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No. 8460

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Peter Egger and Georg Wamser

INTERNATIONAL TRADE AND REGIONAL ECONOMICS

Centre for Economic Policy Research

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Available online at: **www.cepr.org/pubs/dps/DP8460.asp**

ISSN 0265-8003

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Peter Egger, ETH Zurich, CESifo, GEP, Oxford University and CEPR
Georg Wamser, ETH Zürich and CESifo

Discussion Paper No. 8460
June 2011

Centre for Economic Policy Research
77 Bastwick Street, London EC1V 3PZ, UK
Tel: (44 20) 7183 8801, Fax: (44 20) 7183 8820
Email: cepr@cepr.org, Website: www.cepr.org

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CEPR Discussion Paper No. 8460

June 2011

ABSTRACT

The Impact of Controlled Foreign Company Legislation on Real Investments Abroad. A Two-dimensional Regression Discontinuity Design*

Controlled foreign company (CFC) rules are frequently imposed by countries as part of their anti-tax-avoidance legislation. This paper aims at quantifying their impact on foreign investments by utilizing a regression discontinuity design and the universe of German foreign investments notified to Deutsche Bundesbank. While most regression discontinuity designs are one-dimensional, German CFC legislation gives rise to a two-dimensional design. The latter allows the local average treatment effect (LATE) to be heterogeneous along the two treatment thresholds, which are related to the level of the foreign corporate profit tax rate and to the returns on passive assets relative to total returns. We find clear evidence of a negative average LATE of the CFC legislation on the fixed assets held by German multinationals abroad. We find also evidence of some heterogeneity of LATE according to parametric as well as nonparametric estimates. On average, foreign assets are estimated to respond by about 10 million Euros in the neighborhood of the intersection of both treatment thresholds. This evidence points to a significant and economically large impact of anti-tax-avoidance legislation on multinational firms' real activity abroad.

JEL Classification: F23 and H25
Keywords: CFC rule, corporate profit tax, multinational firms, plant-level data, regression discontinuity design and tax avoidance

Peter Egger
ETH Zürich, KOF
Weinbergstrasse 35
8092 Zürich
SWITZERLAND

Email: egger@kof.ethz.ch

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Georg Wamser
ETH Zurich
KOF Weinbergstrasse 35
WEH E8
8092 Zurich
SWITZERLAND

Email: wamser@kof.ethz.ch

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* We gratefully acknowledge support by members of the research center of the Deutsche Bundesbank.

Submitted 08 June 2011

1 Introduction

Profit-shifting activities of multinational enterprises (MNEs) have attracted much attention both in policy debate and economic research. Several recent studies provide evidence that MNEs shift, to a significant extent, income to low-tax jurisdictions in order to save taxes (see, e.g., Huizinga and Laeven, 2008; Weichenrieder, 2009; Egger, Eggert, and Winner, 2010). Since profit shifting constrains parent countries in their ability to raise corporate tax revenue, their tax legislation often responds by establishing specific anti-tax-avoidance measures. The two most important such measures in international tax law are *thin-capitalization rules* and *controlled-foreign-corporation (CFC) rules*, which have been adopted by many countries during the last years.

CFC rules specifically aim at taxing foreign income that is sheltered from parent-country taxation otherwise. If the parent country of an MNE runs a tax exemption system (and is a high-tax country), the benefit of low taxes at foreign locations is obvious: foreign income is taxed at a low rate and exempt from high domestic taxation. But an MNE can also benefit if its home country applies a tax credit system (as, for example, the United States do), in particular, if income is not repatriated to the home country. In case that foreign income is generated from productive (active) operations, tax-shelter activities are usually accepted. Yet this exemption privilege is often withdrawn if income is associated with passive investment (referred to as the *tainted-income approach*). If MNEs exploit international tax-rate differentials to avoid taxes, such income typically arises at foreign subsidiaries in low-tax jurisdictions, which often design their tax systems in a way that attracts passive investments or paper profits (see Nicodème, 2009). As this is considered as *harmful tax practice* (see OECD, 1998), supra-national organizations such as the OECD recommend taxing passive income following a residence-based approach of taxation. The OECD (1998, p. 40-41) particularly emphasizes "*that countries that do not have such rules [should] consider adopting them and that countries that have such rules [should] ensure that they apply in a fashion consistent with the desirability of curbing harmful tax practices.*"

Although CFC rules are perceived as increasingly important, only a few studies have looked at their impact, especially, on the behavior of MNEs. Altshuler and Hubbard (2003) examine the effects of the U.S. Tax Reform Act of 1986, which included changes in the U.S. CFC legislation (Subpart F). In an analysis focused on aggregate statistics, they illustrate that tighter rules seem to have made it more difficult for firms to defer U.S. taxes on

financial services income held in low-tax jurisdictions. In later studies, however, Altshuler and Grubert (2006) as well as Mutti and Grubert (2006) argue that hybrid entities have been increasingly used by U.S. MNEs, allowing the firms to avoid anti-abuse provisions. They argue that the U.S. Treasury, for this reason, faces new challenges in taxing income from passive investments. In a recent study, Ruf and Weichenrieder (2009) explore the consequences of the German CFC rule and show that it affects the behavior of MNEs in foreign low-tax jurisdictions.[1]

The scarcity of research on the matter may be owed to the difficulty of evaluating the impact of anti-tax-avoidance provisions as such. This is particularly pertinent in the context of MNE behavior, since such firms by nature operate on a worldwide basis and engage in complex interrelations with their foreign subsidiaries (e.g., in terms of financing), rendering the identification of causal effects of national regulations such as CFC rules difficult. Moreover, an empirical identification of the effects of CFC rules is complicated by their very design. For instance, whether or not a CFC rule is applicable typically depends on host-country characteristics as well as firm or subsidiary characteristics, and inference based on comparisons across the board of host countries *and* firms or subsidiaries may be blurred by the omission of relevant observable and unobservable characteristics.

This study has two goals. First, we aim at using the design of German CFC legislation as a quasi-experimental design to estimate the local average treatment effect (LATE) of CFC rules on MNEs (see Imbens and Lemieux, 2008; Angrist and Pischke, 2009; Lee and Lemieux, 2010). Second, in contrast to previous research on the consequences of CFC rules, we focus on their impact on foreign *real* investments (fixed assets) as an outcome of interest. This is motivated by the analysis in Weichenrieder (1996), who demonstrates theoretically that a reduction of passive assets (e.g., through a tighter CFC rule) may cause real investments to fall, accruing to higher costs of capital. From this, we would hypothesize that switching from CFC non-treatment to treatment limits the profitability of passive assets (see Ruf and Weichenrieder, 2009) which, in turn, should raise the costs of capital of real assets. By that token, CFC treatment should reduce the level of real foreign investment.

[1] As for thin-capitalization rules, evidence has been provided by Buettner, Overesch, Schreiber and Wamser (2008). Their findings indicate that tighter rules cause a reduction in loans from foreign subsidiaries and effectively remove the incentive to use such loans for tax-planning purposes. Weichenrieder and Windischbauer (2008) as well as Overesch and Wamser (2010) investigate a reform of the German thin-capitalization rule and confirm that firms respond by using less internal debt.

The latter hypothesis is at the heart of our analysis.

It turns out that the legislation underlying our study exhibits two continuous, so-called forcing variables, namely the foreign corporate tax rate and the returns on passive assets relative to the returns on total assets, which generate a two-dimensional discontinuity about the CFC rule's impact on outcome. First, German CFC legislation applies only to foreign investments in low-tax countries, defined as countries where the statutory tax rate lies below 30% (25% since 2001). Second, CFC legislation does not come into operation if the underlying gross return from passive investment is below 10% of the overall gross return (see Section 2 for more details). The mentioned two thresholds give rise to a two-dimensional regression discontinuity design, allowing us to compare outcomes of foreign subsidiaries that are just *below the tax* and *above the passive-assets* cutoff values, with control observations just above and below the respective thresholds. This design enables us to provide causal evidence on the impact of CFC rules on real foreign investments of MNEs.

Using a unique data-set provided by Deutsche Bundesbank (the German Central Bank) which captures virtually all activities of German MNEs in foreign countries, we find that CFC-rule treatment is indeed associated with significantly less real investment (fixed assets). The negative effect roots in the high level of the German corporate profit tax rate. Treatment of firms under the CFC legislation raises the overall cost of capital significantly relative to comparable control firms. Our benchmark estimates suggest that fixed foreign assets decline, on average, by about €10 million in response to CFC treatment in the neighborhood of the two treatment thresholds.

