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Patterns of foreign direct investment in Egypt: Descriptive insights from a novel panel dataset at the governorate level

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Patterns of Foreign Direct Investment in Egypt—Descriptive Insights from a Novel Panel Dataset at the Governorate Level

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Abstract

This paper describes the main characteristics of Foreign Direct Investment (FDI) in Egypt using an unpublished dataset for FDI in 27 Egyptian governorates covering the period 1972–2009. Special attention is given to the geographical distribution of FDI, both as an aggregate and at the sectoral level. The paper is the first article of a larger empirical project on FDI in Egypt at the governorate level. Our dataset shows that FDI is unevenly distributed across Egyptian governorates. More than 60% of ‘non-petroleum greenfield FDI’ stock has been accumulated by two governorates, Cairo and Giza, and roughly 90% of FDI stock targets only 10 governorates. Tracing two spatial concentration indices of FDI inflows (Gini coefficient and coefficient of variation) over four decades, we find that the unequal geographical distribution of FDI decreased until the mid/late 1990s. This trend, however, did not continue when there was a substantial increase of FDI inflows in the 2000s. Moreover, we find differences in the degree of geographical concentration of FDI between various economic sectors. Service FDI shows the strongest concentration (mostly articulated in the ICT and finance sectors), while manufacturing FDI is the most geographically dispersed.

JEL Codes: F21, E22, R12, O53, Z10

Keywords: Foreign Direct investment, sectoral FDI, regional FDI, Egypt.

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1. Introduction

This paper provides a comprehensive description of Foreign Direct Investment (FDI) in Egypt beginning with the first years of FDI in the 1970s. We use a unique and unpublished dataset on ‘non-petroleum greenfield FDI’ in Egypt at the governorate level. When compared to other African and Arab countries, Egypt ranks high as a recipient of FDI.¹ FDI inflows to Egypt have been a major component of the country’s total private investment across different sectors. From 1972–2009, ‘non-petroleum greenfield FDI’ constituted on average 23% of private investment in Egypt. When FDI inflows to Egypt surged in the 2000s, FDI comprised more than 30% of the country’s private investment. We are grateful to the General Authority for Investment and Free Zones (GAFI) in Egypt, which kindly made this dataset available to us.

The dataset has several advantages. First, the data begin in 1972, when Egypt began to receive FDI inflows in anticipation of a new open-door policy.² Second, FDI figures are disaggregated for all 27 Egyptian governorates. Thus, our data allow for an FDI panel dataset of 27 Egyptian governorates for the period 1972–2009. Third, the dataset allows for a disaggregation of FDI figures by sector. In addition to the manufacturing and agricultural sectors, it differentiates between five sub-groups of the service sector; finance, tourism, construction, Information and Communication Technology (ICT) and a category ‘other services’. Fourth, the dataset provides insights into the origin of FDI by differentiating between FDI from the Arab region and FDI from the rest of the world (non-Arab FDI). Finally, data on domestic private investment are further included in the dataset, both at the governorate and sectoral levels.

Compiling the first dataset of FDI in Egypt at the governorate level—also by sector and origin—allows for a variety of empirical investigations of direct relevance for policymakers. This paper is the first article of a larger empirical project on FDI in Egypt at the governorate level that is based on this unique dataset. In this paper, we use this dataset to identify and

¹ Since 2004, Egypt has annually received either the largest or the second largest amount of FDI in Africa (excluding the year 2011, where the 25th of January Uprising deterred FDI in Egypt), and has been the third largest FDI recipient among Arab countries (UNCTAD, 2014).

² Egypt’s open-door policy officially started in 1974, but the country began receiving inflows in 1972.

describe features of aggregate (across all sectors) and sectoral FDI in Egypt, with a special focus on its geographical distribution.

Our dataset shows that an important characteristic of FDI in Egypt is its uneven distribution across Egyptian governorates. Over our sample period, more than 60% of ‘non-petroleum greenfield FDI’ is accumulated in only two governorates (Cairo and Giza) and roughly 90% of this type of FDI targeted only 10 governorates. Examples from other countries clearly show that geographical concentration is not unusual.³ However, high concentrations of FDI in only a few relatively advanced regions might prevent the dissemination of possible positive FDI spillovers in the whole economy, since spillovers tend to be weaker by distance (Mukim and Nunnenkamp, 2012; Bickenbach et al., 2014). If this is the case, FDI might exacerbate regional inequalities in both income and economic growth. Empirical results by Lessman (2013) show that —other than in high income economies— FDI inflows in low and middle income countries increase regional inequality.⁴

To assess the pattern of FDI concentration over time, we make use of two spatial concentration indices (Gini coefficient and coefficient of variation), which we calculate based on the annual FDI inflow distribution at the governorate level. We find that unequal geographical distribution decreased until the mid/late 1990s, however, the substantial increase in FDI inflows in the 2000s did not further reduce geographical concentration.

In the second part of the paper, we use our dataset to describe FDI in Egypt at the sectoral level. Most ‘non-petroleum greenfield FDI’ flows to Egypt target the manufacturing and service sectors, while the agriculture sector receives very little FDI. As to the origin of FDI, our dataset reveals that no sector is significantly dominated by Arab or non-Arab investments. Our analysis further differentiates the degree of FDI geographical

³ In India, for example, more than 50% of approved FDI inflows are concentrated in three states only (Nunnenkamp and Stracke, 2008) and more than 50% of FDI projects are hosted by 1% only of over 600 districts (Mukim and Nunnenkamp, 2012). Similarly, only one region in Russia accounts for almost 50% of the country’s FDI (Ledyaeva, 2009). In China, FDI inflows are heavily concentrated in the coastal area (Broadman and Sun, 1997; Zhang and Zhang, 2003; Wei et al., 2009).

⁴ Ma (2006) argues that FDI increases wage inequality between the coastal provinces and the hinterland in China. However, Wei et al. (2009) and Lessman (2013) show that the negative effect of FDI on regional inequality has decreased in China since the end of the 1990s. According to Nunnenkamp and Stracke (2008), FDI concentration in India may have prevented FDI effects from spreading to other Indian regions.

concentration in Egypt at the sectoral level. Service FDI shows the strongest spatial concentration (mostly articulated in the ICT and finance sectors), while manufacturing FDI is the most geographically dispersed. For example, 90% of FDI stock in the ICT sector is directed to the governorate Giza and 94% of FDI stock into finance is concentrated in the governorates of Cairo and Giza. In contrast, 90% of manufacturing FDI stock is accumulated by 10 governorates, among which five governorates received a double digit percentage.

In section 2, we review policies and sources of FDI data in Egypt and introduce our unique dataset. In section 3, we use our dataset to describe aggregate ‘non-petroleum greenfield FDI’ in Egypt as well as its geographical distribution for the period 1972–2009. Section 4 breaks down the analysis of section 3 at the sectoral level. Section 5 is our conclusion.

2. FDI in Egypt: Policies and Data

Egypt officially adopted an open door policy in 1974, after the End of the October War in 1973. Since then, the government has enacted various laws to improve the country’s posture to foreign investors.⁵ For example, Law 43 of 1974 regulated the establishment of Free Zones in Egypt with the hope of increasing exports and attracting foreign investment. In the early 1980s, a law was put in place to govern the establishment and operation of companies in Egypt (Companies Law No. 159 of 1981). However, the law included some articles that considerably limited foreign ownership (UNCTAD, 1999).

In the early 1990s, Egypt launched an Economic Reform and Structural Adjustment Program (ERSAP) in order to achieve macroeconomic stability.⁶ The new reform program recognized FDI as an important source of total domestic capital formation. The main objectives of the country’s investment policy were to improve the institutional and regulatory environment for investment and to attract more FDI (UNCTAD, 1999). Consequently, an investment law was introduced in 1997 (Law 8 of 1997), providing additional incentives, customs exemptions and privileges to foreign and domestic private investment. One of the law’s

⁵ Important laws have been Law 43 in 1974 as amended, Law 230 in 1989, Law 159 in 1981, Investment Law 8 in 1997 and Law 94 in 2005. See AfDB (2009), Louis et al. (2003) and UNCTAD (1999) for a comparative matrix of investment legislations in Egypt in 1998.

⁶ In light of this program, Egypt’s inflation rate returned to single-digit values (UNCTAD, 1999).

most important provisions for FDI was granting, with only few exceptions, national treatment to foreign investment, thereby allowing 100% foreign ownership.⁷ In 1998, UNCTAD and ERF conducted a survey of foreign firms operating in Egypt, the response of executives of Transnational Companies' affiliates in Egypt indicated that the adjustment and stabilization programs, as well as the new investment law, significantly improved the investment climate (UNCTAD, 1999). In fact, international business executives ranked Egypt first among 58 countries regarding competitiveness improvements due to changes in government policies (UNCTAD, 1999).

Additional reforms were undertaken in 2004 by the new Egyptian government to further enhance macroeconomic stability and improve the investment climate, with a special focus on attracting FDI (ESCWA, 2008). The reforms included establishing a new Ministry of Investment as well as reorganizing the General Authority for Investment and Free Zones (GAFI). GAFI was given the mandate to act as a 'One-Stop Shop' for investment. Thus, GAFI became the sole body investors needed to approach when establishing their companies, and acted on behalf of all governmental agencies to provide investors with all needed licenses, approvals and certifications. After the establishment of the 'One-Stop Shop', the average amount of time it took to register a company dropped significantly from an average of 34 days (and up to 140 days) to only three days (Stone, 2006). Furthermore, a new tax law was introduced in 2005 (Income Tax Law No. 91 of 2005), providing both domestic and foreign investors with uniform tax treatment (ESCWA, 2008). In 2007, the World Bank rated Egypt as the top world reformer in doing business (World Bank, 2009).

There are two agencies that report FDI-related data in Egypt. The first one is the Central Bank of Egypt (CBE), which records quarterly and annual FDI flows based on actual financial transactions. The second one is GAFI, which is the principal governmental authority in charge of licensing, registering, regulating and promoting foreign and domestic investment projects in Egypt. GAFI maintains a database of investments registered by domestic and foreign

⁷ See UNCTAD (1999) for more details on Law 8 of 1997. Any investment in Sinai was still subject to prior approvals from interested ministries.

enterprises in Egypt upon a company's registration or expansion.⁸ We use the unpublished data by GAFI at the governorate level, since the CBE data do not reveal the geographical distribution of FDI within Egypt. One further advantage of the GAFI dataset is that it also provides data on domestic private investment at the governorate level.

CBE structures the data on FDI in Egypt in the following four categories: (1) Greenfield investments and expansions, (2) net investments in the petroleum sector (oil and gas), (3) privatization proceeds, and (4) direct real estate investments of non-residents (see Table A.1 in the Appendix of the composition of FDI in Egypt in 2005/06 –2009/10). The GAFI database concentrates on the first category of FDI only, that is greenfield investment and expansion⁹, which accounts for nearly one half of FDI to Egypt in 2005/06 –2009/10. FDI in the petroleum sector, which is the second largest bulk of FDI in Egypt, is governed by concession agreements between foreign investors and the Egyptian General Petroleum Corporation (EGPC), and is not included in the GAFI data.¹⁰ Consequently, our dataset captures only 'non-petroleum greenfield FDI' in Egypt and their expansions. For the sake of simplicity, we sometimes use 'FDI' in this paper as shorthand for 'non-petroleum greenfield FDI'.

Our GAFI panel dataset of FDI in 27 governorates for the period 1972–2009 is multidimensional. In addition to FDI regional disaggregation, the dataset further allows for disaggregating FDI according to seven sectors and investment origin. Specifically, in addition to the manufacturing and agricultural sectors, our dataset differentiates between five sub-groups of the service sector; finance, tourism, construction, ICT and 'other services'. Our dataset differentiates between FDI originating from the Arab region and FDI from the rest of the world (non-Arab FDI).

GAFI's figures are reported in Egyptian Pounds at the historical value. Thus, the investment figures are nominal. To obtain real figures, we used the GDP deflator (1992 = 100) reported by the World Bank. Although GAFI also offers cumulative FDI figures since the early years of

⁸ Note that the two sources measure FDI in Egypt differently. While the FDI data by the CBE is more in line with the IMF methodology, IMF (2005) reports problems regarding it. See El Sherif (2004) for more information about the discrepancies between the CBE and the GAFI data.

⁹ This is because GAFI reports the approved capital of foreign investors for new companies or company expansions.

¹⁰ Foreign investment usually takes place under a production-sharing agreement. The foreign company receives up to 40% of the oil produced (OECD, 2010).

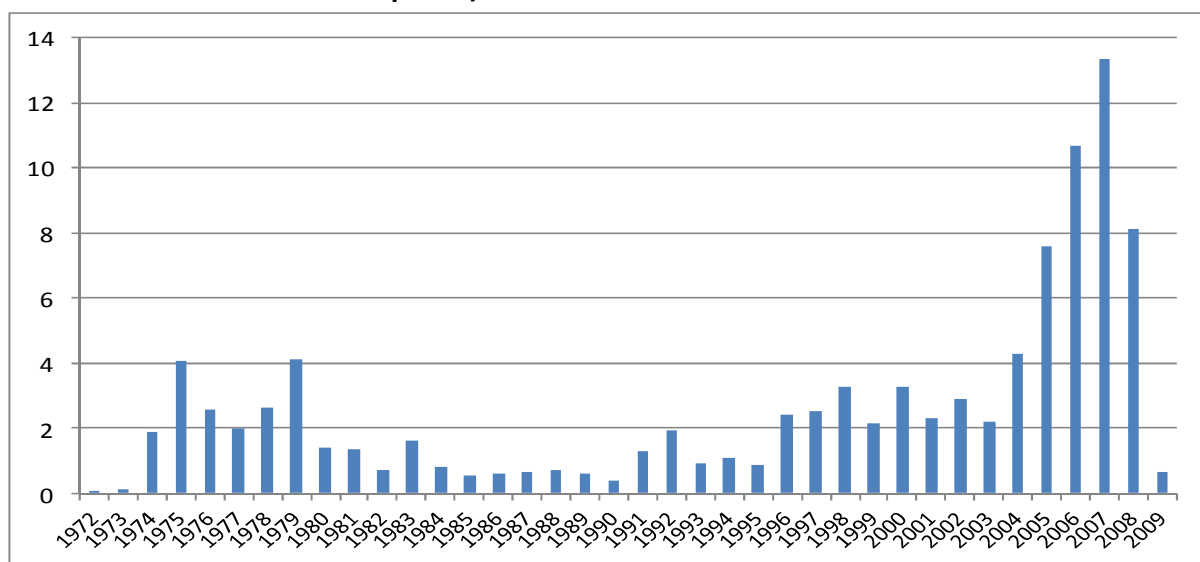
FDI, it would not be appropriate to use these figures since they are based on historical values of annual FDI with no allowance for depreciation. To calculate the real FDI stock in 2009, the final year of our sample period, we cumulate real FDI flows since 1972 (at 1992 prices) and employ—based on the calculations by Hevia and Loayza (2011) for Egypt—an annual depreciation rate of 4%.

