TAXATION AND OWNERSHIP STRUCTURE IN SUPPLYING FOREIGN MARKETS

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INTRODUCTION

On Tuesday July 27, 1999 Germany's Minister of Economics Werner Mueller announced that between 1997 and 1998 foreign direct investment flows (FDI) in Germany doubled to around 35 billion marks. He also suggested that, "Reforms on corporate tax and nonwage labor costs will further improve (Germany's) position as a market place."[1] On a similar tone, Ludovit Cernak, the Slovak Minister of Economics announced in early September of 1999 that by the end of the same year $220 million of FDI was expected to flow into the country. He also mentioned that the government was drafting a new law on taxation that was intended to increase support to FDI inflows.[2]

In the late 90s, tax incentives, as part of a package to attract FDI inflows, became a common practice among several Eastern European countries. In 1996 Poland attracted General Motor's Adam Opel AG unit to build its $300 million plant in south Katowice by offering free infrastructure and a 10-year tax holiday. At the same time, the Hungarian government approved legislation that lengthened the time of tax holidays offered to foreign investors (from 5 to 10 years). Finally, the Czech government offered tax incentives to Intel in luring the company to build its chip-assembly plant in the Czech Republic. Economic-development experts argue that for Eastern European countries, tax and other incentives have become increasingly important in attracting FDI inflows as labor and other costs move closer to Western levels.[3] Overall, business practice indicates that tax incentives represent a key factor in attracting FDI inflows.

Tax incentives also seem to influence companies' decisions about the ownership structure of their foreign subsidiaries. The *Wall Street Journal Europe* reported that Ramco Oil & Gas PLC intended to develop an oil field in Azerbaijan pending on a change in its share of property of its joint venture with Socar, Azerbaijan's state oil company. Ramco was waiting for governmental approval to convert its joint venture with Socar to a production-sharing contract, with Ramco owning a larger share of the subsidiary and thus receive a more favorable tax treatment. Mr. Bertram, Ramco's Chief Financial Officer, stated that "once we've been given full approval, we will start appraisal work straight away, and we have the funds ready to do so."[4]

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Motivated by such anecdotal evidence, this study investigates empirically the impact of a host country's taxation on FDI inflows. We thus present evidence that taxation has an important effect on aggregate FDI flows, but various types of taxes influence differently the FDI flows to majority owned subsidiaries (MOS) and minority owned subsidiaries (MIS). Specifically, corporate income, capital gains and dividends tax rates influence the aggregate flows of FDI, with the first having the strongest impact among the three. Also, corporate income and capital gains taxes have a strong effect on FDI flows to MOS with the taxation on dividends having a much smaller impact. However, FDI flows to minority owned subsidiaries (MIS) seem to respond very little to lower taxes in the host country. Finally, these differences in the tax responsiveness of different types of FDI are statistically significant.

LITERATURE REVIEW

Previous research has focused extensively on the relationship between taxation and FDI flows presenting evidence for a rather small relationship. Hartman [1985] finds a positive but small relationship between U.S. FDI outflows and the after-tax rate of return in host countries, while Boskin and Gale [1987], and Newlon [1987] extended Hartman's study and found similar results over a longer period of time. Grubert and Mutti [1991] and Hines and Rice [1994] find a larger tax elasticity of U.S. FDI outflows that ranges between 1.5 and 3. Cummins and Hubbard [1995], using micro data from U.S. foreign subsidiaries, find that tax parameters do influence U.S. outflows of FDI. Altshuler, Grubert and Newlon [2001] present evidence that the elasticity of real U.S. capital outflows and the after-tax rates of return was 1.5 in 1984 but rose to almost 3.0 in 1992, claiming that the FDI outflows became more sensitive to taxes in the recent years. Finally, Swenson [1997] indicates that various types of U.S. FDI inflows respond differently to taxes.

Cassou [1997] on the other hand contributes in the literature by studying the relationship between two types of taxes, corporate and individual income taxes, with FDI flows. He finds that the individual income tax rate has similar effects on FDI as the corporate tax rate. The explanation for this effect is not clear since individual income taxes do not directly reduce the returns of FDI investments in foreign markets made by multinational corporations.

Our approach also includes multiple types of taxes, which, at least theoretically, are expected to affect the returns a multinational corporation receives from its foreign subsidiaries. Specifically, we consider taxes on corporate income, capital gains and withholding dividends that influence respectively a multinational's ordinary (non-capital) corporate income, capital income and the income transferred back to the home country (repatriated income). Thus, the taxes in consideration have a direct impact on the returns a multinational receives from its FDI activity.

