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Wan-Hsin Liu
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Regional Concentration of FDI in Post-reform India: A District-level Analysis

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Abstract: We analyze the concentration of FDI in India at the district level, based on project-specific location choices since the reform program in the early 1990s. The decomposition property of the Theil index allows us to trace changes over time in the overall concentration of FDI to changes in concentration between and within subgroups of districts. We also differentiate between major types and sources of FDI. We find that the extensive margin of concentration persistently increased, with an ever larger number of districts not attracting any projects. The intensive margin increased as well but the increase leveled off in the most recent past. These trends hold for essentially all types and sources of FDI, while the average level of concentration varies considerably between these types and sources.

Keywords: FDI, project location, Theil index, decomposability, India

JEL classification: F23, R12

Frank Bickenbach

Kiel Institute for the World Economy
Hindenburgufer 66
24105 Kiel, Germany
+49(0)431-8814-274
Email: frank.bickenbach@ifw-kiel.de

Wan-Hsin Liu

Kiel Institute for the World Economy
Hindenburgufer 66
24105 Kiel, Germany
+49(0)431-8814-269
Email: wan-hsin.liu@ifw-kiel.de

Peter Nunnenkamp

Kiel Institute for the World Economy
Hindenburgufer 66
24105 Kiel, Germany
+49(0)431-8814-209
Email: peter.nunnenkamp@ifw-kiel.de

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1. Introduction

The liberalization of foreign direct investment (FDI) represented an important element of India's reform program in the early 1990s.[1] According to Balasubramanyam and Mahambare (2003: 46), the reforms "marked a major break from the earlier dirigiste regime with its regulation of the spheres of foreign affiliate participation and its modes of operation." India's Minister of Finance, P. Chidambaram, claimed that "FDI worked wonders in China and can do so in India" (*Indian Express*, November 11, 2005). Indeed, FDI inflows are widely perceived to enhance productivity and income growth in developing host countries by providing access to superior technologies and management know-how (see, e.g., OECD 2002).

However, the example of China also points to the limitations of FDI liberalization in promoting the host country's economic development. In particular, FDI in China appears to be heavily concentrated in the coastal area (Fujita and Hu 2001; Zhang and Zhang 2003). Wei et al. (2009) argue that this concentration has contributed to the increasing disparity in regional income and growth since the late 1970s. Regarding India, some tentative evidence points into the same direction. It has been noted repeatedly that FDI flows to India are heavily concentrated in a few states (e.g., Basu 2005; Purfield 2006). Mukim and Nunnenkamp (2012) observe that various districts did not receive any FDI inflows since the early 1990s. Nunnenkamp and Stracke (2008) argue that the concentration of FDI in a few relatively advanced regions could have prevented FDI effects from spreading across the Indian economy.

Against this backdrop, we provide a systematic assessment of the concentration of FDI inflows at the district level in post-reform India. We draw on (unpublished) data from the Department of Industrial Promotion and Policy (DIPP) of the Ministry of Commerce and

[1] For details on the liberalization of FDI regulations, see for example CUTS (2003) and FICCI (2005).

Industry on FDI projects approved during the 1991-2005 period.[2] We calculate Theil indices based on the number of FDI projects in the different districts and periods of time. This allows us to track the degree of FDI concentration over time. Furthermore, we differentiate between different types and sources of FDI, including technical cooperation agreements and projects of non-resident Indians, in order to identify the major driving forces underlying the concentration of FDI in India. Making use of the decomposition property of the Theil index allows us to trace changes over time in the overall concentration of FDI (or differences in concentration for different types or sources of FDI) to changes (differences) in the corresponding concentration within and between different subgroups of districts.

The paper is organized as follows. We summarize the related literature in Section 2. Section 3 offers details on the data and approach. We present our empirical results in Section 4, and conclude in Section 5.

2. Related literature

The so-called Monterrey Consensus achieved at the UN Conference on Financing for Development in Mexico in March 2002 stressed that FDI inflows provide an important means to achieve "sustained economic growth over the longer run" (United Nations 2003: 9). The UN summit concluded that creating the necessary conditions to facilitate FDI inflows is the central challenge for various developing countries which had failed to attract the attention of foreign investors. In other words, the concentration of FDI "in a few leading Southeast Asian and Latin American economies" (De Mello 1997: 2) was regarded to be the major impediment to spreading the benefits of FDI throughout the developing world.[3]

[2] However, we do not use approvals for 1991, 1992, and 2005 for the quantitative analysis in this paper. See Section 3 for details.

[3] See also the OECD (2002: 7) which noted that FDI flows to developing countries are "spread very unevenly." Nunnenkamp and Thiele (2013) find that the 20 top performers persistently accounted for more than 80% of FDI stocks in all developing countries. For details, see http://unctadstat.unctad.org/.

Insufficient or lacking access to FDI can also be regarded to be a major problem within countries. FDI appears to be regionally concentrated within developed as well as developing host countries. For instance, FDI in the United States is located primarily in a few large and relatively advanced states. Just four major metropolitan US areas (out of 170 economic areas) accounted for one third of all FDI cases considered by Chung and Alcácer (2002).[4] New greenfield FDI in Portugal in the 1982-1992 period clustered heavily around the two largest cities of Lisbon and Porto (Guimaraes et al. 2000). China's coastal areas attracted about 90% of total inflows of FDI in the 1986-1998 period (Zhang and Zhang 2003). UNCTAD (2011: iii) essentially follows the reasoning of the Monterrey Consensus when discussing the distribution of FDI within least developed countries (LDCs): "FDI contributed towards promoting pro-poor growth […]. However, the concentration of FDI in enclaves of export-oriented primary production with limited employment, technological and productivity linkages remains the main challenge in most LDCs."

Tracking the location choices of foreign investors more systematically seems necessary as the concentration of FDI tends to have wider implications. In particular, the regional concentration of FDI often appears to go hand in hand with agglomeration of economic activity in general. This does not necessarily imply that causation is always running from FDI to increasing regional disparity. Foreign investors may rather react to the attractions of existing economic agglomerations. It is well known from cross-country studies that FDI is generally flowing to large and relatively advanced markets.[5] Similarly, FDI is attracted by larger regional markets within particular host countries. For instance, the gross state product

[4] A quarter of the foreign-owned manufacturing firms analyzed by Coughlin et al. (1991) were located in just two US states (California and New York). See also Coughlin and Segev (2000) for an analysis at the level of US counties.

[5] Indeed, the size of local markets proved to be the only robust FDI determinant in the extreme-bound analysis of Chakrabarti (2001).

of US states enters significantly positive in the analysis of Bobonis and Shatz (2007).[6] In the Indian context, Mukim and Nunnenkamp (2012) use population figures to show that the size of local markets is an important determinant of FDI at the district level.