3. FDI across all Sectors

3.1 FDI at the National Level

Figure 1 shows the flow of real ‘non-petroleum greenfield FDI’ to Egypt for the period 1972–2009 in billions of EGP at constant 1992 prices. We prefer to conduct the analysis using real FDI figures which, compared to nominal figures, allow for a comparison of inflows over this long time period. As an indicator of the relative importance of FDI for private investments in Egypt, Figure 2 shows the contribution of FDI to total private investment according to averages of 5-year-intervals.

Figure 1: Flow of real ‘non-petroleum greenfield FDI’ to Egypt for the period 1972–2009 (in billions EGP at constant 1992 prices)

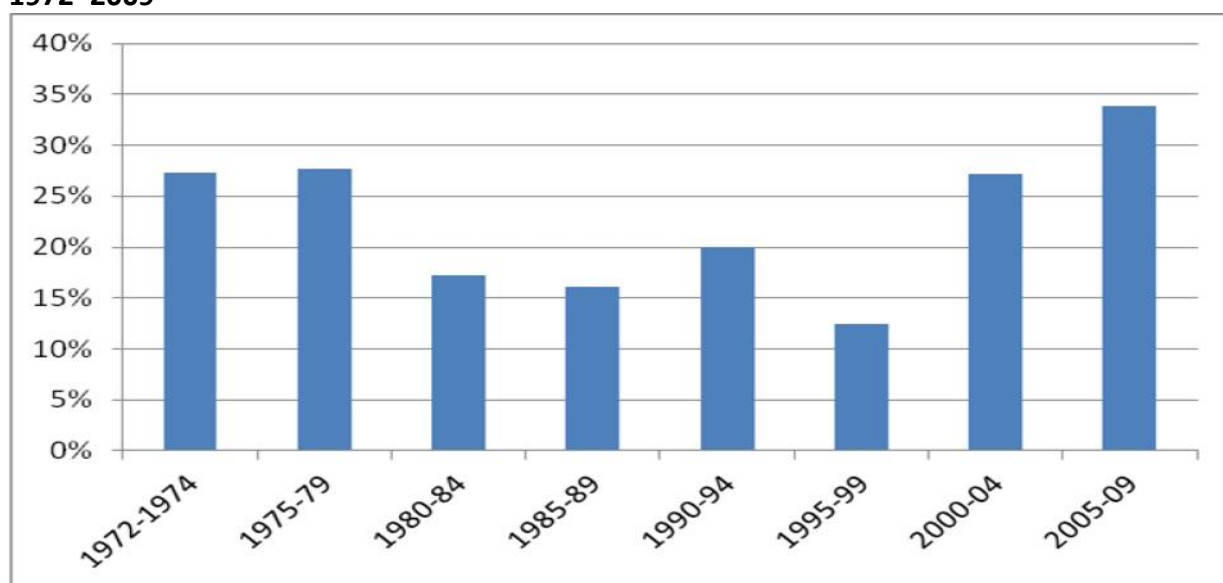


Source: Author’s calculations based on GAFI data.

Egypt saw the first real FDI of 0.05 billion EGP in 1972. Real inflows increased in the following years in light of the introduction of new investment laws. In 1975, real ‘non-petroleum greenfield FDI’ reached 4 billion EGP. Our data show that FDI accounted for more than one

quarter of private investment of FDI in the 1970s. In the 1980s, when inflation was very high in Egypt, real FDI was very low.¹¹ Real Egyptian private investment was relatively low in 1980s as well.¹² The cumulative real FDI almost doubled from 9 billion EGP in the 1980s to 17 billion EGP in the 1990s (at 1992 prices). Although real FDI increased in the 1990s, the average contribution of FDI to private investment shows no increase when compared to the 1980s. The average contribution in the 1980s and 1990s is 17%, respectively.

Figure 2: FDI contribution in total private investment in Egypt (5-year-averages, in %), 1972–2009



Source: Source: Author's calculations based on GAFI data.

Note: Data are based on averages of 5-year-intervals with the exception of the first time span 1972–1974.

FDI followed a strong upward trend after 2004, as a result of the previously mentioned substantial reforms of Egypt's investment climate. Real 'non-petroleum greenfield FDI' increased from 4.3 billion EGP in 2004 to 10 billion EGP in 2006, reaching an unprecedented level of 13.3 billion EGP in 2007 (Figure 1).¹³ That is, in 2007, real FDI inflows were more than three times greater than in 2004 and six times greater than FDI in 2003. The average contribution of FDI to total private investment increased with the surge of FDI inflows in the 2000s. Specifically, FDI accounted for 27% and 34% of total private investment in 2000–2004

¹¹ The 1980s saw the highest inflation rates in Egypt during our sample period, reaching 31% in 1987 (source: World Development Indicators Database). Note that the nominal FDI figures were similarly low in the 1970s as in the 1980s. However, due to the lower inflation in the 1970s, real FDI figures are much larger in the 1980s than in the 1970s.

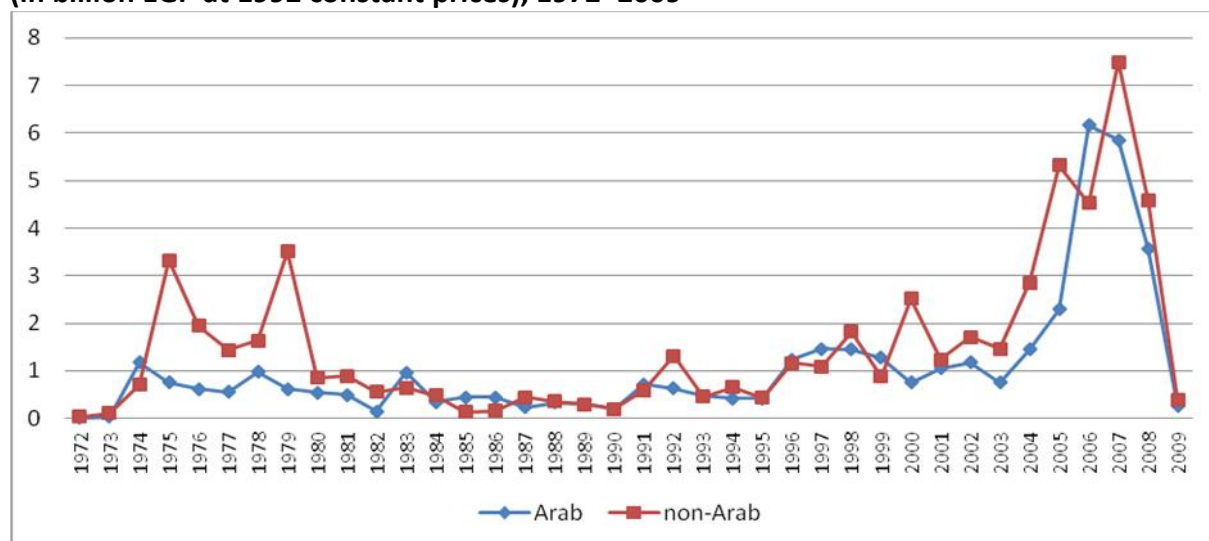
¹² FDI inflows to Egypt and domestic private investment are strongly correlated in 1972–2009 at the 1% significance level (66%).

¹³ Nominal FDI in 2007 was 36.4 billion EGP (equivalent to 6.4 billion USD).

and 2005–2009, respectively.¹⁴ In 2008, however, the world financial crisis had some impact on foreign investment to Egypt. The full impact of the crisis was felt in 2009 (Kamaly, 2011), when real ‘non-petroleum greenfield FDI’ flows sunk below 1 billion EGP, as can be seen in Figure 1.

Figures 3 and 4 focus on the origin of ‘non-petroleum greenfield FDI’. Figure 3 plots real FDI from both Arab and non-Arab sources for each year from 1972–2009. Figure 4 shows the average FDI of Arab and non-Arab sources for each of the four decades in our dataset. The data show that both Arab and non-Arab countries are major sources of ‘non-petroleum greenfield FDI’ in Egypt. Since the adoption of the open-door policy, an annual average of 42% of FDI inflows originated from Arab countries, while 58% originated from non-Arab countries. In the 1970s, non-Arab countries contributed more than 70% of total FDI. In the 1980s and 1990s, Arab and non-Arab FDI contributed almost equally to total FDI inflows. When FDI inflows surged in the 2000s, the relative importance of non-Arab FDI increased again, accounting for 60% of FDI inflows.¹⁵ The peak of real ‘non-petroleum greenfield FDI’ from the Arab region was in 2006 (6.2 billion EGP) and from non-Arab countries in 2007 (7.5 billion EGP) (Figure 3). During the financial crisis in 2009, investments from both sources were remarkably low.

Figure 3: Flow of real ‘non-petroleum greenfield FDI’ from Arab versus non-Arab countries (in billion EGP at 1992 constant prices), 1972–2009

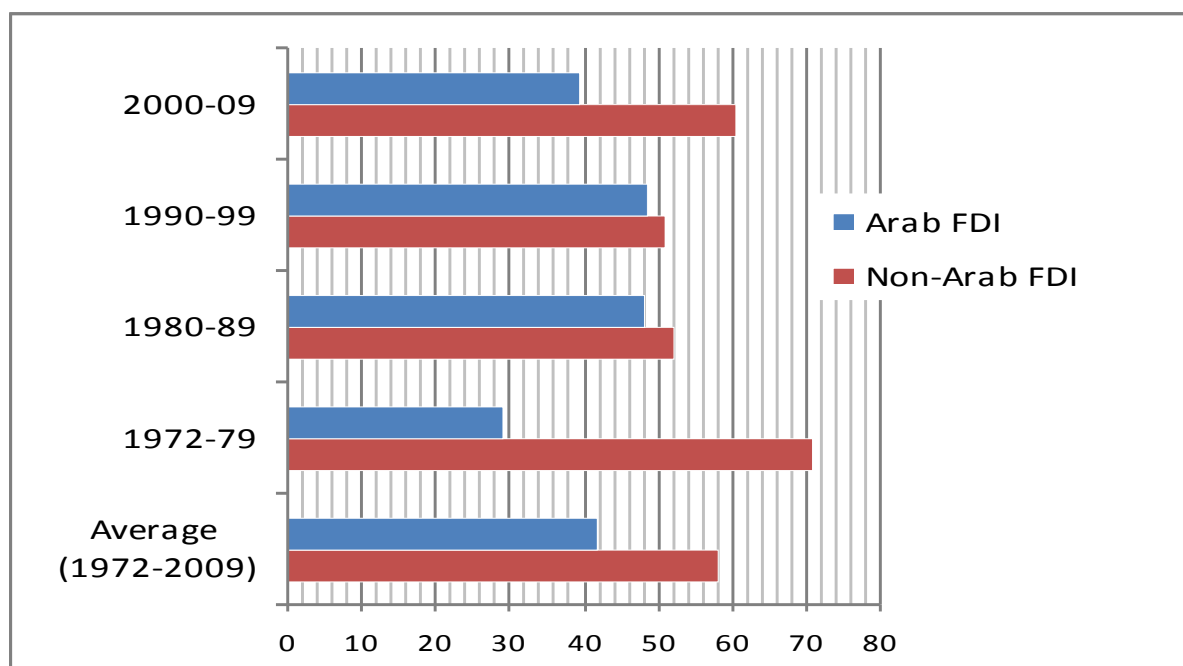


Source: Author’s calculations based on GAFI data.

¹⁴ In 2007, it even constituted for 44% of private investment.

¹⁵ While Arab FDI never outpaced non-Arab FDI on average of any of the four decades, it did in seven different years of our sample period (1974, 1983, 1985, 1986, 1997, 1999 and 2006).

Figure 4: Composition of FDI according to Arab versus non-Arab origin (decade's average, in %), 1972–2009



Source: Author's calculations based on GAFI data.

3.2 FDI at the Governorate Level

3.2.1 Regional Distribution According to Accumulated FDI Stock

Table 1 reports the cumulative 'non-petroleum greenfield FDI' stock in the 27 Egyptian governorates in 2009, our sample's final year. The data show that FDI in Egypt is extremely unevenly distributed. Over 60% of FDI stock was directed to the main economic hubs of the country, Cairo and Giza, which accumulated about 34% and 28% of FDI stock, respectively. There is a significant drop of accumulated FDI stock for any other governorate. Alexandria governorate comes at third place, receiving only 7.5% of FDI stock.

The governorates are classified according to seven regions in Egypt. We adopted the same classification of regions as the Egyptian Ministry of Planning (e.g. MOP, 2011), since doing so allows better insight into the data compared to using other common classifications. Note that according to this classification, each of the governorates Cairo, Giza and Alexandria form a single region as well. Each of the remaining four regions consists of a different number of governorates. Figure 5 provides a visual illustration of FDI stock at the regional level. Next to Cairo (33.6%), Giza (27.9%) and Alexandria (7.5%), the three Suez Canal governorates accumulated together 10% of FDI stock. Lower Egypt's eight governorates

together attracted 11.3% of FDI stock, while Upper Egypt's eight governorates received 3.7% only. The five Frontier governorates accumulated 6% of FDI stock.

