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CHINA-AFRICA RELATIONS, A WIN-WIN SITUATION OR A YELLOW MAN'S BURDEN

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Abstract

China and Ethiopia have committed to a South-South Cooperation, which strives for mutual benefit and sustainable development. This would allow China to increase its influence on the African continent through the Belt and Road Initiative, while Ethiopia could supplement its own shortages to induce industrialization. Recent investment withdrawals however, indicate that this relationship has not yet achieved a sustainable form. Due to the complex nature of this problem and the widespread impact of potential improvements, this research has adopted an interdisciplinary approach to reveal the challenges faced by Ethiopia and China to achieve a sustainable win-win relationship. The three most relevant disciplines include development studies, economics and innovation science, as these disciplines represent the diplomatic, macro-economic and micro-economic perspectives respectively. These disciplines are sufficiently exhaustive to formulate a comprehensive understanding of the challenges regarding the complex relationship between China and Ethiopia. To facilitate interdisciplinary research, common-ground was established regarding the fundamental concepts *knowledge*, *country performance* and *sustainable development*. Building on this common-ground, the following key insights were formulated: (1) a sustainable relationship should make use of three channels of interaction; investments, shared production and shared ownership, to optimize technology and knowledge exchange. (2) Shared ownership allows the exchange of most valuable knowledge and expertise. Therefore, a sustainable relationship should attempt to focus on this channel of interaction. (3) Moving through the channels involves a trade-off between sovereignty and equality. Ultimately, a more comprehensive understanding is created such that China and Ethiopia should move towards shared production and ownership, while finding a substantiated balance between the diplomatic values sovereignty and equality, to safeguard human development and reduce risks of debt.

Key words: China, Ethiopia, south-south cooperation, knowledge, sustainability, country performance, equality, sovereignty, technology transfer, FDI, debt, human development, resource curse.

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We are proud of the end result and hope to make the world a little better and fairer.

Inhoudsopgave

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1 Introduction

“The West no longer enjoys monopoly over Africa’s future development. For the first time since the end of the Cold War, other nations are taking notice of African politics and economics, especially China” (Klare & Volman, 2006). China seeks to increase its influence on the African continent through the Belt and Road Initiative (BRI). This global transport network has a purpose to improve connectivity and cooperation on a transcontinental scale (World Bank, 2019). China has been eminent for their participation in South-South Cooperation and in particular for their active cooperation with African economies to leverage international politics, obtain access to growing markets and acquire much needed raw materials. During the Forum on China Africa Cooperation (FOCAC) Beijing summit in 2018, Xi Jinping mentioned that China and Africa have embarked on a distinctive path of win-win cooperation (Wen et al., 2019). However, scholars and critics have expressed their concern that China makes advantage of the frustration from African policy makers regarding the past colonialism and corruption by the West to implement their own foreign policy (Asongu & Ssozi, 2016). The foreign policy of China, with the no-strings-attached characteristics, would be overlooking the political and human rights abuses in order to appease oppressive but resource-rich countries and causing higher risks of indebtedness in host countries (Rich & Recker, 2013).

Both benefits and challenges caused by the China-Africa relation are observable in Ethiopia. China has invested in power plants, infrastructure and are in the process in building and financing the telecommunication sector in Ethiopia (Geda, 2008). However, in the summer of 2018, due to a higher potential of rising foreign exchange shortages and government debt, China has scaled back investments in Ethiopia (Aglionby & Feng, 2018). The reduction of investments shows that the China-Africa relations have not yet taken an optimum shape. Therefore, it is important that African countries are aware of possible challenges when entering in a partnership with China.

Ethiopia is intended to serve as a model for other African countries that are facing similar Sino-African relations. In this thesis, we shall examine how the Chinese South-South discourses are presented and what consequences this has for the African recipient countries. In order to be successful, it is necessary to know what challenges must be overcome in order to achieve the win-win situation that China and Ethiopia proclaim to strive for. Therefore, this thesis will try to answer the following research question:

What challenges must the China-Ethiopia relation overcome in order to provide a win-win relationship for both stakeholders?

The goal of our thesis is to provide advice for China and the recipient countries to optimize their South-South cooperation, in which both participants enjoy equally the benefits needed. This is a particularly urgent issue, as rising national debt is already forcing Ethiopia to push back Chinese investments, causing many joint ventures and projects to seize operations (Donahue, 2018). Therefore, we identify possible challenges within the China-Ethiopia relation, with the aim of increasing the possibility of a win-win relationship. Within our research, we focus on the diplomatic and economic aspects of the China-Ethiopia relation, and how this affects the country performance. With the challenges, we mean obstacles that both Ethiopia and China have to overcome in order to create a sustainable profitable relationship. Consequently, a win-win signifies that both parties involved get benefits out of a sustainable profitable relationship. With sustainability, we mean that the relationship lasts an indefinite period of time, instead of a short-term relationship. Furthermore, profitable means that both Ethiopia and China reap benefits out of the relationship.

Taking into account the multidisciplinary nature of the South-South discourses between China and Ethiopia, the task of critically analysing this relationship may strongly benefit from an interdisciplinary approach (Repko, 2012). The cooperation between China and Ethiopia consists of multiple societal fields: economy, which can be subdivided in micro-economy and macro-economy, and diplomacy. Inequality regarding certain concepts in one field can be justified by an increased benefit in another field, therefore it would be naive to base conclusions on the investigation of only one societal field (Endaylalu, 2018). The resulting research is complex and therefore needs insights from different disciplines to get a comprehensive answer to the research question.

A necessary step in the interdisciplinary research process is the identification of multiple potentially relevant disciplines (Repko, 2012). In accordance with the specification of the win-win situation and with the potential to be sustainable, the following disciplines can be identified as possible provision of insights in the China-African relation: development studies, economics, human geography, geopolitics, innovation sciences, cultural anthropology and environmental studies. Of these studies, we identify development studies, economics and

innovation sciences as the most relevant ones. All have limited value if not reconciled with one another. Approaching the China-African relation with one discipline would be viewing the case through a microscope. The selection can be justified as follows:

First, the China-African relation reflects the developments and conditions in the contemporary world, which is part of development studies. Development studies can give insights in the coherence between social processes and contributing geographical distribution of power among states. Geopolitics, social processes and economics go hand in hand, and to evaluate a win-win situation for both China as Ethiopia, the complexity of these key features must be placed into perspective to find a sustainable profitable relationship. Second, an economic perspective is needed to give economic value to projected win-win situations. What are the effects on a macroeconomic level? China's hunger for global economic presence and need of resources combined with Ethiopia's desire to maintain its high economic growth needs an economic perspective. Third, innovation sciences suggest a new source of innovation through the transfer of knowledge and technology. In this light, the involvement of innovation sciences is necessary to clarify the opportunities from a micro-economic perspective and offer policy recommendations to maximize the Ethiopian benefits from the Sino-Ethiopian South-South Cooperation (Casadella & Liu, 2019). Both cultural anthropology and environmental studies are not considered in our research, because both China and Ethiopia's incentives to enter into a partnership have an economic and diplomatic intentions (Gamora, 2009)

For the three interdisciplines of development studies, economics and innovation sciences, we have formulated the following three sub-questions, respectively:

- *Which processes in the geopolitical China-Ethiopian relation can influence human development?*
- *What are the economic consequences of Chinese foreign direct investment in Ethiopia?*
- *How should Ethiopia optimize the effects of the South-South Cooperation with China on its innovative capacity?*

The thesis is structured as follows: first, in chapters 2, 3 and 4 the above sub questions will be answered. For each discipline, the notion of a sustainable relationship will be defined and the challenges associated with the China-Africa relation will be outlined. Then, chapter 5 will

consist of the interdisciplinary conflicts and common ground. Finally, chapter 6 will provide a more comprehensive understanding and ultimately conclusions and future research will be formulated in chapter 7.

2 Development studies

2.1 Introduction

Recent visitors of the capital of Ethiopia, Addis Ababa, will find a city that has been radically transformed, with huge skyscrapers which are changing the whole profile of the city. The traffic chugs through the city on smooth Chinese roads, Chinese cranes lift the skyline, the tourists are arriving at the Chinese-upgraded airport, commuters ride modern Chinese trains to work and Chinese factories are operating in the manufacturing sector (Marsh, 2018). Addis Ababa is one out of many places in Africa which have been funded by the Chinese. The investments in Addis Ababa by China are an example of the expanding Sino-African relations, whereby China's political and economic activities in Africa are increasing at an exponential rate. In 2008, it replaced the European Union (EU) and the United States (US) as Africa's major trading partner (Van Dijk, 2009). Additional to trade, China's Foreign Direct Investments (FDI) and development aid are mutually incorporated in the increasing Sino-African relations. To coordinate the investments in Africa, China has developed a foreign political strategy with a no-strings-attached dimension and different policies to achieve a successful implementation, which involves actors like the Chinese government, state-owned enterprises, private Chinese companies, the Chinese Embassy in the country concerned and Chinese people (Rogers, 2007). The no-strings-attached policy is still operating, and one of the key features of China's Africa policy (Li, 2018). China is using the emergence of Africa as a continent of strategic importance for its vast resources and potential. China's national objectives, like great economic expansion, increased international prestige, a unified China and Taiwan, and domestic stability directly or indirectly amplify its great interest in Africa. At the same time shows Africa a mutual interest in China whereby China is seen as a tool to accomplish economic modernization and have a quick delivery of services and cheap goods (Adem, 2012). Furthermore, the trade relations between developing countries and China can be seen as a win-win situation, because China is providing Africa with jobs, better international relations ties and an improved infrastructure (Abdullah et al., 2015). Additionally, China also helped in treating infectious diseases such as malaria and AIDS, helped building hospitals through the whole continent and launched the first overseas radio station in Kenya (Brooks & Shin, 2006).

However, the growth of the Sino-African relation has provoked a rash of criticisms aimed at China's governance and human rights issues on the continent. Mainly out of a Western perspective, there is been observed that many African states that enjoy Chinese support not only trample on civil and political rights, it also lacks in economic and social rights (Taylor, 2007). China's increased presence in Africa is part of a wider effort to create a paradigm of globalization that favors China itself. Amnesty International has argued that 'China is having an adverse effect on human rights in other countries because by dealing with repressive regimes, such as in Sudan, and putting its economic and trading interests ahead of concern for human rights it's allowing these regimes to be provided with resources that they would not otherwise get so easily.' (Rees-Roberts, 2006).

As the Sino-African relation has its downsides, it is important to identify the malfunctions, in which both Africa as China find itself in an optimal partnership. To avoid making sweeping conclusions since Chinese involvement in Africa is both dynamic and highly complex, local contexts needs to be examined carefully (Potter et al., 2012). Therefore, the China-Ethiopian relation is analyzed, to go more in debt with certain benefits and challenges. Hereby, human development is used as an indicator for an optimal sustainable relation. Human development involves the expanding of the richness of human life, rather than simply the richness of the economy in which human beings live (UNDP, 2019). Within human development, the well-being of the people is central, thus any process which has a negative impact on the well-being of the people of Ethiopia will be identified as a malfunction within the China-Ethiopian relation. The Rights-Based Approach will be seen as a prerequisite of human development, as the Rights-Based Approach is normatively based on international human rights standards and operationally directed to promoting and protecting human rights (Uvin, 2007). To this end, this chapter addresses the following question from the perspective of development studies:

“Which processes in the geopolitical China-Ethiopian relation can influence human development?”