The remainder of the paper is structured as follows. In Section 2 we describe the relevant aspects of the German CFC legislation. Section 3 introduces the empirical identification strategy. Section 4 presents the data used. The results and several robustness checks are shown in Section 5, and the last section concludes.

2 German CFC Legislation

The German CFC legislation was introduced in 1972 under the country's Foreign Transactions Tax Act (*Außensteuergesetz, AStG*).[2] The provisions

[2]Ten years earlier, under the Revenue Act of 1962, the United States enacted Subpart F provisions to hamper the opportunities of MNEs to avoid U.S. taxes. Subpart F income is defined as income from certain types of passive investments, such as interest or dividend

aim at preventing sheltering of passive investment income in low-tax countries from higher parent-country taxation. Given that foreign profits of German MNEs are usually exempt from German taxation, the CFC legislation renders the tax exemption system for some income ineffective. To be precise, on the basis of §§7–14 AStG – the statutory body of the German CFC rule – income from investment with capital investment characteristics may be subject to parent-country taxation. §7 (6a) AStG states explicitly that such income includes interest and dividend received from financial investments. §8 AStG further defines active business operations that are not within the scope of the CFC rule, including the activities of banking and insurance firms. For a foreign subsidiary to be treated by the CFC rule, two basic criteria have to be fulfilled. First, according to §8 (3) AStG, the level of the host country's corporate profit tax rate must be lower than 30% (since 2001, 25%). Second, according to §9 AStG, the returns from passive investments must exceed 10% of total returns. We provide excerpts from the relevant legal texts together with own translations thereof in the Appendix.

If these requirements are fulfilled, relevant income as defined by §7 AStG is immediately taxable in the residence country (see §10 AStG). While passive income is included in the taxable income of the German residents, taxes paid at the foreign locations may be deducted or credited against the German tax.

Since the German tax level is significantly higher[3] compared with the tax level faced by subsidiaries in low-tax locations (below 30% or 25%, respectively), the implication is straightforward. Consider two subsidiaries, one in an environment where the foreign tax rate and passive income ratio variables are such that the subsidiary is *just not treated* by CFC law, and another one that is *just treated*, all else equal. Then, the treated unit should face a less favorable environment regarding its cost of capital and, hence, should exhibit less real investment than the untreated unit (see Weichenrieder, 1996, and the discussion in Section 5).

3 Empirical Approach

We aim at estimating the impact of the German CFC legislation on the use of fixed assets at foreign subsidiaries held by firms in the universe of German

income from securities (see Altshuler and Hubbard, 2003).

[3]Note, though, that Germany substantially reduced its corporate tax rate (including the local business tax) during the time period considered (from approx. 53% in 1996 to approx. 33% in 2007).

MNEs which Deutsche Bundesbank collects data about. The CFC legislation, as outlined in the previous section, provides for two forcing variables and, hence, a two-dimensional discontinuity determining treatment in compliance with the CFC rule. Accordingly, a regression discontinuity design (RDD) based on two forcing variables and discontinuities appears to be a natural identification strategy for the (local) average CFC treatment effect on German MNEs in the neighborhood of the two thresholds.

To introduce the approach, it is useful to define a single binary indicator, CFC_{it}, which is unity if foreign subsidiary i is treated under the CFC provision in period t, and zero otherwise. Let us denote the statutory corporate profit tax rate in year t of the host country of subsidiary i by Tax_{it}, and the passive-assets-to-total-assets ratio of subsidiary i at time t by $Pass_{it}$.[4] In terms of this notation, whether an entity is treated or not depends on the following two criteria:

$$CFC_{it} = \begin{cases} 1 & \text{if } Tax_{it} < 30\% \text{ (25\%) and } Pass_{it} > 10\%, \\ 0 & \text{if } Tax_{it} \geq 30\% \text{ (25\%) or } Pass_{it} \leq 10\%. \end{cases} \quad (1)$$

When thinking of CFC_{it} as being determined by two *rules*, one about Tax_{it} and one about $Pass_{it}$, we might specify

$$Rule_{it}^{Tax} = \begin{cases} 1 & \text{if } Tax_{it} < 30\% \text{ (25\%)}, \\ 0 & \text{if } Tax_{it} \geq 30\% \text{ (25\%)}, \end{cases} \quad (2)$$

$$Rule_{it}^{Pass} = \begin{cases} 1 & \text{if } Pass_{it} > 10\%, \\ 0 & \text{if } Pass_{it} \leq 10\%, \end{cases} \quad (3)$$

so that we can define $CFC_{it} = Rule_{it}^{Tax} \cdot Rule_{it}^{Pass}$ (see Section 2).

We postulate that the fixed assets of subsidiary i at time t, $FixedAssets_{it}$, depend on both Tax_{it} and $Pass_{it}$ in a continuous way. A higher level of Tax_{it}

[4]The CFC legislation refers to passive returns before taxes as a share of total returns. In the absence of arbitrage between investment opportunities (which is very likely the case here), this translates into passive investments relative to total investments or passive assets relative to total assets. The latter is measurable. Below, we will provide evidence for the existence of a threshold at the suggested 10% passive-to-total asset ratio level and not elsewhere in its neighborhood. Also, we will illustrate (supported by tests) that there is neither local bunching of activity in the treatment region close to the threshold in either dimension (forcing variable) nor anywhere in the passive-to-total-asset ratio distribution.

is a natural determinant of foreign direct investment since it affects German firms' profits abroad directly (Hines, 1996; Mutti and Grubert, 2004) and, moreover, affects firms' incentives to shift profits through transfer pricing (Grubert and Mutti, 1991; Swenson, 2001; Clausing, 2003), debt shifting (Desai, Foley and Hines, 2004; Huizinga, Laeven and Nicodème, 2008), and royalty payments (Hines, 1995; Grubert, 1998). A higher level of $Pass_{it}$ is associated with higher returns so that, due to lower capital costs, firms can ceteris paribus afford higher investments in $FixedAssets_{it}$ (see Weichenrieder, 1996). Apart from a continuous relationship between $FixedAssets_{it}$ and Tax_{it} on the one hand and $FixedAssets_{it}$ and $Pass_{it}$ on the other hand, treatment status, CFC_{it}, is determined by Tax_{it} as well as $Pass_{it}$, which entails a discontinuity about the thresholds specified in (1).

The RDD compares outcome $FixedAssets_{it}$ of foreign subsidiaries just above the CFC treatment threshold (at $CFC_{it} = 1$) with those just below it (at $CFC_{it} = 0$). Unlike in the textbook case (see Imbens and Lemieux, 2008; Angrist and Pischke, 2009; Lee and Lemieux, 2010), the two rules determining treatment status entail a two-dimensional threshold where the continuous control functions for units with versus without treatment are surfaces rather than curves. Before introducing the regression framework, it is useful to define transformed forcing variables $\widetilde{Tax}_{it} = Tax_{it} - \tau_t$ and $\widetilde{Pass}_{it} = Pass_{it} - \pi_t$, where τ_t and π_t denote the threshold levels $Tax_{it} = 30\%$ (25%) and $Pass_{it} = 10\%$, respectively, as used in equations (1)-(3). Let us define flexible continuous (polynomial or nonparametric) functions of $\widetilde{Tax}_{it}$ and $\widetilde{Pass}_{it}$, one defined for the untreated where $CFC_{it} = 0$, $f_0(\widetilde{Tax}_{it}, \widetilde{Pass}_{it})$, and one for the treated where $CFC_{it} = 1$, $f_1(\widetilde{Tax}_{it}, \widetilde{Pass}_{it})$.[5]

To identify the local average treatment effect (LATE) as a parameter on CFC_{it} in the neighborhood of $Tax_{it} = 30\%$ (25%) and $Pass_{it} = 10\%$, we may now specify the following model:

$$\begin{aligned} FixedAssets_{it} = \alpha + \beta\ CFC_{it} \quad &+ \quad f_0(\widetilde{Tax}_{it}, \widetilde{Pass}_{it}) \\ &+ \quad f_1(\widetilde{Tax}_{it}, \widetilde{Pass}_{it}) + \epsilon_{it}, \end{aligned} \tag{4}$$

where α is a constant term and ϵ_{it} a possibly heteroscedastic disturbance term containing i-specific random effects. As indicated before, the functions

[5]In practice, it is possible but not advisable to restrict the control function to be the same for untreated observations with $CFC_{it} = 0$ and treated ones with $CFC_{it} = 1$, akin to single-threshold models as described in Imbens and Lemieux (2008), Angrist and Pischke (2009), or Lee and Lemieux (2010).