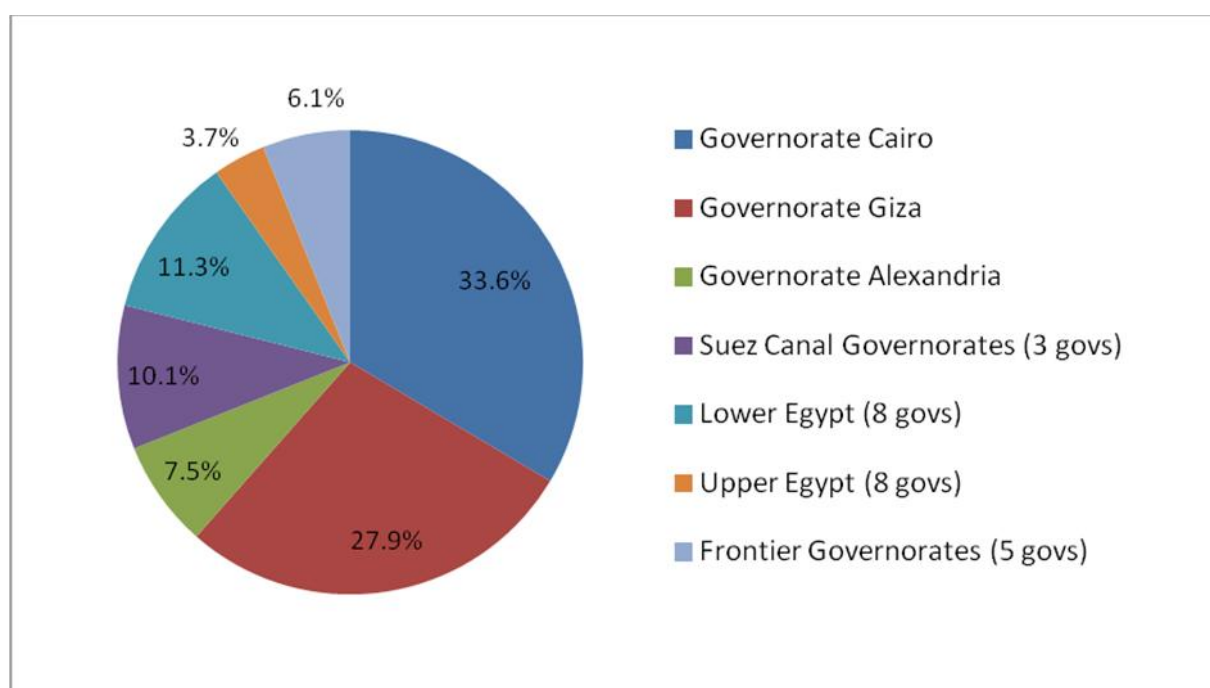
Table 1: Distribution of 'non-petroleum greenfield FDI' stock across Egyptian governorates and regions, 2009

Location	Aggregate FDI (in billion EGP)	Percent	Rank
Cairo	22.1	33.6%	1
Giza	18.3	27.9%	2
Alexandria	4.9	7.5%	3
<i>Suez Canal Governorates</i>	6.6	10.0%	
Suez	3.6	5.5%	4
Ismalia	1.5	2.3%	7
Port Said	1.4	2.2%	8
<i>Lower Egypt</i>	7.4	11.3%	
Sharkia	2.8	4.2%	5
Damietta	1.4	2.2%	9
Kalyoubia	1.4	2.2%	10
Menoufia	0.9	1.3%	11
Behera	0.6	0.9%	15
Gharbia	0.2	0.3%	20
Dakahlia	0.1	0.1%	24
Kafr El-Sheikh	0.1	0.1%	26
<i>Upper Egypt</i>	2.4	3.7%	
Beni Suef	0.7	1.1%	12
Aswan	0.6	1.0%	14
Fayoum	0.4	0.7%	17
Menia	0.2	0.3%	18
Qena	0.2	0.3%	19
Assiut	0.1	0.1%	22
Luxor	0.1	0.1%	25
Suhag	0.0	0.0%	27
<i>Frontier Governorates</i>	4.0	6.1%	
Red Sea	2.5	3.8%	6
South Sinai	0.7	1.1%	13
North Sinai	0.5	0.8%	16
Matrouh	0.2	0.2%	21
NewValley	0.1	0.1%	23

Source: Author's calculations based on GAFI data.

Notes: The 27 governorates are classified according to seven regions in Egypt. We adopted the same classification of regions as the Egyptian Ministry of Planning (e.g. MOP, 2011), since doing so allows better insight into the data compared to using other common classifications. According to this classification, each of the governorates Cairo, Giza and Alexandria form a single region as well.

Figure 5: Distribution of ‘non-petroleum greenfield FDI’ stock by regions, 2009

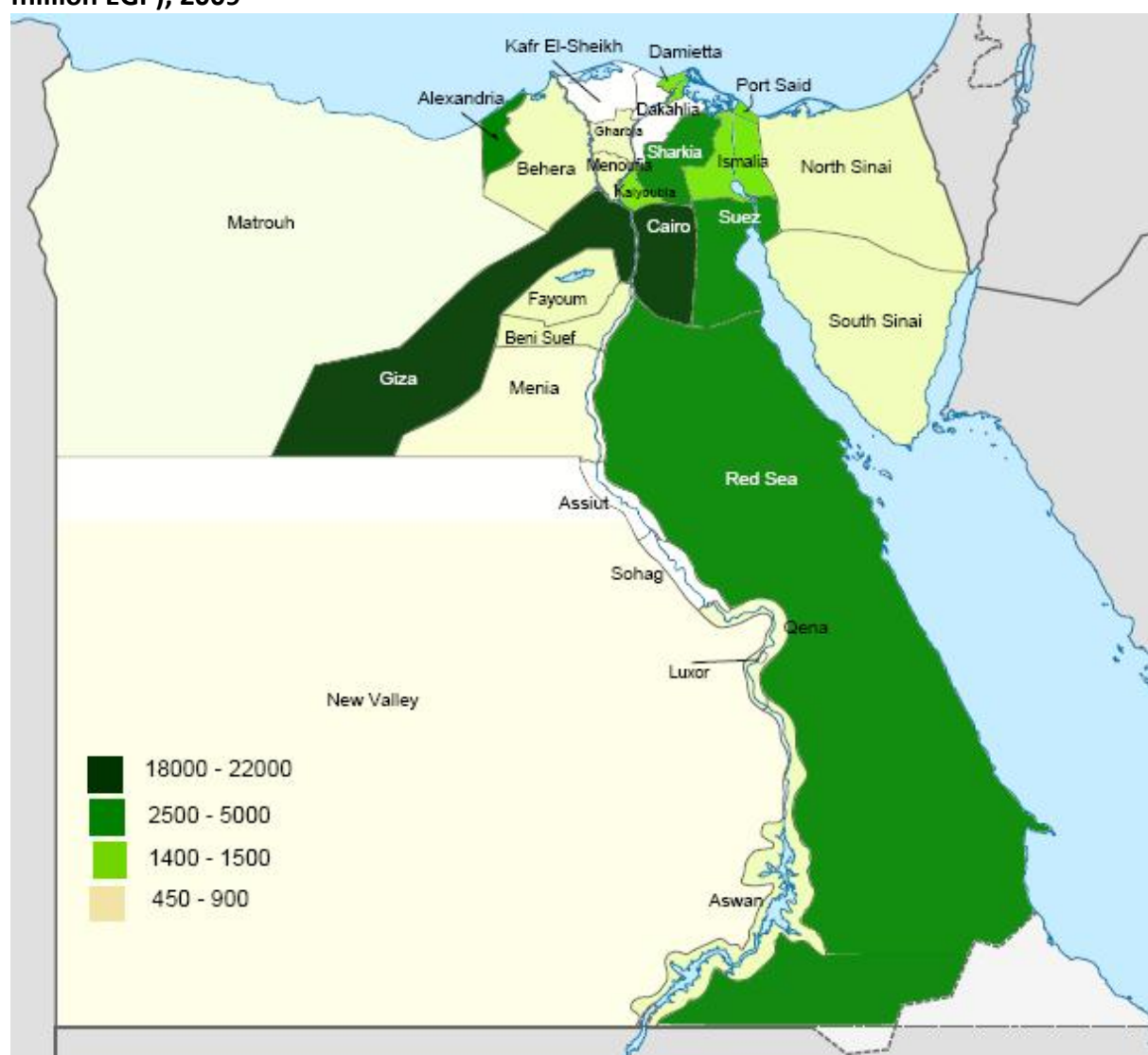


Source: Author's calculations based on GAFI data.

Notes: The number of governorates in a region—if more than one governorate—is included in brackets. ‘govs’ is used as an abbreviation of governorates.

The map in Figure 6 illustrates the geographical distribution of FDI at the governorate level. We made the cut-off points between the categories in the map where the gap in accumulated FDI stock between two governorates is relatively pronounced. The first three categories include the top 10 FDI recipient governorates (see Table 2 for a list of the top 10 governorates according to FDI fraction). The top category includes the governorates Cairo (33.6%) and Giza (27.9%); the second category includes the governorates Alexandria (7.5%), Suez (5.5%), Sharkia (4%), and Red Sea (3.8%); and the third category includes the governorates Ismalia (2.3%), Port Said (2.2%), Damietta (2.2%) and Kalyoubia (2.2%). While the top 10 FDI recipient governorates together accumulated 91% of FDI stock (see Table 2), the bottom 10 FDI recipient governorates—which make the map's final category in white—together attracted less than 2% of FDI stock.

Figure 6: Geographical distribution of ‘non-petroleum greenfield FDI’ stock in Egypt (in real million EGP), 2009



Source: Author's calculations and illustrations based on GAFI data.

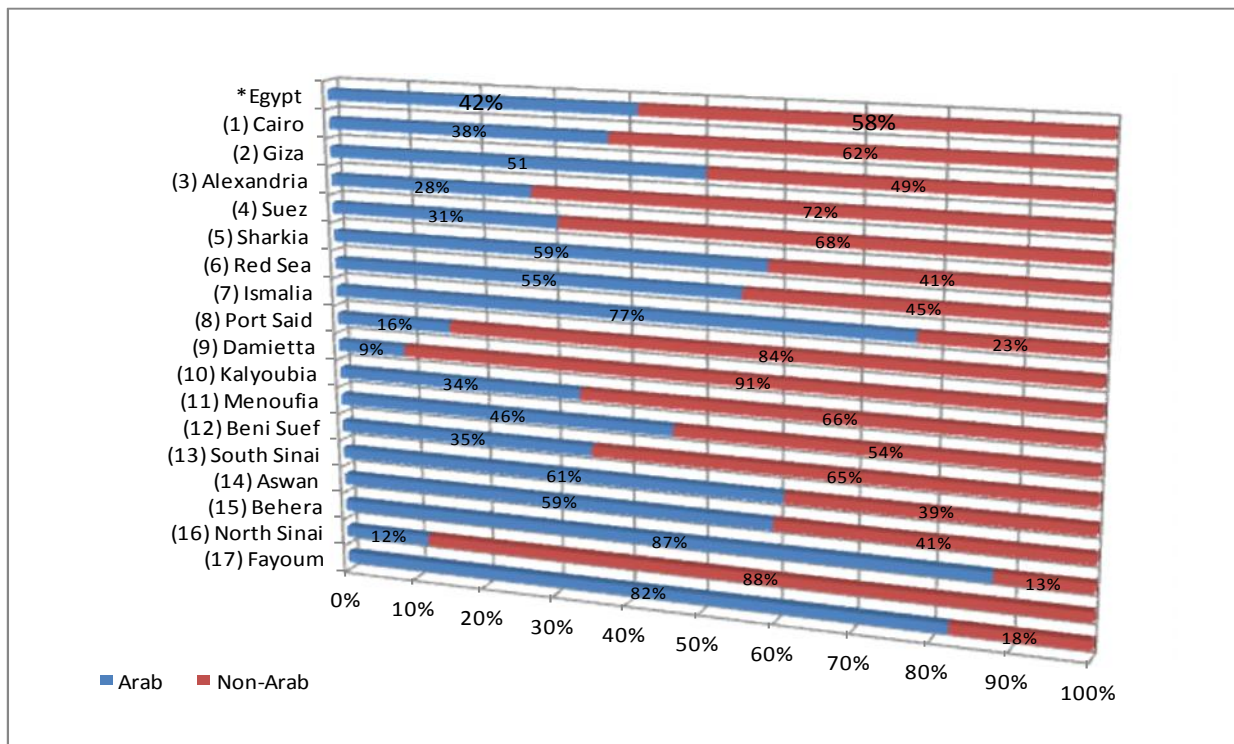
Table 2: The top ten recipient governorates of ‘non-petroleum greenfield FDI’ stock, 2009

Rank	Governorate	Region	FDI stock (in billion EGP at 1992 prices)	Share (%)	Accumulative share (%)
1	Cairo	Cairo	22.08	33.58 %	33.58 %
2	Giza	Giza	18.34	27.89 %	61.47 %
3	Alexandria	Alexandria	4.91	7.46 %	68.93 %
4	Suez	Suez Canal Governorates	3.40	5.53 %	74.45 %
5	Sharkia	Lower Egypt	2.79	4.24 %	78.70 %
6	Red Sea	Frontier Governorates	2.53	3.84 %	82.54 %
7	Ismalia	Suez Canal Governorates	1.54	2.34 %	84.89 %

8	Port Said	Suez Canal Governorates	1.43	2.18 %	87.06 %
9	Damietta	Lower Egypt	1.43	2.17 %	89.23 %
10	Kalyoubia	Lower Egypt	1.42	2.16 %	91.39 %

Source: Author's calculations based on GAFI data.

Figure 7: Fraction of Arab versus non-Arab FDI stock by governorate, 2009



Source: Author's calculations based on GAFI data.

Notes: 'Egypt' shows origin distribution of FDI at the national level. The governorates are ordered according to their fraction in aggregate FDI stock. These 17 governorates include the top 15 recipient governorates by each FDI origin and account for 98% of aggregate FDI stock in Egypt.

Figure 7 shows the fraction of Arab versus non-Arab FDI stock by governorate. To save space, Figure 7 includes only those 17 governorates, which account for 98% of aggregate FDI stock and covers the top 15 recipient governorates by each origin.¹⁶ For a full list of Arab and non-Arab FDI stock by governorate, see Table A.2 in the Appendix. Arab and non-Arab FDI in Egypt show similarities as well as differences in their regional distribution. Arab and non-Arab FDI are both highly concentrated in the Cairo and Giza governorates (Table A.2).¹⁷ However, compared to the composition of FDI at the national level (42% Arab FDI versus 58% non-Arab FDI), Figure 7 shows that Arab FDI is considerably above average in the

¹⁶ These 17 governorates make the first four categories in the Map in Figure 6.

¹⁷ It is interesting to note that the second top FDI recipient Giza accumulated almost the same amount of Arab and non-Arab FDI (49% Arab and 51% non-Arab).

governorates of North Sinai (88%), Behera (87%), Fayoum (82%), Ismalia (77%), South Sinai (61%), Sharkia (59%), Aswan (59%), Red Sea (55%). Non-Arab FDI has an above average presence in Damietta (91%), Port Said (84%), Alexandria (72%), Suez (68%), Kalyoubia (66%), Beni Suef (65%) and Cairo (62%). The data suggest that Arab and non-Arab FDI may differ in their location determinants.

3.2.2 Measuring the Evolution of FDI Regional Concentration

We have described the geographical distribution of accumulative FDI stock according to the sample's final year. In the following, we analyse the evolution of geographical concentration of FDI flows from 1972-2009. Is FDI in Egypt today more regionally diffused than in the 1970s, 1980s or 1990s, or is it more concentrated? The concentration of FDI in only a few regions might prevent the dissemination of possible positive FDI effects throughout the whole economy and thus increase regional inequalities (Mukim and Nunnenkamp, 2012).

We use measures of FDI geographical concentration to trace its development over time. This approach further allows us to compare FDI concentration in different economic sectors (see section 4).¹⁸ To do so, we make use of classical inequality measures, since geographic concentration is a reflection of spatial inequality.¹⁹ We employ two of the most frequently applied measures of inequality, the Gini coefficient and the coefficient of variation.

The Gini coefficient, which is used in the analysis of income inequality (see Cowell, 1995)²⁰, was later adopted by economic geographers for the analysis of geographic distribution of economic activities (Krugman, 1991; Amiti, 1998) and became a common measure of geographical concentration.²¹ Using our dataset on FDI inflows at the governorate level, we calculate the Gini coefficient of FDI distribution in Egypt for 1972–2009 to capture the spatial concentration of FDI within the country. Accordingly, a higher level of inequality between the governorates indicates a higher level of FDI geographical concentration.