THEORETICAL MOTIVATION

Investors, in an attempt to maximize after tax returns from their investment, evaluate not only the future income and gains from an investment, but also how these

gains will be affected by taxes. To simply illustrate the point, suppose an investor considers two investments of equal risk, the first with a 10 percent rate of return and a tax rate of 40 percent, and the second with an 8 percent rate of return and a tax rate of 12.5 percent. Obviously, the investor will choose the second investment, although of a lower pre-tax rate of return, since the after-tax return of this investment is greater than the alternative one ([10%*(1-0.4)=6%], versus [8%*(1-0.125)=7%]).

In an international investment environment, there are a variety of taxes that might apply to any particular investment by a multinational corporation. Corporate and individual income taxes, capital gains taxes, taxes on withholding dividends, interest and royalties, property taxes, and import and export duties are only few examples.

However, different taxes might have a varying impact on FDI flows due to the specific ownership structure of the foreign subsidiary. For instance, the host country's corporate income tax rate will generally apply to the entire income of a MOS, but only to a portion of the income generated from a MIS. This occurs in host countries where their tax burden is imposed on the investors of a MIS rather than the MIS itself. Therefore we might expect a weaker tax responsiveness of FDI to MIS than to MOS.

On the other hand, a home country's tax system might treat differently income that comes from MOS versus MIS. For instance, Desai and Hines [1999] point out that U.S. FDI outflows to MIS dropped significantly after 1986 because the 1986 U.S. Tax Reform Act (TRA) introduced a more complex method for U.S. multinationals in filing foreign tax credits for income from foreign MIS.

Similarly, dividend withholding taxes do not influence the return from an FDI uniformly. This tax is imposed on the transfer of dividends (repatriated profits) from a foreign subsidiary to its parent company. Thus, its impact depends, in part, on the length of the time interval between the generation of the profits and their repatriation. If there is a great delay from the time the profits are generated to the time the profits are repatriated, the withholding tax will have less impact due to the time value of money. In fact, the withholding tax should have little or no impact if the foreign investor intends to either permanently, or for an extended period of time, leave the profits in the host country.

Finally, the capital gains tax applies to limited types of economic transactions varying among jurisdictions. Generally, it applies to transactions that are not part of the ordinary course of business, and therefore, will not apply to the sale of inventory or ordinary services rendered. Instead, it applies to infrequent transactions such as the sale of a building or machinery (so long as the building and machinery are not inventory). Since the tax is not imposed on the normal or mainstream generation of income, it should have less of an impact on FDI than the corporate income tax.

Ultimately, taxes have an important impact on other activities, besides FDI, by multinational corporations. The latter, in an effort to reduce their tax liabilities, structure and finance their investments appropriately, or relocate taxable income, through transfer pricing, from subsidiaries located in relatively high tax countries towards subsidiaries in relatively low tax countries (see, for instance, Grubert and Mutti [1991] or Grubert [1998]). However, in this paper, we only focus on the effects of various tax rates on the ownership structure of foreign subsidiaries.

DATA

In testing empirically the intuition developed in the previous section we use data on U.S. FDI outflows maintained by the Bureau of Economic Analysis, the U.S. Department of Commerce. The database contains information on the economic activities of 2,272 U.S. Multinational Corporations with 18,899 foreign subsidiaries worldwide, for the period between 1983 and 1993. These are annual data for all the above foreign subsidiaries, organized by the host country in which these subsidiaries are located, and the industry (2-digit SIC) in which their primary products belong. In our sample, we include U.S. FDI outflows to fourteen countries (eight from Europe, two from North and South America, three for Asia, and Australia) and in ten 2-digit SIC industries.

We also employ three types of taxes – the corporate income tax, the capital gains tax and finally the dividend withholding tax – in each of the host countries in our sample. Data on these taxes (from 1986 to 1993) come from the *Coopers & Lybrand Annual International Tax* summaries, while from 1983 to 1985 the tax data come from the *Foreign Tax and Trade Briefs*. The dividends withholding tax rates were further adjusted to reflect any tax treaty rates in effect. The tax treaty information was obtained from the *Bureau of National Affairs Tax Treaty Service*.[5]

TAXES AND OWNERSHIP STRUCTURE OF FOREIGN SUBSIDIARIES

Table 1 contains descriptive statistics of the key variables in the analysis indicating a negative correlation between a host country's corporate tax rate and its total FDI (the sum of FDI flows to MOS and MIS) and MOS inflows, but a weak correlation with its FDI inflows to MIS. Similarly, host countries' capital gains tax rates are negatively correlated with their total FDI and MOS inflows but positively correlated with their FDI inflows to MIS. Finally, the dividends tax rate is negatively correlated with all the three types of FDI flows in our sample.

On the other hand, the host country's growth rate of real GDP and the level of domestic (U.S.) fixed capital investment are positively correlated with all three types of U.S. FDI outflows in the sample.