$f_0(\cdot)$ and $f_1(\cdot)$ are control functions which may be estimated parametrically or non-parametrically. The former relies on a polynomial approximation and the latter may be estimated by additive nonparametric regression models (see Hastie and Tibshirani, 1990; Härdle and Linton, 1994; see Becker, Egger, and Ehrlich, 2011, for Monte Carlo evidence on multi-threshold RDD models with semi- or nonparametric control functions). Since both $f_0(\cdot)$ and $f_1(\cdot)$ are zero in the neighborhood of the bivariate CFC treatment threshold, β measures LATE of a CFC treatment in the neighborhood of $Tax_{it} = 30\%$ (25%) and $Pass_{it} = 10\%$. The average treatment effect of β is *local*, because it measures the effect only in the neighborhood of $\widetilde{Tax}_{it} = 0$ *and* $\widetilde{Pass}_{it} = 0$. There is a continuum of such LATEs along the treatment thresholds in $\widetilde{Tax}_{it}$-$\widetilde{Pass}_{it}$-space where $\widetilde{Tax}_{it} = 0$ *or* $\widetilde{Pass}_{it} = 0$. In general, the local average treatment effect of German CFC legislation on $FixedAssets_{it}$ is determined as

$$LATE^{FixedAssets} = \beta + f_1(\cdot) - f_0(\cdot), \tag{5}$$

where the arguments of $f_1(\cdot)$ and $f_0(\cdot)$ determine the point in $\widetilde{Tax}_{it}$ or $\widetilde{Pass}_{it}$ at which LATE is evaluated. In practice, identification may improve with focusing on observations within a certain window around treatment thresholds with (semi-)parametric control functions or with the choice of a smaller bandwidth with nonparametric control functions. Then, the control functions in the neighborhood of $Tax_{it} = 30\%$ (25%) and $Pass_{it} = 10\%$ will not be distorted by influential observations far off the critical values of Tax_{it} and $Pass_{it}$ associated with $Rule_{it}^{Tax}$ and $Rule_{it}^{Pass}$.

As mentioned above, we use parametric and, alternatively, nonparametric control functions for identification. In the former case, we employ 3^{rd}-order polynomial functions about $\widetilde{Tax}_{it}$ and $\widetilde{Pass}_{it}$.[6] With non-parametric control functions, we use linear additive models of the local linear regression type as suggested by Hahn, Todd, and van der Klaauw (2001); see also Cleveland (1979), Hastie and Tibshirani (1990) and, especially, Ruppert and Wand (1992). The local linear estimator based on the kernel K_h with bandwidth h for the model at stake then minimizes

$$\sum_{i=1}^{N} K_h(-\widetilde{Tax}_{sit}, -\widetilde{Pass}_{sit})$$
$$\left[FixedAssets_{sit} - \alpha_s - \left(\gamma_s \widetilde{Tax}_{it} + \delta_s \widetilde{Pass}_{it} + \zeta_s \widetilde{Tax}_{it} \widetilde{Pass}_{it}\right)\right]^2, \tag{6}$$

[6] In the sensitivity analysis, we will also consider βs which are estimated within smaller windows around threshold levels of Tax_{it} and $Pass_{it}$.

where subscript s in (6) refers to treated versus untreated observations. α_s, γ_s, δ_s, and ζ_s are parameters of the local linear function which have to be estimated. As with parametric estimates of the control functions, nonparametric estimation is done separately to the left and to the right of the CFC treatment threshold. We use an Epanechnikov kernel function for $K_h(\cdot)$ with a bandwidth of $h = 0.8$. Of course, a greater (smaller) bandwidth results in more (less) smoothing as with univariate nonparametric smoothing algorithms. However, given the range of variation in the dependent variable $FixedAssets_{it}$, a bandwidth of 0.8 should be considered as quite small and associated with not too much smoothing.[7]

Based on estimates of (4) or (6), we may calculate $LATE^{FixedAssets}$ as in (5). For convenience, we will do so within cells of $\widetilde{Tax}_{it}$ and $\widetilde{Pass}_{it}$ of one-percentage-point size and focus on just one band of cells on either side of the treatment threshold (i.e., in the neighborhood of $Tax_{it} = 30\%$ (25%) or $Pass_{it} = 10\%$).[8] Then, the difference of those averages between the treated and untreated units right at the threshold provides for a semi- or nonparametric estimate of $LATE^{FixedAssets}$. Since outcome and treatment bear a time index and are based upon repeated observation of subsidiary i across years t, we will base inference on bloc-sub-sampled standard errors throughout (see Fitzenberger, 1998), where equicorrelation of the units of observation is properly respected in sampling and standard errors are robust to clustering and heteroskedasticity.

4 Data

Information on the foreign activity of German MNEs is available through MiDi (Microdatabase Direct Investment), a balance-sheet-based database provided by Deutsche Bundesbank. One remarkable feature of this data is

[7] We are bound by law to respect confidentiality about single (affiliate-specific) values of all variables contained in MiDi. However, the interquartile range of $FixedAssets_{it}$ spans a width of almost €4 million, the range between the lowest and highest deciles amounts to more than €14 million, and the average level is €10.71 million.

[8] Notice that larger cells are associated with a larger distance between the points at which LATE is evaluated. A larger such distance may lead to a bigger bias of LATE (see Hahn, Todd, and van der Klaauw, 2001). With histogram-type estimates of LATE based on cell-specific averages, a larger cell width implies taking averages over bigger subsamples of data which reduces the noise in the data. However, our estimates suggest that there is only a minor difference between regressions based on cell averages versus ones based on subsidiary-level raw data.

that it includes information on all foreign investments of German MNEs above a certain threshold of the total assets (see Lipponer, 2010, for a detailed documentation), because firms are legally bound to report to Deutsche Bundesbank according to the German Foreign Trade and Payments Regulation (Außenwirtschaftsverordnung). In combination with information on countries' tax rates, MiDi allows us to identify subsidiaries that are affected by the German CFC rule according to the requirement as defined in Section 2. Passive returns before taxes are not directly measurable as pointed out in Footnote 3. However, in the absence of arbitrage, passive returns before taxes relative to total returns of a subsidiary should be proportional to the passive-to-total-asset ratio which can be measured as total financial assets net of equity plus lending to affiliated firms relative to total assets (see Ruf and Weichenrieder, 2009).[9]

Whether $Rule_{it}^{Pass}$ applies or not is determined at the level of subsidiaries in MiDi. The second threshold, $Rule_{it}^{Tax}$, is determined by the statutory corporate profit tax rate of the host country where the foreign subsidiary i is located in.[10] All subsidiaries active in the banking and insurance sector are excluded from the analysis, as these observations are explicitly not covered by the CFC legislation (see Section 2). We also focus on majority-held subsidiaries because minority holdings are usually not covered by the CFC rule (see §7 AStG).[11]

– Insert Table 1 about here –

Table 1 presents average values of the fixed assets, depending on the two rules ($Rule_{it}^{Pass}$ and $Rule_{it}^{Tax}$) determining treatment. Three different samples are displayed. One where the means are calculated from all observations.

[9]Notice that internal lending is usually refinanced by external bond issues (see Ruf and Weichenrieder, 2009), which is explicitly excluded from the German CFC rule application (see §8 AStG).

[10]The tax data is collected from databases provided by the International Bureau of Fiscal Documentation (IBFD) and tax surveys provided by Ernst&Young, PwC, and KPMG.

[11]According to §7 (6) AStG, if the foreign affiliate is an intermediate entity, minority holdings may also be subject to the German CFC legislation. The results appear to be rather insensitive to the inclusion/exclusion of minority-held observations. Corresponding results are available from the authors upon request. They are suppressed here, since the RDD is not sharp anymore (but fuzzy) when including minority-held foreign subsidiaries. However, this is not a standard fuzzy design (which can easily be accommodated by instrumental variable estimation). The reason for the latter is that the rule itself (rather than treatment per se, as usual) is fuzzy for minority-held foreign affiliates.