¹⁸ Note that looking at the concentration in Cairo and Giza only would be misleading as they are not the top recipient governorates in all sectors.

¹⁹ Similarly, Bickenbach et al. (forthcoming) analyse the development of FDI concentration in India.

²⁰ The Gini coefficient measures the extent to which the underlying distribution of, e.g. income, within the economy deviates from a perfectly equal distribution. A Gini coefficient of 0 implies perfect equality whereas a coefficient of 1 implies perfect inequality.

²¹ For instance, Jordaan (2005) uses the Gini coefficient to measure the geographical distribution of industries across Mexican states and Brühlhart (2001) uses the Gini coefficient to analyse the geographical distribution of European manufacturing industries.

The coefficient of variation (CV) is calculated as the ratio of the standard deviation to the mean and thus measures the dispersion to the mean. Accordingly, a higher CV implies a higher inequality of distribution. While the Gini coefficient is more sensitive to observations in the middle of the distribution, the CV is more sensitive to observations in the right-hand tail of the distribution.²² We therefore look at both indicators to better capture the development of spatial distribution of FDI inflows since the country opened for FDI in the 1970s.²³

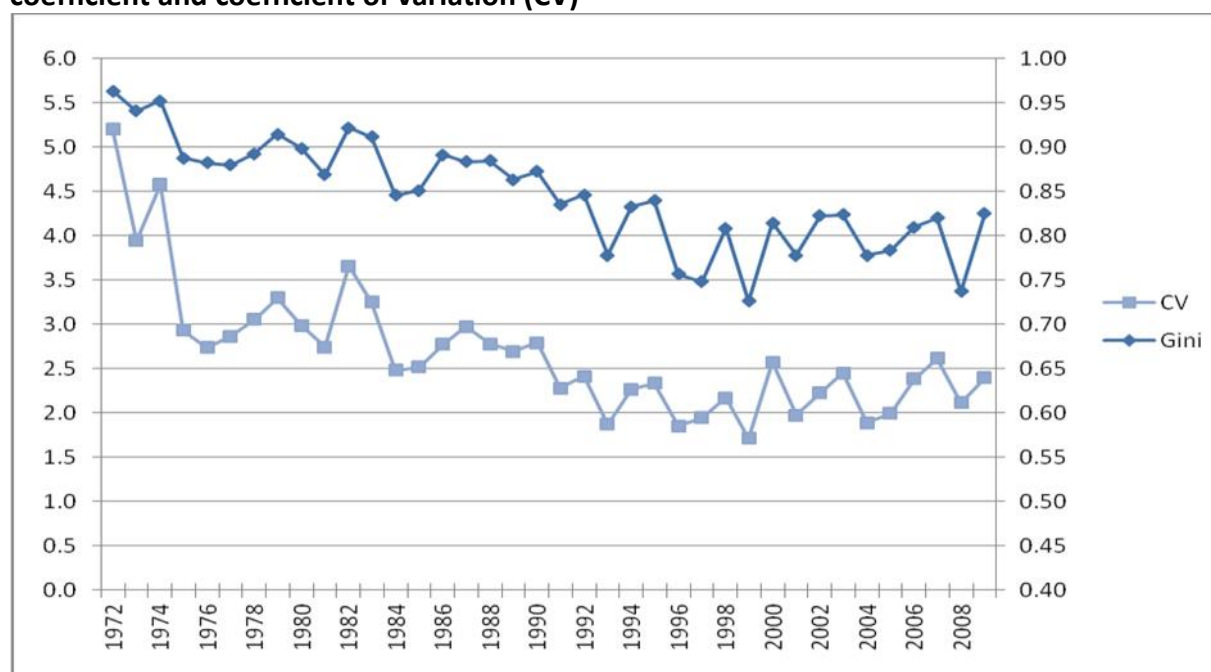
As expected, the mean of CV and Gini coefficient of real FDI inflows for the period 1972–2009 reflect a strong inequality of FDI distribution among Egyptian governorates. The sample's mean of Gini coefficient is 0.85, that is relatively close to unity. The sample's mean of CV is 2.7, which indicates that the standard deviation of FDI flows is, on average, about three times higher than its mean.

Figure 8 plots the CV and the Gini coefficient of real FDI inflows in 1972–2009. Both indicators show that the geographical concentration of FDI was most noticeable when Egypt received its first FDI in 1972. The following years saw a gradual decrease in FDI concentration. The decrease is more pronounced according to the CV (dropped from 5.2 in 1972 to 2.9 in 1975), than the Gini coefficient (decreased from 0.96 in 1972 to 0.89 in 1975), which indicates that the concentration of FDI rather decreased at the right tail of the distribution. This is because the Gini coefficient is more robust to changes in the tail of the distribution (see Bendel et al., 1989). In fact, our dataset shows that all inbound FDI in 1972 was directed to Cairo only, whereas FDI flows in 1975 targeted eight different governorates (Cairo, Giza, Alexandria, the three Suez Canal governorates and two governorates in Lower Egypt).

²² See Bendel et al. (1989) for a comparison of the two inequality measures

²³ Bickenbach et al. (forthcoming) analyse the concentration of FDI in India at the district level using the Theil indicator. The main advantage of the Theil index is the decomposition of the inequality of FDI concentration between and within subgroups of regions which is different than the purpose of our analysis.

Figure 8: Development of FDI spatial concentration in 1972–2009, based on the Gini coefficient and coefficient of variation (CV)



Notes: Author's calculation based on real inflows of 'non-petroleum greenfield FDI' in Egypt at the governorate level. The right-hand scale applies for the CV and the left-hand scale for the Gini coefficient.

Table 3: FDI spatial concentration for 1972–2009, based on sample's mean

Years	Gini coefficient	Coefficient of Variation (CV)	Cairo and Giza (%)
1972-79	0.91	3.57	75.7
1980-89	0.88	2.88	68.7
1990-99	0.80	2.16	55.0
2000-09	0.80	2.26	59.0
1972-2009	0.85	2.68	64.0

Notes: Author's calculation based on real inflows of 'non-petroleum greenfield FDI' in Egypt at the governorate level.

In general, both indicators show a similar picture of the development of FDI concentration at the governorate level over time. The unequal geographical distribution shows a downward trend until the mid/late 1990s, indicating an increase in the geographical diffusion of FDI inflows during this period. However, this trend no longer holds when FDI inflows increased after the late 1990s. Consequently, our dataset reveals that the substantial increase in FDI inflows in the 2000s did not promote a further decrease in FDI geographical concentration. Rather, the degree of FDI distributional inequality remained persistently high. In fact, Table 3 shows that the mean of Gini coefficient in the 2000s and 1990s are equal (0.8). The CV's mean in the 2000s (2.26) is even slightly larger than in 1990s (2.16), suggesting a small increase in FDI concentration in the top FDI recipient governorates. Table 3 also reports the

average of FDI inflows to Cairo and Giza by decade, which confirms our result. The average fraction of FDI inflows to Cairo and Giza was lowest in the 1990s (55%) and increased by 4 percentage points to 59% in the 2000s.

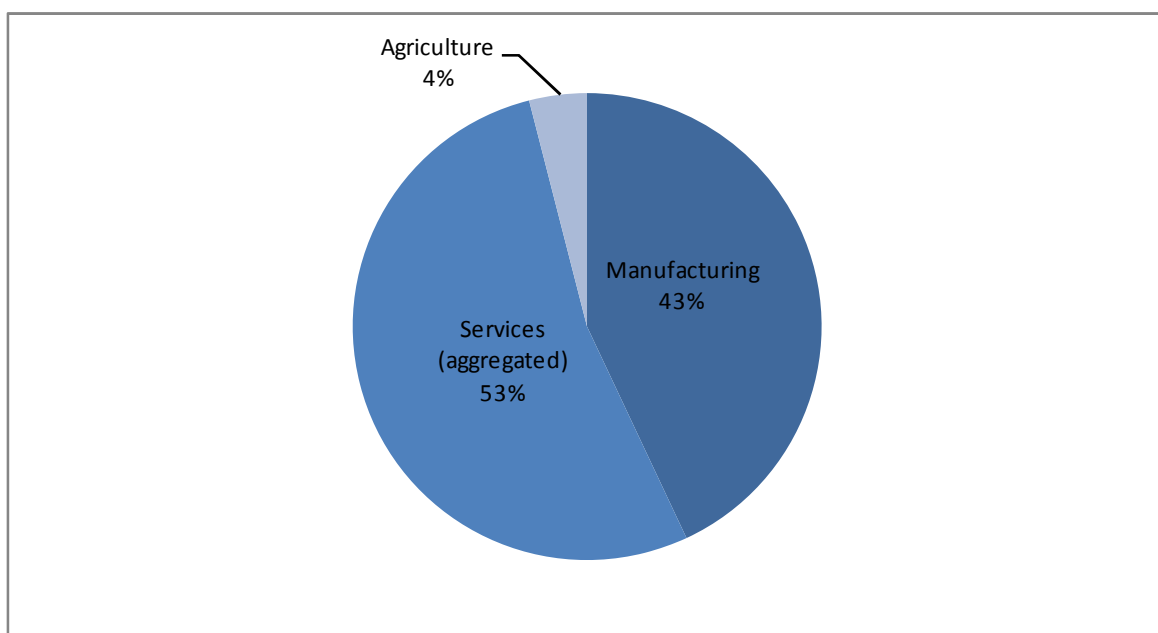
4. Sectoral FDI

This section describes the sectoral composition of FDI in Egypt as well as the spatial distribution of sectoral FDI for the period 1972–2009. In addition to the manufacturing and agricultural sectors, our dataset differentiates between five sub-groups of the service sector; finance, tourism, construction, ICT and a category ‘other services’. Thus, our dataset allows for a disaggregated analysis of FDI in the heterogeneous service sector. See Table A.3 of the Appendix for a detailed breakdown of economic activities in each sector.

Figure 9 reveals the average annual sectoral composition of real ‘non-petroleum greenfield FDI’ flows in 1972–2009. Most ‘non-petroleum greenfield FDI’ flows to Egypt target the service (53%) and manufacturing (44%) sectors, while the agriculture sector received very little FDI (4%). Figure 10 allows for a further disaggregation of the heterogeneous service sector. The financial sector is the top recipient of service FDI and, on average, accounted for about one-quarter of real ‘non-petroleum greenfield FDI’ flows (24%), while tourism attracted 11%, construction 6%, ICT 3% and 9% targeted ‘other services’.

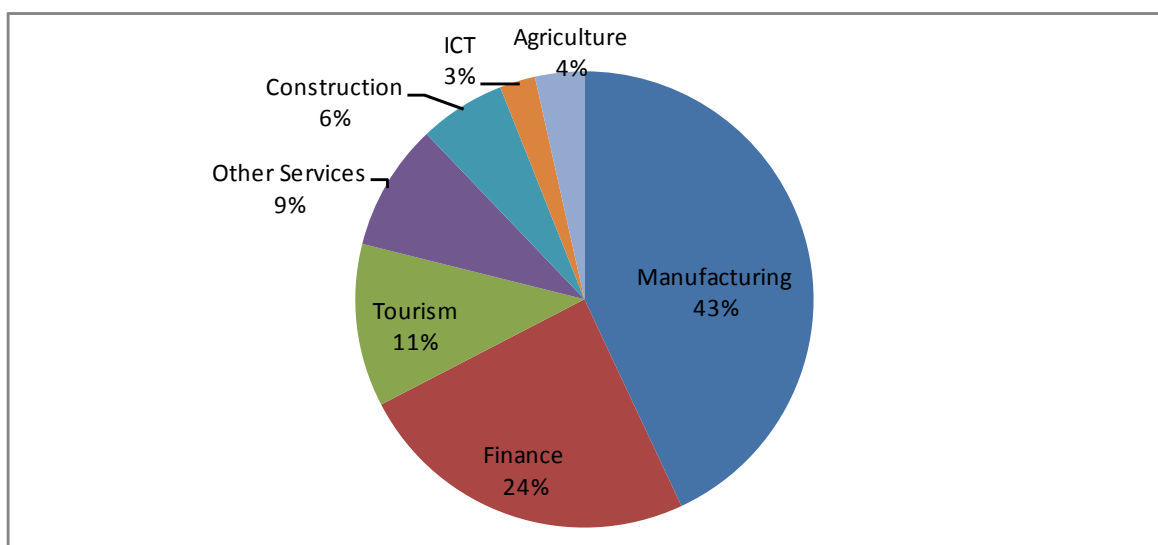
For the sectoral distribution of FDI inflows by origin, see Figure A.1 and Figure A.2 in the Appendix. The data reveal that Arab and non-Arab ‘non-petroleum greenfield FDI’ inflows do not differ much in their sectoral composition. The fraction of Arab FDI that targets manufacturing is a bit smaller than non-Arab FDI, whereas a slightly larger share of Arab FDI targets the finance, tourism and agriculture sectors.

Figure 9: Sectoral composition of ‘non-petroleum greenfield FDI’ flows in Egypt (average of 1972–2009)



Source: Author’s calculations based on GAFI data.

Figure 10: Sectoral composition of ‘non-petroleum greenfield FDI’ flows in Egypt (average of 1972–2009), including sub-groups of the service sector

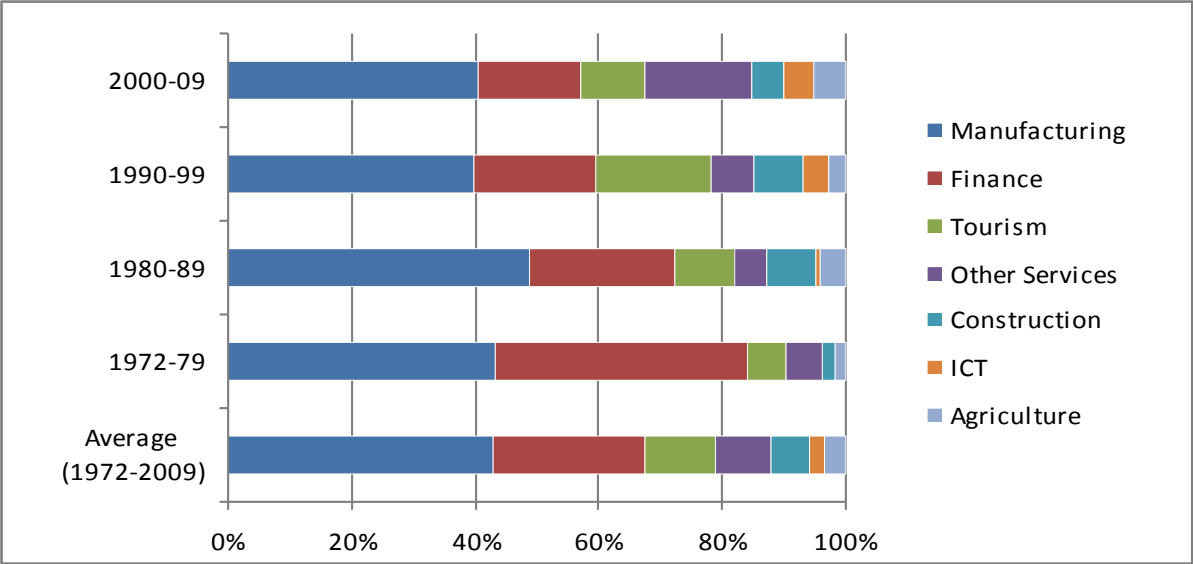


Source: Author’s calculations based on GAFI data.