The geopolitical relation refers to the political and diplomatic relations between China and Ethiopia as influenced by geographical factors.

The main focus will be on the geopolitical and societal dimensions of the China-Ethiopian relation. First in section 2.2, the background of the China-Ethiopian relation is highlighted, and whether it complies with a development cooperation. In section 2.3 the geopolitical influences on human development in Ethiopia are analyzed, on the basis of the Rights Based Approach. This hopefully enhances the understanding of how to provide a sustainable relationship for both countries. Finally, section 2.4 will provide an answer on the research question.

2.2 Background China-Ethiopian relation

It is inconceivable, from the African perspective, to discuss Africa's political and economic development without referencing to China. The China-African relationship has grown exponentially since the start of the partnership in the 1960s (Amanor, 2013). A shared common belief to fight for the liberation of peoples and nations from the remains of colonialism, poverty, oppression and underdevelopment, seems to create a vision of mutual benefit and solidarity within their place in the world system (Gray & Gills, 2016).

The China-Ethiopian relationship started after China and Ethiopia issued the joint communiqué on the establishment of the diplomatic relations between the two countries, on November 24, 1970 (Geda, 2008). However, after the Dergue regime was overthrown by the Ethiopian People's Revolutionary Democratic Front (EPRDF) in May 1991 the relation between Ethiopia and China started to pay off (Adem, 2012). The new government led by Melese Zenawi set out to deliver democracy, and transform the Ethiopian political system based on ethnic federalism. One of the priorities within the foreign policy of the EPRDF is peaceful co-existence and in particular a free market economy (except the ownership of land) (Gamora, 2009). China has strengthened the China-Ethiopian relation after the EPRDF came to power. Different factors contributed to the China-Ethiopian relation. Out of an Ethiopian perspective, the EPRDF needed to gain international recognition and support, whereby China could help improve their image. Second, is the need of socio-economy recovery thru foreign assistance (Shinn, 2014). Hence, Ethiopia sees China as an alternative partner to the West, which provides extra assistance in the departments, mainly the economic sector, where the West cannot or will not provide more aid assistance.

From the perspective of China, Ethiopia has various characteristics that can be beneficial for China. The first has economic purposes, with Ethiopia's 90 million population, being the second most populous country in Africa after Nigeria, the Ethiopian population is considered as a very lucrative market for products made in China, trading and investments opportunities (Geda & Meskel, 2010; Gamora, 2009). Also, the few natural resources that Ethiopia exports are of strategic interest to China (Chakrabarty, 2016). The second characteristic considers Ethiopia's political and diplomatic usefulness. Ethiopia has played a major role in the creation of FOCAC in 2000, and makes outstanding contributions to promoting China-Africa cooperation (Jalata, 2014). Ethiopia's positive attitude towards China can be highly beneficial for China because of Ethiopia's important role as being a founding member of the African Union, and its seat within the Economic Commission for Africa and other specialized organs of the UN (Fei et al., 2018). Ethiopia is China's gate towards more diplomatic and economic cooperation with other African nations. The third important factor, which is in line with the second, is that Ethiopia is mostly being surrounded by unstable regimes, which makes the country widely considered as a pillar of relative stability in the Horn of Africa between the Muslim north and Christian south which makes it an important strategic ally for many of its international partners (Hackenesh, 2011).

Table 2.1 shows that Ethiopia has grown considerably in recent decades in terms of Gross Domestic Product (GDP), Gross National Income (GNI) and Human Development Index (HDI). China's beneficial contribution to infrastructure, telecommunications and the manufacturing sector and additional support as a major donor have among other things helped improving the country's performance and thereby towards Ethiopia's development (Adem 2012; Alves, 2013). However, the statistics of Ethiopia show still relatively low numbers. For both GDP, GNI as HDI Ethiopia's performance can be placed in low development and low income (World Bank, 2019; UNDP, 2019). Therefore, Ethiopia is still one of the poorest countries in the world, both in economic as human development (Attanasio et al., 2017).

Tabel 2.1: Ethiopia Country Performance

Year	2000	2017
GDP per capita	123.876	767.563
GNI per capita PPP	490	1,890
HDI	0.283	0.463

Source: UNDP, 2019; World Bank, 2019

2.2.1 A development cooperation?

How China engages Ethiopia, or Africa, with its aid principles suggest that they strive for a development cooperation (DC). The African diplomatic community announcing FOCAC stated: “We decide to vigorously promote further China-Africa cooperation in the economic, trade, financial, agricultural, medical care and public health, scientific resource development, transportation, environmental, tourism and other areas on the basis of the principles enshrined in this declaration and the Program for China-Africa Cooperation in economic and social development adopted at the Forum so as to promote the common development of China and Africa.” (Potter et al., 2017). Consequently, Gu (2016) and Scoones (2016) describe the Sino-African relation as a form of a South-South Development Cooperation (Gu et al., 2016; Scoones et al., 2016). A South-South Development Cooperation can be defined as a broad framework of collaboration among countries of the South to share on a bilateral or regional basis knowledge, skills, expertise and resources to meet their development goals through concerted efforts. In general, the SSDC does not follow the rules entirely for development assistance by the Development Assistance Committee (DAC), and is commonly based on solidarity, horizontality – in contrary to the perceived vertical essence of traditional DAC aid – non-interference in domestic affairs, and mutual benefit (De Renzio & Seifert, 2014). If the China-Ethiopian relation is in line with a DC it should be compatible with the purposes and characteristics of a DC defined by the United Nations, of which China is a charter member. Table 2.1 shows the purposes and characteristics of a DC. Based on this model, a couple of things stand out. First, when comparing the purposes of a DC and the purposes of China’s engagement a difference is noticeable. Although China itself is convinced that they are promoting human rights very well and guarantee that people are able to exercise universal social basic standards with their aid, in practice different situations occur (Power & Mohan, 2010). For example, through the no-strings-attached policy their finances and aid could

support regimes that harm human rights (Taylor, 2007). So, there are contradictory statements about the human rights approach of China.

Within the characteristics of a DC, a difference is detectable with China’s implementation of aid. First, China’s aid should be on the basis of the Sustainable Development Goals (SDGs), which are international development priorities. Secondly, a DC should not be driven by profit. Given that China’s engagement with Africa is part of their Belt and Road Initiative (BRI), which aims to strengthen Beijing’s economic leadership through a vast program of infrastructure building, Africa is part of a greater project to improve China’s profit, either within economic sense or political sense (Cai, 2017). A cooperation driven by profit could undermine developmental objectives, as economic progress comes first (Alonzo & Glennie, 2015).

The purposes and characteristics of DC that are corresponding with China’s ‘win-win situation’ are the supportive efforts for participation within international trade and based on cooperative relationships that seek to enhance developing country ownership (Donou-Adonsou & Lim, 2018).

Table 2.2: Purposes and characteristics of a development cooperation

Purposes	Characteristics
Guaranteeing universal basic standards of social protection	Explicitly intended to support national or international development priorities
Promoting convergence among countries’ standards of living	Not driven by profit
Supporting efforts of developing countries to actively participate in the provision of international public goods	Discriminates in favour of developing countries
	Based on cooperative relationships that seek to enhance developing country ownership

Source: Alonzo & Glennie, 2015

Based on the table above, there can be concluded that China does not entirely execute the preferred DC as stated by the UN. Therefore, the China-Ethiopia (Thus China-Africa),

cannot be called a DC. Because China has a divergent approach to Africa, it raises some challenges for their aid impact on human development.

2.3 Ethiopia and China: Impact on Human Development

The China-Ethiopia relation contains both fruitful opportunities as characteristics that might be in conflict with human development. As China has some differences with the execution of a development cooperation, this section will analyze which characteristics of the geopolitical relation between China and Ethiopia has more potential risk of having a negative impact on human development, or positive, than if it was covenant with a DC. The Rights Based Approach is used as a foundation of human development, so the processes that result out of the geopolitical relation between China and Ethiopia will be examined in order to conclude if it may or may not comply with the Rights Based Approach and thus human development.

2.3.1 Rights Based Approach

The Rights Based Approach has its origin in the 1990s, when a bridge was formed between the human rights system and the development enterprise. The main reasons for this change were the end of the Cold War, the failure of structural adjustment programs and development thinkers that redefined development as being more than economic growth: including human rights was a way to construct a more holistic definition (Cornwall & Nyamu-Musembi, 2004; Uvin, 2007).

A Rights Based Approach is a conceptual framework promoted by many development agencies and non-governmental organizations (NGOs). It seeks to analyze inequalities that are at the core of developmental problems and discriminatory behavior and to correct unlawful power distribution that hinders the development progress (Filzmoser et al., 2015). At the core, the Rights Based Approach has two different rationales. The first is based in the intrinsic value, that pursuing human rights is the morally and legally right thing to do. So, the question that arises from this rationale is: is China 'doing good' with their aid for the people within Ethiopia? The second rationale has an instrumental base, in which it is recognized that a Rights Based Approach is leading towards a better and more sustainable human development (Hák et al.,

2016). If China follows the Rights Based Approach correctly, their aid flows will have a higher chance of human sustainability, which will increase the benefits of the China-Ethiopia relation.

The Rights Based Approach involves a set of characteristics. First, there should be equal rights and access for all, thus no discrimination should be involved in any process within the China-Ethiopia relation. Second, it is important to erase all possible disparities and inequalities, social justice is a key factor. Third, the relationship between the state and its citizens must be put on the center stage. And fourth, the relation must create conditions under which people can live in dignity and peace and are able to develop their full potential. The following conditions should create an environment where people can develop themselves: empowerment, participation, ownership and capacity development (Marks, 2018).

It must be taken into account that although the Rights Based Approach can enhance human development, the focus of the approach is likely to be less on service delivery and general capacity building and more on enabling the duty-bearer to respond to claims from the ultimate recipients of the development assistance and to ensure that minimum core rights regarding health, education, housing and/or social security are fulfilled (Broberg & Sano, 2018). This would mean that the Rights Based Approach is not applicable in every situation.

Taken the latter into account, the next section will examine which processes of the China-Ethiopian relation have an effect on the characteristics of the Rights Based Approach.

2.3.2 Factors of influence for human development

The bilateral relations between China and Ethiopia have been greatly developed especially in political and economic fields since coming into power of the EPRDF in 1991. However, the bilateral relationship between the two countries has some challenges regarding human development.

Transparency

China's aid is contradictory with the principles of the Paris Declaration on aid effectiveness (Ajakaiye & Kaplinsky, 2009). Many questions are raised about the delivery of Chinese 'aid' and possibilities between donors. There seems to be a lack of transparency in China's aid allocation. There is little or no knowledge about the definition of Chinese aid, its amount and level, and effectiveness. To aggravate China's perception as a "fraudulent creditor" is the lack

of details about the level and conditions of its own assistance to other countries - so the data and information in that regard are sketchy. This results in not knowing who funded what and for whom, what projects are funded for what purposes and where. As a consequence of having little knowledge, the chances of corruption are remarkably high (Jalata, 2014). China's lack of transparency can make the Ethiopian elite less accountable by allowing them to have non-transparent deals, as well as allow them to commit human rights abuse without external restraints, which used to come with Western aid (Geda, 2008).