The second and the third sample include only observations within windows of *(6;6)* and *(8;8)* percentage points in $(\widetilde{Tax}_{it}; \widetilde{Pass}_{it})$-space to the right and the left of the threshold levels π_t and τ_t. Since Tax and $Pass$ are defined in percentage points, this means that observations must lie within a band of ± 6 and ± 8 percentage points, respectively, around the thresholds. An unconditional mean comparison, using the values displayed in Table 1, shows that treated subsidiaries ($Rule_{it}^{Pass} = 1$ and $Rule_{it}^{Tax} = 1$) invest on average less in fixed assets. Across different samples, the differences between groups seem to be fairly stable.

5 Results

For our investigation, we first define cells according to $\widetilde{Tax}_{it}$ and $\widetilde{Pass}_{it}$, respectively. Cells are determined in steps of 1-percentage-point intervals, such that each subsidiary is assigned to a cell $C_{(\widetilde{Tax}_{it}, \widetilde{Pass}_{it})}$ if the following condition is satisfied:

$$\begin{aligned} C_{(\widetilde{Tax}_{it}, \widetilde{Pass}_{it})} &= \{\widetilde{Tax}_{it}, \widetilde{Pass}_{it} | \\ -.30 &< \widetilde{Tax}_{it} \leq -.29 \wedge -.10 < \widetilde{Pass}_{it} \leq -.09, \\ -.29 &< \widetilde{Tax}_{it} \leq -.28 \wedge -.09 < \widetilde{Pass}_{it} \leq -.08, ..., \\ .29 &< \widetilde{Tax}_{it} \leq .30 \wedge .89 < \widetilde{Pass}_{it} \leq .90\}. \end{aligned}$$

As a result, the two criteria span a two-dimensional space that captures $60 \cdot 100 = 6,000$ cells where treated observations just satisfy $\widetilde{Tax}_{it} < 0$ and $\widetilde{Pass}_{it} > 0$. Since both $Rule_{it}^{Tax}$ and $Rule_{it}^{Pass}$ define treatment, the $LATE^{FixedAssets}$ corresponding to β in terms of equation (5) arises at $C_{(0,0)}$. Subsequently, we estimate $LATE^{FixedAssets}$ based on average values of $Fixed-Assets_{it}$ across subsidiaries assigned to a cell in a given year.

– Insert Table 2 about here –

Table 2 presents the findings of the regression discontinuity design (RDD). The dependent variable is the average value of $FixedAssets_{it}$ in a cell and year. We report results for *symmetrically* and *asymmetrically* specified polynomials to the left and the right of the two-dimensional threshold. Asymmetric polynomial functions estimated separately for $CFC_{it} = 0$ and $CFC_{it} = 1$ are more flexible, because the control function may assume a different functional form whose restriction might bias the estimate of the average treatment

effect β in the neighborhood of $\widetilde{Tax}_{it}, \widetilde{Pass}_{it} = 0$. Since the number of observations (subsidiaries) which contribute to (the average in) a cell $C_{(\widetilde{Tax}_{it}, \widetilde{Pass}_{it})}$ differs across cells, regressions are weighted by the number of underlying observations per cell.

In column 1, where symmetric polynomials are used, a significant impact of the CFC rule on fixed assets is found. Column 2 allows for asymmetric polynomials and confirms the negative treatment effect. The magnitude of the estimate $\hat{\beta}$ in column 2 exceeds the coefficient in column 1 by a factor of almost 2.5. According to the asymmetric specification in Table 2, CFC-rule treatment is associated with €9.66 million less investment in fixed assets. This is a statistically and economically significant impact of CFC legislation on real investment activity in the neighborhood of the bivariate threshold.

Figure 1 displays the regression discontinuity graphically. The surfaces are estimated using the asymmetric specification of the polynomial functions. The graph shows how the fixed assets vary in the two dimensions determining treatment. Each observation (cell), underlying the estimation of the surfaces, is depicted by a single point. The discontinuity and, hence, $\widehat{LATE}^{FixedAssets}$ appears to be largest in absolute value around the treatment, where $\widetilde{Tax}_{it}, \widetilde{Pass}_{it} = 0$.

– Insert Figure 1 about here –

The information in Figure 1 may now be used to estimate the jump at the multivariate threshold by calculating the difference between the cells on the red (treated) surface adjacent to the threshold, and the ones on the blue (untreated) surface adjacent to the threshold. That difference is measured with error accruing to the variability of the data on $FixedAssets_{it}$ across the cells in the neighborhood of the threshold. We display the estimated difference together with a ± 1-standard-deviation confidence band around LATE in the three-dimensional Figure 2.

– Insert Figure 2 about here –

Due to the chosen normalization, the point at the corner in the back of Figure 2 corresponds to $\hat{\beta}$, i.e., the difference between the red and the blue points in the corner of the bivariate treatment threshold in Figure 1. The branches reaching out from there indicate how LATE evolves with changing forcing variables in the neighborhood of the threshold of the yet other forcing variable. Figure 2 suggests that $\widehat{LATE}^{FixedAssets}$ is highest in absolute value in the neighborhood where both $\widetilde{Tax}_{it}, \widetilde{Pass}_{it} = 0$.

6 Robustness

6.1 Subsidiary-level Data

Single subsidiary-level observations contribute to average values of $FixedAss-ets_{it}$ in each cell as defined above. We also present results using the raw micro-level data in comparison to the ones based on cell averages in Table 2. Such subsidiary-level estimates are useful robustness checks because we may take into account the underlying variation of data on $FixedAssets_{it}$ across subsidiaries and within cells when calculating standard errors. Table 3 shows the impact of the German CFC rule on fixed assets at the level of individual foreign subsidiaries. The findings should be very similar to the findings from above.[12]

– Insert Table 3 about here –

The results confirm the findings from Table 2 for $\widehat{LATE}^{FixedAssets}$ in the neighborhood of both thresholds π_t and τ_t when employing asymmetric polynomial control functions. Using subsidiary-level data, we estimate the corresponding treatment effect at about €7 millions, which is slightly (but not significantly) less than in Table 2.

6.2 Misrepresentation of Functional Form

Let us, for reasons of a bias reduction in $\widehat{LATE}^{FixedAssets}$, utilize alternative empirical specifications. A bias of $\widehat{LATE}^{FixedAssets}$ may arise if, for instance, the degree of the polynomial control functions is underspecified so that data points far away from the multivariate treatment threshold influence the functional form close to the threshold. A custom way to circumvent this problem is to use parametric control functions which are estimated from data within smaller *windows around treatment thresholds* to avoid a bias from misrepresentation of the functional form of the control functions. Alternatively, one may use nonparametric estimates based on a small bandwidth (such as 0.8) to rely mostly on data close to the threshold for identification of $LATE^{FixedAssets}$.

[12] Estimated coefficients might actually differ, depending on how observations are spaced in the $\widetilde{Tax}$ and $\widetilde{Pass}$ dimensions within cells. As already mentioned, standard errors may differ as well.

– Insert Table 4 about here –

In particular, we estimate $LATE^{FixedAssets}$ by using parametric control functions within windows of *(6;6)* and *(8;8)* as specified in Table 1. Using a window size of *(8;8)*, we see that the treatment effect estimates of $\hat{\beta}$ in column 2 of Table 4 are very close to each other. The estimates of $\hat{\beta}$ are quite robust and we confirm the significant negative treatment effect found in Table 2. Using a window size of *(6;6)*, the treatment effect at the multivariate threshold becomes even bigger and amounts to a reduction in fixed assets by almost €16 millions.

– Insert Table 5 about here –

We can focus on estimates within such windows particularly well with subsidiary-level rather than cell-averaged data as in the previous subsection. Then, there are enough observations in the neighborhood of the multivariate threshold so that we may estimate control functions not only within windows of *(6;6)* and *(8;8)* but even of *(4;4)*. Subsidiary-level-based estimates within all windows in Table 5 support the original findings in Table 2 not only in qualitative but also in quantitative terms, independent of the window size.

– Insert Figure 3 about here –

When using nonparametric estimates and a bandwidth of 0.8, we find the estimated treatment effect to be quite close (carrying a slightly larger confidence interval) to the one based on the parametric polynomial using all observations as in Figure 2. This can be seen from an inspection of Figure 3 which suggests that $\widehat{LATE}^{FixedAssets}$ is around 11.98 in the neighborhood of the two thresholds π_t and τ_t in the corner of the treatment locus.