Figure 11 shows the evolution of FDI sectoral composition from 1972–2009 in terms of decades’ averages. The fraction of FDI in manufacturing saw only small changes across decades’ averages. It is a bit smaller in the 2000s and 1990s (40%), compared to the 1980s (49%) and 1970s (43%). Although the share of FDI inflows into the aggregate service sector also showed little change over time, the pattern of distribution changed showing an

increasing diversification of FDI within the service sector. For example, on average, 41% of total FDI inflows targeted the financial sector in the 1970s, that is, almost as much as the manufacturing sector. However, this fraction significantly decreased in the subsequent decades in favour of the other service activities. In the 2000s, the financial sector accounts for only 17% of FDI, similar to the amalgam ‘other services’. The latter saw a remarkable increase in the 2000s, both in volume and percentage. As to the agricultural sector, it accounts for a small, yet slightly increasing share of FDI inflows. Similar to the ICT and construction sectors, it received 5% of the soaring FDI inflows in the 2000s. In the following, we use our dataset to describe FDI and its geographical distribution in each sector.

Figure 11: Evolution of sectoral composition of ‘non-petroleum greenfield FDI’ flows (decade’s average), 1972–2009



Source: Author’s calculations based on GAFI data.

4.1 FDI in the Manufacturing Sector

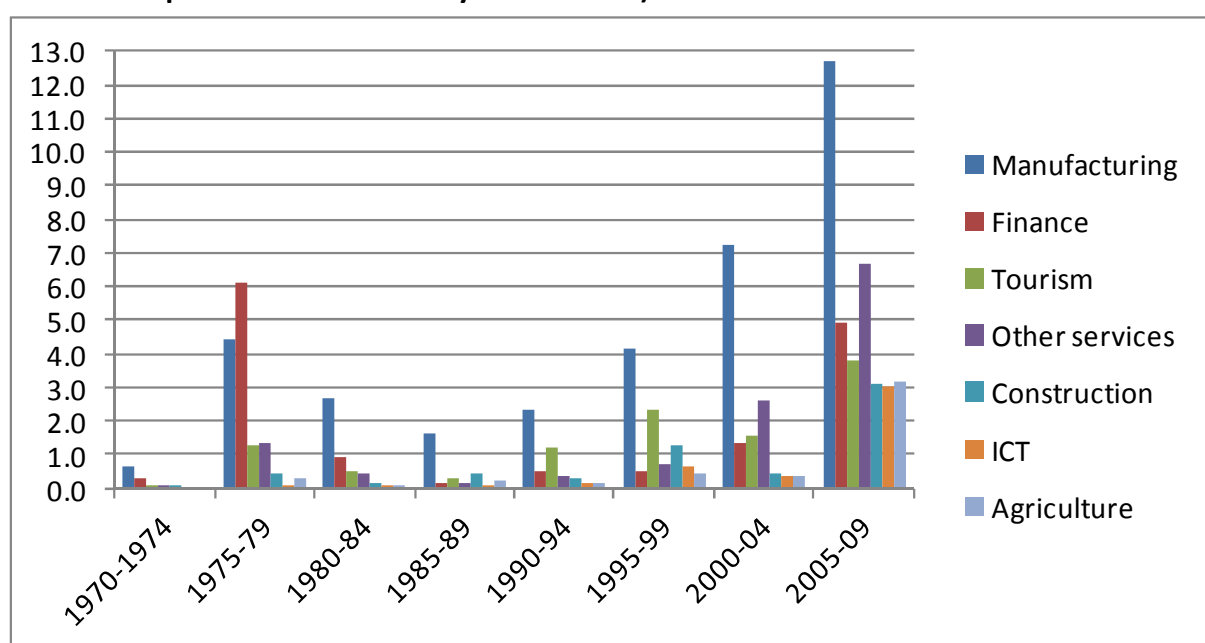
The manufacturing sector in Egypt contributes to roughly 16% of the country’s GDP (EHDR, 2010) and, according to the latest population census in 2006, employs 12% of the country’s labour force (AfDB, 2009). The sector attracts about one-fifth of all investments in Egypt. The private sector is an increasingly important investor in this sector (AfDB, 2009).²⁴

4.1.1. Manufacturing FDI at the National Level

²⁴For example, the private sector accounts for 87% of manufacturing investments in 2007/08, which is 30 percentage points higher than four years earlier (AfDB, 2009).

Figure 12 shows real ‘non-petroleum greenfield FDI’ flows by sector in billion EGP at 1992 prices as sums of five-year-intervals.²⁵ Manufacturing FDI inflows show a similar evolution to aggregate ‘non-petroleum greenfield FDI’ inflows in Egypt over time. That is, while the actual amount of FDI has increased since 1985, the overall percentage of FDI dedicated to manufacturing has not significantly changed over time. In 2005–2009, manufacturing received real FDI of almost 13 billion EGP at 1992 prices, that is roughly double the inflows in 2000–2004 (7 billion EGP) and more than triple the inflows in 1995–1999 (4 billion EGP).

Figure 12: Real ‘non-petroleum greenfield FDI’ in Egypt by sector in 1970–2009 (in billion EGP at 1992 prices as sums of five-year-intervals)



Source: Author's calculations based on GAFI data.

Table 4: FDI by sector (decade's average, in % of total private investments), 1972–2009

Years	Sectoral FDI (in % of sector's private investment)							Aggregate FDI (% of private investment)
	Manufacturing	Agriculture	Finance	Tourism	Construction	ICT	Other Services	
1972-79	22.6%	27.6%	32.0%	40.0%	30.6%	0.8%	20.1%	27.6%
1980-89	24.3%	16.7%	20.8%	22.8%	6.6%	28.0%	6.4%	16.7%
1990-99	19.4%	16.2%	30.8%	17.0%	12.6%	26.6%	9.8%	16.2%
2000-09	31.7%	30.6%	45.7%	21.2%	18.3%	29.8%	28.6%	30.6%
Average (1972-2009)	24.6%	22.5%	32.3%	24.5%	16.3%	22.4%	16.0%	22.5%

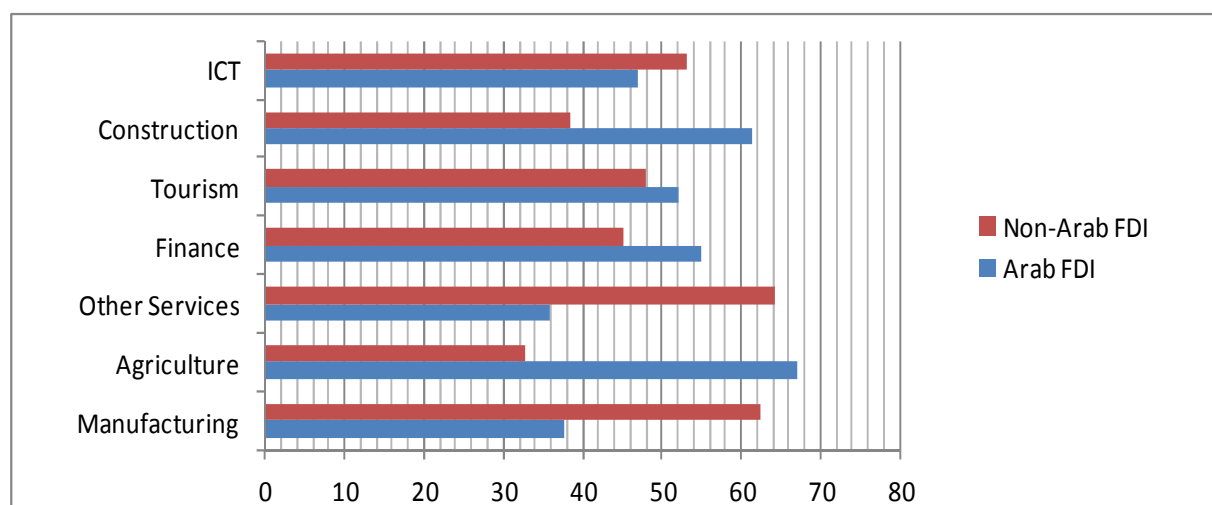
Source: Author's calculations based on GAFI data.

²⁵ Egypt received the first FDI inflows in 1972.

Table 4 shows the average annual contribution of FDI to private investment by sector, as well as the each decade's average for the period 1972–2009. FDI on average contributed 25% of private investments in manufacturing. Similar to aggregate FDI, the contribution was highest (32%) when FDI increased in the 2000s.

Figure 13 shows the average composition of sectoral FDI according to Arab versus non-Arab origin in 1972–2009. For more insight into the origin composition, Tables A.4 and A.5 in the Appendix report the fraction of sectoral FDI from Arab and non-Arab countries on decade's averages, respectively. The data are in percentage and thus, Table A.4 is a mirror image of Table A.5. Non-Arab countries on average account for 62% of manufacturing FDI since Egypt's open door policy; the remaining 38% originate from Arab countries. The composition is similar in the 2000s, when manufacturing FDI increased.

Figure 13: Composition of sectoral FDI according to Arab versus non-Arab origin (annual average contribution in %), 1972–2009



Source: Author's calculations based on GAFI data.

Note: The fraction of Arab and non-Arab FDI add up to 100%.

4.1.2. Manufacturing FDI at the Governorate Level

Table 5 shows the sample's mean of CV and Gini coefficient of FDI geographical distribution by sector from 1972–2009. The concentration indicators for the manufacturing sector are the lowest among all sectors (Gini = 0.84; CV = 2.54), revealing that, in Egypt, manufacturing FDI has the lowest geographical concentration when compared to all other sectors. We reject, based on the paired t-test and the Wilcoxon signed rank sum test, that the sample's mean of CV or Gini coefficient is not different between manufacturing FDI and FDI in any

other sector. That is, the differences in means between manufacturing FDI and other FDI sectors are statistically significant at the 1% level.

Table 5: Geographical concentration of ‘non-petroleum greenfield FDI’ flows by sector

	Least concentrated ←-----→ Most concentrated						
Indicator	Manufacturing	Agriculture	Other Services	Tourism	Construction	Finance	ICT
Gini	0.84	0.89	0.91	0.92	0.93	0.95	0.95
CV	2.54	3.37	3.40	3.61	3.76	4.30	4.38

Notes: Reported Gini and CV figures are the mean of the annual figures for 1972-2009 based on FDI inflow at the governorate level. We reject according to the paired t-test and the Wilcoxon signed rank sum test that the mean of the concentration indicators (CV and Gini coefficient) does not differ between manufacturing FDI and FDI to any other field (at the 1% significance level). The same applies for differences between the finance and ICT sector on the one hand and the remaining sectors on the other hand.

Tables 6 and 7 show a detailed geographical breakdown of real FDI stock in 2009 by sector, with the manufacturing sector in column 3. Each of the top five recipient governorates of manufacturing FDI accounts for a double digit percentage of accumulated manufacturing FDI stock. This is different from the other sectors, which are mostly concentrated in Cairo and/or Giza. Alexandria is the top recipient governorate of manufacturing FDI (17.1%) and attracts more than double its fraction in aggregate FDI stock. The Giza governorate directly follows (16.5%). Cairo comes at third place; its fraction in manufacturing FDI stock (12.4%) is only one third of its fraction in aggregate FDI stock.

In contrast, the percentage of manufacturing FDI dedicated the Suez Canal governorates, Lower Egypt and Upper Egypt is around double their fraction of aggregate FDI stock, that is, 20%, 26.2%, and 6.9%, respectively. The top recipient governorates in Lower Egypt are Sharkia (10.8%), Damietta (6%), and Kalyoubia (5.2%), among the Suez Canal governorates is the governorate Suez (12.1%) and in Upper Egypt is Beni Suef (3%). Only 1% of manufacturing FDI stock targeted the Frontier governorates. Moreover, our dataset shows that while every Egyptian governorate received some manufacturing FDI during the sample period, 15 of the 27 governorates (56% of governorates) received less than 1% of accumulated manufacturing FDI stock during our sample.

Table 6: Regional distribution of 'non-petroleum greenfield FDI' stock in 2009, by sector (in %)

Location	Aggregate FDI	Manufacturing	Agriculture	Finance	Tourism	Construction	ICT	Other services
Cairo	33.58	12.41	44.17	53.23	40.14	56.48	7.54	47.74
Giza	27.89	16.46	13.06	41.15	10.72	23.79	90.26	34.95
Alexandria	7.46	17.07	2.00	0.22	1.39	5.26	0.22	4.51
<i>Suez Canal Governorates</i>	10.04	19.80	4.78	4.69	4.29	5.89	0.61	5.37
Suez	5.53	12.11	1.16	0.02	3.94	4.94	0.49	2.10
Ismalia	2.34	3.17	3.51	4.66	0.00	0.02	0.12	0.10
Port Said	2.18	4.51	0.10	0.00	0.34	0.93	0.00	3.16
<i>Lower Egypt</i>	11.30	26.24	21.66	0.25	0.08	2.13	1.29	2.52
Sharkia	4.24	10.79	2.09	0.00	0.03	0.35	0.10	1.51
Damietta	2.17	5.66	0.16	0.07	0.02	0.96	0.02	0.27
Kalyoubia	2.16	5.18	1.16	0.16	0.01	0.56	1.13	0.67
Menoufia	1.32	3.26	2.38	0.01	0.00	0.06	0.01	0.02
Behera	0.94	0.26	14.80	0.01	0.02	0.01	0.00	0.02
Gharbia	0.26	0.69	0.11	0.00	0.00	0.00	0.00	0.01
Dakahlia	0.14	0.24	0.59	0.00	0.00	0.18	0.02	0.02
Kafr El-Sheikh	0.08	0.16	0.37	0.00	0.00	0.01	0.02	0.00
<i>Upper Egypt</i>	3.65	6.90	11.58	0.03	4.01	0.20	0.03	0.33
Beni Suef	1.12	3.06	0.35	0.00	0.00	0.00	0.00	0.00
Aswan	0.98	0.31	9.72	0.00	2.69	0.02	0.00	0.10
Fayoum	0.68	1.70	0.63	0.00	0.02	0.01	0.02	0.17
Menia	0.34	0.91	0.12	0.00	0.00	0.00	0.00	0.00
Qena	0.27	0.46	0.64	0.03	0.46	0.13	0.00	0.03
Assiut	0.15	0.40	0.01	0.00	0.00	0.00	0.01	0.01
Luxor	0.10	0.01	0.02	0.00	0.85	0.04	0.00	0.01
Suhag	0.02	0.04	0.09	0.00	0.00	0.00	0.00	0.01
<i>Frontier Governorates</i>	6.08	1.12	2.75	0.43	39.38	6.25	0.05	4.57
Red Sea	3.84	0.32	0.20	0.37	29.23	4.72	0.04	0.56
South Sinai	1.09	0.01	0.05	0.05	9.07	0.99	0.01	0.03
North Sinai	0.76	0.44	0.02	0.00	0.59	0.00	0.00	3.84
Matrouh	0.24	0.17	1.32	0.00	0.45	0.54	0.00	0.15
NewValley	0.14	0.19	1.17	0.00	0.04	0.00	0.00	0.00

Source: Author's calculations based on GAFI data.

