explained in this section is the intention of promoting the application of the BeiDou

system, which is the Chinese satellite navigation system. Again, in Part 3, the aim of accelerating the construction of new infrastructure is declared, together with the objective of digitalization for innovating infrastructure, the aim of building a space infrastructure; and the goal of making China a transportation powerhouse; the last strategic aim discussed in this part is the active promotion of clean energy production and consumption. Although some industrial sectors and aims are not explicitly named as *strategical*, they can be understood to be strategical because of the characteristics that are explicitly stated in the document, and which correspond with the above discussed definitions of *strategic*.

Table 1: strategic industrial sectors in Italy and China

Italian, PNRR specific strategic industrial sectors	**Chinese, 14th FYP specific strategic industrial sectors**	**Common strategic industrial sectors**
Primary sector: energy sourcing to implement ecological transition	Primary sector: energy sourcing with focus on reducing polluting emissions	Primary sector: green energy
Manufacturing sector: sustainable infrastructure development, development of hydrogen and biomethane production chain, automotive, agrifood (Made in Italy)	Manufacturing sector: raw materials for constructions, for chemical industrial production, industrial sectors relevant to interventions needed to requalification of urban and rural areas and to implement the one belt one road initiative; textile production, food manufacturing in terms of food safety	Manufacturing sector: biotechnologies, biopharmaceutical, aerospace, construction of modern infrastructures (with a common focus on harbors), information technology needed to implement objectives of innovation and mass digitalization of products and services and to improve cybersecurity, paper industry

Third sector: tourism, cultural and creative industry, requalification of sport structures	Third sector: technology: photonics, quantic information, artificial intelligence, neurosciences, polar studies, integrated circuits, research for further development of Chinese satellite navigation system BeiDou	Third sector: healthcare, education, research

It may be argued that the existing convergence of some strategical industrial sectors in the two nations may imply an element of competitiveness in the international exchanges and in FDI initiatives occurring between Italy and China, thus hindering economic and commercial development.

Nevertheless, not all strategic industrial sectors are converging between Italy and China, and some important differences in strategical priorities are still present, which could balance the equilibrium in commercial international exchanges between the two countries. For example, China's future long-term investments are different from Italian ones with regards to research on photonics, quantic information, artificial intelligence, neuroscience, polar studies, of integrated circuits and for further development of Chinese satellite navigation system BeiDou. As far as manufacturing industries are concerned, China, contrarily to Italy, will be focusing on textile production and sourcing of raw materials needed for construction, for chemical industrial production, for interventions needed to requalification of urban and rural areas and to implement the one belt one road initiative, and food manufacturing in terms of food safety. With regards to third sector and services, Italy, contrarily to China, intends to incentive tourism, which is regarded as one of the main missions for future development; furthermore, the ecological transition is a recurring element in all the six Missions of the PNRR Plan and is especially focused on the development of sustainable infrastructures and of hydrogen and biomethane production chains, which is not the case of Chinese strategic investment plans. Other industrial sectors

that have been identified as strategical for Italy and which are not mentioned in the Chinese 14th Five Year Plan are the automotive manufacturing sector, the production of Made in Italy products and agrifood, the cultural and creative industry and the industrial sector relevant for requalification of sport infrastructures (PNRR, 2021:16).

Among the strategic industrial sectors converging between Italy and China, manufacturing is extremely relevant: the two countries share a common interest for biotechnologies, biopharmaceutical, aerospace, construction of modern infrastructures (with a common focus on harbors), information technology needed to implement objectives of innovation and mass digitalization of products and services. Moreover, both nations aim at improving their cybersecurity and paper industry. In addition, in the primary sector, a common strategic interest is shown to modern systems of energy sourcing and consumption, with a specific focus on renewable energy; but here lies an important difference between the two countries. One the one hand, Italy sets the goal of developing energy production chains and sustainable infrastructures to reach a zero impact on environment. On the other hand, China set the reduction of polluting emissions as its main goal.

A second commonality in strategic industrial sectors in Italy and China is represented by the services industry. Services industry is relevant to both nations to reach long-term fixed goals, in particular the healthcare industry, education and research have been appointed a huge importance, which could be partially due to the need of handling the increasingly frequent structural and health crises. All these industrial sectors have been pointed out as crucial to innovate new technologies in a sustainable way and to implement environmental and social sustainability, while also ameliorating the governance aspect and therefore the political sustainability which allows the proliferation of safe investment. The common final aim is to reach ecological transition in Italy, to ease the harmonious coexistence of man and nature in China and reducing the recently accentuated territorial and social inequalities in both nations.

When it comes to the convergence between some strategic industrial sectors in Italy and China, it can be argued that competitiveness will play an important role in redefining and reducing the necessity for international exchanges of goods or services that would be available at a national level. On the other hand, given a climate of political stability and cooperation among the two nations involved, competitiveness on some third sector-related

activities, such as research and education, may as well incentivize internationalization initiatives and strategies. Especially, as far as the healthcare industries are concerned, cooperation and international exchanges of goods and services have already proven their effectiveness in dealing with Covid-19 crisis: FDIs could therefore represent an opportunity of integrating and support research in different countries. In the last years, characterized by the spread of pandemics, the importance of specific industrial sectors, such as healthcare, logistics and agrifood, has risen to such a degree that it made undoubtedly clear how international cooperation is not only necessary, but also way more profitable than market concurrency. Considering recent evidence (UNCTAD, 2022), systemic crisis such as pandemics are most probably going to rise rather than reducing, therefore, international collaboration and cooperation should be reinforced to surely reach common strategical objectives.

Considering the overall European perspective on mid-long term declared strategic objectives, the document Next Generation EU shows how some general objectives coincide with the Italian PNRR: that is because the Italian document had to follow the Next Generation EU guidelines for member States. The Next Generation EU program mainly identifies six Missions, that represent the thematic areas of intervention. The six strategic pillar that define the industrial sectors onto which NGEU program bases are: green transition, digital transformation, intelligent-sustainable-inclusive growth, social and territorial cohesion, health and economic-social-institutional resilience, policies for the new generations, for children and young people.

Given the broad importance gained by triple-bottom line definition of sustainability and the rising expectations on policies interventions among the masses both in Europe and in China discussed in the previous chapter, it can be inferred that future FDI trends will be affected by the level of sustainability reached by the strategic industrial sectors identified by the Chinese and Italian governments for their mid to long term plans. To understand future trends in sustainable FDI occurring between Italy and China, some research on the level of sustainability according to different industrial sectors both in China and Italy has been consulted. Before deepening the topics of sustainable levels of industrial sectors in China and Italy, it may be useful to provide a general definition of a sustainable industry.

What is a sustainable industrial sector?

According to recent studies (Mio, 2021), industrial sectors may be classified as not sustainable, sustainable, and in-transition-sustainable industrial sectors according to common characteristics of companies operating in the sector, such as companies' strategies and business models.