Host Country's Taxes and Total FDI Flows

In our estimations we use three different types of tax rates in the host country; the corporate tax rate, ($COTAX_{it}$), the capital gains tax rate ($CATAX_{it}$) and the tax rate on dividends ($DITAX_{it}$).[6] Since we use panel data, Ordinary Least Squares, the Fixed Effects model and the Random Effects model are used in estimations. Notice that the first model estimates a single intercept for the entire data pooled together, while the second model estimates a separate intercept for each country in the sample assuming that unknown country-specific differences might be shifting the estimated lines. However, some researchers claim that this ignorance should be treated like the one that is captured by the regular error term of the estimated equation, and thus propose the Random Effects model, which calculates an additional error term that picks any shift of the regression line that is observation specific. We finally report the most appropriate model among the three based on the Lagrange multiplier coefficient

(that tests between the OLS and the Fixed/Random Effects model) and the Hausman statistic (that tests between the Fixed and the Random Effects model). Finally, reduced form equation (1) is estimated and the results are reported in Table 3.

$$(1) \qquad FDI_{ijt} = f\left(VE_{it}, GDP_{it}, I_{jt}, TAX_{it}\right)$$

where (FDI_{ijt}) is the real total U.S. FDI outflows, and also the U.S. FDI outflows to MOS and MIS in the host countries of our sample (in country i, industry j and year t), (VE_{it}) is the volatility of the bilateral real exchange rate between the U.S. dollar and the host country's currency, (GDP_{it}) is the real GDP growth of the host country, (I_{jt}) is the real investment on fixed capital in the U.S., and finally (TAX_{it}) is the tax rate in the host country (i.e., one of the three tax rates in our data).

The corporate tax rate in the host country has a strong, negative and statistically significant impact on FDI flows. *Ceteris paribus*, and consistent with Grubert and Mutti [1991] and Hines and Rice [1994], a 1 percent increase in the host country's corporate tax rate ($COTAX_{it}$) causes a 3.10 percent drop in the U.S. total FDI outflows to the same country. Also, *ceteris paribus*, the host country's growth rate of real (GDP_{it}) , and the level of U.S. investment on fixed capital (I_{jt}) have a positive and statistically significant impact on the U.S. total FDI outflows to the host country. Finally, the volatility of the U.S. dollar (VOL_{it}) with respect to the host country's currency (that captures the host country's economic risk) appears to deter U.S. FDI outflows (consistent with Campa [1993] and others).

Similarly, the host country's capital gains tax rate ($CATAX_{it}$) has a negative impact on total FDI inflows from the U.S. A 1 percent increase in ($CATAX_{it}$) is associated with 2.15 percent decline in total FDI inflows from the U.S. Finally, the host country's tax rate on dividends ($DITAX_{it}$) has a similar but much smaller impact on total FDI inflows from the U.S. A 1 percent increase in it is associated with a drop of 0.26 percent in total FDI inflows from the U.S. Overall, all three types of tax rates have the expected impact on FDI flows in the host countries. However, the corporate income tax rate among the tree appears to have the strongest effects on FDI flows.

Multiple Taxation and Total FDI Flows

So far, it appears that host country's tax rates have a strong and statistically significant impact on FDI flows. However, managers consider various taxes concurrently when they make their FDI decisions. Taxation on corporate income along with taxation on capital gains and dividends are important elements in their decision, since these taxes affect different aspects of the company's economic activities in the host country. At the same time, there is a fairly strong and positive correlation at least between the level of the corporate tax rate and the capital gains tax rate (Table 2). Countries that have high (low) corporate tax rates also tend to have high (low) capital gains tax rates. On the other hand, the dividends tax rate is much less correlated with either the corporate tax rates or the capital gains rates.

In this section, we extend our analysis by measuring the marginal impact of a given tax rate on the tax responsiveness of FDI flows to another tax rate. For that, equation (2) is estimated, and the results are reported in Table 6.

(2) $$FDI_{ijt} = f\left(VE_{it}, GDP_{it}, I_{jt}, TAX1_{it}, TAX1_{it} * TAX2_{it}\right)$$

where ($TAX1_{it}$) is one type of host country's tax rate and ($TAX2_{it}$) is a second (different) type of host country's tax rate.

The estimated coefficient of ($TAX1_{it} * TAX2_{it}$) captures the marginal effect of a certain taxation on the tax responsiveness of FDI flows to another taxation. The impact of the corporate tax rate on total U.S. FDI outflows becomes stronger (i.e., more negative) as the tax rates on capital gains and dividends increase (negative and statistically significant coefficient of the interaction variable between the corporate and the capital gains tax rate ($COCA_{it}$) and also the corporate and the dividends tax rate ($CODI_{it}$) respectively). Similarly, the impact of the capital gains taxation on total FDI flows becomes stronger as the corporate or the dividend tax rate increases. Finally, the impact of the dividends tax on total FDI flows becomes stronger only when the capital gains tax rate increases. Overall, the tax responsiveness of FDI flows becomes stronger when other taxes are taken in to consideration. Apparently, companies consider more than one tax in the host country when they decide on their FDI flows.