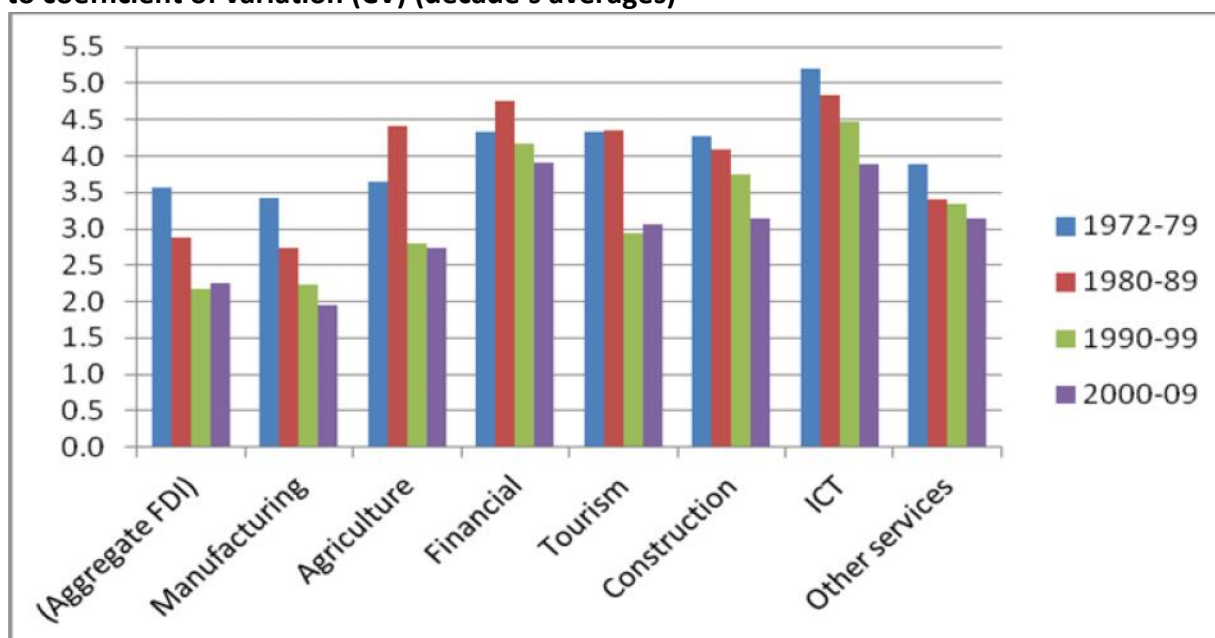
Table 7: Regional breakdown of real FDI inflows, by sector (in million EGP at 1992 prices)

Location	Aggregate FDI	Manufacturing	Agriculture	Finance	Tourism	Construction	ICT	Other services
Cairo	22084.7	2935.9	1643.6	7368.0	2921.4	2542.3	265.9	4407.4
Giza	18338.2	3893.8	486.0	5696.5	780.0	1070.9	3184.5	3226.5
Alexandria	4906.3	4038.9	74.3	31.0	101.2	236.9	7.8	416.3
<i>Suez Canal Governorates</i>	6605.1	4685.0	177.7	648.5	312.0	265.1	21.5	495.3
Suez	3633.6	2866.4	43.2	3.4	287.0	222.3	17.2	194.2
Ismalia	1541.0	750.6	130.7	644.7	0.2	0.9	4.3	9.5
Port Said	1430.6	1068.0	3.7	0.5	24.8	41.9	0.0	291.6
<i>Lower Egypt</i>	7428.5	6209.0	805.9	34.1	5.6	95.7	45.7	232.6
Sharkia	2791.6	2552.5	77.9	0.4	2.1	15.8	3.7	139.1
Damietta	1425.1	1339.0	5.9	9.6	1.7	43.1	0.8	25.0
Kalyoubia	1417.9	1226.0	43.2	21.8	0.4	25.1	39.7	61.7
Menoufia	865.3	771.2	88.5	0.7	0.1	2.7	0.2	1.9
Behera	616.5	61.1	550.7	1.5	1.2	0.3	0.0	1.7
Gharbia	169.5	164.4	4.0	0.0	0.1	0.0	0.1	0.9
Dakahlia	89.6	56.3	22.1	0.0	0.0	8.3	0.6	2.3
Kafr El-Sheikh	53.0	38.6	13.6	0.0	0.0	0.2	0.6	0.0
<i>Upper Egypt</i>	2400.4	1632.1	430.9	4.7	291.9	8.9	1.1	30.9
Beni Suef	736.9	723.4	13.1	0.0	0.0	0.1	0.1	0.2
Aswan	641.8	74.4	361.8	0.0	195.4	0.8	0.0	9.4
Fayoum	445.1	403.3	23.6	0.0	1.3	0.3	0.6	16.1
Menia	220.4	215.9	4.4	0.0	0.0	0.1	0.0	0.0
Qena	178.4	108.3	23.7	4.7	33.4	5.8	0.0	2.6
Assiut	96.7	95.6	0.3	0.0	0.0	0.0	0.2	0.6
Luxor	67.6	2.1	0.8	0.0	61.8	1.8	0.2	0.9
Suhag	13.5	9.2	3.2	0.0	0.0	0.0	0.0	1.1
<i>Frontier Governorates</i>	3998.7	265.2	102.4	59.0	2866.7	281.3	1.7	422.3
Red Sea	2528.4	76.0	7.5	51.6	2127.6	212.6	1.6	51.5
South Sinai	718.8	2.8	1.9	6.6	660.4	44.5	0.2	2.4
North Sinai	500.8	103.0	0.6	0.0	42.7	0.0	0.0	354.5
Matrouh	159.3	39.1	49.0	0.3	33.0	24.1	0.0	13.8
NewValley	91.4	44.3	43.4	0.5	3.0	0.0	0.0	0.2

Source: Author's calculations based on GAFI data.

Figures 14 and 15 show the development of both FDI concentration indicators over the last four decades by sector. Both figures reveal that the geographical concentration of manufacturing FDI was lowest compared to all other sectors in every decade and that it decreased over the sample's period. Specifically, the Gini coefficient's mean decreased from 0.9 in 1970s to 0.78 in the 2000s and the CV's mean remarkably decreased from 3.4 in 1970s to 1.9 in the 2000s. In fact, our dataset shows that Cairo, Giza and Alexandria together accounted for an annual average of 80% of manufacturing FDI inflows in the 1970s, whereas they received only 43% of it in the 2000s. This is because more manufacturing FDI targeted the Suez Canal governorates and Lower Egypt.²⁶

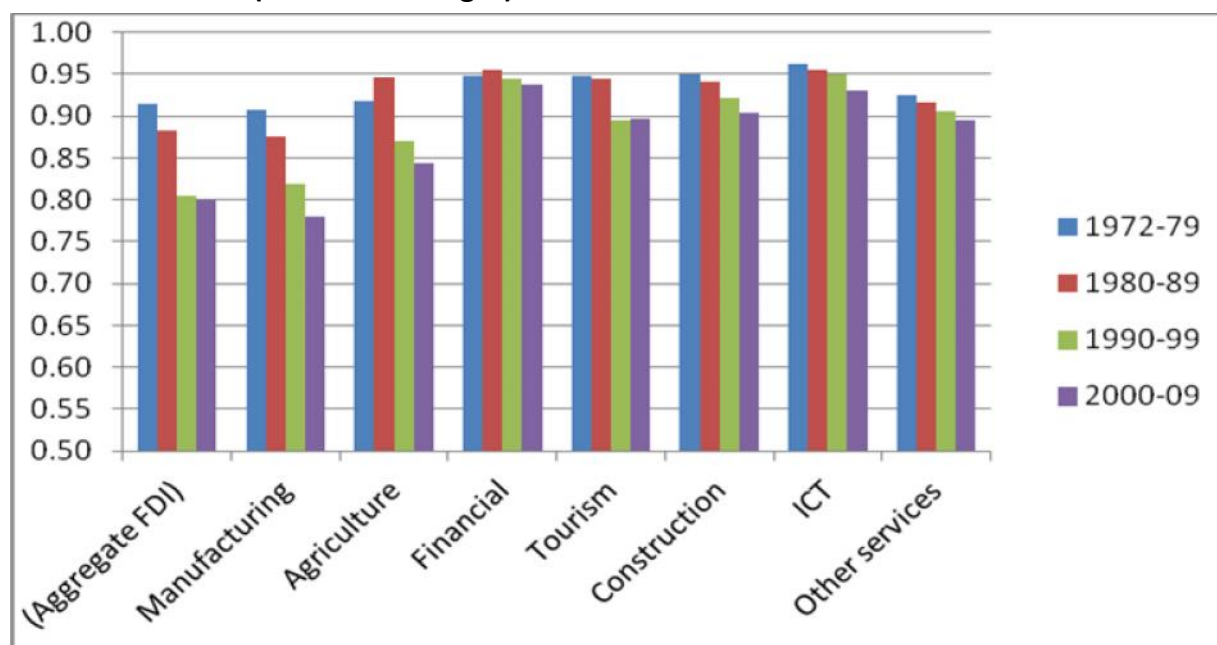
Figure 14: Evolution of geographical concentration FDI by sector in 1972–2009, according to coefficient of variation (CV) (decade's averages)



Note: Author's calculation based on real inflows of sectoral FDI in Egypt at the governorate level.

²⁶ Our dataset further suggests differences in the regional distribution of manufacturing FDI according to FDI origin. For example, the governorate Sharkia in Lower Egypt is the top recipient of manufacturing FDI stock from Arab countries (17%), while it ranks only sixth in receiving non-Arab FDI (7%). On the other hand, Alexandria ranks first in accumulating non-Arab FDI stock (20%), but only fourth for Arab manufacturing FDI (12%). For reasons of brevity, we do not report the data on the geographical distribution of FDI by sector according to Arab versus non-Arab origin.

Figure 15: Evolution of geographical concentration FDI by sector in 1972–2009, according to Gini coefficient (decade's averages)



Note: See Figure 14.

4.2 FDI in the Agriculture Sector

The agriculture sector contributes to around 14% of GDP and is the largest employer in Egypt, employing around one-third of the labour force in 2009 (AfDB, 2009). The private sector's contribution to agricultural investments remarkably increased from only 4% in the early 1970s to more than 60% in the 2000s (AfDB, 2009).

4.2.1. Agricultural FDI at the National Level

The agricultural sector in Egypt did not attract a lot of FDI during our sample period. It did, however, see a significant increase of real FDI inflows in the second half of the last decade. In 2005–2009, the sector attracted 3.1 billion EGP (at 1992 prices) of real FDI, more than double the real FDI it received from the early years of FDI in the 1970s through 2004 (Figure 12). The biggest share of FDI to agriculture targets land reclamation and cultivation (FAO, 2009).²⁷

Despite the relatively small amount and fraction of FDI inflows that target the agricultural sector, FDI on average contributed 18% of the sector's private investments since the 1970s

²⁷ Note that the investment data in the agriculture sector does not include industrial sub-sectors related to the agriculture sector such as food or beverage industry.

(Table 4). The contribution has grown in the last two decades, reaching 24% of private investments in the 2000s. This indicates that private investment in agriculture in Egypt is relatively low, which, according to FAO (2009), is one of the sector's major problems.²⁸

As to the source of agricultural FDI, Arab countries accounted for two-thirds (67%) on average of our sample period (Figure 13). Their fraction reached 78% when agricultural FDI increased in the 2000s (Table A.4). Note, however, that agricultural FDI accounts for only 5% of Arab FDI inflows to Egypt during our sample period.

4.2.2. Agricultural FDI at the Governorate Level

Agricultural FDI is highly concentrated in Cairo, which accumulated 44% of the sector's FDI stock. Despite the strong spatial concentration of agricultural FDI in general (Gini=0.89; CV=3.37) and in Cairo in particular, the agricultural sector still shows the second highest geographical dispersion of FDI after the manufacturing sector (Table 5).

Column 4 of Tables 6 and 7 show a detailed regional breakdown of agricultural FDI stock in 2009. Agricultural FDI is mostly concentrated in Cairo (44%), Lower Egypt (22%), Giza (13%) and Upper Egypt (12%), that is, along the Nile River, whereas a smaller amount of agriculture FDI stock targeted the Suez Canal governorates (5%), the Frontier governorates (3%), and Alexandria (2%). Our data show that the fraction of Lower Egypt and Upper Egypt is about double and triple their fraction in aggregate FDI, respectively. Lower Egypt's governorate Sharkia actually ranks second after Cairo among the 27 Egyptian governorates in accumulating FDI stock (15%) and Upper Egypt's Aswan ranks fourth (10%). Although Giza (13%) ranks third in agricultural FDI, its fraction in agricultural FDI is less than half its fraction in aggregate FDI stock. Similar to the manufacturing sector, but different from all service sub-sectors, all Egyptian governorates received some agricultural FDI flows during the last

²⁸ Given that the private sector accounts for more than 60% of the sector's investments in the 2000s (AfDB, 2009), this indicates the low total investments in agriculture in Egypt. Additional issues facing the agriculture sector in Egypt are limited water resources, the institutional framework and fragmented land ownership (FAO, 2009). One further reason for the low foreign investments in agriculture might be the prohibition of agricultural land ownership for foreign individuals or corporations according to the Land/Real Estate Law 15 of 1963 (OECD, 2010).

four decades. However, and again similar to manufacturing, 15 of the 27 governorates (56%) accumulated less than 1% of agricultural FDI stock.²⁹

Figures 14 and 15 show lower geographical concentration of agricultural FDI at the governorate level in the last two decades. Between the 1980s and 1990s, the CV's mean dropped from 4.4 to 2.7 and the Gini coefficient's mean from 0.95 to 0.87. In the 2000s, the lower concentration level maintained or even decreased slightly more.

4.3. FDI in Financial Sector

4.3.1. Financial Sector's FDI at the National Level

Because of the financial reforms created by Egypt's open door policy in the 1970s, a large amount of FDI targeted the country's financial sector. In 1975–79, GAFI registered more than 6 billion EGP of real FDI (at 1992 prices) in this sector. The financial sector was further liberalized as part of the economic and financial reform programme in the 1990s.³⁰ The private sector's role significantly increased when Egypt saw major financial reforms in 2004 (World Bank, 2010).³¹ Financial FDI saw significant increases in 2005–2009, accounting for about 5 billion EGP at 1992 prices, which is more than the sector's real FDI in 1980–2004 (Figure 12).³²

The financial sector sees the largest contribution of FDI to private investments at the sectoral level, where FDI inflows accounted for one third of the sector's private investment on average of our sample period (Table 4). The contribution was even higher in the 2000s, constituting more than 45% of the sector's private investment. This shows that FDI still plays an important role in Egypt's financial sector, despite the decreasing fraction of Egypt's FDI inflows to it (see Figure 11).