Sustainable industrial sectors are all those industries whose companies and enterprises adopt sustainability inspired strategies. Companies belonging to sustainable industrial sectors are characterized by complementarity relationships and aim at realizing network externalities since their strategy aims at positively affecting all different dimensions of sustainability. On the other hand, not sustainable industrial sectors are all those industries that do not respect the equilibrium of nature and people: for example, all those industries whose business model bases upon the consumption of not renewable resources, such as fossil fuel industries. In transition-sustainable industrial sectors are defined by a shift in production modes, from a not sustainable one to a sustainable one; this phenomenon happens in transition-sustainable industries thanks to the change in corporate mentality, which is now occurring worldwide as discussed in the previous chapters, and thanks to the development of technology, which is discussed below as a main component in influencing environmentally sustainable productivity growth and the level of ecoefficiency reached by a specific industrial sector. In transition-sustainable industrial sector include companies and enterprises that are currently adopting CSR initiatives but have not changed their business model (yet), thus avoiding adopting a life cycle perspective.

The evidence below discussed concerning the Chinese context is characterized by the discussion on ecoefficiency and environmentally sustainable productivity growth increase, and thus focuses on the environmental dimension of sustainability, neglecting the social and economic component. According to the definition of sustainable industrial sectors aforementioned, the discussed Chinese industries can be described as in transition-sustainable industrial sectors since evidence shows an increase in ecoefficiency and environmentally sustainable productivity growth which is given by the enforcement of environmental laws and by the technological development (Li & Lin, 2015), but does not

derive from a change of overall business models, does not adopt a life cycle perspective and does not deal with all aspects and dimensions relating to sustainability.

On the other hand, evidence proposed to discuss the Italian context takes into consideration all the components of triple-bottom line definition of sustainability. For this reason, industrial sectors whose companies have been proven to be the most virtuous from triple-bottom line sustainability perspective, most likely have achieved a superior score relating to all sustainability aspects not only by adopting sustainability-inspired strategies but also by realizing network externalities and complementary relationship as well.

Discussion about in transition-sustainable industrial sectors in China

As far as China is concerned, much research shows the ecological sustainability component in relation to the different industrial sectors. Methodologies differ, some of them aim at measuring the ecoefficiency in terms of input or output of production inefficiencies (DEA method, implemented DEA method as in Wang et al., 2019; ML index method to measure the environmentally sustainable productivity growth as in Li et. al, 2018). Some other methods consider the ecological component of sustainability in terms of economic, energetic and environmental sustainability (DSBA model as in Zhang et. al, 2018), in terms of efficiency compared to undesired outputs (implemented and weighted SBM model as in Zhou et. al, 2013), some other methods combine the input and output inefficiencies with productivity growth (MLPI index, Malmquist–Luenberger implemented productivity index as in Li & Lin, 2015). Comparing the aforementioned research, it becomes evident that in the last twenty years some Chinese industrial sectors developed in a sustainable way, while others stayed underdeveloped as regards sustainability. Moreover, it is important to consider that it exists a large differential between ecoefficient and sustainably underdeveloped industrial sectors in China. Ecoefficient industries are in net minority compared to the still vast number of sustainably underdeveloped industries: this majority of industries showed a resistance to change and amelioration of ecological efficiency and environmentally sustainable productivity growth. The great difference in the level of ecoefficiency reached among different industrial sectors is mainly due to the higher level

of resource consumption needed for production, with a particular relevance of water and energy consumption. This phenomenon on the one hand emphasizes the difficulties in implementing ecological strategies in traditionally polluting industrial sectors, and, on the other hand, the chance for great and net improvement that is possible and necessary for less developed industrial sectors in terms of sustainability.

Another element of interest that arouse from research is that the main component affecting the environmentally sustainable productivity growth is technological progress, which is far more determining than efficiency improvement (Liu et. al, 2018).

According to Li & Lin (2015), due to the delicate and quick industrialization and urbanization phase China is going through, at the moment it is not possible to significantly reduce production polluting, undesired outputs and the vast use of resource-intensive industries. Therefore, it is stated that it becomes a necessity to follow the technological innovation and technical progress path already started in 1978 with the foreign economic policy of market in exchange for technology, which has led to the attraction of many FDI, which in turn have helped imports and development of production technologies. At the same time is also necessary to prompt the development of innovation at a national level, to avoid path dependence risk and a too great dependence on foreign investments to develop innovation. Looking at the 14th Five Year Plan, one of the strategical objectives identified by Chinese government is the development of innovation, research and energetic efficiency. It can therefore be inferred that, in the mid to long term, the environmentally sustainable productivity growth will experience a further growth, thanks to technology development rather than ecoefficiency improvement.

Here below are two the list of Chinese industrial sectors, according to their level of ecoefficiency and the greater or lesser increase in environmentally sustainable productivity growth.

Table 2: Chinese industrial sectors' level of ecoefficiency

Industrial sectors with higher level of ecoefficiency	**Industrial sectors with lower level of ecoefficiency**
Wang et. al (2019): period 2006-2015	

Water production and supply, measuring and other equipment, electric equipment, telecommunication equipment, petroleum and coking.	Coal mining, nonmetal and other ores mining, paper printing.
Zhang et. al (2018): DSBI model is employed to measure the green efficiency of 37 industrial sectors in China Extraction of petroleum and natural gas, culture, education and sport activities articles, and manufacture of automobiles sectors are the top three on the SGE list; ferrous metals smelting and pressing, the power generation sectors.	DSBI model is employed to measure the green efficiency of 37 industrial sectors in China Paper, mining and processing of ferrous metal ores, and manufacture of liquor, beverages and tea sectors rank low on the SGE list; manufacture of nonmetal mineral products such as cement, glass, and ceramic.
Zhou et. al (2013): Improved SBM model, environmental efficiency level=1 among 27 industrial sectors Manufacture of tobacco, manufacture of textile wearing apparel, footwear and caps, manufacture of leather, fur, feather and related products, manufacture of furniture, printing and record medium reproduction, cultural, educational and sports goods, manufacture of plastic, manufacture of general purpose machinery, manufacture of electrical machinery and equipment, manufacture of communication equipment, computers and other electronic equipment, instruments, meters, cultural and clerical machinery.	Improved SBM model, environmental efficiency level<0,4 among 27 industrial sectors Extraction of petroleum and natural gas, mining and processing of ferrous metal ores, mining and processing of non-ferrous metal ores, mining and processing of nonmetal ores, manufacture of beverages, processing of timber and manufacture of wood, bamboo, rattan, palm and straw Products, medical and pharmaceutical products, manufacture of chemical fibers, manufacture of rubber, smelting and pressing of non-ferrous metals, manufacture of metal products, manufacture of special purpose

	machinery, production and supply of gas and production and supply of water.