Host Country's Taxes and FDI Flows to MOS

In the next two sections, we decompose the volume of aggregate U.S. FDI outflows to those that flow in to MOS and MIS. First, we estimate the effects of taxation on FDI flows to MOS. Equation (1) is estimated again with the dependent variable being the FDI flows to MOS. The results are reported in Table 4.

All three tax rates used in our study have a negative and statistically significant impact on FDI flows to MOS. The strongest effect, magnitude wise, comes from the corporate tax rate and the weakest from the dividends tax rate. Specifically, FDI flows to MOS drop by 4.22 percent, 3.13 percent and 0.27 percent when the host country's tax rate on corporate income, capital gains and dividends increases respectively by 1 percent.

On the other hand, the level of U.S. investment on fixed capital (I_{jt}) has a positive and statistically significant impact on U.S. FDI outflows to MOS in all the regressions. It appears that U.S. outflows of capital do not compete with domestic fixed investment (see also Goldberg and Kolstad [1995]). Finally, the host country's GDP growth and the exchange rate volatility have the expected impact on MOS outflows, but these results are not robust across all specifications.

In testing for the interaction effects of different tax rates on U.S. FDI outflows to MOS, equation (2) is estimated again, with the dependent variable being the U.S. FDI outflows to MOS. The results are reported in Table 7. Again, in all cases, the interaction effects of various tax rates on U.S. FDI flows to MOS are negative and statistically significant.

Host Country's Taxes and FDI flows to MIS

In this section we study the impact of host countries' tax rates on the U.S. FDI inflows to MIS. Again, we estimate equation (1) with the dependent variable being the U.S. FDI outflows to MIS. The results are reported in Table 5.

Overall, the tax responsiveness of FDI flows to MIS is much weaker than in the case of FDI flows to MOS. Indeed, the estimated tax elasticities drop by approximately 50 percent in the case of corporate income taxes and dividend taxes and more than that in the case of capital gains taxes. On the other hand, in all specifications the host country's GDP growth and the level of U.S. domestic investment on fixed capital have a strong, positive and statistically significant effect on FDI flows to MIS.

In terms of the interaction effects of various tax rates on FDI to MIS, we estimate again equation (2) (Table 8). Overall, with only one exception, the interaction effects of various taxes on FDI flows to MIS are not statistically significant.

Apparently, taxation in the host country has, at best, mixed effects on FDI flows to MIS, while it strongly influences FDI flows to MOS. To test whether these differences in tax responsiveness of FDI flows to MOS and MIS are statistically significant, reduced form equation (3) is estimated and the results are reported in Table 9.

$$(3) \qquad FDI_{ijt} = f\left(D_{MIS}, VE_{it}, GDP_{it}, I_{jt}, TAX_{it}, D_{MIS} * TAX_{it}\right)$$

Now, both the FDI to MOS and MIS are polled together and the dummy variable (D_{MIS}) takes the value of 1 (0) in case of an FDI to MIS (MOS). Then, an interaction variable between (TAX_{it}) and (D_{MIS}) is introduced in equation (3) with its coefficient indicating the difference in the tax responsiveness of FDI flows between MIS and MOS.

The estimated coefficients indicate again the strong and statistically significant impact of all three tax rates on FDI flows to MOS and also the fact that the tax responsiveness of FDI flows to MIS is much weaker and this difference is statistically significant (since the estimated coefficient of the interaction variable ($D_{MIS} * TAX_{it}$) is positive and statistically significant). Consequently, our basic finding that the tax responsiveness of FDI to MIS is much weaker than the one of FDI to MOS is quite robust.

Discussion

Our empirical results indicate that U.S. FDI flows to MOS respond much more to host country's tax incentives than U.S. FDI flows to MIS. This is perhaps due to the fact that the U.S. tax system allows U.S. multinationals to receive a tax credit for the taxes they pay in the foreign country on their profit generated by their majority-owned subsidiaries, but it does not allow them to do so in case of minority-owned foreign subsidiaries. At the same time Desai and Hines [1999] suggest that the U.S. Tax Reform Act (1986) further complicated the tax liabilities for U.S. multinationals with foreign MIS, causing finally a significant decline in U.S. FDI flows to MIS after 1986.