All the same, the available evidence justifies concerns that concentrated FDI may cause wider regional income and growth disparities. FDI-related spillovers – that are crucially important for FDI to have positive effects on growth – are highly likely to have a spatial dimension, i.e., the relevance of spillovers weakens with distance. Girma and Wakelin (2007) address the regional dimension of FDI-related spillovers in their analysis of the UK electronics industry. They find spillovers within the region, whereas spillovers from outside the particular region do not play a significant role – indicating narrow geographical limits to the impact of FDI. Bode et al. (2012) find spatial proximity to be important for spillovers from foreign firms operating in US states. Several earlier studies suggest that FDI intensified the spatial clustering of industrial activity within the United States by locating where agglomeration economies could be reaped (e.g., Coughlin et al. 1991; Head et al. 1995; Bobonis and Shatz 2007).[7]

Among developing host countries, the combination of high growth and rising inequality in China after opening up to FDI and world markets has received particular attention. Ma (2006) argues that FDI contributed to rising wage inequality between China's coastal provinces and its hinterland. As noted before, the coastal provinces have attracted most of Chinese FDI inflows. Foreign-owned firms located in coastal provinces paid higher wages, relative to the average local firm, as they enjoyed favorable access to markets and suppliers of inputs. In a

[6] The size of the population in UK regions carries a negative sign in the analysis of Wren and Jones (2011), while higher per-capita income is associated with a larger number of FDI projects.

[7] More specifically, foreign investors tend to follow their peers when deciding on where to locate within a particular host country. See Mukim and Nunnenkamp (2012) as well as Nunnenkamp and Mukim (2012) for empirical evidence on peer effects on location choices within India; see also the literature given there.

similar vein, Wei et al. (2009) find that "it is the uneven distribution of FDI instead of FDI itself that has caused regional growth differences" between Chinese regions.[8]

China's experience seems to be particularly relevant for post-reform India. The systematic measurement of FDI concentration, as described in more detail in the subsequent section, does not attempt to assess the distributional consequences of increasing FDI in India since the early 1990s. Yet it alerts policymakers that booming FDI in India may involve similar trade-offs as in China.

3. Data and method

Data

We draw on unpublished data for about 27,000 FDI projects, including projects of technical cooperation without foreign equity stakes (so-called technical cases), collected by the Department of Industrial Promotion and Policy (DIPP) of the Ministry of Commerce and Industry.[9] This database presents detailed information in various respects. In the context of the present paper, it is particularly important that the database typically lists the district where the project is located (this information is available for more than 70% of all projects).

Furthermore, projects can be differentiated along several dimensions. Apart from separating technical cases from FDI projects in the stricter sense, the latter can be classified into projects with minority and majority stakes of foreign equity. While technical cases figured most prominently at the beginning of the period of observation, projects with majority foreign equity stakes gained importance over time. The database also identifies the country of origin

[8] Earlier studies finding that globalization, i.e., FDI and trade, contributed to widening income disparity between China's coastal area and the hinterland include Fujita and Hu (2001) as well as Zhang and Zhang (2003).

[9] For highly aggregated data on different types of FDI in India, see various issues of the Handbook of Industrial Policy and Statistics (e.g., Government of India 2008).

for most FDI projects. Not surprisingly, foreign partners from OECD countries participated in more than two thirds of all projects. Among OECD partners, North America and the European Union (mainly Germany and the United Kingdom) account for similarly large numbers of projects. Asian partner countries fall into two groups: the group of developed East Asian countries (Japan, South Korea, Hong Kong and Taiwan) and a group of eleven Southeast Asian partner countries. Mauritius stands out among the remaining partner countries. However, Mauritius is rarely the true country of origin; FDI is often channeled through Mauritius for tax reasons.[10] Interestingly, the database also includes projects with so-called non-resident Indians (NRI) as "foreign" partners. One might suspect that the location choices of NRI differ from those of truly foreign partners as NRI may have better knowledge of local needs and profit opportunities in relatively remote Indian districts.

The database covers projects approved in the 1991-2005 period. However, entries are incomplete particularly at the beginning of this period and also in the final year. Most importantly, information about the exact location is missing for most projects approved in 1991 and 1992. Consequently, the subsequent analysis is restricted to the 1993-2004 period, for which there are altogether 18,640 projects with information about the district where the project is located. It should also be noted that we use the number of projects, rather than approved amounts, to calculate our concentration measures. It cannot be ruled out that some approved projects were not realized at all. Yet the count measure of FDI projects is less likely to distort the results on concentration, compared to the amount of approved FDI which routinely and considerably deviates from realized FDI.

Measuring the concentration of FDI

In economics, and the social sciences more generally, a large number of alternative inequality measures have been defined and applied to the analysis of various forms of inequality, or

[10] Hence, we do not consider Mauritius as a distinct source of FDI in Section 4 below.

concentration, between (groups of) individuals, regions or countries.[11] In this paper, we measure the concentration of FDI projects across Indian districts – or equivalently, the inequality of Indian districts with respect to the number of attracted FDI projects – by means of the Theil index. The Theil index is defined as

$$\mathrm{T}^{\mathbf{I}} = \frac{1}{I}\sum_{i=1}^{I}\frac{X_i}{\overline{X}}\ln\left(\frac{X_i}{\overline{X}}\right), \qquad (1)$$

where I is the number of observations, in our case the 317 Indian districts that received at least one FDI project between 1993 and 2004 and **I** is the set of these districts. X_i (i=1, …, I) is the realisation of the variable of interest, here the number of FDI projects attracted to district i; and $\overline{X} = \frac{1}{I}\sum_{i=1}^{I} X_i$ is the average number of FDI projects per district.

The Theil index is equal to zero (no concentration) if all districts receive the same number of FDI projects (i.e., X_i is the same for all $i \in \mathbf{I}$) and is strictly positive otherwise. It takes its maximal value $\mathrm{T}^{\mathbf{I}}_{\max} = \ln(I)$ if all FDI projects are concentrated in just one district.

The Theil index is arguably the most prominent member of the so-called general entropy (GE) class of inequality measures. All measures from this class satisfy a number of normative criteria, among which the additive decomposability of the measure will be of particular importance to our analysis.[12] Additive decomposability implies that, for any mutually exclusive (disjoint) and exhaustive set of subgroups (subsets) of districts, the total inequality

[11] The most frequently applied inequality measures are: the Gini coefficient, the coefficient of variation, and the generalised entropy (GE) class of inequality measures. This class includes the so-called Theil index, which is also known as the GE(1) measure.