Asymmetric relation

It is striking that although the rhetoric principle of mutual benefit invoked by political leaders of China and Ethiopia, the China-Ethiopian relation is largely asymmetrical (Endaylalu, 2018). The relationship between the countries is a reciprocal exchange of favors between two countries of different status and power, whereby China gives aid, or favors, to Ethiopia in exchange for loyalty and political support (Fukuyama, 2014). From the economic point of view, the nature of trade relations between China and Ethiopia is highly imbalanced and in favour of China. Subsequently, China has used Ethiopia as a fortress against criticism by the West.

As a consequence of the asymmetric relation between China and Ethiopia, there is a chance of losing sovereignty and autonomy for Ethiopia (Endaylalu, 2018). Because of the asymmetric relation, China gains more power over Ethiopia, which results in a sovereignty loss. This might have a negative effect on the population of Ethiopia, because without sufficient sovereignty, the rights and liberties of the citizens are not fully protected by national standards (Biersteker & Weber, 1996).

Tied aid

Another aspect of the China-Ethiopian relation is that Chinese projects are financed through tied aid which might create over-dependency, loss of ownership, and might undermine the right to development. Tied aid deprives developing countries from full potentials of the long-term sustainable development that untied aid might have provided with local procurement products and services from the development recipient country (Kim & Kim, 2016; Jalata, 2014). On top of the tied aid, China is using its own resources and staff for their development

projects (Chakrabarty, 2016). As a consequence, the Ethiopian population is not properly involved in the key technical and managerial posts, which hampers their skill transfer and personal development. Hereby some key characteristics of the Human Rights Based Approach are missing. First, because China is tying aid, the Ethiopians are losing ownership and empowerment, as they have less control over their own economic sector. Secondly, because China’s does not involve the local population in their projects, the participation factor is very low. Furthermore, participation is important to improve transparency and accountability of the projects’ leaders, which enhances the quality standards (Mwiru, 2015).

Paradox of economic growth

An important aspect of the China-Ethiopian relation is that its primarily driven by economic forces (Chakrabarty, 2016). As explained in section 2.2.1, the cooperation builds on profit. China’s financial aid flows can be positively associated with income inequality. Economic growth can result in widening the gap in income and working conditions and social segmentation of society (Ranci, 2011). Hence, the foreign direct investments (FDI) by China leads to higher inequality in countries with a lower absorptive capacity, which is Ethiopia (Seyoum et al., 2015; Wu & Hsu, 2012). Final, to confirm the paradox of economic growth, the ‘Kuznets inverted U curve’ states that inequality increases early in the industrialization process, in which Ethiopia finds itself including through help from China, and then decreases with further development (He & Zou, 2018). This would suggest that the income inequality in Ethiopia will proceed rising. Table 2.3 shows the GINI-index of Ethiopia. The GINI coefficient ranges from 0% to 100%, with 0 representing perfect equality and 1 representing perfect inequality. The GINI-index confirms that the income inequality is rising in Ethiopia, equal to the rise of the economic growth, GDP, seen in table 2.1.

Table 2.3: Gini index of Ethiopia

Year	2004	2010	2015
Gini Index	29.8	33.2	39.1

Source: World Bank, 2019

Democracy

The no-strings-attached foreign policy of China may undermine African governance. One of the objectives of the EPRDF, was democracy. However, the lack of requirements for better governance or social programs may result in a loss of democracy (Shinn, 2014). The Chinese model of development has showed economic growth without civil liberties or participatory democracy. The development model of China also discredits the notion that an autonomous civil society is central to development. These practices might adversely affect the democratization process in Ethiopia. Furthermore, with the no-strings-attached policy of China, comes a no-questions-asked attitude. The AU is concerned that this might threaten to reintroduce practices that the New Partnership for Africa's Development (NEPAD) is supposedly looking to move away from, like eradicating poverty and inequalities (Taylor, 2007). China's economic power in such circumstances supports the Ethiopian elite which have been reluctant in following NEPAD's governance goals (Jalata, 2014; Chakrabarty, 2016).

2.4 Conclusion

Let us return to the sub-question: “*What processes in the geopolitical China-Ethiopian relation can influence human development?*”. One should keep in mind that the China-Ethiopian relation is constantly developing, whereby certain challenges might be mitigated in the near future. Furthermore, the human development approach used in this chapter has a western origin, whereby certain identifications can be biased. Keeping that in mind, it is found that because the China-Ethiopian relation does not fully comply with a DC, a couple of possible challenges arise concerning human development. The engagement of China with Africa is based on political and economic expansion with a profit driven mind. This results in transparency, asymmetric relation, tied aid, inequality and democracy challenges.

Based on the findings, it is expected that the China-Ethiopian relation does have challenges to overcome, but also has potential to be beneficial for both countries. Given the fact that Ethiopia is not only supported by China, but also by the human development programs by Western countries, China's involvement in Ethiopia could be seen as supplementary to Western aid. In order to achieve a safe operating space for human development within Ethiopia, an engagement with China on its own conceptualization of what human rights are seems apposite. A conversation could be started about how China's doings in Ethiopia could undermine its own

long-term interests, making them aware of the negative influence of a malfunction within human development.

3 Economics

3.1 Introduction

In September 2018, Prime Minister of Ethiopia Abiy Ahmed Ali met with Chinese President Xi Jinping prior to the 2018 Beijing Summit of the Forum on Chinese-African Cooperation. The 6th edition of this summit was held to strengthen the relationship between China and the African continent under the theme “China and Africa: Toward an Even Stronger Community with a Shared Future through Win-Win Cooperation”. With its increasing interest in African countries, China is making a tremendous amount of effort to establish a stronger presence on the African continent. Building on a South-South Cooperation China and Ethiopia are becoming well acquainted economic partners. China has become Ethiopia’s biggest import and export partner, accounting for 33% of Ethiopia’s total imports and 16% of total exports in 2017 (OEC, 2019). Products most imported from China are machinery, metals, and transportation (OEC, 2019). Furthermore, the EXIM Bank, The Chinese Development Bank, and the Chinese Government are increasingly investing in the Ethiopian projects such as the Grand Ethiopian Renaissance Dam and the Addis Ababa-Djibouti Railway project (Van Mead, 2018). Moreover, Chinese investments are greeted with open arms due to Ethiopia’s openness for foreign direct investments (FDI’s) mentioned in their Growth and Transformation Plan II (GTP II 2015/16-2019/20). Developing and transition economies prioritise attracting FDI as a driver of economic growth and development (Görg & Greenaway, 2004).

Ethiopia, and many other African countries, would like to see a transformation from a more agricultural economy to an industrial economy (GTP II 2015/16-2019/20). Ethiopia is building, in collaboration with Chinese contractors, export processing zones, such as the Hawassa Industrial park. Many other industrial parks, primarily focused on manufacturing, are scheduled by the Industrial Park Development Corporation of Ethiopia (GTP II 2015/16-2019/20).

Both China and Ethiopia are eager to reap the benefits of this “win-win cooperation”. This paper will focus on the incentives for China and Ethiopia to engage in economic cooperation. Furthermore, it will examine potential adverse consequences of Chinese investments in Ethiopia for both partners.

3.2 Overviews

To gain a better understanding of the incentives that drive both Ethiopia and China, it is crucial to take a look at the historic and economic context of both countries.

3.2.1 Overview Ethiopia

The current Ethiopian economy is best described as a transition economy. It is changing from a centrally planned economy into a market economy by privatizing previously state-owned corporations, with the exception of transport, telecommunication, and banking (Barber and Pilling, 2019). The Federal Democratic of Ethiopia is a Sub-Saharan country located in the Horn of Africa. It is the second most populated country in Africa, with a population of 105 million as of 2017 (World Bank, 2017). Ethiopia is one of the fastest growing economies based on real GDP with an 8-11% annual growth rate for the last 15 years (IMF, 2019). Ethiopia is also one of the fastest growing country in terms of population with a growth rate of 2.5% in 2017, however population growth is decreasing since 1992 (World Bank, 2017). Also, the poverty ratio in Ethiopia has been declining from 45.5% in 1995 to 23.5% in 2015 (World Bank, 2017).

In the Growth and Transformation Plan (GTP) I and II Ethiopia is emphasizing its desire for a more industrial Ethiopia backed by a strong agricultural sector. Looking back at GTP I period from 2010/11 until 2014/15 it managed a 20% average annual growth in the industrial sector. It has a labor force participation rate of 82% (World Bank, 2017). Ethiopia's labor force division by occupation is 72.7% in agriculture, 7.4% in industry, and 19.9% in services (CIA World Factbook, 2013). This is a typical division for a developing country. Ethiopia's export of agricultural products such as coffee, other oily seeds, cut flowers, and others account for 68% of export value in 2017 (OEC, 2019). Other important export products include textiles, gold, and animal products, such as hides, meat, leather, and live animals (ibid.).

Ethiopia is landlocked and currently relying on the port of Djibouti for nearly all its imports and exports (Maasho, 2011). Prior to the Eritrean-Ethiopian War the ports of Assab and Mawassa were used. In 2018, a peace deal has been concluded between Ethiopia and Eritrea, setting up the possibility to return to the ports of Eritrea (Maasho, 2019).

3.2.2 Overview China

China has experienced massive economic growth ever since it transformed itself from a centrally planned economy to a market economy. The People's Republic of China is the second

largest economy ranked by GDP with 12.24 trillion US\$. It has the largest population in the world estimating 1.386 billion people. (World Bank, 2017). Population growth was 0.559% dominantly caused by the one-child policy introduced in 1979 to control population growth (World Bank, 2017). In 1978, after Mao's death, economic reforms took place, repairing its underperforming economy (Brandt and Rawski, 2008). The Open-Door Policy was introduced, opening China up for foreign investment. In 1991, China joined the Asia-Pacific Economic Cooperation (APEC) group, and later in 2001 the World Trade Organization (WTO), helping China establish a stronger global trade presence.

China is the largest exporter of products and the second largest importer of products in 2017(World Bank, 2017). It had a trade surplus of 870 billion US\$ in 2017. 49% of the total value of export consists of machines such as broadcasting equipment, computers, integrated circuits, and telephones. Other important export products are textiles, metals, and chemical products. China's main importing products are machines, petroleum, metal ores, and chemical products (OEC, 2017).

China's Belt and Road Initiative (BRI) is a prominent tool to increase its influence on a global scale. The Belt and Road initiative is created to strengthen infrastructure, trade, and investment links between China and 65 other countries. These countries account for over 30 percent of global GDP, 62 percent of population, and 75 percent of known energy reserves (World Bank, 2019).

3.3. Motives

The theme of the FOCAC 2018 Beijing Summit was "China and Africa: Toward an Even Stronger Community with a Shared Future through Win-Win Cooperation". What does a so-called win-win situation entail? What makes FDI a win situation for China, and what makes FDI a win situation for Ethiopia?