6.3 Bunching at Threshold

Another concern could be that subsidiaries bunch (or cluster) just below the 10% passive-to-total asset threshold. If this were the case, MNEs could influence treatment assignment at the margin and the aforementioned estimates of $LATE^{FixedAssets}$ in general and of β in particular could be biased. Absence of such bunching would make us confident about the measurement of $\widehat{LATE}^{FixedAssets}$ and $\hat{\beta}$. Hence, it is useful to investigate the distribution of

subsidiaries in general and specifically in the neighborhood of the threshold π_t. We do so by way of graphical inspection and of testing.

To plot the distribution of observations, we group subsidiaries into 1-percentage-point bins according to $\widetilde{Pass}_{it}$.[13] Figure 4 shows this distribution and indicates the threshold with a vertical line.

– Insert Figure 4 about here –

According to Figure 4, the density of firms appears to decrease more or less continuously with higher values of $\widetilde{Pass}$. The figure does not raise particular concerns about bunching at the 10% threshold. We may, however, introduce a more formal test on this. To estimate a potential excess mass before the threshold, we follow Chetty, Friedman, Olsen, and Pistaferri (2011) and estimate a counterfactual density which ignores changes in the passive-assets-to-total-assets ratio before the threshold.[14] For this purpose, we specify the following polynomial regression:

$$F_s = \sum_{i=0}^{q} \beta_i^0 \cdot (\widetilde{Pass}_s)^i + \sum_{i=-R}^{0} \gamma_i^0 \cdot 1[\widetilde{Pass}_s = i] + \epsilon_s^0. \tag{7}$$

F_s denotes the number of subsidiaries within 1-percentage-point bins s of $\widetilde{Pass}_s$. $\widetilde{Pass}_s$ is the respective value of the normalized passive-to-total-asset ratio and q is the order of the polynomial. R denotes the width to the left of the threshold that is excluded (for example, if $R = 4$, observations corresponding to the 4 bins to the left of the threshold in the interval $[-.04 <= \widetilde{Pass}_s <= 0]$ are excluded).

Given equation 7, we calculate the predicted values for the number of foreign subsidiaries while omitting the contribution of the dummies left of

[13] Note that we focus on observations for which the tax threshold bites; the others are not relevant if we are concerned about self-selection to avoid treatment at the margin of $\widetilde{Pass}_{it}$. Moreover, we restrict the graphical illustration to observations within the interval of $[-0.07 \geq \widetilde{Pass}_{it} \leq 0.8]$. This allows us to focus on the relevant part of the distribution. Naturally, a significant mass of subsidiaries exhibits a very low passive-to-total-asset ratio close to zero and only very few subsidiaries have passive-to-total-asset ratios above 80%.

[14] Since we are concerned about bunching below the threshold, where subsidiaries would avoid CFC rule treatment, our case differs slightly from Chetty, Friedman, Olsen, and Pistaferri (2011) who investigate bunching around (to the left *and* the right of) a cutoff value.

the threshold: $\widehat{F_s}^0 = \sum_{i=0}^{q} \widehat{\beta_i^0} \cdot (\widetilde{Pass}_s)^i$. The excess number of foreign subsidiaries $\widehat{B}_N^0$ is then given by: $\widehat{B}_N^0 = \sum_{j=-R}^{0} F_s - \widehat{F}_s^0 = \sum_{i=-R}^{0} \widehat{\gamma}_i^0$.

Chetty, Friedman, Olsen, and Pistaferri (2011) point out that $\widehat{B}_N^0$ overestimates B_N because additional subsidiaries at the threshold may come from points to the right of the threshold. For this reason, the counterfactual distribution is obtained from specifying the regression

$$F_s \cdot (1 + 1[j > 0] \frac{\widehat{B}_N}{\sum_{j=R+1}^{\infty} F_s}) = \tag{8}$$
$$\sum_{i=0}^{q} \beta_i^0 \cdot (\widetilde{Pass}_s)^i + \sum_{i=-R}^{0} \gamma_i^0 \cdot 1[\widetilde{Pass}_s = i] + \epsilon_s^0.$$

The excess number of subsidiaries is then defined as $\widehat{B}_N = \sum_{j=-R}^{0} F_s - \widehat{F}_s = \sum_{i=-R}^{0} \widehat{\gamma}_i$. Equation 8 is estimated by iteration, because the dependent variable and, hence, $\widehat{B}_N$ depends on estimated βs. Finally, we define the excess mass relative to the counterfactual distribution b between $-R$ and the threshold as

$$\widehat{b} = \frac{\widehat{B}_N}{\sum_{j=-R}^{0} \widehat{F}_s/(R+1)}. \tag{9}$$

Using this method, for a window of $R = 4$, we obtain an estimate for $\widehat{b}$ equal to -.718 (1.38).[15] Hence, we do not find any evidence for bunching at the passive-to-total-asset threshold.

– Insert Figure 5 about here –

Figure 5 shows the counterfactual density (the solid curve denoted as *Predictions*) and the actual number of subsidiaries (the dots denoted as *Subsidiaries*). To the left of the threshold, all actual observations lie on or below the estimated counterfactual density, which implies that subsidiaries do not bunch just before the threshold to avoid the CFC rule.

– Insert Figures 6 and 7 about here –

[15]The standard error (in parenthesis) is calculated using bootstrapping as suggested in Chetty, Friedman, Olsen, and Pistaferri (2011).

Of course, although the tax threshold is not a choice variable of the subsidiaries at the margin, it may be interesting to consider the distribution of foreign subsidiaries also in $\widetilde{Tax}_s$-space. Figure 6 provides an illustration by considering subsidiaries located around τ_t. If subsidiaries could affect tax rates or MNEs reacted very sensitively at the extensive plant location margin to changes in $\widetilde{Tax}_{it}$, we would expect bunching of the observations just to the right of the threshold. Clearly, there is no such bunching according to Figure 6. Since a number of countries tax corporate income at a rate of approx. 35% (which corresponds to $\widetilde{Tax}_{it} = 0.05$), there is a high density of observations at this point. But there is no systematic bunching in connection with the CFC rule. Formally, for a window of $R = 4$, we obtain an estimate for $\widehat{b}$ equal to -.933 (.992). Again, this means that subsidiaries do not bunch at the threshold. Corresponding to the case of the passive-to-total-asset ratio, Figure 7 shows the counterfactual density (the solid curve denoted as *Predictions*) and the actual number of subsidiaries (the dots denoted as *Subsidiaries*). To the right of the threshold, actual observations lie rather below than above the estimated counterfactual density.

6.4 Placebo Treatment

Table 6 defines *placebo treatments*. In this experiment, we shift the thresholds by 2-, 3-, and 4-percentage points either above or below the actual thresholds. As a result, the *placebo thresholds* lie within the groups of treated and non-treated observations. The respective regressions do not point to a significant LATE at those placebo thresholds.

– Insert Table 6 about here –

Hence, these placebo-treatment results suggest that no such discontinuities as at the thresholds π_t and τ_t exist at the considered arbitrary points in $\widetilde{Tax}_{it} - \widetilde{Pass}_{it}$-space. With regard to the passive-assets threshold, π_t, this finding is very important for two reasons. First, it indicates that tax authorities apply the thresholds strictly consistent with the CFC provisions. And second, it confirms the validity of the approximation of the passive-returns-to-total-returns threshold by the passive-assets-to-total-assets threshold.

7 Conclusions

This study suggests a novel approach to investigate the impact of CFC rules on foreign subsidiaries of MNEs. CFC rules have been introduced by many countries to curtail the deliberate avoidance of profit taxes by MNEs. Only very little is known about the impact such rules have on foreign operations of MNEs *in general*. Even less is known about the role of CFC rules on *real investment in particular*.

For reasons of availability of high-quality data on MNEs, we focus on the German CFC rule in this study. If the German CFC rule applies to a foreign subsidiary of a German-borne MNE, income arising in the host country is subject to full taxation in Germany, as if the MNE were taxed on its worldwide income (which would be the case in a real residence-based tax system). Against the background of the high German tax level, this could lead to a significant increase in the overall cost of capital and may incentivize firms to reduce their investments in real capital at such subsidiaries.