[12] The other criteria satisfied by the GE class of inequality measures are the "weak principle of transfer", "scale independence", and the "principle of population". All inequality measures that satisfy these properties (including the decomposition property) are ordinally-equivalent transformations of GE measures (for a discussion see Cowell 2011, Section 3.4). The GE measures differ from each other with respect to the weights they give to changes in the different parts of the distribution of the variable considered (in our case the number of FDI projects in the different districts). Relative to the Theil (GE(1)) index, the GE(0) index, for example, is more sensitive to changes in the lower tail of the distribution, whereas the GE(2) index, which is a simple monotonic transformation of the frequently used coefficient of variation (GE(2)=0.5CV^2), is more sensitive to changes in the upper tail of the distribution.

across districts can be meaningfully decomposed into the sum of the inequality *within* these subgroups (within-group component) and the inequality *between* these subgroups (between-group component).[13] More specifically, the within-group component corresponds to a weighted sum of the levels of inequality between the districts *within* each group[14]; and the between-group component corresponds to the level of inequality between the different group averages. The decomposition property of the Theil index thus allows us to trace changes over time in the overall concentration of FDI projects across Indian districts (or differences in concentration for different types or sources of FDI) to changes (differences) in the corresponding concentration within and between different subgroups of districts.

In our empirical analysis we make extensive use of the decomposition property of the Theil index. While the decomposition rule applies to an arbitrary number of subsets, we will apply it only to the case of just two subsets.[15] For the case of two subsets the decomposition of the Theil index can be formally described as follows:

Let **J** and **K** denote two groups of districts that are mutually exclusive and exhaustive subsets of **I** (i.e., $\mathbf{J} \cap \mathbf{K} = \varnothing$ and $\mathbf{J} \cup \mathbf{K} = \mathbf{I}$). The Theil index $T^{\mathbf{I}}$ from (1) can then be additively decomposed into a within-group component, $TW^{\mathbf{JK}}$, and a between-group component, $TB^{\mathbf{JK}}$, i.e.,

$$T^{\mathbf{I}} = TW^{\mathbf{JK}} + TB^{\mathbf{JK}}, \tag{2}$$

where

$$TW^{\mathbf{JK}} = \sum_{G=J,K} \frac{I_G}{I} \frac{\overline{X}_G}{\overline{X}} \sum_{i \in G} \frac{1}{I_G} \frac{X_i}{\overline{X}_G} \ln\left(\frac{X_i}{\overline{X}_G}\right) = \omega_J T^{\mathbf{J}} + \omega_K T^{\mathbf{K}} \text{ , with } \overline{X}_G = \frac{1}{I_G} \sum_{i \in G} X_i \tag{3}$$

[13] Other frequently used inequality measures, such as the Gini index or the coefficient of variation (CV) do not have this property.

[14] In the case of the Theil index the sum of these weights is always equal to one so that the within-group component is actually a weighted average of the group-specific inequality measures. Except for the Theil (or GE(1)) index this is true only for the GE(0) index but not for the other members of the GE class of inequality measures (see Bourguignon 1979).

[15] We will do so repeatedly, however; i.e., one of the subsets of the first partition will itself be further partitioned. Overall we will thus partition the set **I** into three disjoint subsets.

and $\quad \mathrm{TB}^{\mathbf{JK}} = \sum_{G=J,K} \frac{I_G}{I} \frac{\overline{X}_G}{\overline{X}} \ln\left(\frac{\overline{X}_G}{\overline{X}} \right).$ (4)

Note that $\omega_J + \omega_K = 1$, so that the within-group component $\mathrm{TW}^{\mathbf{JK}}$ is the weighted average of the Theil inequality indices, $\mathrm{T}^{\mathbf{J}}$ and $\mathrm{T}^{\mathbf{K}}$, for the two subgroups **J** and **K**.

In our empirical application we will, in a first step, consider the partition of **I** into the two subsets **Z**=$\{i \mid X_i = 0\}$, i.e. the set of all districts that have attracted zero FDI projects, and **N**=$\{i \mid X_i > 0\}$, i.e. the set of districts with nonzero (i.e., a strictly positive number of) FDI projects. For this specific case of subsets, (3) and (4) can be simplified to:[16]

$$\mathrm{TW}^{\mathbf{ZN}} = \sum_{i \in \mathbf{N}} \frac{1}{I_N} \frac{X_i}{\overline{X}_N} \ln\left(\frac{X_i}{\overline{X}_N} \right) = \mathrm{T}^{\mathbf{N}} \tag{5}$$

and $\quad \mathrm{TB}^{\mathbf{ZN}} = \ln\left(\frac{I}{I_N} \right).$ (6)

In this specific case, the within-group component $\mathrm{TW}^{\mathbf{ZN}} = \mathrm{T}^{\mathbf{N}}$ is itself a Theil index, so that we can further decompose it in the usual way. We partition the set **N** of districts with nonzero FDI projects into the set **H** that consists of the six districts that received the highest numbers of (overall) FDI projects between 1993 and 2004 (these are Mumbai, Delhi, Bangalore, Chennai, Pune and Hyderabad) and the set **M** of districts that received a medium or small (but positive) number of FDI projects (M=$\{i \mid X_i > 0$ and $i \notin$ H$\}$. By applying the decomposition rule (2)-(4) to this partition we get

$$\mathrm{TW}^{\mathbf{ZN}} = \mathrm{T}^{\mathbf{N}} = \mathrm{TW}^{\mathbf{HM}} + \mathrm{TB}^{\mathbf{HM}}, \tag{7}$$

[16] In deriving (5) and (6) we make use of the fact that for group **N** the weight ω_N from (3) is equal to 1 ($I_N \overline{X}_N = I\overline{X}$). As ln($x$) is not defined for $x = 0$ we substitute $x$ln(x) by $\lim_{x \to 0} x\ln(x) = 0$. For a similar decomposition in the context of trade diversification see Cadot et al. (2012).

where $TW^{\mathbf{HM}} = \omega_H T^{\mathbf{H}} + \omega_M T^{\mathbf{M}}$ is a weighted average of the Theil index for the group **H** of the six top FDI attractors among the districts and the Theil index for the group **M** of districts with a medium or small (but positive) number of FDI projects.