On the other hand, host countries tend to offer much stronger tax incentives to FDI inflows for MOS as opposed to MIS, since the former appear more stable and beneficial for the local economy than the latter. For instance, in 1998, the government authorities in Shanghai, China, announced a wide range of tax incentives to foreign companies that were willing to establish wholly-owned R&D facilities in Shanghai.[7] However, the tax incentives were much weaker in case of minority-owned (by the foreign company) R&D facilities.[8]

Following a similar strategy with China, the government in South Korea was planning to offer a tax incentives package in attracting FDI inflows, starting at the beginning of 1999. [9] These tax incentives were to be available only to foreign companies that were planning in establishing majority-owned subsidiaries, whereas, foreign companies could not claim these tax incentives in the case of minority-owned subsidiaries, supporting thus our empirical findings in this study.[10]

CONCLUSIONS

Taxation overall appears to have catalytic effects on total FDI flows and FDI flows to MOS, but much weaker effects on FDI flows to MIS. All three types of taxes used in the present study show a strong interactive effect on total FDI flows as well as on FDI flows to MOS in the presence of other tax rates, but very little interactive effect on FDI flows to MIS. Finally, the corporate tax rate has the strongest impact on total FDI and FDI flows to MOS, with the capital gains tax rate in the middle, and the dividends tax rate having the weakest overall effect.

Of course, tax incentives might seem effective in attracting at least some types of FDI inflows, but it must not go unnoticed the growing concern among economists and policy makers about the plausible detrimental effects FDI outflows might have on home countries. Tanzi [2000] for instance argues that the outflow of FDI from developed countries might erode future tax revenues jeopardizing welfare policies in these countries, while Gropp and Kostial [2000] present strong evidence that FDI outflows diminish home country's corporate tax base. Although an important topic, this is beyond the scope of the present study.

Finally, the fact that taxation seems to play an important role in affecting the optimal structure of ownership of a foreign subsidiary sets up an interesting research question; that of examining the impact taxation might have on different types of FDI flows such as Mergers and Acquisitions and Greenfield investments.

APPENDIX A

DATA SOURCES AND TRANSFORMATIONS

Countries in the sample: Australia, Belgium, Canada, France, Germany, Hong Kong, Italy, Japan, Mexico, Netherlands, South Korea, Spain, Sweden, and United Kingdom.

Industries in the sample: Petroleum, Food and Kindered Products, Chemical and Allied Products, Primary and Fabricated Metals, Machinery except Electrical, Electrical and Electronic Equipment, Transportation equipment, Other Manufacturing, Total including Petroleum, Total of all Excluding Petroleum.

FDI Flows to Minority Owned Subsidiaries (MIS): First we subtract the "Total Assets of Majority Owned Affiliates of US Companies" from the "Total Assets of Affiliates of US Companies" in order to derive the "Total Assets of Minority Owned Affiliates of US Companies". Then we calculate its difference from two consecutive years and for the entire period between 1983 through 1993. Then we derive the real value of MIS, by using the appropriate price deflator. Finally, we normalize the MIS value by dividing it by the appropriate real GDP of the host country (Source: Bureau of Economic Analysis).

FDI Flows to Majority Owned Subsidiaries (MOS): We use the "Total Assets of Majority Owned Affiliates of US Companies" and we calculate its first difference across years in order to find the flows of capital due to MOS investment. By using the appropriate price deflator, we derive the real value of MOS that we finally use in our regressions. Finally, we normalize the MOS value in the same way as for MIS (Source: Bureau of Economic Analysis).

Foreign Direct Investment (FDI): The sum of FDI flows to MOS and MIS.

Bilateral Real Exchange Rate: We follow the same derivations as in Goldberg and Kolstad [1995]. Specifically, we multiply the nominal exchange rate (defined as the price of a US dollar in terms of the currency of the host country) by the price deflator of the host country and divide by the respective deflator of the US. (Source: IMF International Financial Statistics).

Volatility of the real exchange rate: We follow the calculations suggested by Goldberg and Campa [1993], and Goldberg and Kolstad [1995]. Specifically, we calculate the standard deviation of the real exchange rate for the past 12 quarters and we divide it by its mean over the same period. (Source: Bureau of Economic Analysis).

Real GDP: This is the real Gross Domestic Product, or an equivalent, for all the countries in our sample, and for the period between 1983 through 1993. (Source: OECD).

Consumer Price Index: We use various consumer price indices in calculating our real exchange rates. We use the "Consumer Price Index" for Australia, Belgium, Canada, France, Germany, Hong Kong, Italy, Japan, Netherlands, US and Spain; the "Consumer Price" for Mexico, South Korea, and Sweden. (Source: Datastream International Limited).