Table 3: Chinese industrial sectors' change in environmentally sustainable productivity growth

Industrial sectors with greater increase in environmentally sustainable productivity growth	**Industrial sectors with lower increase or slight decrease in environmentally sustainable productivity growth**
Liu et. al, (2018): Environmentally sensitive productivity growth of 29 industrial sectors in 9 cities Industrial sectors displaying green development above 60%: printing and reproduction of recording media, manufacture of measuring instruments and machinery, manufacture of medicines, manufacture of general-purpose machinery, processing of food from agricultural products, manufacture of liquor, beverages and refined tea, repair service of metal products, and smelting and pressing of ferrous metals.	Environmentally sensitive productivity growth of 29 industrial sectors in 9 cities Industrial sectors displaying yellow development: manufacture of railway, ship, aerospace, and other transport equipment.
Li & Lin (2015): Novel MLPI is employed to measure the green productivity growth of 36 Chinese industrial subsectors during the period 1998–2011 Petroleum extraction, leather, and furniture, have higher green TFP growth rates than the traditional TFP growth; some energy-intensive sectors (e.g., extraction of petroleum and natural gas, transport	Novel MLPI is employed to measure the green productivity growth of 36 Chinese industrial subsectors during the period 1998–2011 Gas production, metal products, nonmetal materials, plastic, wood, textile, nonmetal mining, coal mining, water production, computers and similar products.

equipment, production of electric power, and petroleum) have much higher green productivity growth rates. Tobacco.	

It is interesting to notice that, regardless of different methodologies used in the literature to access either the level of ecoefficiency or the increase in environmentally sustainable productivity growth of Chinese industrial sectors, most of the evidence coincides. To be specific, the industries could be summarized as follows according to their level of ecoefficiency and of environmentally sustainable productivity growth:

Table 4: Chinese industrial sectors' environmental sustainability

High ecoefficiency levels **Important increase in environmentally sustainable productivity growth**	**Low ecoefficiency levels** **Slight increase or decrease in environmentally sustainable productivity growth**
Manufacturing of electric appliances, measuring appliances, telecommunications, medicaments, machines, for transformation of agricultural products, manufacturing of food from agricultural products, of liquors, drinks and tea, automotive manufacturing, leather, sport products	Manufacturing of beverages, wooden and bamboo, paper production, manufacture of transport appliances, ferrous materials and ores manufacturing, manufacturing of glass, cement, ceramic, rubber, manufacturing of special machines
Smelting and pressing of ferrous metals	Extraction of minerals
Culture, education	Petrol and natural gas extraction
Printing, media	Water production and distribution

Discussion about sustainable industrial sectors in Italy

As far as Italy is concerned, an interesting study has been conducted by Sole24Ore in collaboration with Statista (2021): the research classifies the 150 Italian most sustainable companies from the triple-bottom line sustainability perspective and classifies the companies according to different industrial sectors. The most recurring sectors are: energy

and raw materials sourcing (18), banks (18), industrial products and components (17), food and beverage (12), fashion (11), finished products and consumer goods (8), constructions and plants (8), retail, wholesale, e-commerce (6), general services (5), insurances (4), pharmaceutical (4), automotive production chain (4), catering e Ho.re.ca (4), financial services (4), IT and technology (4), telecomunications (4), trasports and logistics (4), media (3), beauty and hygiene (2), healthcare (2), asset management (1), chemicals (1), health & personal care (1), investments holding (1), housing (1), financial institution (1), advertising and marketing (1), waste and recycling (1).

The results coming from the aforementioned research coincide with what has been appointed by the National Council for Green Economy in Italy as the list of the ten strategic industrial sectors for a green economy in Italy (2014). Agrifood production chain, financial and general services, services related to finance and credit, waste and recycling, industrial sectors involved in the creation of a sustainable mobility (as transports, raw materials, plants and constructions, industrial products and components) are all industries that have been appointed great importance by both evidences. Indeed, the ten industrial sectors involved in the transition to an Italian green economy are: eco innovation, ecoefficiency in terms of materials renewability and waste recycling, efficiency and energy savings, renewable energy sources, valorization of services, of ecosystems, of sustainable mobility of agricultural production chains (especially of ecological quality), sustainable finance and credit for a green economy, regions and local entities for a green economy.

Comparison of sustainable and in transition-sustainable industrial sectors in China and Italy

By comparing the results of sustainable and in transition-sustainable industrial sectors in Italy and China with the sectors appointed to as strategic by PNRR and 14th Five Year Plan, a few observations may rise.

First, some industrial sectors that are strategic both for PNRR and for 14th Five Year Plan are not traditionally sustainable in China but are quite sustainable in Italy, especially as far

as the manufacturing (manufacturing of agrifood and beverages) and the energy sector are concerned.

Secondly, as far as machinery manufacturing is concerned, both China and Italy proved to be able to develop and implement more sustainable behaviors compared to other industrial sectors.

Third, some strategic industrial sectors common to both nations, such as education, telecommunication, medicaments and machinery manufacturing have been classified as positively impacting sustainability.

After having attempted at classifying industrial sectors according to their degree of sustainability both in Italy and in China, FDI impact on sustainability has been studied also considering another mesoeconomic approach used in research: the regional approach, which accounts for territorial differences present in a nation and may be particularly useful to describe the still occurring differences in sustainability practices among huge and highly diversified countries, as it is the case for China and its provinces.

2.4 Mesoeconomic approach: regions

As mentioned, the mesoeconomic approach on the study of sustainability indicators relevant to FDI has been discussed from an industrial sector perspective, namely focusing on a specific industrial sector or on a comparison between different sectors. Another consistent field of mesoeconomic research about the topic is represented by all those studies that are based on the regional dimension, and which often chose to compare possible differences among regions in the same territory or nations. In China, this kind of research has been quite common: one possible reason lies in the awareness about regional disparities which have been characterizing Chinese areas since the beginning of the opening and catching-up initiatives, which, as reported in the introduction, have differentiated policies and governance methods among experimental developmental zones and other regions on purpose. As noticed for the other mentioned levels of analysis, namely the microeconomic, the macroeconomic and the mesoeconomic level based on industrial sectors, finding materials about the economic impact generated by FDI initiatives is quite

easy and accessible for both international and Chinese literature. An example of research focusing on the economic sustainability reached by FDI strategies in China is represented by the work of Li and Chan (2009), who researched upon FDI's technological spillover effects on host countries analyzing 29 municipalities and provinces from 1988 to 2006; they thus proved that FDI's spillover effects can have a positive impact on technological progress in FDI's host countries, but that such a progress is characterized by regional and temporal differences (Li & Chan, 2009).

Nevertheless, also at this level of analysis, some efforts have been recently made in order to provide more inclusive indication of overall impact on sustainability. For example, Gohou and Soumaré (2012) provided an analysis of FDI impact on poverty reduction in 52 African States between 1990 and 2007, accounting for the existing regional differences. Their analysis based on both indicators of economic and social sustainability as: FDI flow, per capita GDP and Human Development Index. They also provided some interesting control variables able not only to indicate economic conditions, but also policy and political risks, thus already providing some information about governance and political effects on sustainability. Here, the mesoeconomic approach is useful since it underlines the differences among African regions, and allowed to discover that FDI has a greater positive impact on welfare and poverty reduction in poorer African regions than in wealthier ones. To the author's best knowledge, this is the only relevant research conducted at regional level and assessing FDI-lead sustainable social impact.