Overall, partitioning **I** into **Z** and **N** and, in a second step, partitioning **N** into **H** and **M** and partitioning the Theil index correspondingly allows us to decompose the (overall) Theil index $T^{\mathbf{I}}$ into four components

$$T^{\mathbf{I}} = T^{\mathbf{N}} + TB^{\mathbf{ZN}} = \omega_H T^{\mathbf{H}} + \omega_M T^{\mathbf{M}} + TB^{\mathbf{HM}} + TB^{\mathbf{ZN}}. \quad (8)$$

These four components represent the respective contributions of (i) the concentration of FDI within the group of the six districts with the highest number of FDI projects, (ii) the concentration of FDI within the group of districts that have a medium or small (but positive) number of projects, (iii) the difference between the average numbers of FDI projects between the group of the top-6 FDI attractors and the group of districts with a medium or small number of projects, and (iv) the (inverse of the) share of districts that attract at least one project. The first three components may be considered to represent the "intensive margin" of concentration (or inequality) and the last component to represent the "extensive" margin of concentration (inequality).

4. Empirical results

All projects

In a first step, we calculated the Theil index of concentration and its components (resulting from the two-step decomposition described in the previous section) for the total of all 18,640 FDI projects over the whole observation period 1993-2004 as well as for four 3-year intervals (1993-1995, 1996-1998, 1999-2001, and 2002-2004). The results are displayed in Table 1.

To get a better understanding of the interpretation of the different components and develop some intuition for their numerical values we first look at the results for the distribution of the aggregate numbers of FDI projects over the whole observation period (last column of Table 1). Recall that we take into account only those 317 districts that had at least one FDI project in at least one year of our observation period. Hence, there are no districts with zero observed FDI projects over the 1993-2004 period ($I = I_N$). As a consequence the between-group component of the first decomposition, TB^{ZN} from equation (6), is equal to zero. The overall Theil index of concentration T^I is then equal to the Theil index of the concentration across districts with non-zero FDI projects T^N, which itself is equal to the within-group component of the first decomposition TW^{ZN}. The value of that index is equal to 2.22.[17]

Partitioning the set of all 317 districts with a positive number of projects into the set of the six districts with the highest number of FDI projects over the whole observation period[18] and the 311 districts with a medium or small (but positive) number of FDI projects over the 1993-2004 period allows us to (further) decompose T^N according to equation (7). This decomposition shows that the larger part of total concentration comes from the resulting between-group component, TB^{HM}, which takes a value of 1.66. This value reflects the inequality between the average number of projects attracted by the top-6 districts (which equals 10,943/6 ≈ 1,824 projects) and the average number of projects of the other 311 districts (which is 7,697/311 ≈ 24.75 projects). The within-group component, TW^{HM}, which takes a value of 0.56, reflects the concentration of FDI projects across districts within these two groups of districts. The larger part of this component reflects the concentration of projects across the 311 districts with medium and small numbers of projects ($\omega_M T^M = 0.49$), whereas

[17] The maximal value of the Theil index with 317 observations (number of districts) is equal to ln(317) ≈ 5.76. If we had based our calculations on the set of all Indian districts (which was 593 in 2001), we would have $I = 593$, the between-group component would according to (6) be equal to ln(593/317) ≈ 0.63, and the overall Theil index (both its maximal value and its realized value) would increase by that same amount.

[18] The districts Mumbai, Delhi, Bangalore, Chennai, Pune and Hyderabad together account for 10,943, or 58.7%, of the total of 18,640 projects.

the concentration across the top-6 districts (ω_H T^H = 0.07) contributes only a small part of overall concentration.[19]

[Table 1 about here]

Considering the results for the four 3-year sub-periods, we find that the concentration of projects as measured by the Theil index T^I continuously increased from 1.48 in the 1993-1995 period to 3.07 in the 2002-2004 period. At the same time, the number of projects increased from 4,005 in 1993-1995 to 5,190 in 2002-2004. The increase in the level of concentration was particularly strong from the second to the third sub-period, when there was also a particularly strong increase in the number of FDI projects.

For each of the four sub-periods we decomposed total concentration as measured by T^I in the way described above. The first decomposition is based on partitioning the set of all districts into those districts that received at least one project within the given sub-period and those districts that did not receive any project within that sub-period. The results displayed in Table 1 show that both the resulting within-group component, $TW^{ZN} = T^N$, and the between-group component, TB^{ZN}, increased over time. The increase in the between-group component, TB^{ZN}, implies that the number or, equivalently, the share of districts that did not receive any project within a 3-year interval (the extensive margin of concentration) increased over time.[20] This is true even though the number of FDI projects was substantially higher in the later two sub-

[19] The corresponding Theil indices are $T^{\boldsymbol{M}}$ = 1.19 and $T^{\boldsymbol{H}}$ = 0.12. These differences reflect the fact that the number of projects per district is much more equal among the top-6 districts, where it ranges from 687 (Hyderabad) to 2772 (Mumbai), than in the other 311 districts, where there are 52 districts with just one project over the whole observation period, while the district with the highest number of projects among these districts (Gurgaon) accounts for no less than 468 projects.

[20] Remember that, for each of the time intervals, the set **I** of districts included in the analysis is the set of districts that received at least one project over the 1993-2004 period (i.e., I = 317). In each of the 3-year intervals, some of these districts did not receive any project. Hence, the between-group component TB^{ZN} is greater than zero for all 3-year intervals and varies with the number of districts that did not receive a project within the different intervals. The values of TB^{ZN} suggest that the share of districts that received at least one project decreased from about 80% (≈100/exp(0.23)) in the 1993-1995 sub-period to about 48% (≈100/exp(0.73)) in the 2002-2004 sub-period (or just 25% of all 593 districts).

periods.[21] The increase of the within-group component, $TW^{ZN} = T^{N}$, implies that the concentration of projects across the (decreasing number of) districts that received at least one project (the intensive margin of concentration) also increased over time. The further decomposition of T^{N} shows that the inequality between the average number of projects of the top-6 districts[22] and the districts with a medium or low number of projects also increased (increasing TB^{HM}), whereas the weighted average of inequality within these groups, TW^{HM}, decreased, due to a decreasing contribution from the concentration within the group of districts with a medium of low number of projects ($\omega_M T^{M}$).

Comparing the Theil index and its components for the individual 3-year sub-periods with that for the whole observation period reveals that the levels of concentration over the whole period are generally taking values between the highest and the lowest values of the corresponding indices for the sub-periods. This suggests that the projects tend to concentrate largely in the same districts in each sub-period.[23]

Overall the results described so far suggest that the progressing deregulation of FDI in India did not only lead to an increase in the number of FDI projects. At the same time, it led to a considerable increase in the concentration of FDI projects among a rather small number of districts. Not only did the share of projects going to the top-6 districts increase substantially. More surprisingly perhaps, despite the strong increase in the number of projects, there was a substantial increase in the number of districts that did not receive any project at all (within a 3-year interval). This is even though the deregulation of FDI hardly affected location choices in a direct way. The deregulation had rather indirect effects by allowing foreign partners to

[21] With an increase in the overall number of projects we would generally expect the number of districts with no FDI projects and thus TB^{ZN} to decrease *ceteris paribus*. In its impact on the overall Theil index this "size effect" on the extensive margin of concentration is counteracted by an opposite "size effect" on the intensive margin of concentration, T^{N}, which tends to increase *ceteris paribus* with an increasing number of projects.