3.3.1 Ethiopian motives

Industrialization

Manufacturing plays a fundamental role in economic development. Ethiopia has been averaging a 10.7% economic growth over the last years, upsetting the average growth of 5.2% in the region. With already staggering growth rates averaging 20% in the manufacturing

sector, it is seeking more foreign investments to maintain the growth path they headed (GTP II 2015/16-2019/20). The Chinese has set their attention on labor-intensive manufacturing because of low labor costs (World Bank, 2017). FDI in the manufacturing sector has increased to 75% of the total FDI's in Ethiopia (Balchin et al., 2016). Moreover, based on Kaldor growth laws economic growth is positively related to manufacturing growth (Kaldor, 1967). Firstly, the growth of GDP is positive related to growth of the manufacturing sector. Secondly, the productivity of the manufacturing sector is positively related to the growth of the manufacturing sector (Vendoorn's Law). Thirdly, the productivity of the non-manufacturing sector is positively related to the growth of the manufacturing sector. Rodrik (2013) also confirms that manufacturing is fundamental for economic development. He showed that manufacturing shows unconditional convergence in labor productivity. Countries with a higher proportion working in the manufacturing industry grow faster. Szirmai and Verspagen (2011) showed that manufacturing can act as an engine for rapid growth and economic development. According to their research there is an empirical correlation between GDP per capita and the level of manufacturing development. Hausmann *et al.* (2007) further showed the importance of manufacturing. Following Engel's Law the share of agriculture in total household expenditure falls as per capita income rises while the share of manufactures increases. Economies that profited most of the opportunities were countries that have been able to increase their exports of dynamic products, particularly manufactures, with high income elasticity of demand. Therefore, what a country produces and exports matters (*ibid.*).

Low capital

As of 1971 Ethiopia is included in the list of Least Developed Countries by the United Nations (UNCTAD, 2019). The average annual income of \$549 makes it hard save and to accumulate capital for investment. Therefore, the Ethiopian Government encourages foreign direct investment to attract capital. Feldstein (2000) emphasized the importance of foreign capital. Through FDI the government can increase their capital. Earnings can be made by the leasing of land, the operation of SEZs, and the generation of tax revenue.

Job creation

Ethiopia has a need for new jobs. Many young people are entering the labor market every year (UNCTAD, 2011). By attracting FDI in labor-intensive manufacturing many jobs are created (Görg & Greenaway, 2004). Gu (2009) found that many Chinese multinational corporations (MNC's) employ from the local labor force, especially for labor-intensive manufacturing. In the case of Ethiopia, many jobs can be created.

However, for these FDI's to be fruitful there needs to be an ability to absorb new technologies (De Mello, 1997). Szirmai and Verspagen (2011) already concluded there is a positive effect of manufacturing on growth with skilled workers. Although Chinese MNCs are attracted by low wages, they will invest in education and training (Görg & Greenaway, 2004). This statement is backed by a World Bank survey (2012). They found that 69% of the surveyed Chinese companies provide formal training programs for Ethiopian workers. Only 38% of Ethiopian firms invested in such training programs. The survey shows that 11,314 Ethiopians already have been benefitting from training programs provided by Chinese firms. Feldstein (2000) agrees with this notion and adds that not only production workers, but managers and executives, as well as receiving training for human capital development as a by-product of operating the new businesses. This additional training can lead to a spillover of human capital. Skilled workers can leave, join a domestic firm, or start their own domestic firm, applying his or hers attained knowledge elsewhere (Fosfuri et al. 2001; Hausmann & Rodrik 2006).

Inter-sectoral linkages

Foreign direct investment could affect the Ethiopian economy through inter-sectoral linkages. Growth in one industry affects other industries as well. Rodríguez-Clare (1996) makes a distinction between forward and backward linkages. Backward linkages are upstream the production chain and forward linkages down stream the production chain. Positive externalities exist through the increased demand for inputs, backward linkages, and through output, forward linkages. Faster growth in one sector generates faster growth in another sector, in particular manufacturing (Felipe et al., 2014). Manufacturing is heavily reliant on the agricultural sector, providing it the necessary inputs. Growth in manufacturing happens often without reducing agricultural output (ibid.). Furthermore, Borensztein *et al.*(1998)

complements this by adding that manufacturing firms are important consumers of banking, transport, insurance and communication services. Investment in one sector stimulates domestic investment, employment and output in other sectors (Borensztein et al., 1998).

Export diversification

Product diversification in Ethiopia leads to economic growth. For a long time, agricultural goods have been Ethiopia's main source of exports (OEC, 2017). These products have a high risk of potential agricultural output because they are dependent on climate. Rainfall and droughts impact the output of the agricultural sector since only a small proportion of the land is irrigated (FAO, 2015). Promising export products for Ethiopia are agro-processing, garments and natural resources. Export diversification of these products could give Ethiopia economic development and macroeconomic stability (Bahar et al. 2017). Hausmann *et al.* (2007) also stressed the importance of what you export. The type of products a country specializes in has important implications for economic performance. Comparative advantage and sophistication of products play a key role. Ethiopia has a comparative advantage in labor-intensive manufacturing because of low wages and high population.

Natural resources show an export diversification prospect. Neighboring countries such as South Sudan and Kenya have vast oil reserves that are being exploited (OEC, 2017). Ethiopia has already approved licenses for soil investigation. Besides the Ogaden Basin, it wants to increase their export on fossil fuels (World Bank, 2016).

3.3.2 Chinese Motives

Lowering labor costs

Chinese firms are seeking new possibilities to reduce their production costs. With rising labor costs in China, it seeks to make resource-seeking investments. The goal of these types of investments is to acquire resources not available at home, such as natural resource or raw materials, or are available at lower costs, such as labor (Dunning, 1993). Balchin et al. (2016) share this notion. The rebalancing and rising wages in China provide an opportunity to attract investment in higher value-added, export-led manufacturing.

Natural resource diversification

To maintain economic growth at home, China is in need of these natural resources (Foster et al. 2009). Zhang (2006) argues that China wants to diversify its natural resource supply to maintain its domestic growth. This need for natural resources diversification has caused China to turn to the African continent. The Ogaden Basin holds large reserves of crude oil and natural gas. Parts are currently being exploited by a Chinese company, Poly GCL. Vast areas of Ethiopia haven't been investigated yet for natural resources and offer promising prospects. A recent discovery 1.6 trillion cub feet of natural gas by New AGE, a British energy firm, is one of those possible prospects. The presence of natural resources has a positive effect on FDI (Asiedu, 2006). Asiedu showed in an empirical analysis that natural resources together with a large local market, good infrastructure, low inflation, an efficient legal system and a good investment framework promote FDI. Neighbouring country South Sudan holds large reserves of crude oil, just as many other Sub Saharan countries (Basu, 2002).

Governmental support

The Chinese Government view on FDI has changed. Under the Open-Door policy outward direct investments were prohibited by the Chinese government. The Chinese Government tightly controlled the market with laws and economic policy to enhance its domestic economy (Buckley et al., 2006). However, in recent years the Chinese Government has been encouraging outward FDI (Sauvant, 2005). The main reasons were the need for natural resources (Zhang, 2003) and comparative advantage due to low labor costs in African countries. In 2004, the National Development and Reform Commission and the Export-Import Bank of China (EXIM Bank) jointly decided to provide significant support to prioritize the overseas projects (Cai, 2006). Partly because of the above-mentioned factors, the Chinese government has begun to support outward FDI with official loans, export credits, and ready access to foreign exchange for Chinese firms (El Rashidy, 2019). Foster et al. (2009) confirms the trend of the Chinese Exim Bank supporting overseas expansion to increase productivity and competitiveness. Currently about 66 percent of Chinese companies are in the manufacture sector in Ethiopia. (Geda, 2009).

The Chinese Government wants to create jobs overseas. The domestic market is saturated creating excess production capacity (Gu, 2009). China is funding Ethiopian projects

in infrastructure and special economic zones. These loans come with contracts for Chinese contractor to build the projects (Dollar, 2016). This policy has led to fourteen thousand Chinese workers active in Ethiopia in 2014 (ibid.) Moreover, Chinese construction companies are also increasingly active in the development of the power sector in Ethiopia, primarily focused on the construction side (IEA, 2016). This will create future jobs for Chinese workers.

Attracting investment climate

Ethiopia has pursued economic liberalization and deregulation for the past few years, giving foreign firms a better access to their markets. Furthermore, Ethiopia has been privatizing state-owned enterprises to reduce the burden on the budget and make the enterprises more efficient. Privatization has attracted FDI as a relatively easy access to Ethiopia's markets for foreign investors (Basu, 2002).

Special economic zones have been created to attract foreign investors. Special economic zones offer customs duty payments exemptions and income tax exemption for up to 15 years. (IPDC, 2019). Prominent special economic zones in Ethiopia are the Hawassa Industrial Park and the Eastern Industrial Zone (UNDP, 2015). These special economic zones mainly focus on labor-intensive manufacturing.

Other important condition for a healthy investment environment is good infrastructure. Wheeler and Mody (1992) found that good infrastructure is one of the important factors of choosing an FDI location. Limao and Venables (2001) concluded that poor infrastructure leads to higher production costs, reducing competitiveness. Ethiopia has been heavily investing in infrastructure such as roads railways. The Addis Ababa-Djibouti Railway offers great transportation to a global port (IPDC, 2019).

3.4. Consequences

China and Ethiopia are attracted by these unique selling points described above. However, some implications might arise when the China-Ethiopia relationship is not used optimally.

3.4.1 Potential resource curse

The exploitation of Ethiopian natural resource brings many consequences with them. Resource-rich countries such as South Sudan, Angola, Eritrea and Gambia export the majority

of natural resources to China (OEC, 2017). Exploitation of natural resources could lead to a resource curse. The resource curse is the adverse effects of a country's natural resource wealth on its economic, social, or political well-being (Ross, 2015).

Countries without high skilled labor and capital seek help abroad to exploit natural resources. Massive loans can create a possible debt trap (Van & Po, 2017). Africa oil-dependent states have performed worse in terms of economic growth and development than non-oil states in recent years (Otaha, 2012). Angola and Sudan are good examples. Angola has used oil money to fight against UNITA rebels (Gamba 2000). The discovery of natural resources in Ethiopia could re-ignite civil unrest in the Somali region of Ethiopia, as it did for Sudan and South Sudan (Otaha, 2012).

A Dutch Disease could happen when a country's export is focused on single commodity. Nigeria has seen a Dutch disease due to increased revenues of natural resources (Otaha, 2012). Natural resource revenues cause an appreciation of the domestic currency and raises the exchange rate. As a result, export decreases and non-resource sectors, such as agriculture and manufacturing, lose their competitiveness and could be crowded out (Kaplinsky and Morris, 2009). In the case of Ethiopia this is catastrophic, as it is almost completely reliant on these sectors. Ethiopia has to set a policy to prevent these outcomes to happen. However, difficulty in predicting duration of price shocks has limited the ability to manage commodity booms and slumps (Cashin and Pattillo 2000). More focus on other sectors and reducing the appreciation of the exchange rate are remedies for the Dutch disease effect.

3.4.2 Shared development

Ownership of investments has to be shared in order to benefit mutually from economic development. The Ethiopian government should encourage joint venture with Chinese firms (Gamora, 2009). When ownership is shared spillovers happen more often (Chakrabarty, 2016). The Open-Door Policy of China was based on the same principles. Foreign firms were allowed access to the domestic market in exchange for technology transfer through joint production or joint ventures (Rodrik, 2006). However, Chinese firms prefer to work alone. Chinese development assistance is tied with Chinese companies and materials, minimizing spillovers on local economies, job opportunities, and knowledge and skill transfer (Chakrabarty, 2016). Moreover, local economies are not always up to standards to provide

qualitative inputs. Backward linkages can only happen when local suppliers meet the demand of higher quality, price and delivery standards (Smarzynska 2003). In 2011, 91.5% needed to import materials for production and 61% consisted of foreign origins (World Bank, 2012). Huajian Shoe Company is only using 30% of local leather yield every year. This is saving them 30% of the costs of raw materials. However, currently local leather can only be used for middle- or low-end products (Jing, 2013). Thus, increasing the quality of local leather reduces the costs of Chinese firms as well as boosts the local economies. When this doesn't happen, a foreign firm can suffocate local competitors and create a market-stealing effect (Leahy and Neary 1999).