The German CFC rule applies to subsidiaries which satisfy *two* conditions. First, they have to be located in a country where the statutory tax rate lies below 30% (25% since 2001). Second, the passive-to-total-asset ratio exceeds 10%. The two thresholds give rise to a two-dimensional regression discontinuity design. We provide evidence that subsidiaries which are treated by the CFC rule use significantly less fixed assets, where the impact on just treated subsidiaries (i.e., those close to the threshold levels) is particularly large. This suggests that the CFC rule brings about a sharp increase in the cost of capital, since the statutory tax rate faced in the source country has to be comparatively low to qualify for treatment, while the German tax level has been quite high during the time span considered in our analysis. It is important to note that our regression discontinuity design ensures that this finding is not confounded by the fact that these subsidiaries specialize, for instance, in financial investments and therefore exhibit less fixed assets. In fact, at the thresholds, we may interpret the effect as the *causal* impact of the CFC rule, because subsidiaries differ only in their treatment status and nothing else.

Since CFC rules typically distinguish between active and passive income, it is rather questionable whether this outcome – a negative impact on active investment – is intended by policy makers. In general, this consequence interferes with the principle of exempting foreign income from residence taxation: under a source-based system of taxation, governments explicitly emphasize tax exemption of active foreign income. As all investment (income) seems

to be affected by the CFC rule, this finding implies that the competition between firms from different residence countries is distorted, depending on whether home countries apply CFC rules or not.

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Table 1: Descriptive Statistics

Mean of $FixedAssets_{it}$ (*all observations*)

	$(Rule_{it}^{Pass}=1)$	$(Rule_{it}^{Pass}=0)$
$(Rule_{it}^{Tax}=1)$	3.20	8.67
$(Rule_{it}^{Tax}=0)$	8.45	11.25

Mean of $FixedAssets_{it}$ (*within window (6;6)*)

	$(Rule_{it}^{Pass}=1)$	$(Rule_{it}^{Pass}=0)$
$(Rule_{it}^{Tax}=1)$	2.99	12.79
$(Rule_{it}^{Tax}=0)$	8.29	10.46

Mean of $FixedAssets_{it}$ (*within window (8;8)*)

	$(Rule_{it}^{Pass}=1)$	$(Rule_{it}^{Pass}=0)$
$(Rule_{it}^{Tax}=1)$	3.66	13.73
$(Rule_{it}^{Tax}=0)$	7.87	9.76

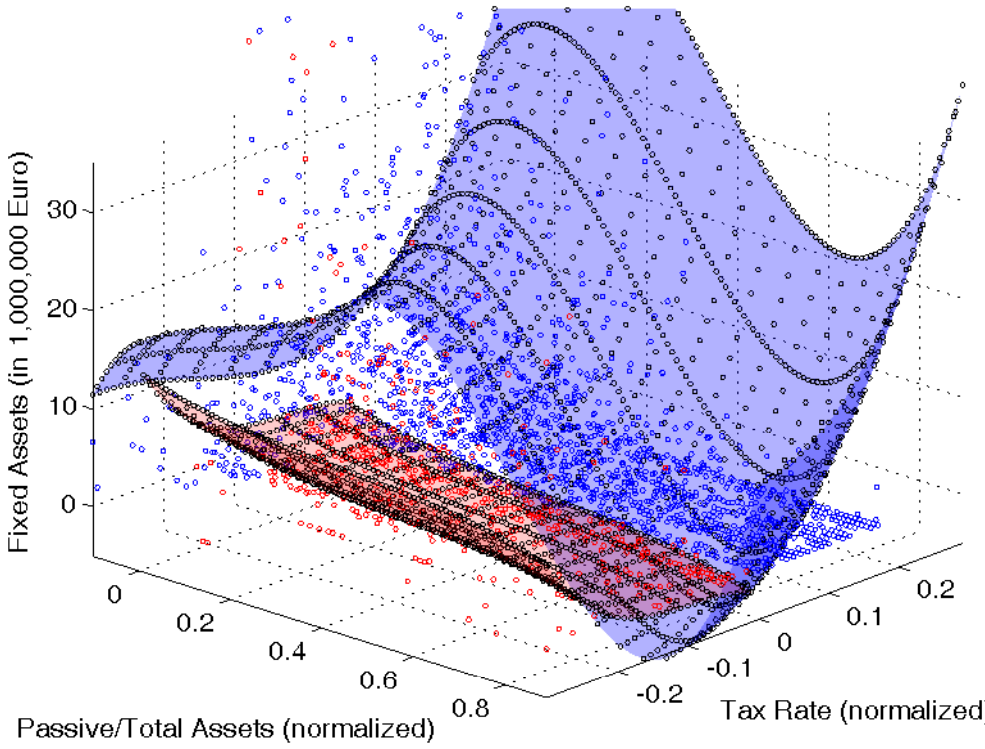
Notes: The fixed assets are measured in €1,000,000. The (*6;6*) window is associated with observations within an interval of 6-percentage-points below and 6-percentage-points above the two thresholds. Hence, observations satisfy the following condition: 24% (19%) $\leq Tax \leq$ 36% (31%) and 4% $\leq Pass \leq$ 16%. The same definition applies to the (*8;8*) window.

Table 2: Impact of CFC Rule on Fixed Assets

	Specification of Polynomial	
	Symmetric	*Asymmetric*
CFC	-3.93**	-9.66***
	(1.90)	(2.21)
Observations	*2,119*	*2,119*

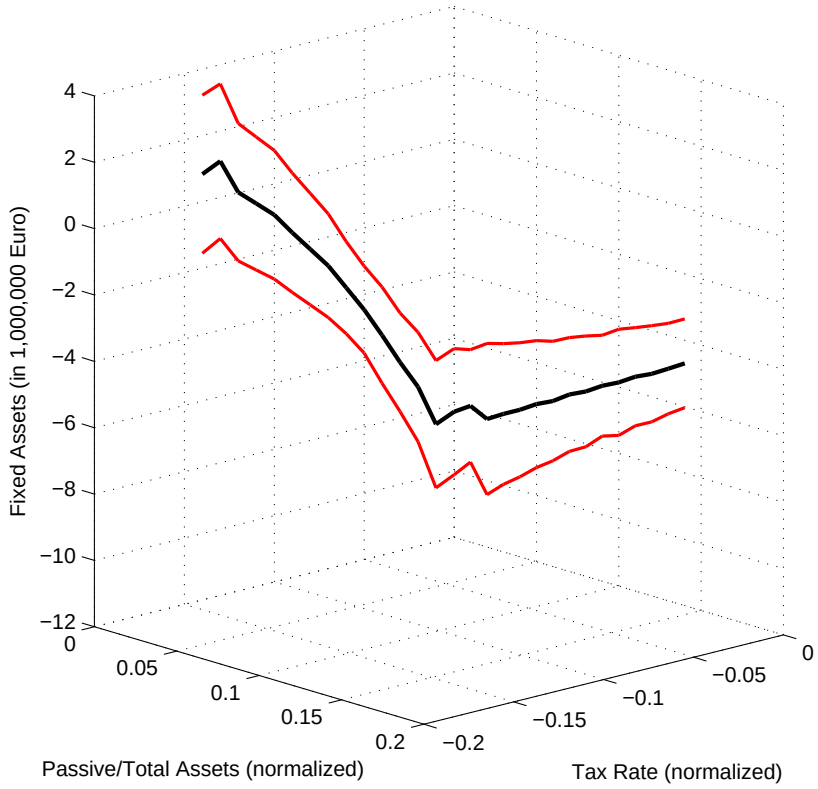
Notes: Dependent variable: fixed assets. *Symmetric:* the polynomial functions (of 3rd order) are forced to have identical parameters to the left and the right of the threshold. *Asymmetric:* the polynomial functions (of 3rd order) are allowed to have different parameters to the left and the right of the threshold. Since each cell (here one observation) represents averages of subsidiary observations, we weight each cell by the number of elements (subsidiary observations) that gave rise to the average. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively. Robust standard errors in parentheses.

Figure 1: Fixed Assets of (Treated and Untreated) Subsidiaries of German MNEs



Notes: Regression Discontinuity at Passive/Total Assets (normalized) = 0 and Tax Rate (normalized) = 0. Untreated observations are depicted by blue dots, treated observations by red dots. Each dot corresponds to the average value of fixed assets of subsidiaries assigned to the respective cell. The blue surface corresponds to the estimated polynomial function for the untreated, the red surface to the estimated polynomial function for the treated according to equation 4.

Figure 2: Progression of LATE (polynomial specification)



Notes: Calculation of LATE based on parametric estimation. Solid black line corresponds to the LATE along the thresholds, i.e. where Passive/Total Assets (normalized) = 0 and Tax Rate (normalized) = 0. Red lines are confidence bands (±1 Std. Dev.).