Our dataset also shows that Arab and non-Arab countries contributed a relatively similar percentage to the sector's inflows, accounting for 55% and 45% of it on average of our

²⁹However, these governorates partly differ between the two sectors. For example, while Behera and Aswan are among the top recipients of agricultural FDI, they receive less than 1% of accumulated manufacturing FDI stock.

³⁰ Egypt's State information portal: <http://www.sis.gov.eg/En/Templates/Articles/tmpArticles.aspx?CatID=348>.

³¹ For example, the private sector became the major owner of the banking sector (World Bank, 2010).

³² For more information on the financial sector and its reforms in Egypt, see Poshakwale and Qian (2011).

sample's period, respectively (Figure 13). In the 2000s, the average annual contribution by non-Arab investors (55%) was slightly higher than Arab investors (45%) (Tables A.4 and A.5).

4.3.2. Financial Sector's FDI at the Governorate Level

Together with the ICT sector, the financial sector shows the highest FDI spatial concentration in Egypt (Gini=0.95; CV=4.3) (Table 5).³³ In fact, column 5 of Tables 6 and 7 show that FDI stock into the financial sector is extremely concentrated in Cairo and Giza, which account for 53% and 41% of it, respectively. That is, they accumulated together 94% of FDI stock into Egypt's second largest FDI sector. Further 5% targeted the Suez Canal governorate of Ismailia. 10 of 27 governorates have never received any financial FDI.

The Gini coefficient of the geographical distribution hardly changed during the last four decades and the CV shows only a slight decrease in the last two decades. This suggests a slight decrease of the geographical concentration of FDI in finance at the tail of the distribution. In fact, a closer look at our data shows that during the last two decades more financial FDI targeted governorates other than Cairo and Giza than during the 1970s and 1980s, when almost all inflows were directed to Cairo and Giza. Yet, the average CV in the 2000s is still as high as 3.9. That is, the standard deviation of financial FDI at the governorate level is still about 4 times its mean.

4.4 FDI in Tourism

Egypt's tourism sector, which is a major contributor to the country's revenues, is mainly and increasingly dominated by the private sector. More than 90% of the sector's investments are private at the end of our sample period (AfDB, 2009). The sector saw a boom in the 2000s before it was hit by the financial crisis (AfDB, 2009) and the uprising in Egypt.³⁴

4.4.1. Tourism FDI at the National Level

Egypt's tourism sector attracted some FDI flows in the 1970s and 1980s already. However, real FDI flows into tourism have been increasing since the 1990s (Figure 12). The Investment

³³ We cannot reject that difference in FDI concentration level in the finance and the ICT sectors is not different from zero at the 1% significance level, using both the paired t-test and the Wilcoxon signed rank sum test. However, their means are significantly different from all other sectors.

³⁴ The latter is not included in our sample period which ends in 2009.

Law No. 8 of 1997 offered higher incentives for foreign investments in tourism, allowing 100% foreign ownership in the previously restricted tourism sector (AfDB, 2009).³⁵ As in the other sectors, the country received the highest real inflows in 2005–2009, which amounted to 3.8 billion EGP (at 1992 prices).

Table 4 reveals the relevance of FDI for the private investments in Egypt's tourism sector. Similar to the manufacturing sector, FDI contributed to about one quarter of total private investments in tourism on average from 1972–2009. Although FDI inflows into tourism were quite low in the 1970s (Figure 12), the average percentage of FDI contribution to private investment in tourism was at its highest (40%), which indicates relatively low Egyptian private investments in tourism at that time. Even at the peak of FDI inflows to tourism during the 2000s, the FDI contribution to private investments is only 21%, reflecting a significant increase in the amount of Egyptian private investment in tourism.

Similar to the financial sector, the average contribution of Arab (52%) and non-Arab (48%) countries to tourism FDI is almost equal (Figure 13). In the 2000s, however, Arab countries accounted on average for only 42% of the larger tourism FDI inflows to Egypt (Table A.4)

4.4.2. Tourism FDI at the Governorate Level

The annual average of inequality indicators in Table 5 reveal a high geographical concentration of tourism FDI (Gini=0.92; CV=3.61). Cairo accounts for 40% of accumulated tourism FDI stock in 2009.³⁶ Column 6 of Tables 6 and 7 reveal the geographical breakdown of tourism FDI stock in 2009. Tourism FDI stock is mainly concentrated in Cairo (40%) and the Frontier governorates (39%). Among the Frontier governorates, tourism FDI is concentrated in two governorates which attract a large number of tourists: The Red Sea governorate and South Sinai governorate attracted 29% and 9% of tourism FDI stock, respectively. Additional tourism FDI stock is accumulated by Giza (11%), the Suez Canal Governorates (4%) and Upper Egypt (4%).³⁷ Alexandria and Lower Egypt receive very little tourism FDI.

³⁵ However, for investments in Sinai, prior ministerial approvals were still needed (AfDB, 2009).

³⁶ The concentration indicators' means are slightly higher than in the agricultural sector. However, the difference is statistically significant for only the Gini coefficient, not for the CV, indicating that the higher concentration of tourism FDI is more pronounced in the middle of the distribution.

³⁷ The tourism FDI to Upper Egypt mainly targets Aswan (3%), while Luxor interestingly hosts less than 1% of accumulated tourism FDI to Egypt.

Figures 14 and 15 show that the geographical concentration of tourism FDI inflows decreased in the last two decades, according to both inequality indicators. The CV remarkably dropped from an average of 4.4 in the 1970s and 1980s to 3 in the 1990s and 2000s.³⁸ In other words, our dataset reveals that the increase in tourism FDI inflows in the 1990s and 2000s (see Figure 12) went hand in hand with a lower geographical concentration.

4.5. FDI in Construction Sector

The labour-intensive construction sector in Egypt is showing strong growth.³⁹ The construction sector employs about 11% of labour force according to the Labour Force Sample Survey in 2009 and contributes to about 5% of GDP (AfDB, 2009).

4.5.1. Construction FDI at the National Level

Similar to the other sectors, Egypt saw the highest real FDI inflows in construction in 2005–2009 (3 billion EGP at 1992 prices, see figure 12). Table 4 reveals the contribution of construction FDI in the sector's private investments. From 1972–2009, FDI constituted an average of 16% of construction private investment, which is the lowest FDI contribution in private investment at the sectoral level. The FDI share was highest in the 1970s (30%), despite the small amount of construction inflows, which reflects the low Egyptian private investments in construction at that time. Despite the increase in construction FDI inflows in the 2000s, they account for only 18% of construction private investment. This is due to the increasing amount of Egyptian private investment targeting construction. In fact, while construction in Egypt used to be dominated by the public sector in the 1970s, the private sector accounts for more than 80% of all construction investment in the late 2000s (AfDB, 2009).

³⁸ Looking at our dataset in more detail reveals a shift in the destination of tourism FDI over time. The fraction of tourism FDI inflows to Cairo and Giza dropped from an annual average of 87% in the 1972–1989 to 50% in the 1990–2009. Tourism FDI began to target the touristy governorates of Red Sea and South Sinai only during the late 1980s and the early 1990s, respectively.

³⁹ This is mainly due to “favourable demographics, new regulations encouraging registration of home ownership, the entrance of a number of major Middle Eastern property developers, availability of mortgage financing, elimination of restrictions on real estate ownership by foreigners and relatively cheap prices compared to other countries in the region.” (AfDB, 2009).

Arab countries are major investors in Egypt's construction sector, accounting for 62% of FDI inflows on average of our sample in 1972–2009 (Figure 13). Our dataset reveals that construction is the only sector where Arab FDI was more than non-Arab FDI across all four decades (Tables A.4 and A.5). The Gulf countries are major investors in Egypt's construction sector (AfDB, 2009).

4.5.2. Construction FDI at the Governorate Level

Construction FDI is highly geographically concentrated in Egypt, as revealed by the sample's average of our inequality indicators in tTable 5 (Gini=0.93; CV=3.76). We cannot reject that the geographical concentration level of construction FDI is equal to that of tourism FDI, using both the paired t-test and the Wilcoxon signed rank sum test, but we reject that construction concentration is equal to other sectors. That is, construction FDI is on average less geographically concentrated than finance and ICT FDI, but more concentrated than manufacturing, agriculture, tourism and 'other services' FDI.

Column 7 of Tables 6 and 7 shows that construction FDI is highly concentrated in the densely populated governorates of Cairo and Giza, which accumulated 56% and 24% of FDI stock in 2009, respectively. Other attractive locations for construction FDI were the governorates Alexandria (5%), Suez (5%) and Red Sea (5%). The remaining 5% were scattered among 18 governorates, each receiving less than 1%. Four of 27 Egyptian governorates (15%) have not received any construction FDI. On the regional level, the Suez Canal governorates and the Frontier governorates attracted 6% of FDI stock each. Lower Egypt attracted only 2% and hardly any construction FDI targets Upper Egypt.

The development of both distributional inequality indicators in Figures 14 and 15 reveal a decrease in the geographical concentration of construction FDI flows at the governorate level over the last four decades. The CV decreased from an average of 4.3 in the 1970s to 3.1 in the 2000s, the Gini coefficient from 0.95 to 0.90. Our dataset shows that the average FDI inflows to Cairo and Giza fall from more than 90% in 1972–1989 to about 66% in 1990–2009.

4.6. ICT FDI

The ICT sector has experienced remarkable growth in Egypt since the 1990s. Egypt was able to attract several multinational companies to this sector (UNCTAD, 2011). According to a recent survey that covers 200 international companies, Egypt is the 4th most preferred location for contact services behind the Czech Republic, Chile and India (UNCTAD, 2011). The 2000s saw a significant investment increase in the sector, with the private sector playing an increasingly important role.⁴⁰ In 2009, the ICT sector contributed to about 4% of real GDP (AfDB, 2009).

4.6.1. ICT Sector's FDI at the National Level

FDI in the ICT sector increased dramatically in the mid-2000s. In 2005–2009, Egypt's ICT sector received real FDI inflows of 3 billion EGP, which is more than double the amount received in all previous years (Figure 12). There are several reasons for this development; the deregulation of the telecommunication sector in 2005, emerging private-public-partnerships in the ICT sector and the establishment of regional call centers for offshoring IT and IT system services (AmCham Egypt, 2008). These were facilitated by the establishment of the so-called 'Smart Village' for IT industry in Giza (UNCTAD, 2011).

Table 4 reveals the contribution of FDI in ICT private investment in 1972–2009. On average, FDI inflows account for 22% of private investment in the ICT sector in our sample period, which equals the average contribution of aggregate FDI to total private investment in Egypt. In the 1970s, FDI played only a minor role in the negligible ICT sector in Egypt. The average contribution of FDI inflows in ICT over the last three decades, however, was 28%. The share is only slightly larger (30%) when the sector saw a remarkable increase of FDI inflows in the 2000s, reflecting the overall growth of private investment in ICT.

Similar to the tourism and finance sectors, Arab and non-Arab countries contribute almost equally to FDI inflows in the ICT sector, accounting for 47% and 53% on average of our sample period, respectively (Figure 13).

⁴⁰ While only about 50% of ICT investments were private in 2003/04, the private investment share reached 88% in 2007/08 (AfDB, 2009).

4.6.2. ICT Sector's FDI at the National Level

Together with the finance sector, FDI in the ICT sector shows the highest degree of spatial concentration as revealed by the sample's average of our inequality indicators in Table 5 (Gini=0.95; CV=4.38). It is extremely clustered in Giza, which accounts for 90% of ICT FDI stock in 2009 (Table 6). According to UNCTAD (2011), this extreme spatial concentration of FDI in ICT sector is induced by two factors. First, ICT services are, in general, easily tradable both domestically and internationally. In Egypt, the operations of foreign ICT companies are mainly part of outsourcing and offshoring activities.⁴¹ Second, Giza is home to the so called Smart Village, which provides the necessary infrastructure for ICT companies. Thus, most ICT multinational companies and ICT enterprises are located there. Cairo receives 7.5% of ICT FDI stock, while only 2% of the sector's FDI was directed to governorates other than Cairo and Giza (Table 6).

Both geographical inequality indicators shown in Figures 14 and 15 show a decrease in concentration over the last four decades. However, the average Gini coefficient in the 2000s was still as high as 0.93 and the CV was 3.9. A closer look at our dataset shows that around 10% of ICT FDI targeted governorates other than Cairo and Giza in the 2000s.

4.7. FDI in 'other services'

According to GAFI, 'other services' include consultancy, petroleum services, trade services, education and human resources, health as well as general services. The private sector increasingly contributes to investments in many service activities in Egypt.⁴²

4.7.1. 'Other Services' FDI at the National Level

The activities that fall under the category 'other services' became a major target of FDI to Egypt in the 2000s. The low real FDI inflows in 'other services' in the 1970s–1990s saw a significant increase in the 2000s (Figure 12). Real FDI flows in 'other services' increased from 0.7 billion EGP in 1995–1999 to 2.6 billion EGP in 2000–2004, reaching 6.7 billion EGP in 2005–2009. In the 2000s, FDI contributes 29% of private investment in 'other services',

⁴¹ According to an online survey by UNCTAD, many foreign companies indicated to use Egypt as a platform to offer operation services for mainly English, but also Arabic, French and German speaking markets abroad (UNCTAD, 2011).

⁴² For example, the private sector accounts for 95% of investments in internal trade, 46% in education and 39% in health in 2007/08, compared to 83%, 13% and 28% in 2003/04, respectively (AfDB, 2009).

which is triple its contribution in the 1990s (9.8%) and about 4.5 times its share in the 1980s (6.4%).

Similar to the manufacturing sector, non-Arab countries, on average, account for 64% of FDI in 'other services' for our sample period in 1972–2009, whereas Arab countries contribute 36% (Figure 13). When FDI inflows in 'other services' significantly increased in the 2000s, the contribution of non-Arab countries grew to 70% (Table A.5).

4.7.2. 'Other Services' FDI at the Governorate Level

Similar to the finance and construction sectors, FDI into 'other services' is highly concentrated in Cairo and Giza, which account for 48% and 35% of FDI stock in 2009, respectively, as column 9 of Table 6 shows. That is, the governorates Cairo and Giza accumulated 83% of FDI stock in 'other services' during the final year of our sample. The geographical distribution shows that 98% of FDI stock was accumulated by only 7 of 27 governorates (26% of governorates). The governorates of Alexandria (4.5%), North Sinai (3.8%) and Port Said (3.2%) received noticeable FDI stock, while little FDI stock was received by the eight governorates in Lower Egypt (2.5%) or the eight governorates in Upper Egypt (0.3%).