3.4.3 Unsustainable debt burden

Ethiopia might risk an unsustainable debt burden. Recently, Prime minister Abiy Ahmed made a statement that the Ethiopian economy isn't generating enough to pay off loans the state took to finance ambitious infrastructure and development programs (Malek 2019). Underperformance of the Addis Ababa-Djibouti Railway is one of the reasons (Chen, 2019). Moreover, an imbalance in trade reinforces this problem. For the last three years it had an average of -11.71 billion USD annually (World Bank, 2017). The Debt Sustainability Analysis argued that Ethiopia remains at high risk of debt distress. Furthermore, the exchange rate is overvalued, and international reserves are thin. Imports have substantially narrowed external imbalances in recent years (IMF, 2018). They further mentioned that when Ethiopia export demand decreases, it can lead to widening the trade deficit and weaker debt sustainability. The current level of debt is moderate, 61.8 and 33.3 percent of GDP respectively for total and external debt. Caner *et al.* (2010) found that there is a tipping point in public debt on the effect of economic growth for developing countries. When a developing country exceeds 64 percent of total debt-to-GDP, debt will have a negative effect on economic growth. The current 61.8 percent of Ethiopia is very close to the 64 percent tipping point. Actions have already been taken to avoid this tipping point. China and Ethiopia have agreed to change the repayment period on 60% of its loans from 10 to 30 years (Kiruga, 2019). When Ethiopia is unable to repay its debts, it is risking falling into a debt trap (Van & Po, 2017).

3.5. Conclusion

China and Ethiopia are entangled in a strong economic relationship through FDI. Both reap benefits of this cooperation. Ethiopia is able to realize its need for industrialization, new jobs, export diversification and spillovers where possible. With support of the government and an attracting investment climate China has gained access to lower labor costs and natural resources. However, a win-win situation for both Ethiopia and China has a couple of determinants. In order to maintain a win-win situation a possible resource curse and an unsustainable debt burden has to be averted. Furthermore, shared development is needed to ensure both Ethiopia and China can benefit optimally.

However, further research is needed to create a more comprehensive understanding on Chinese FDI's in Ethiopia. Only recently, China and Ethiopia have been engaged with each other. National resources have mostly been speculative and capability to transfer technology and skill have yet to be proven successful for Ethiopia. It takes time to see the long-term effect this cooperation has.

4 Innovation Science

4.1 Introduction

The United Nations (UN) stresses the importance of South-South Cooperation (SSC) to allow developing countries to emerge from poverty (Huang, Xu & Mao, 2019). SSC is a form of economic and technical cooperation between two developing countries, with an emphasis on equality, mutual benefit and promotion of economic and technological development on both sides (Huang et al., 2019). Developing countries are often more capable of providing help than developed countries, as they can draw from their own (more recent) development experience (Chen, 2018; Casadella & Liu, 2019). Transferring this expertise from one firm to another, or from a donor country to a host country is called technology transfer and is defined as “a broad set of processes covering the flows of know-how, experience and equipment” (Urban, 2018). The term technology transfer includes diffusion of both knowledge and technologies: “It comprises the process of learning to understand, utilize and replicate the technology, including the capacity to choose it and adapt it to local conditions and integrate it with indigenous technologies” (Urban, 2018). Technology transfer has a direct effect on the innovative output of the recipient country through the contribution of transferred technologies and skilled workers from a donor country. In addition, technology transfer has an indirect effect on the innovative output by increasing the host country’s *innovative capacity* (Castellacci & Miguel, 2013; Chen, 2018; Casadella & Liu, 2019).

The ratio between innovative input (i.e. total efforts and investments carried out by country for R&D and innovative activities) and innovative output (i.e. scientific publications and technological patents and products) defines the *innovative capacity* of a country (Castellacci & Miguel, 2013). This ratio is affected by the countries innovative capabilities (i.e. infrastructural and institutional development) and the ability of firms to internalize foreign knowledge, also called *absorptive capacity* (Castellacci & Miguel, 2013; Casadella & Liu, 2019). In general, developing countries have low innovative capacities and lack the financial capital to invest in R&D (Rohne, 2013). Therefore, they rely on technology transfer accompanying foreign direct investments (FDI), for their innovative output (Mcmillan, Abebe & Serafinelli, 2018). Although the direct effect of FDI on production and innovation has been subject to many scientific studies, more recently its indirect effect, through technology transfer, has

received more attention (Casadella & Liu, 2019). According to this research, technology transfer offers important opportunities for organizational and institutional learning that – when exploited adequately- might bring about structural transformation (Casadella & Liu, 2019). For this cause, many developing countries compete with each other to attract FDI and their benefits and experiment with its opportunities (Mcmillan et al., 2018; Casadella & Liu, 2019).

Profiting from this global trend, China has risen from the country to receive the most FDI, to the country that issues the most over the course of a decade (Huang et al., 2019). This fits well with China’s “Going Global” strategy that has encouraged Chinese firms to engage in overseas markets since 2001 (Urban, 2018). The benefits of this strategy for China have been evident: it provides access to new markets, creates employment, allows knowledge and technology cooperation and, ultimately, increases global political and economic power (Michael, Omoruyi, Emmanuel et al., 2018; Urban, 2018). Considering China’s pronounced commitment to the SSC paradigm however, the cooperation between China and host countries ought to be mutually beneficial. Yet, many scholars warn for the neo-colonialist tendencies of China’s involvement in other developing countries (Donahue, 2018) and the mechanisms of host countries to profit from technology transfer are often too weak to benefit from the opportunities of the cooperation (Mcmillan et al., 2018).

The Ethiopian case offers an especially informative illustration of this problem: in their quest to maximize benefits from their lengthy relationship with China, it moved from simple trade, to foreign direct investments. However, despite the mutual commitment, Ethiopia’s financial struggles and fear of rising national debt forced China to drive back investments (Donahue, 2018; Brooks, 2018). In 2010, the first Chinese owned Special Economic Zone (SEZ) finished construction in Ethiopia, ushering in a new experimental approach to in-country collaborative innovation (Rohne, 2013). Ideally, the so-called Eastern Industrial Zone (EIZ) would be a “catalyst for development” and “laboratory for structural transformation” (Bra & Tang, 2014). However, results of the scientific research on this zone are ambiguous. While the contribution of the EIZ to the Ethiopian exports and productivity are broadly substantiated (Rohne, 2013), some academics refer to the EIZ as “just another way for China to exploit cheap labor” (Donahue, 2018). These studies, however, mainly focus on the short-term, direct effect of technology transfer. Therefore, this paper studies the requirements for a long-term, sustainable relationship between China and Ethiopia and mainly focuses on the indirect effect

of technology transfer as a measurement for this goal. It will do so by answering the following research question:

“How should Ethiopia optimize the effects of the South-South Cooperation with China on its innovative capacity?”

To guide the research, the following three sub-questions have been formulated:

- ❖ How can FDI contribute to innovative capacity and what is required to exploit this benefit?
- ❖ How are FDI from China affecting Ethiopia’s innovative capacity?
- ❖ What complications are occurring in Ethiopia and what are the implications for effective policy?

During the Belt and Road Forum for International Cooperation in 2017, the Chinese prime minister Xi Jinping called on Ethiopia to “elevate bilateral relations to a comprehensive strategic partnership of cooperation” (China Daily, 2017), suggesting an increase in the efforts to acquire a sustainable relationship. Since China and Ethiopia have often functioned as example for strategies and policies for both China and other African countries (Huang et al., 2019), the effects of these efforts on the fragile Ethiopian economy provide valuable insights in general Sino-African issues. In addition, it is necessary to study the concepts of SSC to enhance the effectiveness of the international development and foreign-aid system. The policy implications formulated at the conclusion of this paper can guide Ethiopia towards a more sustainable foreign collaboration policy and implementations would contribute to the countries sustainable development.

4.2 Theory

4.2.1 FDI and Innovative Capacity

Generally speaking, developing countries have low innovative capacity and additionally lack the financial capital to internally enhance these capabilities with R&D investments. Therefore, an imitation based, catch-up strategy is often more rewarding (Cassadella & Liu, 2018). Following this strategy, developing countries attract investments from multinational firms, which often include the transfer of technology-based assets and skilled workers to the host economy. Through worker mobility and linkages with local firms, also referred to as the “human capital” and “linkages” channels respectively, this can generate spillovers of the advanced technologies and knowledge (Krogstrup & Matar, 2005; Seyoum, Wu & Yang, 2015). The competitiveness of technology “lagging” countries relies on the transfer of knowledge and technology through these channels (Foss, 2005).

Traditionally, the transfer of knowledge and technology is categorized in three stages, based on what is being transferred: (1) capital goods and equipment, (2) skills and know-how and (3) knowledge and expertise (Bell, 1987; Kirchherr & Urban, 2018). Although generally technology transfer evolves from stage one to stage two and so on, this step-by-step process is not always necessary, as will become clear in this research. The first stage encompasses a transfer of products and equipment, most commonly transferred through linkages when multinational firms outsource to or interact with local suppliers (backward linkages) and customers (forward linkages). In addition, competing local firms (horizontal linkages) might imitate the technology to remain competitive (Krogstrup & Matar, 2005). The second stage involves the transfer of skills and know-how to operate the equipment and technology (Bell, 1987). This know-how is transferred when foreign firms hire and train local workers to operate the technology, or through labor turnover when trained workers decide to move from a foreign firm to a local firm (Krogstrup & Matar, 2005). Finally, the third stage includes corporate and managerial knowledge and expertise that is transferred through close exchanges between foreign and local experts, or when local employees are allowed to manage the foreign technologies (Chen, 2018). As opposed to the know-how of the second stage, the third stage knowledge is distinguished as “know-why” and is essential for the replication as well as innovation of these technologies (Kirchherr & Urban, 2018).

For these channels to have an unambiguously positive effect on a country's innovative capacity, they should contribute to the "absorptive capacity" of its firms. This is determined by the technology gap between foreign and domestic technologies and the educational level of the local workforce (Chen, 2018). If the absorptive capacity is insufficient, available foreign knowledge and technology will not be internalized by domestic firms (Krogstrup & Matar, 2005). As a result, domestic firms might not be able to compete, or even catch-up with the generally lower production costs of the foreign firms and are forced to exit the market, called the *crowding-out* effect. On the other hand, if the absorptive capacity is sufficient, a *crowding-in* effect can occur. In this case, spillovers from the foreign firms stimulate local sectors and allow new firms to enter the market (Krogstrup & Matar, 2005). An optimum absorptive capacity is achieved when the level of workforce education is sufficient to bridge the technology gap between foreign and domestic technologies, allowing the flow of knowledge and technologies between foreign and domestic firms (Krogstrup & Matar, 2005; Nooteboom, Haverbeke, Duysters et al., 2007).