Some other attempts have been made, but they usually aim at providing an assessment of social sustainability reached through general investment initiatives, without specifically focusing on FDI. For example, an assessment analysis that has been lead from a regional perspective is the one conducted by Opp (2017), who accessed the social pillar dimension of sustainability reached in American cities. The author decided to use as indicators for social sustainability indicators of equal access and opportunities, of environmental justice and health risks, community and value of the place, basic human needs. These indicators could also be used in the debate specifically concerning impact created by FDI since they are deployed to access the level of social sustainability reached in a territory, therefore in case of FDI, they would depict the host country's social condition after the implementation of FDI initiatives.

An insightful study has been provided by a group of researchers (Arbolino et. al, 2018) who focused on the level of industrial ecology reached in the Italian territory, specifically examining each region and thus addressing the profound existing inequalities at regional level. They formulated an original index, the Industrial Environmental Sustainability Index, in order to deepen the effectiveness of ecological industrial policy in each Italian region. Their work is interesting for this dissertation since, on one hand, it provides a regional analysis which is able to account for regional differences and inequalities, while, on the other hand, the study not only accounts for companies' results, but also deepens the role of governance and the effectiveness of public policies towards the theme of environmental sustainability.

Apart from the international-level debate, which is quite lacking in this approach, the Chinese debate and the international debate focusing on China's conditions is way more florid. The peculiar attention towards the regional disparities in this national territory reflects the awareness about regional disparities especially in terms of environmental sustainability. Considering Chinese sources regarding China's regional differences, there has been lot of research concerning uniquely environmental or both environmental and economic indicators. As far as the double dimension of environmental and economic sustainability is considered, the used indicators usually combine indicators of emissions together with indicators of circularity. For example, Zhou and Wang (2017) studied the link between the levels of CO2 emissions, market distortion and incoming FDI in different Chinese provinces during the opening era of transitioning to a market economy. They concluded that FDI could have a positive effect on CO2 emissions, but that FDI are discouraged by market distortions. This discovery has been relevant not only for considering the positive effects that FDI could apport in the transitioning era, but also to highlight the importance of the host country's market condition which are mostly favorable to FDI and FDI's chance of enhancing their positive effect. In recent years, Lin (2020) also considered the level of CO2 emissions, but combined it with economic measures of FDI-driven scale, structure and technical effects in Chinese provinces for the period from 2005 to 2017, thus discovering that FDI affect the increase of CO2 emissions because of scale and structural effects, while contributing to CO2 emissions decrease thanks to FDI-prompted technical effects. Chai et. al (2021) also attempted at combining the economic and environmental dimensions of sustainability but used a different kind of indicator which

aimed at considering both aspects together, namely the green total factor productivity indicator. At the same time, they considered the regulatory role of system in the influencing mechanism of FDI, thus once again reinforcing the link between sustainability and good governance. Their results suggest that the level of FDI usually impedes any improvement in green total factor productivity, but that the positive interaction between system and FDI enables FDI to promote green total factor productivity. Moreover, they proved that FDI's role in improving or reducing the green total factor productivity also highly depends on the area considered: while FDI may have a positive effect in the Eastern region, FDI has a negative impact on green total factor productivity indicator in the central and Western regions of China. Again in 2021, another source accounting for green total factor productivity indicator has been provided by You and Xiao (2021): the indicators' main variables include some input variables as energy consumption, capital and labor input, some output systems like economic development and carbon emission, and variables accounting for the environmental factor, as industrial development, research and development investment level. This study differs from the previously mentioned ones since it treats Chinese cities rather than provinces as its meso level unit of analysis. The main discovery concerns the role of environmental regulation and marketization, which seem to be the main factors affecting green total factor productivity; unfortunately, FDI is proven to impede the improvement of green total factor productivity in China. Liu et. al (2022) evaluated China's 30 provinces level of green industrial competitiveness from 2001 to 2017 through the analysis of FDI quality, quantity, and created spatial spillover effects. The main conclusion suggests that, although the impact produced by FDI quality on industrial green competitiveness of a province and its neighbors provinces is insignificant, FDI quantity has a negative effect on industrial green competitiveness of neighboring provinces, while having a not significant effect on industrial green competitiveness relevant to the local involved province. Moreover, FDI quality has a different effect on industrial green competitiveness in East, central and West China: it has a negative effect on East and central China and a not-significant effect in West China. The Chinese debate concerning its national territory and regional discrepancies also regarded the exclusively environmental dimension of sustainability. For example, An et. al (2020) formulated an environmental indicator for measuring impact reached by FDI, namely the Environmental situation index, which includes three sub-indicators: industrial waste gas, water and solid

waste. The research showed the presence of an inverted U-shaped relationship occurring between FDI flows and overall environmental situation. Moreover, the regions which most benefit from a positive FDI impact on the environmental situation are those regions characterized by better industrial structure: the authors underline that these results have important implication about the new stage of high-quality development China is currently aiming at. Other sources coming from international scholars but still focusing on the environmental dimension of sustainability in China usually focus on some indicators which are significantly depicting air pollution conditions. Zheng et. al (2010) decided to calculate air quality in 35 selected biggest cities for the period 1997-2006 through indexes as income, total population size, FDI per capita, local labor market demand, share of manufacturing employment, PM10 and SO2 concentration in the air, green space per capita, rain fall per year and others. The conclusion suggests that FDI does not have a significant harmful effect on air pollution, moreover, cities where FDI flows are higher, usually experience lower air pollution conditions. These results may be indicative of a transitioning era from cities focusing on being productors to cities welcoming consumers. Cole et. al (2011) accounted for the level of environmental sustainability through specific indicators of both air (through waste gas, SO2 emissions, soot and dust) and water pollution (through wastewater levels and petroleum matter). Collecting data among 112 major Chinese cities between 2001 and 2004, they discovered that, at that time with current income levels, both air and water emissions would rise with economic growth increase and that both FDI and domestic firms increased the levels of many pollutant emissions. Zheng et. al (2017) and Jain et. al (2017) studies used CO2 levels as indicators of environmental sustainability. On the one hand, the first study concludes that FDI directly affects the increase in CO2 emissions in China, moreover, after the reforms since the 80s, the negative effect FDI could exert is decreasing year by year; another important aspect is that the study enabled to distinguish the effects of the opening up reform in different areas, which produced different stages of development and different levels of CO2 emissions, with more internationalized areas experiencing lower levels of CO2 emissions. Through a qualitative analysis, the second source suggests that FDIs and MNEs transfer more CO2 emissions to developing economies because of weak regulations and governance, thus once again highlighting the prominent role of good governance in mediating the effects and impacts of FDI on sustainability dimensions.