The significant spatial concentration is reflected by our concentration indicators in Table 5 (Gini=0.91; CV=3.4). The spatial concentration of FDI only slightly decreased over the last four decades compared to the other sectors (Figures 14 and 15). In fact, our dataset reveals that the large FDI inflows in 'other services' in the mid-2000s was still largely directed to Cairo and Giza.

5. Conclusion

We have compiled a unique panel dataset of FDI at the governorate level in Egypt for the period 1972–2009. Our dataset also allowed us to disaggregate FDI by economic sector and point of origin. In addition to the manufacturing and agricultural sectors, our dataset differentiates between five sub-groups of the service sector; finance, tourism, construction,

ICT and a category 'other services'. The dataset also includes domestic private investment sector by sector.

In this paper, we limit ourselves to a description of the multidimensional dataset. Our key findings are:

First, both Arab and non-Arab countries play a major role for FDI in Egypt over the period 1972–2009.

Second, most 'non-petroleum greenfield FDI' inflows to Egypt target the service (53%) and manufacturing (44%) sectors, whereas the agriculture sector received very little FDI (4%).

Third, while both Arab and non-Arab countries make significant FDI contributions to each economic sector, more manufacturing and 'other services' FDI is contributed by non-Arab countries (62% and 64%, respectively), and more agriculture and construction FDI comes from Arab countries (67% and 62%, respectively). The finance, tourism and ICT sectors receive, on average, an almost equal share of Arab and non-Arab investment in 1972–2009.

Fourth, all sectors in Egypt saw a significant increase in real FDI inflows in the mid-2000s.

Fifth, FDI plays a major role in private investment in all economic sectors. On average, FDI constitutes 16–32% of sectoral FDI. With the exception of tourism and construction, the importance of FDI inflows by sector was highest when FDI inflows increased in the 2000s. The financial sector (45%) and the manufacturing sector (32%) saw the highest contribution.

Sixth, FDI in Egypt is extremely unevenly distributed. Egypt consists of 27 governorates, but more than 60% of 'non-petroleum greenfield FDI' stock was directed to only two governorates, Cairo and Giza. While the top 10 FDI recipient governorates received 91% of FDI stock, the bottom 10 FDI recipient governorates together attracted less than 2% of FDI stock.

Seventh, the disparity of FDI geographical distribution in Egypt decreased until the mid/late 1990s. However, the substantial increase in FDI inflows in the 2000s did not promote a further decrease in FDI spatial concentration.

Eighth, Arab and non-Arab FDI show some differences in their regional distribution.

Finally, we also find differences in the degree of FDI geographical concentration between economic sectors in Egypt. Manufacturing FDI shows the lowest spatial concentration, while service FDI shows the strongest. The latter is mostly articulated in the ICT and finance sectors. Thus, our geographical concentration indices suggest a higher localization of the

service sector compared to the manufacturing sector. This is in line with predictions made by Krugman (1991) who argues that technology tends to increase the concentration of services because of improvements in information transmission. Moreover, some services such as tourism or construction are more site-based and are therefore non-tradeable.

Our unique and multidimensional dataset should be helpful for a variety of thorough empirical investigations on FDI in Egypt. Future research could, for example, analyse the determinants as well as growth and development effects of FDI in Egypt at the governorate level. It would be also interesting to update the dataset beyond 2009—when the data are made available. This would allow an investigation of the impact of the Egyptian uprising in 2011 and the subsequent political instability on FDI sectoral, regional and origin distribution.

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APPENDIX

Appendix A: Tables

Table A.1: Composition of FDI in Egypt (in billion USD)

	2005/06		2006/07		2007/08		2008/09		2009/10		Average 2005/06- 2009/10
	Value	%	Value	%	Value	%	Value	%	Value	%	%
Greenfield & Expansion	3.3	54.1%	5.2	46.8%	6.40	48.5%	2.3	28.4%	2.7	39.7%	43.5%
Privatization	0.9	14.8%	2.8	25.2%	2.30	17.4%	0.3	3.7%	0.2	2.9%	12.8%
Oil and Gas	1.8	29.5%	3	27.0%	4.10	31.1%	5.4	66.7%	3.6	52.9%	41.4%
Real Estate	0.1	1.6%	0.1	1.0%	0.40	3.0%	0.1	1.2%	0.3	4.4%	2.2%
Total	6.1	100%	11.1	100%	13.20	100%	8.1	100%	6.8	100%	

Source: Central Bank of Egypt.

Table A.2: Distribution of Arab versus non-Arab FDI stock according to governorates and regions, 2009

Location	Aggregate FDI	Arab FDI	Non-Arab FDI	Aggregate FDI: Rank	Arab FDI: Rank	Non- Arab FDI: Rank
Cairo	33.58	30.45	36.33	1	2	1
Giza	27.89	33.71	24.00	2	1	2
Alexandria	7.46	4.91	9.43	3	5	3
<i>Suez Canal Governorates</i>	10.04	9.22	10.73			
Suez	5.53	4.08	6.61	4	7	4
Ismalia	2.34	4.32	0.93	7	6	13
Port Said	2.18	0.82	3.20	8	15	6
<i>Lower Egypt</i>	11.30	11.91	11.00			
Sharkia	4.24	5.93	3.07	5	3	7
Damietta	2.17	0.48	3.43	9	16	5
Kalyoubia	2.16	1.73	2.49	10	9	9
Menoufia	1.32	1.45	1.24	11	11	11
Behera	0.94	1.96	0.20	15	8	21
Gharbia	0.26	0.12	0.36	20	22	18
Dakahlia	0.14	0.22	0.08	24	19	25
Kafr El-Sheikh	0.08	0.03	0.12	26	25	23
<i>Upper Egypt</i>	3.65	4.02	3.43			
Beni Suef	1.12	0.94	1.27	12	14	10
Aswan	0.98	1.38	0.69	14	12	15
Fayoum	0.68	1.32	0.21	17	13	20
Menia	0.34	0.20	0.44	18	21	17
Qena	0.27	0.02	0.46	19	27	16
Assiut	0.15	0.04	0.22	22	24	19

Luxor	0.10	0.08	0.12	25	23	24
Suhag	0.02	0.02	0.02	27	26	27
Frontier Governorates	6.08	7.54	5.09			
Red Sea	3.84	5.07	3.00	6	4	8
South Sinai	1.09	1.59	0.75	13	10	14
North Sinai	0.76	0.21	1.17	16	20	12
Matrouh	0.24	0.37	0.15	21	17	22
NewValley	0.14	0.30	0.02	23	18	26

Source: Author's calculations based on GAFI data.

Table A.3: Detailed breakdown of economic activities in each sector

Sector	Included economic activities
Manufacturing	Mining, wood, pharmaceuticals, textiles, chemicals, metal, engineering, building materials, food and beverages
Agriculture	Land reclamation and cultivation, stock breeding (livestock), poultry farming, fishing, slaughter houses
(Other) Services	Consultancy, petroleum services, trade services, education and human resources, health, general services
Construction	Housing, infrastructure, contracting, real estates, urban development
Tourism	Tourism
Financial	Banks, investment companies
Information and Communication Technology (ICT)	Information technology, system technology services

Source: GAFI (in Arabic).

Table A.4: Arab FDI fraction by sector (decade's average, in %), 1972–2009

Years	Manufacturing	Agriculture	Finance	Tourism	Construction	ICT	Other Services	All sectors
1972-79	28.2%	34.1%	29.4%	44.6%	67.9%	0.0%	20.8%	29.0%
1980-89	44.2%	78.9%	64.4%	61.1%	59.0%	56.9%	42.5%	48.0%
1990-99	39.6%	60.9%	69.7%	58.0%	59.1%	41.9%	44.4%	48.8%
2000-09	36.6%	78.1%	45.7%	42.1%	62.6%	50.5%	29.8%	39.4%
Average (1972-2009)	37.6%	67.1%	54.8%	52.0%	61.5%	46.9%	35.9%	41.9%

Source: Author's calculations based on GAFI data.

Table A.5: Non-Arab FDI fraction by sector (decade's average, in %), 1972–2009

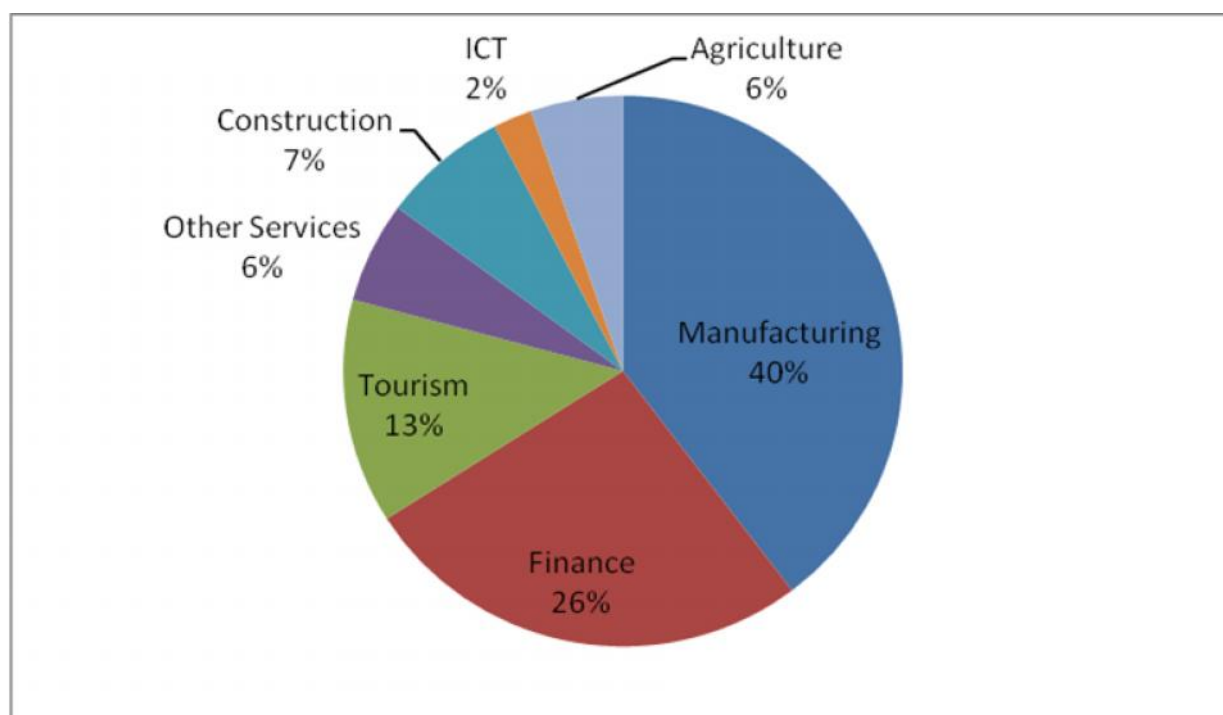
Years	Manufacturing	Agriculture	Finance	Tourism	Construction	ICT	Other Services	All sectors
1972-79	71.8%	65.9%	70.6%	55.4%	32.1%	100.0%*	79.2%	71.0%
1980-89	55.8%	21.1%	35.6%	38.9%	41.0%	43.1%	57.5%	52.0%
1990-99	60.4%	39.1%	30.3%	42.0%	40.9%	58.1%	55.6%	51.2%
2000-09	63.4%	21.9%	54.3%	57.9%	37.4%	49.5%	70.2%	60.6%
Average (1972-2009)	62.4%	32.9%	45.2%	48.0%	38.5%	53.1%	64.1%	58.0%

Source: Author's calculations based on GAFI data.

*This number should be taken with some caution, since the 1970s saw an FDI inflow in 1975 only (1.1 million EGP in 1992 prices). The full FDI amount originated from non-Arab countries.

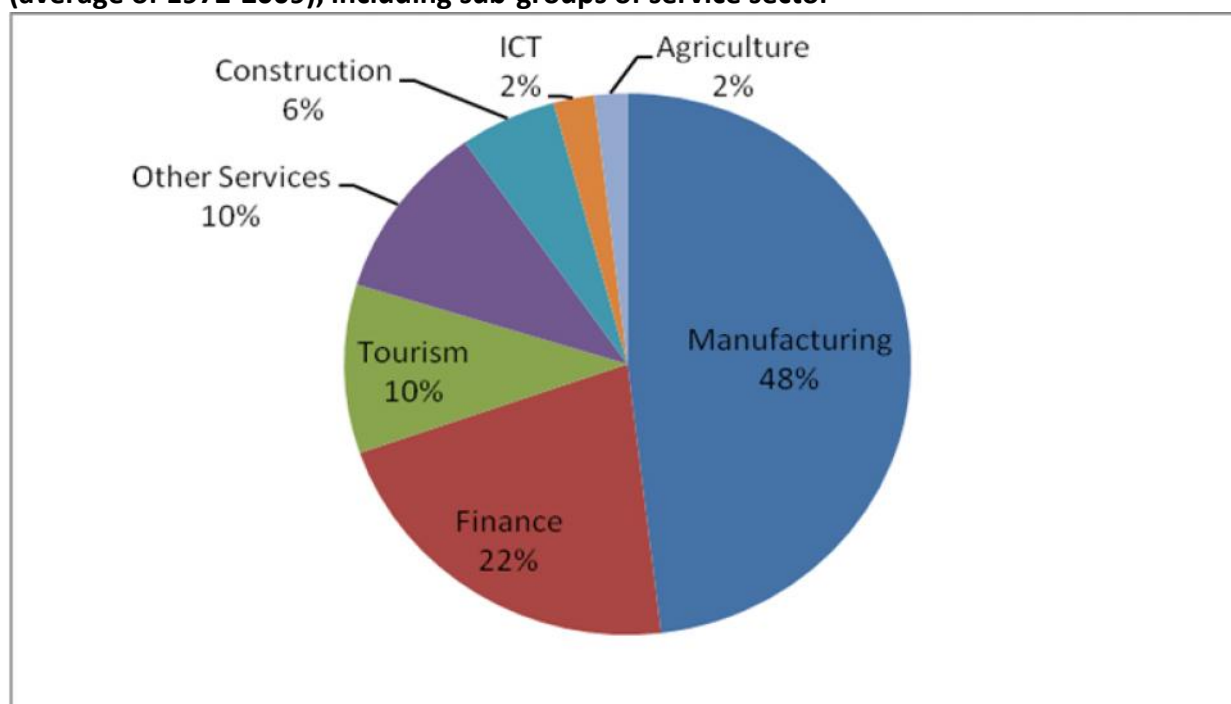
Appendix B: Figures

Figure A.1: Sectoral composition of ‘non-petroleum greenfield’ Arab FDI in Egypt (average of 1972-2009), including sub-groups of service sector



Source: Author's calculations based on GAFI data.

Figure A.2: Sectoral composition of ‘non-petroleum greenfield’ Non-Arab FDI in Egypt (average of 1972-2009), including sub-groups of service sector



Source: Author's calculations based on GAFI data.