Also, innovative capacity can be built by allowing foreign investments to contribute to the national innovative capabilities (infrastructural and institutional development). In addition to the direct effect of foreign investments in the transport sector, these investments contribute to infrastructural development by strengthening the institutions that allocate financial capital, resources and officials. Beneficial policies and strategies are often first tested to attract foreign firms and increase exports. Foreign firms commonly contribute to these practices by invoking intellectual property laws and competition laws. Claims from foreign investors to enforce or implement these laws force the development of an experimental system of laws and regulations. Subsequently, successful practices can be up scaled and applied throughout the entire country (Giannecchini & Taylor, 2018).

4.2.2 China's influence on Ethiopia's Innovative Capabilities

Due to its underdeveloped infrastructure and institutions, Ethiopia lacks the ability to internally set in motion industrialization and relies on the cooperation with China to achieve this reform. For this cause, the 100% Chinese owned Eastern Industrial Zone (EIZ) was developed, as the first Special Economic Zone (SEZ) in Ethiopia (Giannecchini & Taylor, 2018). Ideally, these zones attract investments from multinational companies by creating a favorable microclimate. These companies "provide access to the global value chains, increasing local

employment and, critically for South-South cooperation, have the potential for shared experience and knowledge transfer” (Huang et al., 2019). Especially the experience regarding China’s own development success is interesting for Ethiopia, considering Ethiopia’s lack of experience with SEZ’s and its intent to industrialize: a reform that China has excelled in over the past decades (Rohne, 2013). Deng Xiaoping, the architect of China’s economic reform and SEZ’s said “the SEZ is a window, a window of technology, a window of management skill, a window of knowledge [...] from SEZ’s we can bring in technology, acquire knowledge and learn management skill” (Bra & Tang, 2014). Indeed, the usage of SEZ’s has a long tradition of employing liberal and flexible policies in order to attract foreign investment and generate foreign-domestic technology transfer (Rohne, 2013).

Yet, the EIZ does not host any Ethiopian owned firms (Bra & Tang, 2014), diminishing the opportunities for foreign-domestic technology transfer between firms within the zone. The zone can however exchange technology and knowledge with domestic firms outside of the zones through the linkages channel. If the Chinese firms within the zone source their materials and inputs domestically, Ethiopian firms are stimulated to increase their product quality to match the demand of the EIZ (Bra & Tang, 2014). Considering that the Chinese firms also profit from increased quality and efficiency of upstream suppliers, these backward linkages in particular would support the transfer of technology and know-how (Krogstrup & Matar, 2005; Rohne 2013). In Ethiopia, forward linkages barely contribute to knowledge transfer, since the EIZ is highly export-oriented (Bra & Tang, 2014). But this also affects the backward linkages: the products leaving the zone are expected to suffice to the high-quality standards of the US and EU (Fei, 2018). These high-quality requirements seep through the supply chain, raising quality expectations for the suppliers accordingly (Rohne, 2013). Ethiopian suppliers struggle to live up to these expectations, forcing firms in the IEZ to find suppliers elsewhere (Donahue, 2018) and resulting in weak backward linkages between the EIZ and domestic firms (Giannecchini & Taylor, 2018). The weak linkages channel minimalizes the transfer of equipment and goods, indicating that Ethiopia and China do not profit from the first stage of technology transfer. Nonetheless, the large-scale presence of local workers in Chinese firms is a clear indication of a strong human capital channel between China and Ethiopia and yields the opportunity for the transfer of know-how and know-why (Fei, 2018).

To stimulate the shift towards labor-intensive manufacturing, the Ethiopian government implements beneficial tax regulations to offer cheap labor to Chinese firms in the

EIZ (Bra & Tang, 2014; Donahue, 2018). As a result, local employment is boosted as Chinese companies turn to the local workforce for the operation of their technologies (Fei, 2018). To enhance the performance of these operations, Chinese employers commonly offer training regarding the operational know-how of their technologies. However, despite the skill development achieved through these trainings, Ethiopian workers struggle to utilize these skills after transferring back to Ethiopian firms (Fei, 2018). This might be caused by insufficient general knowledge of local workers to effectively adapt newly obtained know-how and bridge the technology gap. Evidently, Chinese employers only train their employees to operate their own technologies, neglecting the skills necessary to transfer this knowledge (Bra & Tang, 2014). In addition, Chinese employers rarely succeed in the transfer of managerial skills (Casadella & Liu, 2019). While the Ethiopian workforce mainly consists of low-skilled laborers, the skilled workforce composed of engineers, technicians and managers is predominantly Chinese (Urban, 2018). The EIZ has been linked to the Chinese-built Technical and Vocational Education and Training Center (TVET) in the Ethiopian capital Addis Ababa, to stimulate the exchange of both operational knowledge and expertise and managerial skill (Bra & Tang, 2018). However, the amount of companies that have actually made use of this link has been insignificant (Fei, 2018), and because of poor communication due to the language barrier, actual knowledge transfer is limited to the operational, “know-how” type (Huang et al., 2019). These unsuccessful mechanisms to facilitate technology transfer between Chinese and Ethiopian firms result in a minimal effect of FDI on the absorptive capacity of Ethiopian firms.

Nonetheless, the IEZ has served as a tool for the Ethiopian government to experiment with targeted policy regulations and a local framework for industrialization. The Ethiopian government has remained in control of the management of these zones and has refrained from formulating a standard operating procedure (SOP), to speed up their learning curve (Giannecchini & Taylor, 2018). Although this caused some challenge among Chinese developers to negotiate preferential policies, eventually it has led to the implementation of several Industrial Park (IP) laws and preferential policies that were later implemented on a broader scale throughout Ethiopia (Bra & Tang, 2014). Additionally, electricity and water shortages are endemic to Ethiopia (Giannecchini & Taylor, 2018). Yet, the EIZ has taught Ethiopian authorities to provide water, sewage treatment, telecommunication services and other infrastructures on a large scale. The resulting connectivity allowed governments to monitor industrial production by collecting large data sets, rather than by individual

companies (Tang, 2019). Finally, the lessons that the Ethiopian government has learned from Chinese developers have led them to establish multiple Ethiopian state-owned industrial parks throughout the country and resulted in the establishment of the Industrial Park Development Corporation (IPDC), which has mandated the development and administration of these state-owned industrial parks since 2014 (Tang, 2019). This implies that the IEZ has positively impacted the innovative capabilities of Ethiopia, by encouraging infrastructural and institutional development.

4.2.3 Implications and Policy Recommendations

From the previous paragraphs can be concluded that the technology transfer between Ethiopia and China is limited to the second stage: the transfer of technological know-how and operational knowledge. The lack of significant linkages between the IEZ and domestic firms holds back the benefits from technology spillovers (stage 1), and the human capital channel is unsuccessful in the transfer of expertise and know-why to implement incremental innovation on domestic technologies (stage 3). This development of domestic technologies is essential to catch-up with the technology gap between foreign and domestic technologies and become competitive on the global market. Therefore, policies should aim to strengthen these channels to prevent a crowding-out effect of foreign technologies on domestic firms.

As the EIZ is 100% Chinese owned, the Chinese zone developers possess the right to select firms to rent out spaces in the zone (Fei, 2018). These developers give priority to renting out all of the spaces, rather than adopting a selective strategy to maximize technology transfer (Bra & Tang, 2014). As a result, the IEZ hosts no Ethiopian owned firms and the imported technologies often appear too complex for domestic firms to successfully internalize their technology and knowledge (Giannecchini & Taylor, 2018). To benefit from the linkages channel, Chinese firms should be stimulated to cooperate with Ethiopian firms and rely on Ethiopian products for their production and exports. To properly induce this cooperation, foreign investors should be targeted based on their ability to contribute to the domestic market and to cooperate with domestic firms. Notably, the governmental investment policy should target foreign technologies based on the technology gap between the foreign and domestic technologies, so that the level of local workforce education is sufficient to bridge this gap. Subsequently, significant efforts should be undertaken to reduce the geographical proximity between the foreign and domestic firms. This would further increase the willingness

of foreign firms to cooperate with domestic firms due to a reduction of transaction costs. In addition, knowledge flows and technology transfer are increased when firms operate in close proximity, due to the increased likelihood of spillovers through labor turnover (Gebreyesus & Mohnen, 2013).

Furthermore, the lack of a skilled workforce remains a significant barrier to knowledge and technology transfer between China and Ethiopia. To reap the full benefits from foreign engagement, Ethiopia should invest in education to provide a knowledgeable workforce that can fill meaningful positions in the IEZ. Encouraging connections between foreign firms and local knowledge institutions is one way to strengthen the educational level of the local workforce and increase the absorptive capacity (Giannecchini & Taylor, 2018). Local experts would receive the general training necessary to obtain deeper understanding of foreign technologies and how to adapt them to domestic needs. This would create valuable knowledge for Chinese firms as well, as they could more easily adapt their technologies to Ethiopian markets (Fei, 2018). In addition, specific requirements of training should be included in the government investment policies and IEZ regulations: zone developers and foreign firms should take a more active role and should invest more time in training local workers, with an emphasis on the transfer of expertise and technology know-why. Encouraging managers and skilled employees to start their own firms will eventually contribute to the diffusion of these skills (Bra & Tang, 2014).

4.3 Conclusion

In conclusion, developing countries commonly lack the innovative capacity and financial resources to internally induce structural reform. Adopting a catch-up strategy and attracting FDI is a popular go-to strategy for countries of the global south. This strategy, however, is not rewarding for its direct access to foreign technologies and knowledge. Instead, the positive effects on innovative capability (infrastructural and institutional development) and absorptive capacity (workforce education level and technology gap) make attracting FDI favorable for developing countries. To benefit from these effects, technology and knowledge transfer should be facilitated through worker mobility and linkages between foreign and domestic firms. Ideally, all three stages of technology transfer are achieved, allowing the transfer of (1) capital goods and equipment, (2) skills and know-how, (3) knowledge and expertise.

Successful transfer results in the crowding-in effect of domestic firms, while unsuccessful technology transfer decreases the competitiveness of domestic firms, forcing them to exit the market.

The Eastern Industrial Zone (EIZ) has been developed in Ethiopia to attract Chinese investors and generate technology transfer from Chinese to Ethiopian firms. In addition, Ethiopia wishes to build its innovative capabilities by experimenting with flexible zone policies. Currently, the zone is highly export oriented and does not host any Ethiopian firms. This results in weak linkages with the domestic economy due to low geographical proximity and unfeasible quality requirements for domestic products. Despite the lacking flow of goods and equipment, skills and know-how are transferred to Ethiopian workers through employment and training in Chinese firms. However, the low education level of these workers prevents them from fulfilling high positions in the Chinese companies and from transferring sophisticated knowledge and expertise. Although efforts are being made to link the industry to knowledge institutes, these connections are weak and rarely utilized, limiting the effect of Chinese FDI on the Ethiopian absorptive capacity. Nonetheless, the IEZ has taught Ethiopian policy makers valuable lessons regarding the development of infrastructure and the implementation of flexible laws and regulations. Most importantly, these lessons have led the Ethiopian government to establish an Industrial Park Development Corporation that has developed and managed state owned special economic zones throughout Ethiopia.