Chapter Three

Contemporary challenges to FDI and sustainability

Having discussed the importance of FDI and its role in promoting the increasingly urgently needed triple-bottom line sustainability, and after having presented the status of so-far developed debate surrounding the field of measuring FDI impacts on sustainability, it may be useful to consider the possible challenges or opportunities that FDI flows could experience in order to better understand which role FDI is about to have in shaping future's sustainability practices and effects.

Worldwide investments have been affected by changing political, economic and social factors, therefore these events heavily impacted the Chinese and Italian investments' context as well.

As far as the Chinese context is concerned, nowadays, Chinese FDI are still heavily affected by the development and changes in the factors briefly presented in introduction, as the war in Europe starting in 2022, food, fuel and finance crises around the world, rising inflation and interest rates, fears of a coming recession (UNCTAD, 2022), increasing nationalistic and protectionist ideologies, and the rising awareness concerning the need to develop sustainable practices in investments (Xinhua News Agency, 2021). Nevertheless, according to the International Monetary Fund report for 2022, Chinese capacity of attracting FDI inflows is still growing, thus letting China becoming the world's largest recipient of FDI inflows. Furthermore, Chinese capacity of attracting FDI inflows into the country is expected to grow further after the change in the pandemics policies starting from January 2023.

In 2022, Chinese government decided to expand the list of manufacturing sectors open to foreign investment (Chinese National Development and Reform Commission & Chinese Ministry of Commerce, 2022), thus contributing to the trend of gradual opening up even in industrial sectors that have long been considered as strategical (Di Tommaso et. al, 2021). The new list of open sectors includes air ground support equipment, components related to autonomous driving, advanced manufacturing, energy saving and environmental protection in China's central, western and northeastern regions. Foreign companies are

encouraged to set up research and development centers in China and to participate in the country's frontier manufacturing activities, as well as the construction of advanced manufacturing industrial clusters (Chinese National Development and Reform Commission & Chinese Ministry of Commerce, 2022).

Between 2021 and 2022, Chinese Government enacted some policies which allowed a further opening up to foreign investment in services sectors in specific municipalities and provinces as Tianjin, Shanghai, Hainan and Chongqing (UNCTAD, 2022). Another important element in the opening up process of Chinese industrial sectors to foreign investments is represented by the reduction of sectors present in the Negative List for Foreign Direct Investment issued at the beginning of 2022, which opened up new industries to foreign investment.

As far as Chinese FDI outflows are concerned, some initiative as *China goes global* have been enhanced by the Chinese government itself, in order to promote Chinese outwards investments in specific areas and strategic sectors (Di Tommaso et. al, 2021). On the other hand, although Chinese OFDIs kept growing in the last years, they experienced a slowdown in growth rate. The most important reason for that phenomenon lies in the increasing policies concerning host countries' foreign investment scrutiny before acceptance, which lead many Chinese MNEs to pursue domestic options, especially in the technology sector (Gruber, 2022). Nevertheless, Chinese outwards investments keep focusing on areas as Europe, especially in sectors that are less sensitive from a political and security perspective.

As far as Italian FDI flows are concerned, FDI inflows kept growing until 2018, although experiencing some decrease phases, and experienced a more intense slowdown since 2019, slowdown which has become even starker because of the pandemics and its effects produced from 2020 on.

Italian FDI outflows experienced a quite stable phase from 2013 until 2018, when they reached a pick; after 2018, similarly to FDI inflows, also overall FDI outflows decreased, more importantly from 2020 on (OECD, 2023). Nevertheless, Italian FDI outflows directed to China kept increasing until 2021 (Banca d'Italia, 2022).

Recent research has highlighted how Italy has been becoming a more attractive nation for foreign investments since 2021 because of foreign investors' increased trust in Italian investments, especially thanks to Draghi's Government plans and PNRR, which, as stated, mainly focuses on all these sectors that may be strategically essential for the post Pandemic recovery. The industrial sectors that are mainly expected to receive more investments are those related to software development and Information Technology services, logistics, B2B services, while the Nations that are expected to invest the most in Italy are United States, Germany and France (EY Italy, 2022). This trend also corresponds to the decrease in FDI inflows Italy's receiving from China since 2020 (Banca d'Italia, 2022).

3.1 Pandemic

Covid-19 pandemics spreading since 2020 represented a major disruption period for FDI global flows. The pandemics severely hit every country in the world, but particularly affected some countries, as both Italy and China. That is due to the extensive human and economic losses these countries experienced, as well as the confinement practices which have long been employed in these countries. Confinements and the consequent lockdowns of entire areas heavily impacted and disrupted the functioning of global value chains and lead to a severe logistics crisis. Therefore, trust in the future development of commercial relations drastically decreased among investors and affected the development of commerce and international investments as FDI. At the same time, such a crisis made the level of social inequalities increase.

Unfortunately, the pandemics is still not completely over yet, and some areas, as in China, have long been experiencing lockdowns. Nevertheless, the new opening up policy adopted by China in January 2023 seems to encourage investors' trust and to promote a future enhancement of Chinese inwards FDI flows (Murdoch et. al, 2023). Although the world has been seeing a partial relief from the drastic human and economic losses in 2021, the way to full recovery and to pre-Covid levels of investments is still long to go and in 2022 the global investment levels experienced another marked slowdown phase compared to 2021, particularly affecting developing countries and some investments, as the ones

concerning climate change mitigation and adaption. Indeed, the investments' levels inequalities between developed and developing countries have become wider after the pandemics, and the decrease in sustainable investment in developing countries has been extremely more significant and negatively impacting than in developed countries (UNCTAD, 2022).

Nevertheless, the pandemics has also exacerbated the peculiar resilience that FDI strategies are able to maintain during major crises, as the one caused by Covid-19. Moreover, the pandemic has indeed rose awareness around the worldwide necessity of revisiting the fundamentals of economic policies in a new way, which is finally able to prioritize investments and economies' resilience and sustainability. Indeed, it has been stated that, since the world's economy will need even more globalization after the Covid-19 pandemics, globalization's tools as FDI will represent an opportunity to catalyze some of the aspects which were already needed before the pandemics and which became critical during the pandemics, as, for example, higher institutional, governance and sustainability practices. In this sense, the pandemics has been described as an element making essential changes happening quicker than expected (Contractor, 2022).

Since Asia has been particularly affected by the negative impacts of the pandemic, a common and long-term planning has been created by ASEAN to face the crisis. The ASEAN Comprehensive Recovery Framework was ideated in order to provide broad strategies on many fundamental aspects mainly concerning health, welfare, economic integration, digitalization and sustainability, also through the definition and promotion of sustainable and responsible investments. The tools used to implement such objective are mainly the Policy Framework for Investment and the Guidelines for Multinational Enterprises (OECD, 2023).