APPENDIX B

TABLE 1
Descriptive Statistics

Variable	Mean	Minimum	Maximum
FDI_{ijt}	12975.578	0.000	398252.632
MOS_{ijt}	8638.397	0.000	335521.053
MIS_{ijt}	4337.180	0.000	290721.053
$COTAX_{it}$	40.479	16.500	58.000
$CATAX_{it}$	38.603	0.000	58.000
$DITAX_{it}$	12.232	0.000	55.000
VE_{it}	-0.905	-2.561	0.845
GDP_{it}	6.535	3.248	11.527
I_{jt}	148.699	6.944	942.328

TABLE 2
Correlations

	FDI_{ijt}	MOS_{ijt}	MIS_{ijt}	$COTAX_{it}$	$CATAX_{it}$	$DITAX_{it}$	VE_{it}	GDP_{it}	I_{it}
FDI_{ijt}	1.000								
MOS_{ijt}	0.878	1.000							
MIS_{ijt}	0.761	0.505	1.000						
$COTAX_{it}$	-0.151	-0.217	-0.013	1.000					
$CATAX_{it}$	-0.065	-0.205	0.137	0.585	1.000				
$DITAX_{it}$	-0.151	-0.185	0.021	-0.027	0.041	1.000			
VE_{it}	-0.015	0.003	0.041	-0.341	-0.153	0.649	1.000		
GDP_{it}	0.129	0.028	0.193	0.088	0.475	-0.259	-0.132	1.000	
I_{jt}	0.489	0.448	0.436	0.033	0.064	0.045	0.078	-0.022	1.00

TABLE 3
Dependent Variable: Total U.S. FDI Flows
Tax Responsiveness

Independent Variables	Fixed Effects Model	Fixed Effects Model	Fixed Effects Model
VE_{it}	-0.533*	-0.268**	-0.0893
	(-3.559)	(-1.929)	(-0.669)
GDP_{it}	0.0667*	0.142*	0.0829*
	(1.972)	(3.844)	(2.556)
I_{jt}	0.0146*	0.0154*	0.0140*
	(7.775)	(8.253)	(7.978)
$COTAX_{it}$	-3.0918*		
	(-4.533)		
$CATAX_{it}$		-2.149*	
		(-5.267)	
$DITAX_{it}$			-0.265*
			(-3.705)
Hausman Coefficient	12.93	14.04	18.28
$\overline{R}^2$	0.295	0.314	0.303
Sample	381	378	427

Notes: The table reports only the estimations from the most appropriate model among the OLS, Fixed Effects and Random Effects models. A (*) next to a coefficient indicates its significance at 0.01 level, and a (**) its significance at 0.05 level. The reported t-statistics are corrected for heteroscedasticity.

TABLE 4
Dependent Variable: U.S. FDI Flows to MOS
Tax Responsiveness

Independent Variables	Random Effects Model	Random Effects Model	Random Effects Model
Constant	21.525*	16.850*	6.819*
	(7.942)	(10.777)	(18.567)
VE_{it}	-0.538*	-0.239	-0.210
	(-3.246)	(-1.567)	(-1.389)
GDP_{it}	0.0359	0.149*	0.0355
	(1.009)	(3.813)	(0.964)
I_{jt}	0.01593*	0.0166*	0.0159*
	(10.078)	(10.455)	(9.571)
$COTAX_{it}$	-4.223*		
	(-5.690)		
$CATAX_{it}$		-3.133*	
		(-6.941)	
$DITAX_{it}$			-0.272*
			(-3.308)
Hausman Coefficient	3.23	5.01	2.94
$\overline{R}^2$	0.275	0.298	0.244
Sample	381	378	427

Notes: The table reports only the estimations from the most appropriate model among the OLS, Fixed Effects and Random Effects models. A (*) next to a coefficient indicates its significance at 0.01 level, and a (**) its significance at 0.05 level. The reported t-statistics are corrected for heteroscedasticity.

TABLE 5
Dependent Variable: U.S. FDI Flows to MIS
Tax Responsiveness

Independent Variables	Random Effects Model	Random Effects Model	Random Effects Model
Constant	9.322*	5.652*	
	(3.017)	(3.128)	

TABLE 5 - *continued*
Dependent Variable: U.S. FDI Flows to MIS
Tax Responsiveness

Independent Variables	Random Effects Model	Random Effects Model	Random Effects Model
VE_{it}	-0.169	0.0129	0.241
	(-0.897)	(0.073)	(1.418)
GDP_{it}	0.207*	0.221*	0.185*
	(5.090)	(4.869)	(4.485)
I_{jt}	0.0158*	0.0161*	0.0156*
	(8.349)	(8.388)	(7.034)
$COTAX_{it}$	-1.415**		
	(-1.673)		
$CATAX_{it}$		-0.423	
		(-0.812)	
$DITAX_{it}$			-0.191*
			(-2.096)
Hausman Coefficient	13.83	14.46	17.58
$\bar{R}^2$	0.236	0.238	0.278
Sample	381	378	427

Notes: The table reports only the estimations from the most appropriate model among the OLS, Fixed Effects and Random Effects models. A (*) next to a coefficient indicates its significance at 0.01 level, and a (**) its significance at 0.05 level. The reported t-statistics are corrected for heteroscedasticity.