Although Chinese FDI has contributed significantly to the national innovative capability of Ethiopia, the effect on the absorptive capacity of Ethiopian firms needs improvement. Especially the first and third stages of technology transfer need to be achieved by strengthening the linkages and human capital channels. The former can be achieved by adopting a technology-based selective strategy for entering the IEZ and allowing domestic firms to reduce transaction costs with Chinese firms by entering the zone as well. The latter can be achieved by enhancing connection between industry and knowledge institutes to raise the level of education among the Ethiopian workforce. This would allow them to fulfill higher positions and transfer more valuable knowledge to the domestic economy.

In conclusion, the effect of Chinese FDI on the absorptive capacity of Ethiopian firms needs to be improved to achieve mutual, sustainable innovation for both China and Ethiopia. The linkages and human capital channel are the mechanisms that need to be strengthened in

order to reach this goal. Although this case has focused on China and Ethiopia in particular, these findings can contribute important strategy implications for the entire African continent.

5 Common Ground

This chapter integrates the different disciplinary insights to create a more comprehensive understanding of the 'win-win situation' between Ethiopia and China. To be able to integrate insights, we will identify the conflicts between our insights and create common ground among them using the integration techniques of Repko (2017) to solve possible conflicts. Development studies, economics and innovation sciences all have different perspectives on what is important for a China-Ethiopia relation. After the creation of common ground and the organization of key disciplinary insights, we are able to create a more comprehensive understanding. This chapter will end with a conclusion by giving an answer to the proposed research question: *What challenges must the China-Ethiopia relation overcome in order to provide a win-win relationship for both stakeholders?*

5.1 Conflicts and common ground

Integrating disciplinary insights can entail conflicts because each discipline works with other concepts, assumptions and theories which causes a lack of common jargon (Repko & Szozak, 2017). Therefore, according to Repko and Szozak (2017), integrating disciplinary insights is inevitable and even necessary within interdisciplinary research. They also state that a conflict does not necessarily mean that the disciplinary views are opposites of each other, but that they can differ. By resolving conflicts through integration techniques of Repko and Szozak, the disciplinary insights can be more well integrated and the resulting concept will be more coherent.

5.1.1 Conceptual conflicts and corresponding common ground

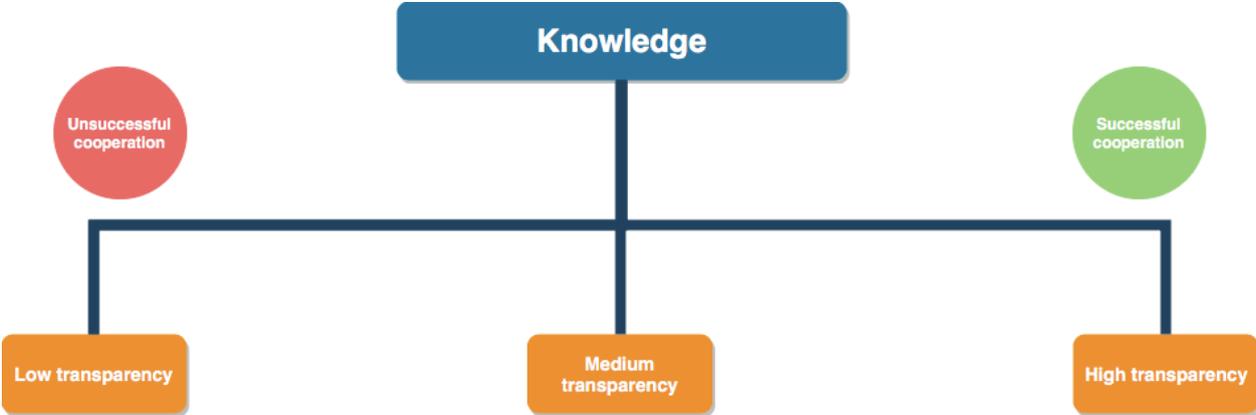
Knowledge

The concept of 'knowledge' forms a conflict between the disciplines. Each discipline recognizes that knowledge is of great importance within the China-Ethiopia relation. However, the way in which knowledge is used and defined differs per discipline. Within development studies knowledge is defined as a means to ensure mutual accountability, transparency and

preventing corruption within a relationship. Knowledge within innovation science is more focused on a technical base, whereby it forms the basis of sustainable development and needs to be transferred to ensure innovation. The concept of knowledge requires less attention within the discipline of economics, and can only be reduced to a stimulus, in which knowledge is the incentive for economic growth. This leads to a conflict between the definitions of knowledge between the disciplines, as knowledge is fixed data within economics, which is openly available, while knowledge within development studies and innovation sciences is perceived as only obtainable through a transfer between different stakeholders.

To solve this conflict, the transformation technique is used. Transformation is defined by Alan F. Repko and Rick Szostak (2017) as a technique to create a continuum of a concept or assumption. The concept of “knowledge” is on a continuum. Where innovation science and development studies believe that knowledge is not easily obtainable, economics believes that knowledge is available for everyone. Therefore, the continuum of *figure 1* arises.

Figure 1: knowledge continuum after transformation technique.



Thus, knowledge can be perceived as a continuum, whereby different forms of knowledge exist relative to transparency. More transparency leads towards the release of more valuable information, which enhances the success of a cooperation. Conversely, the lack of transparency will lead to a less successful cooperation. So, knowledge holds the power to enrich development processes and reduce the chance of failure, it ought to be made transparent in a cooperative relationship.

Sustainable development

In addition, a conflict can be found with the notion of sustainable development, which goes hand in hand with the idea of a win-win situation for China and Ethiopia. Therefore, sustainability is perceived as a concept which is of great influence concerning the proposed research question. Repko (2017) emphasizes the importance of the creation of a common vocabulary. Therefore, in order to have a better communication, the common meaning of sustainable development/relation is given. The three different definitions of sustainability that are used in this research are as follows:

- *Social political sustainability*: defined as the ability of a socio-political system to function at a life-enhancing level within national, regional and/or local spheres, indefinitely.
- *Sustainable innovation*: defined as a process where sustainability consequences (environmental, social and financial) are integrated into the system of idea generation and commercialization, so that future generations do not suffer negative consequences from these present operations.
- *Economic sustainability*: Economic sustainability implies a system of production that satisfies present consumption levels without compromising future needs.

There are two aspects that align with all three definitions. First, all three definitions address a stable system that works effectively, independently of other systems. Second, all definitions emphasize an indefinite period of time: it is an important fact that in the long-term, the relationship is progressive for both stakeholders involved. A notable difference between the three disciplinary perspectives is their view on externalities. A social political system is considered to be sustainable when the system operates “life-enhancing”. Innovation is only considered sustainable when no externalities occur in the environmental, social or financial system. On the other hand, an economic system is sustainable as long as the financial system and its mechanisms are durable. Economic sustainability occurs when the level of production is met indefinitely. To solve this conflict, the extension technique is used. Extension is defined by Alan F. Repko and Rick Szostak (2017) as a technique used to increase the scope of a concept or assumption.

When combining these insights, a new definition of sustainability arises:

Sustainability is the ability of a system to maintain and improve environmental, social and financial processes for an indefinite period of time

5.1.2 Conflicts in insights and corresponding common ground

Country performance

Each discipline acknowledges that the country performance is an important indicator for measuring the best win-win situation for both China as Ethiopia. However, the approach to country performance differs per discipline. Within development studies, country performance is mainly cited for its performance in the field of human development. Human development involves the quality of education, health, income per capita, inequality and work opportunities. Innovation sciences agree on the fact that the welfare of inhabitants is the go-to indicator for a country's performance. However, according to innovation sciences, this is achieved through technological development in an explicit and coherent socio-technological system that produces continuous, sustainable growth. Country performance from an economic perspective is mostly measured through real growth of Gross Domestic Product (GDP). It is the sum of all goods and services produced by an economy in one year. Moreover, economic country performance can also be measured through the level of unemployment or the current account. Unemployment gives a better understanding what part of the economy is contributing to its growth.

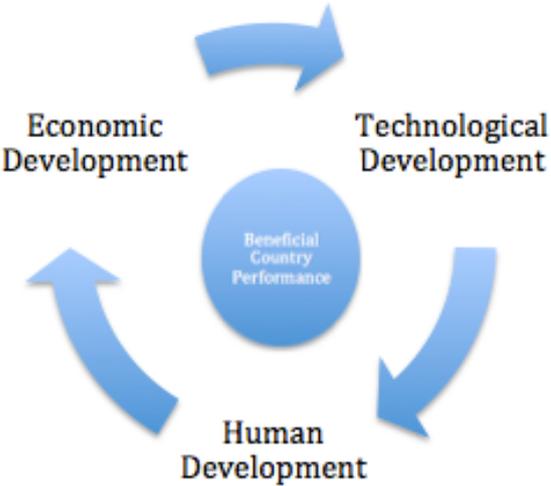
The conclusions drawn from the different disciplines are not mutually exclusive, but shed light on the issue from different areas. These conclusions are not necessarily contradictory, only the priorities of the disciplines are different. It is possible to find a common ground and resolve the conflict with the help of the organization technique. This technique is described by Repko (2017): "The technique of organization creates common ground by clarifying how certain phenomena interact and mapping the causal relationships". All disciplinary insights incorporate the importance of a beneficial country performance. However, the notion of beneficial is approached out of different perspectives. To create common ground the following phenomena will be mapped in order to create one

understanding of country performance: Human development, economic development and technological development.

Figure 2 shows the newly found common ground of the insights surrounding the concept of country performance. Within the concept of country performance, all the insights of the three disciplines are brought together. Each disciplinary insight on country performance merely gives a fraction of the interdisciplinary meaning of country performance, but the result of the organization technique shows that all three can be mapped based on a cyclic causal relationship: Economic development, described as a rise in GDP, finances the national technological development.

Figure 2: country performance disciplinary relationship after organization technique.

Technological development thereafter serves human development. In an idealistic socio-technological view, the sole purpose of technology is to increase human welfare. In reality this might not always be the case, but still, most significant leaps in human welfare can be credited to technological breakthroughs. Finally, human development gives meaning to economic development. Since the economy has been purely made up by humans, it bears no meaning without humans. In addition, economic development benefits from a large and healthy population. This cycle comprises and defines a beneficial country performance. A weak link in the cycle causes the country to underperform.



5.2 Key disciplinary insights

First, to enable an interdisciplinary approach, the key disciplinary insights are mentioned. According to development studies, the China-Ethiopia relation does not fully comply with a development cooperation, which is suggested by China’s principles. Due to a divergent

diplomatic relation in respect to a development cooperation, a couple of challenges arise concerning human development. Through the bilateral diplomatic relations between Ethiopia and China, all conditions are determined for a win-win relation, which involves economic and technical agreements. Therefore, the diplomatic relation is related to human development processes in, for example, economic and technical sectors. It is found that the challenges that arise within the diplomatic relation, are within the subjects of transparency, an asymmetric relation, tied aid, democracy and inequality challenges.

China is not completely transparent about their aid destinations, which creates a lack of accountability for the Ethiopian Elite to have non-transparent deals. This result may lead to corruption and human rights abuses. Additionally, the asymmetric relation creates a loss of sovereignty for Ethiopia, as China holds more power over Ethiopia. A loss in sovereignty for Ethiopia means that the rights and liberties of the citizens are not fully protected by national standards. Through tied aid there is a loss of ownership and empowerment and the participation rate of the population decreases. Ownership, empowerment and participation are seen as prerequisites of human development. Hence, the practices of the foreign policy by China undermine the wish of Ethiopian governance for democratization. Lastly, China's financial aid flows can be positively associated with income inequality. Economic growth can result in widening the gap in income and working conditions and social segmentation of society.