[22] Here and in the following analysis, the definition of the top-6 districts is still based on the total number of projects received over the 1993-2004 period.

[23] If projects had concentrated in different districts in different sub-periods, the concentration for the whole 1993-2004 period would have been lower than the concentration for any sub-period.

invest in projects with majority foreign ownership and in activities, notably services, which were traditionally restricted.[24] Location choices were thus increasingly shaped by the preferences of foreign partners who tend to go where agglomeration advantages could be reaped and where the presence of many peers suggests less risk. Furthermore, the shift toward projects in services may imply that agglomeration economies became more important.

Different types of projects

Table 2 displays the concentration indices for three different types of projects: projects of technical cooperation without foreign equity stakes, so-called technical cases (panel a); FDI projects (in the stricter sense) with a minority foreign ownership share, defined as a foreign ownership share of up to 50% (panel b); and FDI projects with a majority foreign ownership share (panel c). The overall number of technical cases (4,749 over the 1993-2004 period) is somewhat smaller than the numbers of projects in the other two categories (about 7,000 projects each).

[Table 2 about here]

Comparing the levels of concentration for the different types of projects, we generally find the lowest concentration for technical cases and the highest concentration for FDI projects with majority foreign ownership share. This is true for overall concentration, T^I, as well as for both the intensive margin of concentration (T^N) and the extensive margin (TB^{ZN}).[25] And it is generally true for the whole 1993-2004 period as well as for the four sub-periods.[26] As noted

[24] See CUTS (2003) for details on India's investment regime and the reforms since 1991.

[25] To get an idea of the economic significance of the differences in the extensive margin of concentration it may be helpful to realize that a value of TB^{ZN} of 0.23 as calculated for the technical cases over the 1993-2004 period implies that almost 80% (≈100/exp(0.23)) of the 317 districts attracted at least one such project. The corresponding figure for the FDI projects with majority foreign ownership of TB^{ZN} = 0.47 implies that about 63% of the 317 districts received at least one project over the 1993-2004 period.

[26] The only exception to this general rule is the fact that the extensive margin of concentration (i.e., the share of districts with no project) is higher for technical cases than for FDI projects with minority foreign ownership share in the later sub-periods. This is likely to be a consequence of the relatively low number of technical cases in these sub-periods (and in particular in the last sub-period). Note also that for all three types of

before, the deregulation of FDI in post-reform India implied that location choices were increasingly shaped by the preferences of foreign partners. Arguably, technical cases were largely demand-driven by established Indian firms, including firms located in relatively remote districts.[27] At the other end of the spectrum, foreign investors were free to decide where to locate wholly owned greenfield FDI projects (once the authorities had approved such projects).

All three types of projects have in common, however, that concentration increased over time. The developments of total concentration and its main components are very similar to those for the set of all projects displayed in Table 1 above. For all three types of projects, total concentration, T^I, as well as both the intensive margin of concentration (T^N) and the extensive margin (TB^{ZN}) increased over time. One exception to this rule is the decrease in the intensive margin of concentration, T^N, for FDI projects with majority foreign ownership between the third and the fourth sub-period.[28] Similar non-monotonic developments can be observed for projects with majority foreign ownership with respect to the two main components of T^N, the within-group component TW^{HM} and the between-group compoment TB^{HM}. Unless more recent data become available, it remains an open question whether or not this change at the end of our observation period indicates a more permanent reversal of the general trend of an increasing intensive margin of concentration at least for projects with majority foreign ownership (for more on this see below).

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projects, the intensive margin of concentration, T^N, is *higher* for the whole 1993-2004 period than for the four sub-periods, whereas the extensive margin, TB^{ZN}, is *lower* for the whole period than for the sub-periods. This is to be expected as the number of projects is considerably higher for the whole period than for any of the sub-periods.

[27] Furthermore, foreign partners were probably more inclined to agree to technical cases in relatively remote districts, as these projects carried minor financial risk compared to (majority owned) FDI projects.

[28] The only other exception is the decrease of TB^{ZN} for FDI projects with majority foreign ownership between the first and the second sub-period, which is likely to be mainly due to the comparatively small number of FDI projects of this type in the first sub-period.

Different sources of FDI

For almost all FDI projects the database provides information on the country of origin of the foreign project partner. Overall there are projects from more than 100 different source countries or territories. In addition, there is a category of projects with non-resident Indians (NRI) as project partners. This information allows us to investigate whether FDI projects from different sources differ in terms of their concentration across Indian districts. As noted earlier, one may expect projects with NRI to be regionally less concentrated as these investors are more likely to have personal links to and/or better knowledge about remote districts that appear to be unattractive or risky to other groups of investors. A similar argument could be made (though possibly less forcefully) about FDI projects from the United Kingdom with its multifold connections to its former colony. One may also suspect that investors from other developing countries, notably regional neighbors, are more familiar with investment conditions in relatively remote areas so that they are less likely to locate predominantly in India's economic centers. Finally, the concentration patterns could differ between source countries such as Germany that have traditionally invested in the manufacturing sector and source countries such as the United States whose projects increasingly focused on the services sector.

The subsequent analysis focuses on FDI projects in the stricter sense and excludes the technical cases. This focus makes our results more internationally comparable. Moreover, the empirical relevance of technical cases is strongly decreasing over time,[29] so that policymakers are probably less concerned about concentration with regard to technical cases. The exclusion of technical cases leaves us with an overall number of 13,821 projects over the 1993-2004 period.[30]

[29] The share of technical cases in all projects decreased from about 44% in the first sub-period to about 14% in the last sub-period (see Table 2).

[30] The difference in the number of projects analyzed here and the sum of 13,891 projects underlying the results presented in panels (b) and (c) of Table 2 is due to missing source country information for 70 projects.