TABLE 6
Dependent Variable: U.S. FDI Flows
Interactive Effects

Independent Variables	Fixed Effects	Fixed Effects	Fixed Effects	Fixed Effects	Fixed Effects	Fixed Effects
VE_{it}	-0.405	0.0003	-0.416*	0.325**	0.131	0.397*
	(-2.705)	(0.001)	(-2.793)	(1.678)	(0.572)	(2.0688)
GDP_{it}	0.125*	0.0992*	0.122*	0.173*	0.103*	0.160*
	(3.351)	(2.783)	(3.259)	(4.720)	(2.898)	(4.402)
I_{jt}	0.0156*	0.0146*	0.0156*	0.0158*	0.0145*	0.0156*
	(8.419)	(7.867)	(8.419)	(8.663)	(7.805)	(8.524)
$COTAX_{it}$	-0.385	-1.599**				
	(-0.338)	(-1.825)				
$CATAX_{it}$			0.666	-1.461*		
			(0.574)	(-3.404)		
$DITAX_{it}$					1.512	1.729*
					(1.275)	(2.711)
$COCA_{it}$	-0.412*		-0.565*			
	(-3.216)		(-2.588)			
$CODI_{it}$		-0.0776*			-0.502	
		(-2.678)			(-1.633)	
$CADI_{it}$				-0.104*		-0.589*
				(-4.273)		(-3.487)
Hausman Coefficient	14.56	11.79	14.32	13.09	11.54	12.84
$\bar{R}^2$	0.325	0.308	0.326	0.349	0.304	0.340
Sample	378	381	378	378	381	378

Notes: The table reports only the estimations from the most appropriate model among the OLS, Fixed Effects and Random Effects models. A (*) next to a coefficient indicates its significance at 0.01 level, and a (**) its significance at 0.05 level. The reported t-statistics are corrected for heteroscedasticity.

TABLE 7
Dependent Variable: U.S. FDI Flows to MOS – Interactive Effects

Independent Variables	Random Effects	Random Effects	Random Effects	Random Effects	Random Effects	Random Effects
Constant	13.669*	15.101*	13.832*	15.0726*	7.263*	7.0941*
	(4.192)	(4.639)	(7.289)	(9.651)	(17.638)	(18.057)
VE_{it}	-0.405*	0.196	-0.415*	0.481*	0.322	0.577*
	(-2.462)	(0.730)	(-2.535)	(2.285)	(1.290)	(2.763)
GDP_{it}	0.127*	0.0807*	0.124*	0.185*	0.0842*	0.1680*
	(3.174)	(2.154)	(3.094)	(4.779)	(2.244)	(4.371)
I_{jt}	0.0168*	0.0161*	0.0168*	0.0171*	0.0160*	0.0169*
	(10.516)	(10.107)	(10.506)	(10.723)	(10.035)	(10.569)
$COTAX_{it}$	0.12	-2.178*				
	(0.097)	(-2.314)				
$CATAX_{it}$			0.11	-2.281*		
			(0.088)	(-4.826)		
$DITAX_{it}$					2.461**	2.909*
					(1.920	(4.132)
$COCA_{it}$	-0.642*		-0.651*			
	(-4.553)		(-2.780)			
$CODI_{it}$		-0.109*			-0.792*	
		(-3.475)			(-2.384)	
$CADI_{it}$				-0.130*		-0.943*
				(-4.863)		(-5.055)
Hausman Coefficient	5.36	2.08	5.08	4.44	2.01	4.5
$\overline{R}^2$	0.313	0.299	0.313	0.340	0.296	0.331
Sample	378	381	378	378	381	378

Notes: The table reports only the estimations from the most appropriate model among the OLS, Fixed Effects and Random Effects models. A (*) next to a coefficient indicates its significance at 0.01 level, and a (**) its significance at 0.05 level. The reported t-statistics are corrected for heteroscedasticity.