China and Ethiopia are entangled in a strong economic relationship through FDI. Both reap benefits of this cooperation. Ethiopia is able to realize its need for industrialization, new jobs, export diversification and spillovers where possible. With support of the government and an attracting investment climate China has gained access to lower labor costs and natural resources. However, a win-win situation for both Ethiopia and China has a couple of determinants. In order to maintain a win-win situation a possible resource curse and an unsustainable debt burden has to be averted. Furthermore, shared development is needed to ensure both Ethiopia and China can benefit optimally

Insights from innovation sciences conclude that knowledge and technology are the most valuable assets that China has to offer Ethiopia, both of which are transferred from China to special economic zones in Ethiopia. From there, however, Ethiopian policy makers fail to

facilitate significant flow of technology and knowledge into the domestic economy. Even though a great number of Ethiopian workers are educated to operate Chinese technologies, this education does not match the skills required to improve domestic technologies, or educate students to do so. To facilitate the transfer of technology and more sophisticated knowledge to Ethiopia, both the Ethiopian workforce and policy makers need to build strong relations with Chinese workers and experts, respectively. The transfer of technology is achievable through an increased focus on shared production, while the sophisticated knowledge to reduplicate and integrate these technologies into the Ethiopian economy can be transferred through shared ownership. Shared production has a direct, positive effect on innovation, but shared ownership is particularly important for the sustainable development of Ethiopia. To move from an investment focused relationship towards a cooperation of shared production and shared ownership, Ethiopian policy makers should carefully select the Chinese companies that are allowed to invest in the special economic zones. Particularly important is that the accepted firms bring along technologies that are not too complex for the domestic markets. Also, geographical proximity between foreign and domestic firms should be reduced by stimulating domestic firms to enter the special economic zones. Finally, training strategies of Ethiopian workers and experts need to be improved by strengthening the connections between the industry sector and knowledge institutes. This increases the general level of education and allows Ethiopian experts to fulfill higher positions in Chinese firms. Both would contribute to the transfer of more sophisticated knowledge.

As development studies and innovation sciences both offer recommendations for the China-Ethiopia relation, economics states that the relationship is well in balance: Under the right circumstances Chinese FDI offer mutual economic growth. It provides outcomes desired by both parties. China seeks growth through diversification and internationalization. Ethiopia seeks capital and growth through labour-intensive manufacturing. Both are the outcome of such partnership.

6 More comprehensive understanding

Now that the conflicts have been solved and common ground has been created, we can attempt to answer our research question: *What challenges must the China-Ethiopia relation overcome in order to provide a win-win relationship for both stakeholders?*

Figure 3 is a visual representation of the relationship between China and Ethiopia, based on the common ground and key insights found in this interdisciplinary research. Centrally positioned in the framework is diplomacy. The diplomatic relationship between China and Ethiopia forms the underlying basis of the economic collaboration and trade as all channels are subject to diplomatic values. In the left column, the most important assets that China has to offer to Ethiopia are shown. As a developing country, Ethiopia is especially interested in a development model to improve the country's performance. China offers this model through education based off its own experience, and additionally offers the technology and financial capital to implement the model. Subsequently, in the right column, Ethiopia's opportunities for China are mentioned. The opportunities involve potential extraction of natural resources, obtaining human capital and finally, Ethiopia's emerging markets offer high potential benefits for investments.

The China - Ethiopia Relation

An integrated research framework

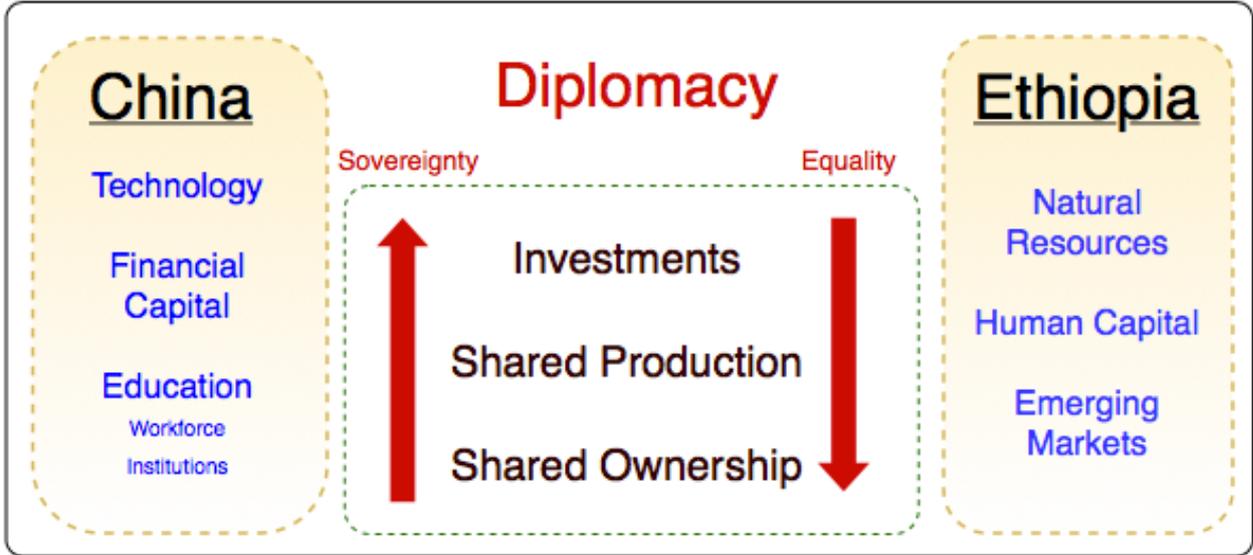


Figure 3: integrated research framework of the more comprehensive understanding.

The center of the framework indicates the three channels through which the Chinese and Ethiopian economies interact and exchange the aforementioned assets. First, investments are financial or technological transactions from a privately-owned company to another, recipient company. Second, shared production takes place when a Chinese firm and an Ethiopian firm collaboratively produce a product. Although these firms work on the same product, they take different positions in the value chain: Chinese firms that have moved their production to Ethiopia often rely on Ethiopian suppliers for raw materials or supplies. Finally, shared ownership is in effect when a company is owned by both Chinese and Ethiopian parties. As mentioned earlier, moving downwards through these channels increases the sophistication of the exchanged technologies and knowledge. In addition, all channels have challenges accompanying the flow of assets. When financial and technological assets are focused too much on one commodity it risks unbalancing its exchange rate and devaluing its international trade position. Being too indebted to China could hurt economic growth when it reaches the tipping point of total debt-to-GDP. Ultimately, the emphasis on a specific channel has important implications for the diplomatic factors sovereignty and equality.

The investment channel generally implies a one-way traffic of assets. When investment is the dominant channel for the exchange of assets, which is currently the case between Ethiopia and China, sovereignty of both countries is safeguarded. However, the provider of the investments, in this case China, has a dominant position with regard to the receiver, as the provider could pull back investments at any given time. This creates inequality between the two parties, due to increased dependency of Ethiopia on China. When shared production is the most used form of interaction, the interdependencies grow more equally, as both foreign and domestic firms rely on the success of the final product. Hence, the relationship is more equal. On the other hand, shared production involves part of the production to be handed over. Therefore, as the control over the value chain decreases, the risk to lose sovereignty increases. Finally, a relationship with high intensity of shared ownership would create the most equal diplomatic relationship, as Chinese and Ethiopian parties jointly possess the company. However, since all decisions are the result of negotiations and mediations, loss of sovereignty is likely.

From the interdisciplinary research, three important results can be formulated: (1) a sustainable relationship should make use of all three channels, as all channels provide valuable benefits: investments are the most important source of financial capital and often precede shared production and shared ownership. Shared production is an important interaction to allow the transfer of technologies and know-how. Finally, shared ownership facilitates more sophisticated exchanges of expertise and “know-why”. (2) subsequent from the first result follows that moving downwards through the channels in the framework increases the likelihood of more valuable assets to be transferred. The shared production channel is particularly important for the exchange of expertise and “know-why”. The transfer of this sophisticated knowledge is an important requirement for independent sustainable development, as experts (engineers, professors etc.) are essential for the long-term growth of a country. (3) On the other hand, moving through the channels involves a trade-off between sovereignty and equality. Moving downward implies increasing the degree of shared production and ownership. Despite the benefits of increased technology and knowledge transfer, the loss of sovereignty might have severe implications for diplomatic power relationships. The loss of sovereignty might have implications for human development, as the rights and liberties of the citizens are not fully protected by national standards. Inequality results in economic instability, debt and inflation. Hence, inequality complicates the eradication of poverty and the pursuit of the SDGs.

Currently, the China-Ethiopia relationship builds heavily on Chinese investments to Ethiopia. As can be derived from the framework, this causes skewed power relations as Ethiopia is highly dependent on an ongoing source of investments. The main challenge that should be overcome in order to achieve a win-win relationship, is to shift the intensity of the investment channel downward, towards shared production and, ultimately, shared ownership. In order to achieve this, Chinese and Ethiopian industries need to become more integrated and interdependent, stimulating shared production and ownership. Note, however, that an overemphasis on shared ownership would create an uneven distribution of power and sovereignty. Therefore, a sustainable, win-win relationship should be based on a substantiated ratio between the different channels of interaction, in which national valuta are held relatively constant and a balance exists between sovereignty and equality that is desirable for both parties.

7 Conclusion

By using an interdisciplinary research approach, we have been able to give a more complete picture of the degree of a sustainable win-win relation between Ethiopia and China in comparison to the separate findings of the individual disciplines. This is due to the fact that the various disciplines focus on different aspects of a win-win situation, allowing the interdisciplinary approach to provide a more comprehensive assessment of the degree of a sustainable win-win relation between Ethiopia and China. By combining the disciplinary findings and showing their interactions, we have been able to create an understanding that is greater than the sum of its parts.

We have identified development studies, innovation sciences and economics as the most important disciplines for addressing the China-Ethiopia relation. Out of this interdisciplinary research it became clear that the challenges that had to be countered in order to provide a win-win relationship for both stakeholders are mainly in finding a balance between the diplomatic factors sovereignty and equality, while gradually shifting the focus of interactions to shared production and shared ownership.

However, it is interesting to point out the strengths and limitations of this interdisciplinary research. First, this thesis has successfully combined the disciplinary insights towards a more comprehensive understanding of the research question, but the whole China-Ethiopia relation is not examined in detail in all possible target audiences, for instance for locals and environmental policy makers, as the environment is not incorporated. Nevertheless, the China-Ethiopia relation is a complex issue and disciplinary research could provide an oversimplified picture of the situation, which could result in inadequate solutions after all.

7.1 Follow-up investigation

The debate on Chinese cooperation with Africa is not yet closed. Actors that play a role within the China-Ethiopian relation are not only the countries itself. In order to provide a common understanding of how the relationship can be beneficial and sustainable for both China as Ethiopia, the involvement of other actors like the West and India also need to be taken into account. Because of globalization, everything and everyone is connected with each other.

Therefore, follow-up investigation is needed to integrate all possible actors of influence of the China-Ethiopian relation.

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