Table 3 displays the levels of overall concentration as well as its extensive and intensive margins for selected sources.[31] The selection of country groups and individual countries captures the major sources of FDI projects in India.[32] Specifically, we present the levels of overall concentration and its intensive and extensive margins for the set of all countries (13,821 projects; panel a), the EU-15 countries[33] (4,197 projects; panel b); the English speaking OECD countries outside the EU (or former British settler colonies), i.e. the United States, Canada, Australia and New Zealand (3,783 projects; panel c); the non-OECD countries (4,563 projects, panel d); the developed East Asian countries Hong Kong, Japan, South Korea, and Taiwan (1,117 projects; panel e); a group of eleven, mostly Southeast Asian neighboring countries[34] (947 projects; panel f); non-resident Indians (1,349 projects; panel g); and the two European countries with the highest number of FDI projects, namely the United Kingdom (1,152 projects; panel h) and Germany (1,036 projects; panel i).[35]

[Table 3 about here]

Comparing the levels of concentration for the different FDI sources, we find that overall concentration, T^I, over the whole 1993-2004 period is highest for the group of the Southeast Asian countries (T^I=2.96) and the group of English speaking OECD countries outside the EU (T^I=2.90). It is lowest for projects undertaken by NRI (T^I=2.18), and it is also comparatively low for projects from Germany (T^I=2.36) and from the EU-15 more generally (T^I=2.37).

[31] We do not show the finer decomposition in order to avoid clutter. The full set of results is available on request.

[32] As noted before, we do not consider Mauritius as a distinct source of FDI.

[33] Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom.

[34] This group of countries includes Bangladesh, Indonesia, Malaysia, the Maldives, Myanmar, Nepal, the Philippines, Singapore, Sri Lanka, Thailand, and Vietnam. We have not included the People's Republic of China in either this group or the group of developed East Asian countries. Given that there only very few FDI projects from China (34) none of the results presented in this section changed notably when we included China in either of these country groups.

[35] Note that the three country groups presented in panels (b)-(d) are of similar importance as sources of FDI (each group accounts for roughly 4,000 projects). Similarly the country groups and individual countries presented in panels (e)-(i) are of comparable importance (each accounts for roughly 1,000 projects). This will become important when comparing the intensive and extensive margins of concentration for the different sources.

We suspect that the difference between the EU-15 and the group of English speaking OECD countries outside the EU is mainly because of differences in sectoral focus. Projects in manufacturing appear to play a larger role for EU sources, while projects in services (in particular IT services) figure prominently for US investors, which dominate the latter group (see Dreher et al. 2013 for details on IT projects). Similarly, the comparison between Germany and the United Kingdom in panels (i) and (h) also points to the importance of the sectoral focus, rather than factors such as a common language and post-colonial ties. T^I is relatively low for Germany which has a reputation for FDI projects in manufacturing (Görg et al. 2010).

The fact that concentration is lowest for projects undertaken by NRI (T^I=2.18) is in line with expectations, recalling that NRI tend to be acquainted with local conditions. In striking contrast, the level of overall concentration is highest for projects from the Southeast Asian neighbors. This finding is surprising as we expected investors from neighboring countries to be more familiar with investment conditions in relatively remote Indian districts. However, our finding resembles Sosa Andrés et al. (2013), according to whom foreign investors based in developing countries are as reluctant as traditional foreign investors to engage in remote locations which appear to be relatively unattractive and risky.

Looking only at the last sub-period (2002-04) the ranking is pretty much the same. NRI (T^I=2.93) and Germany (T^I=3.11) continue to be the sources with the lowest levels of concentration, whereas the projects from the Southeast Asian countries (T^I=3.63) and those from the English speaking OECD countries outside the EU (T^I=3.40) continue to be the most concentrated.

When looking separately at the rankings for the two main components of T^I, the extensive margin of concentration (TB^{ZN}) and the intensive margin of concentration (T^N), we have to take into account that the number of projects differs considerably between some of the

different sources. Both components are generally sensitive to the number of projects. While the extensive margin tends to decrease *ceteris paribus* with the number of projects, the intensive margin tends to increase with the number of projects.[36] We therefore restrict the comparisons for the intensive and for the extensive margin to either the sources in panels (b)-(d) or the sources in panels (e)-(i) of Table 3. The main regularities revealed from these comparisons are: (i) both the intensive and the extensive margins of concentration are lower for the EU-15 than for the English speaking OECD countries outside the EU; (ii) both the intensive and the extensive margins of concentration are comparatively high for the Southeast Asian neighbors, while they are particularly low for NRI; (iii) for Germany the intensive margin of concentration is also comparatively low, but for the extensive margin this is true only for the early sub-periods.

While the level of concentration varies across major sources of FDI, the development over time is strikingly similar for the sources considered in Table 3. As can be seen there, the overall concentration, T^I, of FDI projects increased quite consistently. This is true for (almost) all time intervals and all source countries and country groups analyzed. However, the increase in the level of concentration was slower between the third (1999-2002) and fourth (2002-2004) sub-periods than between the previous sub-periods. For the case of NRI the overall concentration even declined marginally between the third and fourth sub-periods.

Making use of our decomposition of the Theil index we may trace back the causes of this slowdown by looking at the development of the different components of the concentration index. For most sources of FDI, the increase in the extensive margin of concentration, TB^{ZN}, accelerated over time and was strongest in the last sub-period.[37] This is in contrast to the

[36] Therefore, it should come as no surprise that the extensive margin of concentration is lower, and the intensive margin higher, for the set of all countries (panel a) than for each of the individual countries or (sub)groups of countries (panels b-i). By contrast, the level of overall concentration, T^I, is neither particularly high nor particularly low for the set of all countries as compared to the corresponding values for the more narrowly defined sources.

[37] Also note that the overall increase in the extensive margin was particularly strong for the case of NRI.

intensive margin of concentration, T^N. For the majority of FDI sources the intensive margin actually decreased (sometimes even substantially) between the third and fourth sub-periods, and for most other sources the increase was much smaller than in the earlier sub-periods.[38]

Disaggregated evidence on the (sub-)components of the intensive margin (not shown in Table 3) suggests that the slowdown or reversal of the increase in the intensive margin is mainly due to a corresponding development (slowdown or reversal of the increase) of the TB^{HM} component, i.e., the inequality (in the average number of projects) between the top-6 FDI recipients and the group of districts that receives a medium or small (but positive) number of projects.[39] In fact, the share of projects attracted by the top-6 districts continued to grow and the share attracted by the other districts thus continued to decline. The rate of change of these shares slowed down significantly, however.[40] At the same time, the number of districts that received at least one project within a 3-year sub-period continued to decline at high rate. This is reflected by the continued increase in the extensive margin of concentration. As a consequence, the average number of projects among the districts that received at least one project (other than the top-6 districts) increased faster, after the third sub-period, than the average number of projects among the top-6 districts.

Given the high levels of concentration that have developed, a factual trade-off has emerged between further increases in the extensive and the intensive margin of concentration. Any further increase in the extensive margin of concentration is now likely to decrease the intensive margin of concentration. This trade-off can be expected to strengthen if the number of FDI projects continues to increase.