3.2 War Russia – Ukraine

As regards the Russian invasion of Ukraine at the beginning of 2022, its disastrous impact created a new humanitarian and economic crisis, which ultimately lead to increase in inflation and prices of commodities like food and energy, and to slower growth rates.

Another major consequence has been the disruption of trade and supply chains in Russia's neighboring countries. All these consequences heavily impacted on world economic situation and therefore, on FDI as well.

The major reasons why a considerable number of companies from many different industries have decided to divest from Russia after the beginning of the war in 2022 are the high reputational and liability risks, together with basic human rights reflections, the volatile market conditions. MNEs which decided to divest from Russia mainly belong to the consumer goods, energy, food, media, tech, goods and retail, travel, and finance industries. Divestment announcements started in correspondence with the adoption of the internationally shared first round of sanctions and have implied the holding off of new planned investments, scaling back of existing operations, partial or complete suspension of activities, or even the complete withdrawal from any operation in the country. Although these MNEs' business decisions have sustained and further legitimized the policy suggestions posed by the public-sector, the international response to Russia's invasion of Ukraine has further negatively impacted the world economy, contributing to its shock and disruption, including the disruption of FDI flows. Nevertheless, Russia's FDI inflows and outflows are quite marginal compared to other OECD countries, therefore the impact of the invasion on FDI may be limited. Many Italian banks, as some Austrian and French ones, have large absolute exposure to Russia because of their subsidiaries; therefore, these countries' exposure will be definitely higher (OECD, 2022).

Therefore, it can be stated that the most important consequence for foreign investments is the reduced business confidence and overall investment uncertainty, also bolstered by strong international sanctions against Russia, which have been affecting asset prices and financial conditions of investments, thus reducing the amount of Russian and global FDI inflows and outflows (Liadze et. al, 2022). While effects may be quite heavy for Italy, immediate effects for China should be smaller compared to other countries, such as European countries.

That is because of Chinese fiscal stimulus, which has been supporting national growth goal, and because Russia has been buying a relatively small number of Chinese exports. Nevertheless, also for China, commodity prices and weakening demand in big export markets add to new challenges. Longer term, the war may alter the global economic and

geopolitical order, thus raising the risks of economic fragmentation, especially for trade and technology (Kammer et. al, 2022).

It has been stated that, the Russian invasion of Ukraine, together with other exogeneous shocks recently happening as the pandemics, will cause quite unpredictable but still negative effects on world economy, and an important decrease of economic growth. Specifically, as far as FDI are concerned, the recently adopted policies worldwide are characterized by rising protectionism and discriminatory measures. These measures would be able to better respond to contemporary exogeneous shocks but would also make the relevant country less favorable for inward FDI (Mariotti, 2022).

According to OECD, the global crisis deriving from the invasion of Ukraine and the pandemics has indeed increased the risk of slowing down, if not even reversing, all the progress made so far in attempting at creating more resilient, inclusive and sustainable societies. Russian invasion of Ukraine has further aggravated this condition of uncertainty and risk by weakening future economic projections and thus putting at risk the implementation of the 2030 Agenda for Sustainable Development (OECD, 2022).

Furthermore, the war has challenged the post-Cold War order assumed by the West, since the invasion of Ukraine marked the attempt of Russia to mark a shift from the unipolar world that followed the collapse of the Soviet Union and the declared USA hegemony to a multi-polar world, which has been argued to eventually become more dangerous than before (Mearsheimer as stated in Liadze et al, 2022:8).

3.3 Increasing attention to sustainability in its different dimensions

As previously mentioned, sustainability in its different dimension is increasingly gaining momentum, especially among people belonging to the Millennials or Gen-Z generations and coming from every corner of the world. For example, in 2020, Deloitte found out that main concerns about climate change, environmental protection and societal issues as inequalities and healthcare improvement kept raising importance in the period of the pandemics, especially among these generations (Deloitte, 2021).

Many Chinese FDI outflows have started to experience a slowdown phase in some territories as Italy, mainly because of the growing interest and attention paid by the Italian government on triple-bottom line sustainability and sustainability related issues as the level of governance, of political stability and political sustainability, which are increasingly seen as necessary and fundamental in order to efficiently accept foreign investments or to implement investments abroad.

As discussed, in the Chinese context, the contemporary notion of sustainability is becoming increasingly popular not only at the higher levels of Chinese Communist Party, but among Chinese population as well. It has been argued that, despite the topic of catching-up and of economic sustainability has long been the main focus both at Governmental and popular level, although for different reasons, newly gained awareness about sustainability issues is mainly focusing on environmental and social dimensions of sustainability, which are subject both of CCP's attention and of the so-called population's environmental awakening. Some scholars have argued that the possible increase in FDI flows would correspond to the perpetration of inequalities and dualism models in territories which are characterized by a high degree of regional differences, as China (Whalley & Xin, 2006). This warns against the possible effects that FDIs may have on sustainable development in China: nevertheless, as discussed in the previous chapter, it has been proven that FDI flows may also have positive outcomes on the host country's society and inequalities, provided the presence of a good system of governance. Therefore, an increase in quality institutions and governance seems necessary and preliminary to the achievement of other usually neglected dimensions of sustainability, as the social and environmental one, through FDIs.

In this realm, the Council of European Union implementation of the new Corporate Sustainability Reporting Directive as part of the European Green Deal and the Sustainable Finance Agenda is significantly showing how the Environmental Social Governmental impact reporting is gaining importance for evaluating MNEs' performances overall Europe.[10] At the same time, Italian sources show Italy shares the same focus towards the topic with the European Union; moreover, governance is reserved a peculiar attention since

[10] See full report published by Council of the EU, (issued on 28th November 2022, 10:30). Council gives final green light to corporate sustainability reporting directive, Press release.

it is often stated to be one of the main elements which are able to guarantee production capacity profitability and firm quality at the same time, together with other aspects as firm dimension and human capital (Osservatorio Imprese Estere, 2021). Nevertheless, the regulatory pace of change is slowing down, making foreign investment practices and regulations more accessible and predictable for foreign investors, among which, China, which is indeed expected to further enhance its FDI outflows thanks to this new trend of regulatory predictability (Gruber, 2021). Moreover, the Asian region, is increasingly aware about the importance of its governance and quality institutions in order to prompt sustainable FDI strategies and is thus increasingly taking meaningful action to promote sustainable FDI as a needed measure in the contemporary context, heavily affected by the pandemics and other major structural crises (OECD, 2023). Indeed, one of the biggest challenges that nowadays' global and Asian governments have to face is to combine the need to attract foreign investment when the trend of global FDI flows is actually a decreasing one, while making sure of attracting sustainable investments, which can bring sustainable benefits on the involved host country. Both actions' success, namely attracting and obtaining maximum benefit from FDI inflows, mostly depends on the host country's policy framework, which need to foster transparency, strategies to measure the impact of sustainable investment and to implement policies that both minimize FDI potential harmful aspects while enhancing the positive spillovers on the local economy, environment and society. All these aspects characterizing a good quality governance context would also help enabling and respecting Responsible Business Conduct behaviors of MNEs. RBC standards implementation, namely including OECD Guidelines for Multinational Enterprises, the United Nations Guiding Principles on Business and Human Rights and the International Labour Organization Tripartite Declaration for Multinational Enterprises, would also let home countries actively encourage sustainable outcomes for their own Outwards FDI.