Table 3: Impact of CFC Rule (Subsidiary-level Data)

	Specification of Polynomial	
	Symmetric	*Asymmetric*
CFC	-2.38	-6.93***
	(2.03)	(2.57)
Observations	*249,448*	*249,448*

Notes: Dependent variable: fixed assets. *Symmetric:* the polynomial functions (of 3rd order) are forced to have identical parameters to the left and the right of the threshold. *Asymmetric:* the polynomial functions (of 3rd order) are allowed to have different parameters to the left and the right of the threshold. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively. Standard errors in parentheses. Standard errors are robust and clustered at the subsidiary and year level using multi-way clustering as suggested by Cameron, Gelbach and Miller (2010).

Table 4: Impact of CFC Rule (Windows around Treatment)

	Specification of Polynomial	
	Symmetric	*Asymmetric*
Window around treatment: (6;6)		
CFC	-8.82*	-15.91***
	(4.73)	(5.74)
Observations	*161*	*161*
Window around treatment: (8;8)		
CFC	-11.22***	-12.45**
	(3.17)	(5.38)
Observations	*266*	*266*

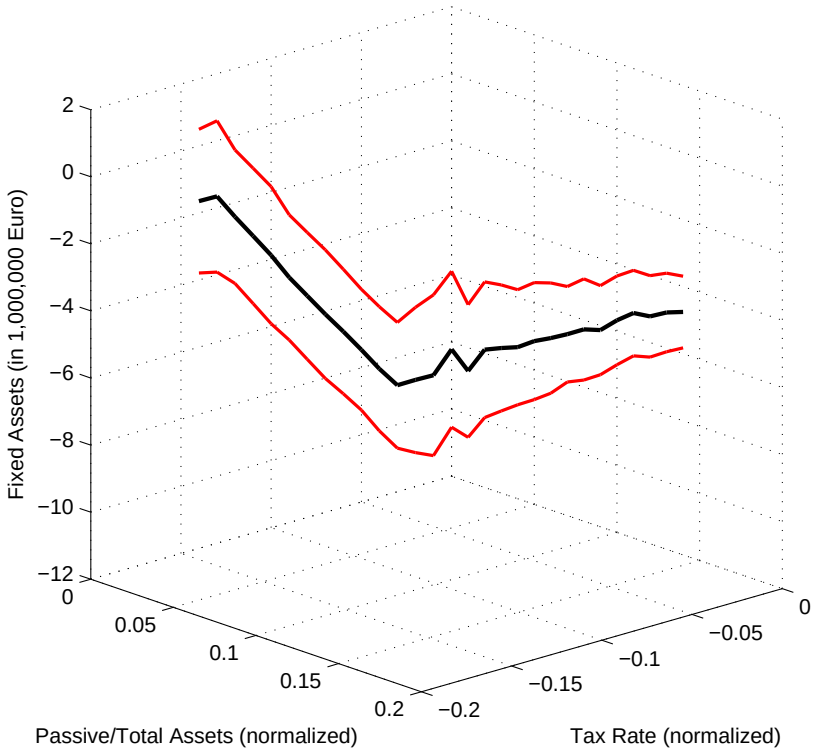
Notes: Dependent variable: fixed assets. *Symmetric:* the polynomial functions (of 3rd order) are forced to have identical parameters to the left and the right of the threshold. *Asymmetric:* the polynomial functions (of 3rd order) are allowed to have different parameters to the left and the right of the threshold. Since each cell (here one observation) represents averages of subsidiary observations, we weight each cell by the number of elements (subsidiary observations) that gave rise to the average. The (*6;6*) window around the treatment is associated with observations within an interval of 6-percentage-points below and 6-percentage-points above the two thresholds. Hence, observations satisfy the following condition: 24% (19%) $\leq Tax \leq$ 36% (31%) and 4% $\leq Pass \leq$ 16%. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively. Robust standard errors in parentheses.

Table 5: Impact of CFC Rule (Windows around Treatment and Subsidiary-level Data)

	Specification of Polynomial	
	Symmetric	*Asymmetric*
Window around treatment: (4;4)		
CFC	-18.75***	-9.05*
	(6.40)	(4.97)
Observations	*812*	*812*
Window around treatment: (6;6)		
CFC	-10.14**	-10.02**
	(4.18)	(4.43)
Observations	*3,717*	*3,717*
Window around treatment: (8;8)		
CFC	-11.05***	-8.70**
	(3.57)	(3.61)
Observations	*7,963*	*7,963*

Notes: Dependent variable: fixed assets. *Symmetric:* the polynomial functions (of 3rd order) are forced to have identical parameters to the left and the right of the threshold. *Asymmetric:* the polynomial functions (of 3rd order) are allowed to have different parameters to the left and the right of the threshold. The (*6;6*) window around the treatment is associated with observations within an interval of 6-percentage-points below and 6-percentage-points above the two thresholds. Hence, observations satisfy the following condition: 24% (19%) $\leq Tax \leq$ 36% (31%) and 4% $\leq Pass \leq$ 16%. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively. Standard errors in parentheses. Standard errors are robust and clustered at the subsidiary and year level using multi-way clustering as suggested by Cameron, Gelbach and Miller (2010).

Figure 3: Progression of LATE (nonparametric specification)



Notes: Calculation of LATE based on nonparametric estimation. Solid black line corresponds to the LATE along the thresholds, i.e. where Passive/Total Assets (normalized) = 0 and Tax Rate (normalized) = 0. Red lines are confidence bands (±1 Std. Dev.).