TABLE 8
Dependent Variable: U.S. FDI Flows to MIS – Interactive Effects

Independent Variables	Fixed Effects	Fixed Effects	Fixed Effects	Fixed Effects	Fixed Effects	Fixed Effects
VE_{it}	-0.144	-0.0774	-0.156	0.256	0.0429	0.288
	(-0.739)	(-0.241)	(-0.806)	(0.998)	(0.145)	(1.142)
GDP_{it}	0.156*	0.159*	0.152*	0.184*	0.163*	0.178*
	(3.226)	(3.445)	(3.138)	(3.799)	(3.541)	(3.721)
I_{jt}	0.0156*	0.0148*	0.0156*	0.0156*	0.0148*	0.0155*
	(6.489)	(6.179)	(6.487)	(6.491)	(6.145)	(6.459)
$COTAX_{it}$	-1.529	-0.901				
	(-1.032)	(-0.795)				
$CATAX_{it}$			1.873	-0.151		
			(1.241)	(-0.265)		
$DITAX_{it}$					0.454	-0.165
					(0.296)	(-0.196)
$COCA_{it}$	-0.0044		-0.473**			
	(-0.026)		(-1.667)			
$CODI_{it}$		-0.0173			-0.154	
		(-0.462)			(-0.387)	
$CADI_{it}$				0.998		-0.0106
				(-1.566)		(-0.047)
Hausman Coefficient	14.10	14.74	13.97	15.40	14.77	15.40
$\overline{R}^2$	0.258	0.250	0.259	0.259	0.249	0.259
Sample	378	381	378	378	381	378

Notes: The table reports only the estimations from the most appropriate model among the OLS, Fixed Effects and Random Effects models. A (*) next to a coefficient indicates its significance at 0.01 level, and a (**) its significance at 0.05 level. The reported t-statistics are corrected for heteroscedasticity.

TABLE 9
Dependent Variable: U.S. FDI flows to MOS and MIS
Differences in Tax Responsiveness

Independent Variables	Fixed Effects Model	Fixed Effects Model	Fixed Effects Model
D_{MIS}	-8.0746*	-9.331*	-1.422*
	(-2.548)	(-5.159)	(-6.559)
VE_{it}	-0.383*	-0.161*	-0.0168
	(-4.0361)	(-1.815)	(-0.185)
GDP_{it}	0.0655*	0.125*	0.0769*
	(2.879)	(5.115)	(3.360)
I_{jt}	0.0168*	0.0172*	0.0163*
	(12.238)	(12.652)	(12.266)
$COTAX_{it}^{MOS}$	-3.562*		
	(-6.289)		
$CATAX_{it}^{MOS}$		-2.734*	
		(-8.735)	
$DITAX_{it}^{MOS}$			-0.299*
			(-4.819)
$COTAX_{it}^{MIS}$	1.910*		
	(2.245)		
$CATAX_{it}^{MIS}$		2.277*	
		(4.640)	
$DITAX_{it}^{MIS}$			0.162*
			(1.840)
Hausman Coefficient	26.17	23.54	35.94
$\overline{R}^{2}$	0.306	0.330	0.312
Sample	762	756	854

Notes: The table reports only the estimations from the most appropriate model among the OLS, Fixed Effects and Random Effects models. A (*) next to a coefficient indicates its significance at 0.01 level, and a (**) its significance at 0.05 level. The reported t-statistics are corrected for heteroscedasticity.

NOTES

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1. "Direct Foreign Investment in Germany Doubled in 1998", the *Wall Street Journal Europe*, 07/28/99.
2. "Construction of Ten Factories Worth of $220m to Start This Year", *Czech News Agency*, 09/03/1999.
3. "Central Europe: Czechs Backtrack on Incentives – Republic is Bolder in Wooing Investors", the *Wall Street Journal Europe*, 09/27/1997.
4. "Ramco Plans to Develop Azerbaijan Field", the *Wall Street Journal Europe*, 04/03/1998.
5. See Appendix A for more on our data sources and transformations
6. In all estimations, our regressors are in logs.
7. "Rules Relax for Foreign Involvement in R&D Jobs," *South China Morning Post*, 02/17/1998.
8. Notice though that the effects of FDI inflows on the host countries' R&D activity are still debatable. Thus, Feinberg and Majumdar [2001] find that in the Indian pharmaceutical industry knowledge spillovers from multinationals' local R&D activities do not benefit local companies but only other multinationals in the same industry. Also, de la Potterie and Lichtenberg [2001] find that FDI flows transfer technology only in the case where a country invests in a more R&D intensive country but not if foreign R&D intensive countries invest in it.
9. "Tax Breaks Eyed for Foreign Investment in Capital Area," the *Korea Herald*, 09/25/1998.
10. Some researchers are quite skeptical though about the effectiveness of tax incentives in attracting FDI inflows, especially in developing countries. Allen et al. [2001] for instance find that the elimination of

tax incentives to foreign investors by the Indonesian government was not associated with any decline of FDI inflows in the country despite the fact that other countries in the region were still offering tax incentives to foreign investors. They also find that the cost of tax incentives to the Indonesian tax payer were far in excess of the benefits of the additional FDI inflows, concluding that these programs of incentives is simply a transfer of funds from domestic tax payers to foreign investors.

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