[38] The main exception is the group of developed East Asian countries (panel e of Table 3). For this source country group the increase in the intensive margin of concentration was actually strongest in the last sub-period.

[39] In almost all cases, this is also by far the largest sub-component of the intensive margin of concentration (particularly in the later sub-periods).

[40] This is no surprise given that the potential of the top-6 districts to absorb an ever increasing share of all projects has almost reached its limit. The share of FDI projects from all sources going to the top-6 districts increased from about 40% in the first sub-period, to almost 50% in the second, to 74% in the third, and to almost 80% in the fourth sub-period (2002-2004). In this last sub-period no less that 9,087 out of the 13,821 projects went to the top-6 districts Mumbai, Delhi, Bangalore, Chennai, Pune and Hyderabad.

5. Summary and conclusion

The concentration of FDI in a few developing host countries is widely regarded to be the major impediment to spreading the benefits of FDI throughout the developing world (e.g., United Nations 2003). In a similar vein, insufficient or lacking access to FDI can be regarded to be a major problem within countries. Concentrated FDI may cause wider regional income and growth disparities as productivity enhancing spillovers from FDI tend to weaken with increasing distance.

We analyzed the concentration of FDI in India at the district level, based on project-specific location choices since the reform program in the early 1990s. The decomposition property of the Theil index allowed us to trace changes over time in the overall concentration of FDI to changes in concentration between and within subgroups of districts. We were also able to differentiate between major types and sources of FDI.

Considering all Indian districts that attracted at least one FDI project over the 1993-2004 period, we find generally very high levels of overall concentration that are mainly determined by two factors. For each sub-period and independent of the types and sources of FDI there is generally a very high (and increasing) number of districts that do not receive any FDI project, and a very high (and increasing) share of FDI projects is located in a very small number of districts, notably in the six districts Mumbai, Delhi, Bangalore, Chennai, Pune and Hyderabad.

The overall level of concentration is particularly high for projects with majority foreign ownership, and relatively modest for technical cooperation projects. In addition, the level of concentration varies considerably across different sources of FDI. On the one hand, the level of concentration is clearly above average for projects from the group of English speaking OECD countries outside the EU (with the United States as the most important source within this group) and the group of Southeast Asian neighbors. On the other hand, the level of

concentration is relatively low for projects from the group of EU countries (and especially, Germany) and notably for projects undertaken by non-resident Indians.

Policymakers may be tempted to conclude from these findings that India's traditional reluctance to allow for wholly foreign owned subsidiaries and its selective approval procedures prior to the reforms in the early 1990s were well founded and could have helped spreading FDI-related benefits beyond a few economic centers. Such a conclusion would be premature, however. Regarding the types of projects, foreign partners may hesitate to transfer up-to-date technology unless they hold majority ownership. This could involve a trade-off for Indian policymakers between a higher overall potential and narrower regional confines of FDI-related technological spillovers. Regarding the sources of FDI, it remains open to question to what extent differences in the sectoral focus do actually contribute to the variation in the level of concentration. In particular, further research would be required to substantiate the conjecture that projects in manufacturing tend to be less concentrated than projects in services.

Furthermore, our results reveal a striking similarity across different types and sources of projects. We find that the concentration of projects has persistently increased since the early 1990s. This holds for essentially all types of projects and all sources of FDI. Typically, both the intensive margin and the extensive margin of concentration contributed to the increase in overall concentration. The increase in the extensive margin is particularly striking: The number of districts that did not attract any project within a 3-year interval increased even though the total number of projects was considerably higher in the more recent 3-year intervals. In other words, a rising share of Indian districts failed to participate in the boom of FDI projects in the post-reform era. At the same time, the top-6 districts attracted a persistently rising share of projects.

There are, however, some indications that the increase in concentration slowed down in the more recent past. The decomposition of the Theil index suggests that this slowdown has to be attributed to a declining intensive margin of concentration of FDI projects from most sources of FDI. It appears that, with the very high levels of concentration, a factual trade-off has emerged between further increases in the external and in the internal margin of concentration. This suggests that the potential for both the external and internal margin of concentration to rise simultaneously has almost reached its limit. However, it remains to be seen whether a further increase in the number of FDI projects will eventually lead to a reversal of the observed strong increase in overall concentration of FDI in post-reform India.

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Table 1: Regional concentration of FDI projects (all projects)

		93-95	96-98	99-01	02-04	93-04
(1)=(2)+(7)	**T^I**	**1.48**	**1.79**	**2.71**	**3.07**	**2.22**
(2)=(3)+(6)	**$TW^{ZN} = T^N$**	**1.25**	**1.51**	**2.25**	**2.34**	**2.22**
(3)=(4)+(5)	TW^{HM}	0.62	0.57	0.41	0.36	0.56
(4)	*$\omega_H T^H$*	*0.04*	*0.04*	*0.10*	*0.11*	*0.07*
(5)	*$\omega_M T^M$*	*0.58*	*0.53*	*0.31*	*0.25*	*0.49*
(6)	TB^{HM}	0.63	0.94	1.84	1.98	1.66
(7)	**TB^{ZN}**	**0.23**	**0.28**	**0.46**	**0.73**	**0.00**
	# Projects	**4,005**	**3,838**	**5,607**	**5,190**	**18,640**

Data source: Department of Industrial Promotion and Policy, Ministry of Commerce and Industry. Own calculations.