Figure 4: Bunching at Passive-to-total-Asset Threshold I

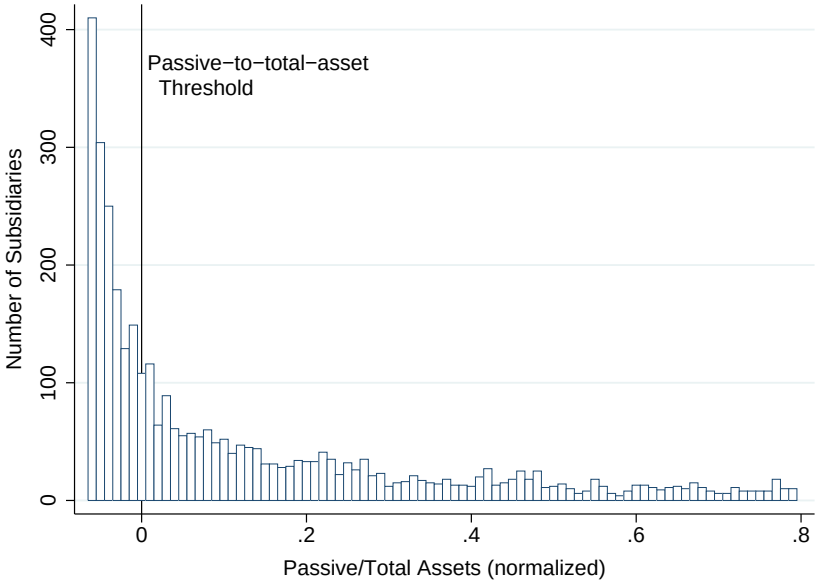


Figure 5: Bunching at Passive-to-total-Asset Threshold II

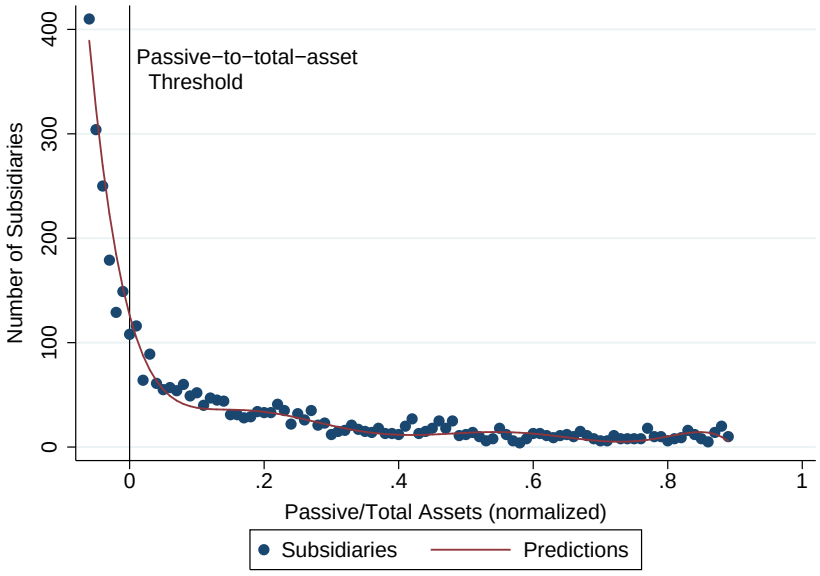


Figure 6: Bunching at Tax Threshold I

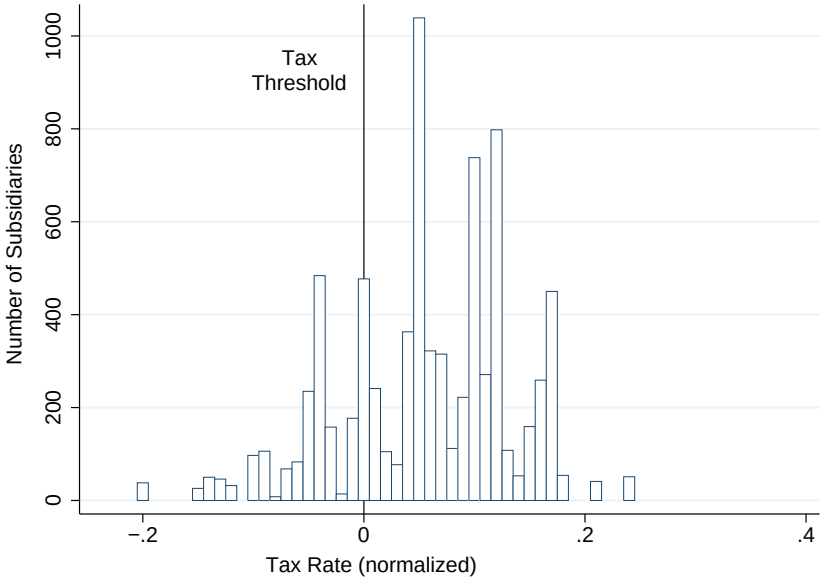


Figure 7: Bunching at Tax Threshold II

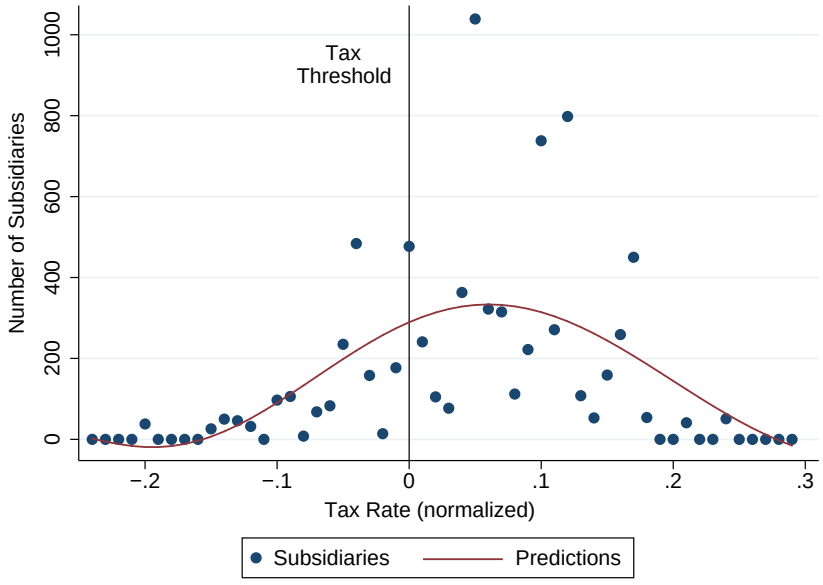


Table 6: Placebo Treatments

	Threshold shifted within group:	
	Treatment	*Non-Treatment*
Threshold shifted by 2-percentage-points		
CFC	-1.20	-8.38
	(2.13)	(5.89)
Observations	*509*	*1610*
Threshold shifted by 3-percentage-points		
CFC	-.826	-2.20
	(1.25)	(6.19)
Observations	*509*	*1610*
Threshold shifted by 4-percentage-points		
CFC	1.87	-1.52
	(1.37)	(4.25)
Observations	*509*	*1610*

Notes: Dependent variable: fixed assets. Asymmetric specification of the polynomial functions (of 3rd order) used in all regressions. Since each cell (here one observation) represents averages of subsidiary observations, we weight each cell by the number of elements (subsidiary observations) that gave rise to the average. Threshold shifted by, for example, 2-percentage points implies a passive-to-total-asset threshold π (tax threshold τ) of 0.08 (0.27 or 0.32) in case of the non-treated group and of 0.12 (0.23 or 0.28) in case of the treated group. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively. Robust standard errors in parentheses.

Appendix: CFC Legislation

Außensteuergesetz, AStG (German Foreign Transactions Tax Act)

The crucial parts of the German CFC legislation are summarized below. We first cite the respective sections from the original law (AStG) in German and then translate these to English.

§7 AStG Steuerpflicht inländischer Gesellschafter (Tax liability of domestic corporations)

"Sind unbeschränkt Steuerpflichtige an einer Körperschaft, Personenvereinigung oder Vermögensmasse im Sinne des Körperschaftsteuergesetzes, die weder Geschäftsleitung noch Sitz im Geltungsbereich dieses Gesetzes hat und die nicht gemäß §3 Abs. 1 des Körperschaftsteuergesetzes von der Körperschaftsteuerpflicht ausgenommen ist (ausländische Gesellschaft), zu mehr als der Hälfte beteiligt, so sind die Einkünfte, für die diese Gesellschaft Zwischengesellschaft ist, bei jedem von ihnen mit dem Teil steuerpflichtig, der auf die ihm zuzurechnende Beteiligung am Nennkapital der Gesellschaft entfällt. [...]"

"If taxable corporations are the majority owners of corporate enterprises, partnerships or assets according to the German corporate income tax law, income, for which this corporation is intermediate entity, is taxable to the extent that it can be ascribed to the share of equity capital held. The majority-held entities are neither located nor have their headquarters within the scope of this law and are not, according to §3 section 1 of the German corporate income tax law, tax exempt (foreign corporations). [...]"

"Zwischeneinkünfte mit Kapitalanlagecharakter sind Einkünfte der ausländischen Zwischengesellschaft (§8), die aus dem Halten, der Verwaltung, Werterhaltung oder Werterhöhung von Zahlungsmitteln, Forderungen, Wertpapieren, Beteiligungen (mit Ausnahme der in §8 Abs. 1 Nr. 8 und 9 genannten Einkünfte) oder ähnlichen Vermögenswerten stammen [...]".

"Intermediate income with capital or financial income characteristics includes income of a foreign intermediate entity (§8) arising from holding or managing of financial assets, increase in or conservation of value of currency holdings, accounts receivable, securities, participation interests (with the exception of income as defined by §8 section 1, number 8 and 9) or similar assets [...]".

§8 AStG Einkünfte von Zwischengesellschaften (Income of intermediate corporations)

"Eine niedrige Besteuerung im Sinne des Absatzes 1 liegt vor, wenn die Einkünfte der ausländischen Gesellschaft einer Belastung durch Ertragsteuern von weniger als 25 Prozent unterliegen [...]".

"Low taxation according to section 1 prevails if the foreign entity faces a tax burden on income of less than 25% [...]".

§9 AStG Freigrenze bei gemischten Einkünften (Exemption limit in case of mixed income)

"Für die Anwendung des §7 Abs. 1 sind Einkünfte [...] außer Ansatz zu lassen, wenn die ihnen zu Grunde liegenden Bruttoerträge nicht mehr als 10 Prozent der gesamten Bruttoerträge der Gesellschaft betragen [...]".

"As for the application of §7 section 1, income is not considered if the returns of the relevant income before taxes do not exceed 10 percent of the total returns of a corporation [...]".

§10 AStG Hinzurechnungsbetrag (Amount of added income)

"Die nach §7 Abs. 1 steuerpflichtigen Einkünfte sind bei dem unbeschränkt Steuerpflichtigen mit dem Betrag, der sich nach Abzug der Steuern ergibt, die zu Lasten der ausländischen Gesellschaft von diesen Einkünften sowie von dem diesen Einkünften zu Grunde liegenden Vermögen erhoben worden sind, anzusetzen (Hinzurechnungsbetrag). [...]"

"Taxable income according to §7, section 1 is calculated as the relevant income after foreign tax payments, including taxes paid on this income and taxes on the underlying assets, and then added to the taxable person's or corporation's taxable income. [...]".