Results

The literature review results highlight some general considerations about impacts reached by FDI initiatives, as the important and mediating role of governance and legislation for

attaining sustainable impacts, the possible positive role of technology (Cole et. al, 2011) and innovation (Lavado et. al, 2018) as elements to prompt sustainability procedures. Another relevant general consideration concerns FDI spillovers, which are proven to be changing according to different countries or regions, or according to the host country's level of development (Zheng & Sheng, 2017), according to different industries (Blomström et. al, 2003) and country's absorptive capacity (Lehnert et. al, 2013).

Considering the dimensions of analysis which were accounted in the literature review, namely: sustainability dimension, geographical area and level of economic analysis, a few results can be drawn.

Observing the level of economic analysis, a first evident consideration is that macroeconomic analysis is the most used approach to assess FDI impacts. This is true both at international level, for studies expressing a comparison between different countries, and at national level. Firm-level studies that focus on the impact of FDI specific initiatives are not so common, especially in the Chinese context. That is probably due to the fact that the microeconomic perspective often focuses on the overall impact created by corporations' operations, as for the already mentioned example of Treedom (2022); that may be caused by the way current regulations are structuring sustainability reporting, as the previously discussed European Corporate Sustainability Reporting Directive, which appoints for compliance indicators that are relevant to the company's overall operations. It has been argued that the micro perspective may be extremely useful, since companies nowadays are still representing the major force driving a culture of sustainability rather than political forces (Mio, 2021:37). It could therefore be stated that there is a need to widen the accountability practices for impact on sustainability related to FDI strategies in the micro perspective. Regional level is quite studied in China, most probably because of the important regional disparities openly characterizing the country since the first opening up reforms. The least studied level in the international debate is the mesoeconomic one, and especially at industry-based level. The industrial level of analysis is available in sources which deal with the economic or environmental impact assessments, but do not include exhaustive assessment of social impact analysis yet; moreover, the industrial level often focuses on the Chinese territory both in the international and in the Chinese national debate. The importance of mesoeconomic level of analysis has already been remarked in the literature review because of its high potential in providing a more variegate and accurate

picture of the actual situation: that is especially true in places experiencing a high diversity and inequality degree when it comes to the regional or industrial distribution of lower or higher sustainable results lead by FDI initiatives.

Secondly, considering the three main dimensions of sustainability, the economic, environmental and social one, it is evident that the economic impact assessment relevant to FDI represents the sustainability dimension that has been the most studied in any geographical context. Interestingly, in more modern sources, indicators relevant to the economic dimension are often accompanied by other impact assessments, as the environmental or social one. It has been argued that, in order for sustainability indicators to effectively point out the impact created, they should consider at least two dimensions of sustainability (Mio, 2021:23). Observing the representation of different sustainability dimensions, it is also striking that social sustainability assessments are the less researched upon in any geographical context and at any level of economic analysis. This could be due to the fact that the social sustainability definition is still not uniform, and its measurement is still hard to identify (Opp, 2017:12). Especially in China, the topic seems to be neglected or restrained to the relations to other countries. Nevertheless, after the pandemic, the urgency to treat increasing social inequalities has started to manifest in an unprecedent way (Ferrannini et. al, 2021); after the outbreak of Russia-Ukraine conflict, the risk of not being able to attain SDGs and to create more inclusive and sustainable societies is even higher (OECD, 2022). Moreover, although some recent research has highlighted the role that good governance may endorse in enhancing FDI's potential of creating a positive, sustainable impact, nevertheless, research considering this topic, and accounting for it while considering other dimensions of sustainability, are still really rare and numerically inferior if compared to sources accounting for just one dimension of sustainability. It can therefore be concluded that FDI impact measurement should start to focus more on these two topics, with the aim, among others, to face the contemporary healthless and peaceless growth (Ferranini et. al, 2021). As concerns the environmental dimension of sustainability, it is noticeable how, at any level, and especially at regional level, there is a Chinese focus on environmental sustainability measurement compared to the economic or social sustainability. This kind of attention posed both by Chinese scholars and international scholars focusing on the Chinese territory could be explained by several reasons. One of them is the high level of polluting emissions characterizing China's industry compared to

other countries, another is the high level of FDI in resource intensive sectors (Kirkulak et. al, 2011); a further explanation may be represented by the increase in polluting emissions levels consequent to FDI in some sectors, as the logistics sector, (Wang, 2010) or by the relaxed environmental policies (Asghari et. al, 2014) at national and regional level (Zhang, 2008). Since 2004, even an official attempt at defining and measuring green GDP has started to develop in China (Carter & Mol, 2007). A last possible reason for the Chinese research focus on the environmental dimension could be explained by the shift in China's development from an early industrialization phase to a new one which accounts for life quality and viability of environment (Zheng & Sheng, 2017).

Another meaningful aspect when observing the results from the literature review and the discussion concerning sustainability in China is quality governance. Indeed, good governance and quality institutions can improve and regulate the positive impact of FDI on environmental dimension of sustainability (Bopkin, 2017) and on social sustainability (Lehnert et. al, 2013); quality governance is also essential in enhancing FDI effects on host country's development, which aspect is even more evident in developing countries. Not only governance has proven to be essential in shifting FDI impacts from negative to positive when it comes to sustainability and sustainable development objectives, but quality institutions and governance reflects a prominent role when foreign countries are considering investments coming from China. This is especially true when considering the late developments of Sino Italian relations and Italy exercising its golden power by refusing Chinese FDI or acquisitions due to political or strategical risks and to lack of institutional and governmental quality.

Another observable element coming from the literature review and the debate revolving around sustainability in contemporary China is a sort of detachment between Chinese declared objective of attaining high quality sustainable and human development as stated in the XIV Five Year Plan and the still prevailing attention to economic development in investment strategies as OBOR (Fondazione Italia Cina, 2021) or in the way that development is measured. For example, we might think about the Chinese Government's objective of becoming a quite wealthy society by 2021 and the used index to monitor the development of such a goal, which is GDP growth. According to the Chinese Government GDP rate should double to consider this societal goal attained; nevertheless, it has already been pointed out how GDP is merely an indicator of economic growth and not an

accountable indicator for development. Moreover, considering that transparency is a fundamental requirement to confront and choose among different investments and to make sustainable choices of investments (Mio, 2021), the detachment occurring between declared governmental objectives and actually implemented strategy, together with the overall lack of transparency in investments strategies in China is highly problematic (Vanoli, 2012). This kind of detachment is probably due to the still present phenomenon of information distortion, discontinuities to environmental statistics in China (Carter & Mol, 2007:7), or due to the detachment between possible reputational gains and effectiveness (Gneiting & Mhlanga, 2021) and to the use of umbrella terms as *shengtai wenming*, 生态文明 (ecological civilization). Indeed, this kind of term addresses the type of sustainable development that China's political leadership envisions for the country and, at the same time, serves ideological purposes, thus defining a broad set of strategies that could be adopted by Chinese authorities to address environmental issues, while offering rhetorical flexibility with which to interpret, adapt and implement state policies (Tong, 2019).