Table 2: Regional concentration of FDI projects by project type

		93-95	96-98	99-01	02-04	93-04
	(a) Technical cooperation projects					
(1)=(2)+(7)	**T^I**	**1.37**	**1.63**	**2.25**	**2.68**	**1.64**
(2)=(3)+(6)	**$TW^{ZN} = T^N$**	**0.94**	**0.97**	**1.31**	**1.41**	**1.41**
(3)=(4)+(5)	TW^{HM}	0.59	0.53	0.43	0.34	0.63
(4)	*$\omega_H T^H$*	*0.04*	*0.03*	*0.09*	*0.13*	*0.04*
(5)	*$\omega_M T^M$*	*0.55*	*0.50*	*0.34*	*0.21*	*0.59*
(6)	TB^{HM}	0.35	0.44	0.88	1.07	0.78
(7)	**TB^{ZN}**	**0.44**	**0.66**	**0.94**	**1.27**	**0.23**
	# Projects	**1,767**	**1,190**	**1,079**	**713**	**4,749**
	(b) FDI projects with minority foreign ownership share					
		93-95	**96-98**	**99-01**	**02-04**	**93-04**
(1)=(2)+(7)	**T^I**	**1.55**	**1.71**	**2.79**	**3.02**	**2.24**
(2)=(3)+(6)	**$TW^{ZN} = T^N$**	**0.99**	**1.07**	**1.91**	**1.92**	**2.00**
(3)=(4)+(5)	TW^{HM}	0.49	0.40	0.37	0.33	0.50
(4)	*$\omega_H T^H$*	*0.03*	*0.04*	*0.13*	*0.11*	*0.08*
(5)	*$\omega_M T^M$*	*0.46*	*0.36*	*0.24*	*0.22*	*0.42*
(6)	TB^{HM}	0.49	0.66	1.54	1.59	1.50
(7)	**TB^{ZN}**	**0.57**	**0.64**	**0.88**	**1.10**	**0.24**
	# Projects	**1,479**	**1,154**	**2,153**	**2,137**	**6,923**
	(c) FDI projects with majority foreign ownership share					
		93-95	**96-98**	**99-01**	**02-04**	**93-04**
(1)=(2)+(7)	**T^I**	**2.40**	**2.31**	**3.06**	**3.45**	**2.84**
(2)=(3)+(6)	**$TW^{ZN} = T^N$**	**1.29**	**1.52**	**2.12**	**1.97**	**2.37**
(3)=(4)+(5)	TW^{HM}	0.35	0.37	0.27	0.29	0.38
(4)	*$\omega_H T^H$*	*0.14*	*0.06*	*0.11*	*0.15*	*0.10*
(5)	*$\omega_M T^M$*	*0.21*	*0.32*	*0.16*	*0.14*	*0.28*
(6)	TB^{HM}	0.94	1.15	1.85	1.67	1.99
(7)	**TB^{ZN}**	**1.10**	**0.78**	**0.94**	**1.48**	**0.47**
	# Projects	**759**	**1,494**	**2,375**	**2,340**	**6,968**

Data source: Department of Industrial Promotion and Policy, Ministry of Commerce and Industry. Own calculations.

Table 3: Regional concentration of FDI projects by source countries[a]

		93-95	96-98	99-01	02-04	93-04
		(a) All countries				
(1)=(2)+(7)	**T^I**	**1.75**	**1.97**	**2.90**	**3.19**	**2.50**
(2)	$TW^{ZN} = T^N$	1.26	1.54	2.26	2.26	2.35
(7)	TB^{ZN}	0.49	0.43	0.63	0.92	0.15
	# Projects	**2,228**	**2,633**	**4,492**	**4,468**	**13,821**
		(b) EU-15[b]				
		93-95	**96-98**	**99-01**	**02-04**	**93-04**
(1)=(2)+(7)	**T^I**	**1.87**	**2.02**	**2.80**	**3.12**	**2.37**
(2)	$TW^{ZN} = T^N$	1.01	1.09	1.71	1.58	1.86
(7)	TB^{ZN}	0.86	0.93	1.09	1.54	0.51
	# Projects	**807**	**921**	**1,305**	**1,164**	**4,197**
		(c) USA, Canada, Australia and New Zealand				
		93-95	**96-98**	**99-01**	**02-04**	**93-04**
(1)=(2)+(7)	**T^I**	**2.21**	**2.39**	**3.21**	**3.40**	**2.90**
(2)	$TW^{ZN} = T^N$	1.05	1.18	1.82	1.81	2.21
(7)	TB^{ZN}	1.15	1.22	1.39	1.58	0.69
	# Projects	**469**	**556**	**1,287**	**1,471**	**3,783**
		(d) Non-OECD				
		93-95	**96-98**	**99-01**	**02-04**	**93-04**
(1)=(2)+(7)	**T^I**	**1.75**	**2.01**	**3.06**	**3.30**	**2.57**
(2)	$TW^{ZN} = T^N$	0.92	1.22	1.94	1.78	2.14
(7)	TB^{ZN}	0.83	0.78	1.12	1.52	0.43
	# Projects	**722**	**844**	**1,525**	**14,72**	**4,563**
		(e) Developed East Asia (HKG, Japan, South Korea, Taiwan)				
		93-95	**96-98**	**99-01**	**02-04**	**93-04**
(1)=(2)+(7)	**T^I**	**2.05**	**2.36**	**3.05**	**3.36**	**2.54**
(2)	$TW^{ZN} = T^N$	0.51	0.73	0.93	1.24	1.42
(7)	TB^{ZN}	1.54	1.63	2.12	2.12	1.11
	# Projects	**202**	**262**	**332**	**321**	**1,117**

Table 3 (cont'd):

		(f) Southeast Asian neighbors[c]				
		93-95	**96-98**	**99-01**	**02-04**	**93-04**
(1)=(2)+(7)	**T^I**	**2.35**	**2.68**	**3.44**	**3.63**	**2.96**
(2)	$TW^{ZN} = T^N$	0.52	0.84	1.17	1.13	1.71
(7)	TB^{ZN}	1.83	1.85	2.26	2.50	1.26
	# Projects	**147**	**166**	**276**	**358**	**947**
		(g) Non-resident Indians				
		93-95	**96-98**	**99-01**	**02-04**	**93-04**
(1)=(2)+(7)	**T^I**	**1.75**	**2.12**	**2.94**	**2.93**	**2.18**
(2)	$TW^{ZN} = T^N$	0.65	0.82	1.15	0.81	1.36
(7)	TB^{ZN}	1.10	1.29	1.79	2.12	0.82
	# Projects	**362**	**335**	**413**	**239**	**1,349**
		(h) United Kingdom				
		93-95	**96-98**	**99-01**	**02-04**	**93-04**
(1)=(2)+(7)	**T^I**	**2.56**	**2.42**	**3.15**	**3.36**	**2.75**
(2)	$TW^{ZN} = T^N$	0.83	0.76	1.36	1.21	1.66
(7)	TB^{ZN}	1.73	1.66	1.79	2.15	1.10
	# Projects	**193**	**220**	**351**	**388**	**1,152**
		(i) Germany				
		93-95	**96-98**	**99-01**	**02-04**	**93-04**
(1)=(2)+(7)	**T^I**	**2.14**	**2.09**	**2.89**	**3.11**	**2.36**
(2)	$TW^{ZN} = T^N$	0.59	0.60	1.06	0.93	1.27
(7)	TB^{ZN}	1.55	1.50	1.83	2.18	1.10
	# Projects	**205**	**254**	**314**	**263**	**1,036**

Data source: Department of Industrial Promotion and Policy, Ministry of Commerce and Industry. Own calculations.

[a] Only "traditional" FDI projects with minority or majority foreign ownership share (technical cases excluded).

[b] Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom.

[c] Bangladesh, Indonesia, Malaysia, the Maldives, Myanmar, Nepal, the Philippines, Singapore, Sri Lanka, Thailand, and Vietnam.