The last consideration about the Chinese geographical context is concerning industrial sectors distribution. The debate around Chinese context highlights the positive effects of FDI on innovation capacity, on export performance, on air pollution reduction, on yield and profit, on green efficiency, environmental and economic efficiency, on energy consumption, on decoupling, on high quality development of industrial sectors, especially on strategic emerging industries (Liu, 2020) and manufacturing (Chinese National Development and Reform Commission & Chinese Ministry of Commerce, 2022). On the other hand, other sources suggest a negative effect of FDI on the level of compliance to environmental regulations reached by Chinese FDI even if it does not seem that Chinese FDI are attracted specifically to areas with lower environmental regulations. Other drawbacks are the risk of accentuating inequalities and social risks; other negative effects are on CO2 emissions especially in manufacturing (Dean et. al, 2009) and on air, water and soil pollution and depletion (Jafri et. al, 2022). In another developing country context, namely Africa, the same negative effect of FDI on host country environmental regulation implementation has been found (Haglund, 2008). In the European context, a negative effect of FDI has been found on environmental depletion, while a positive one has been found for domestic entrepreneurship (De Backer & Sleuwaegen, 2003).

Lastly, as the geographical unit of analysis is taken into consideration, in the Italian context of studies concerning FDI impacts on sustainability and its multidimensionality, unfortunately, research is not exhaustive enough, since it is mainly focusing on sustainability as a competitive paradigm and legitimacy problem for Italian MNEs from an economic sustainability perspective, thus neglecting to improve the debate around social and environmental sustainability indicators. Nevertheless, Italian companies' ability to adopt and comply to sustainability reporting standards has been facing an important increase in the last years; reporting directives Italian companies are compliant to are often national or European. This also shows a positive development in the increasing awareness and commitment that Italian and European institutions are undertaking towards the identification and implementation of sustainability indicators and their relevant directives, thus demonstrating the positive change towards sustainable development that governance may experience and, at the same time, actively help to build in the near future. For example, according to Deloitte's report (2022), Italian companies are increasingly involved in the practice of sustainability reporting and compliance to SDG objectives; among these, the most used and quoted SDG goals is number 8, Decent Work and Economic Growth, number 13, climate action and number 13, responsible consumption and production. The least used SDG indicators are number 2, zero hunger, number 14, life below water and number 1, end poverty in all forms everywhere. This phenomenon is interesting since it both shows the increasing awareness and interest towards sustainability themes and sustainable development, while underlining the still predominant aforementioned focus that is characterizing the Italian debate around sustainability, namely the economic dimension and the interest posed on the responsible consumer and producer.

Conclusions

The main conclusions driven by the previously presented research are presented below.

It has been stated that United Nations, and the territories which are specific focus of the present dissertation, namely Italy and China, all explicitly and formally committed towards the realization and implementation, in the short and long term, of Sustainable Development

Goals, thus committing towards triple-bottom line sustainability while engaging for improving other essential conditions, as governance quality. Therefore, it has been interesting to note that, although the presence of this formal engagement, there have been some difficulties in finding quantitatively elaborated data which could help access and measure the degree of impact of largely used strategic tools, as FDI, on sustainability and SDG goals.

Firstly, the difficulty to find data about indexes considered for measuring the environmental and social dimension of triple-bottom line sustainability is striking because of the great difference which has been observed between the easiness of finding sources discussing about the economic impacts of FDI and the difficulty to access sources which considered other dimensions of sustainability. This huge gap urges the development of more consistent studies about FDI's impact on overall sustainability, and especially on its environmental and social aspects.

Secondly, another difficulty in conducting research has been represented by finding aggregate level data about FDI impact on sustainable development goals. This is particularly interesting because most of research focuses on the macroeconomic impact reached, thus neglecting great regional or sectorial differences, which, in profoundly variegate countries as China, are extremely strong.

Overall, considering the role that FDI could be able to assume towards the implementation of sustainable development goals in the post pandemic and global crisis era thanks to their resilience (OECD, 2022) and considering the importance that quality governance has proven to have on mediating and improving the effective enhancement of FDI positive spillover effects, it is fundamental that the United Nations now put some effort in the formulation of commonly usable indicators for FDIs impact on sustainability.

Therefore, according to the triple-bottom line definition of sustainability which has been adopted in the present dissertation so far, the impact caused by inward or outward FDI strategies should take into account several aspects that provide indications about the level of environmental, social and economic sustainability. Further considering the common commitment that United Nations decided to undertake as regards sustainable development goals and their implementation, the role that United Nations and UNCTAD attribute to FDI and the impact caused by FDI strategies worldwide, it becomes evident that the way

to access impact of FDI on sustainability should become homogeneous and common to every nation, to every company or entity wanting to access this kind of impact from a sustainability perspective.

It is therefore striking that, although the debate concerning the impact of FDI on sustainability and on different dimensions of sustainability starts to raise more and more interest because of its importance in determining the possible path towards sustainable development, we still lack a common framework able to capture the overall impact created by FDI strategies on sustainability. Without a common framework, it is hard to effectively measure and compare FDI initiatives and to enhance FDI potentiality of actively prompting sustainable development. Moreover, considering the contemporary trends involving FDI flows, and especially the decreasing trend in FDI flows' growth globally, it becomes evident that global governments should pay even more attention than before towards the implementation methods of FDI strategies for reshaping and giving a new rigor to these strategies while newly enhancing their legitimacy and effectiveness. Indeed, the disruptions that heavily affected and changed global FDI flows, and FDI flows occurring among the two countries here discussed, namely Italy and China, could represent an opportunity to actively lead change towards a more sustainable direction. Even if we consider the theories that predict a new increase and need of globalization strategies and in FDI, it becomes evident that accessing sustainable development dimensions which are usually neglected is essential to face the challenges of present times and to contribute to change in the advantages that MNEs usually gain from FDIs, as the exploiting of differences and inequalities among territories. This aspect is especially true where territorial differences are quite wide and this kind of change is particularly needed where environmental and social change is extremely urgent, like in China.

These results are even more striking when we reflect upon the necessity of sustainability in the contemporary scenario characterized by an increasing need for sustainable development, for a quantification and implementation of usually neglected dimensions of sustainability as the social one, and for resolving contemporary political and social disrupting events.

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