

Cautionary Tales: Celebrities, the News Media, and Participation in Tax Amnesties

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Abstract

This study investigates effects of news media on tax payers. Media reports likely affect evaluations of the probability of detection of tax evasion and the severity of penalties, as well as knowledge about legal and illegal behaviors. We compile an original data set for Germany, including regional information on the amounts of tax payers using amnesty regulations to voluntarily disclose taxes they have evaded. The data set also includes counts of news reports published by 6 national and 54 local newspapers, addressing topics related to tax evasion. We exploit exogenous variation in the news coverage resulting from public trials for tax evasion by celebrities to identify the causal effect. According to our baseline specification, instrumental variable estimates indicate that a one standard deviation increase in tax evasion coverage raises the number of self-denunciations by 38%. This finding helps to better understand the effectiveness of tax amnesty programs, and it illustrates the economic implications of publicly trying famous personalities.

Keywords: news coverage; public trial; self-denunciation; tax evasion

JEL classification: D83; H26; K34; L82

1. Introduction

The individual decision to evade income taxes depends on many factors, such as the probability of detection, the severity of the penalty, or social acceptance. Sometimes, people are even unaware that they evade taxes, because asset structures of companies or family associations and their wealth transfers can be fairly complex and quickly changing issues. Unlike work-related income, capital gains are flexible, which leads to international tax competition and motivates capital flight. In the past years, the G7 countries have been stepping up their efforts to bring tax havens under control; related events have been fueling the discussion of how the global conflict can be solved. News media play an important role in this context, but their involvement has been barely studied before. For instance, media reports provide information about what is legal and what not; which behaviors might be acceptable from an ethical point of view; what authorities' current auditing strategies are; or what kind of penalty convicts have to expect. The news media's role is even larger in countries that allow tax payers to reverse illegal actions under tax amnesty regulations, because of the incentives to re-evaluate declarations.

This study investigates whether news media actually affect the behavior of tax payers. In particular, we consider self-denunciations, i.e., the act of voluntarily disclosing tax evasion. We gather information from individual tax authorities about the amounts of self-denunciations in 30 German regions and up to 26 quarters between 2010 and 2016. In contrast to survey data, actually registered self-denunciations are an ideal measure in this context, because they are not vulnerable to non-response or untruthful answers.

To construct measures of news coverage, we conduct keyword-based searches in full-text newspaper archives. Considering articles that contain the German word for tax evasion in their (sub)heading, we retrieve more than two thousand reports published by 6 national and 54 local newspapers. Text mining helps to ascertain that the search procedure yields meaningful results, in the sense that the extracted articles address topics such as investigation, prosecution, and sanctioning of tax evasion; the implementation and consequences of anti-tax evasion measures; negotiations with other countries and tax havens; or the macroeconomic damages of tax fraud. We match the news outputs and the self-denunciation data by region and time, i.e., we assume that local news coverage affects people in their federal state or fiscal district.

Estimating the causal effect of tax evasion news coverage on the participation in tax amnesties is complicated by endogeneity issues. For instance, an exogenous increase in the amount of self-denunciations could cause the news media to report more about tax evasion. In addition, third variables might affect the participation in tax amnesties and news coverage simultaneously, such as public opinion or authorities' efforts to fight tax fraud. To identify the causal effect, we exploit exogenous variation in the amounts of tax evasion news, resulting from celebrity tax scandals. For that purpose, we develop a media-independent measure of supply of scandal material. This measure is based on public trials for tax evasion by famous personalities, such as former Italian Prime Minister Silvio Berlusconi, former president of Bayern Munich Uli Hoeneß, model Nadja Auermann, or soccer stars Maradona, Messi, and Neymar. We argue that such celebrity trials increase the amount of tax evasion coverage above its "normal" level, which in turn affects the likelihood that tax payers voluntarily disclose taxes they evaded. We can rule out that the occurrence of celebrity trials abroad is in any way affected by varying efforts of the German authorities to fight tax evasion. Due to the institutional regulation of the investigation, the prosecution, and the trying of tax evaders in Germany, the timing of domestic celebrity trials is completely random and therefore exogenous to the amounts of self-denunciations and news coverage as well. By considering only cases in which the trial was open to the public, we ascertain not to omit any scandal material.

Our baseline estimates indicate that openings or closings of domestic trials lead to a 45% rise in news coverage about tax evasion, and an 8% one in the case of celebrities from outside Germany. We also find strong correlations between the amounts of news coverage and self-denunciations. Instrumenting with celebrity trial openings and closings, we use two-stage least squares (2SLS) to estimate local average treatment effects (LATE), according to which a one standard deviation increase in the number of articles causes 38% more people to voluntarily disclose tax evasion than usually. The results hold when controlling for authorities' efforts to fight tax fraud, and for major changes and events affecting the risks and benefits of tax evasion (i.e., tax data CDs, data leaks, reforms of the law, court rulings); weighting the news outputs by newspaper circulation; including year, region, and observation unit fixed effects; using alternative definitions of celebrity status; and separately including domestic and foreign trials as instruments.

In general, our findings contribute to the growing economics literature on the impact of media, which mostly considers effects on voters and politicians (for reviews, see DellaVigna and Gentzkow, 2010; Prat and Strömberg, 2013). While a few studies investigate effects on consumers (Baker and George, 2010; Bursztyjn and Cantoni, 2016; Garz, 2016), we are some of the first to address the role of media for tax payers: Bo, Slemrod, and Thoresen (2015) investigate the impact of Internet-based public disclosure of tax filings on reporting income, whereas Battiston et al. (2016) examine the effects of different levels of publicity of tax audits on VAT payments. Due to the focus on transgressions of celebrities, our study also relates to the literature that deals with economic aspects of media scandal, such as Di Tella and Franceschelli (2011), Puglisi and Snyder (2011), and Latham (2015).

In addition, our study contributes to the literature on tax amnesty programs. This strand of research addresses the determinants of such programs (e.g., Le Borgne, 2006; Luitel and Tosun, 2014; Bayer, Oberhofer, and Winner, 2015; Bethmann and Kvasnicka, 2016), as well as the implications for tax evasion and revenues (e.g., Das-Gupta and Mookherjee, 1996; Luitel and Sobel, 2007; Langenmayr, 2015). Focusing on the influence of media, we expand this literature by providing evidence of what drives participation in tax amnesties. Finally, media coverage on celebrity tax evasion trials not only provides information about penalties and audit probabilities, but also about the social acceptability of certain behaviors. Therefore, our study relates to the debate on tax compliance due to intrinsic motivation (e.g., Kleven, 2014; Luttmer and Singhal, 2014; Dwenger et al., 2016).

The next section describes the institutional context. Afterwards, we provide details on the data and the identification strategy. We present and discuss the estimation results before concluding in the last section.

2. Institutional context

According to the German law, tax evasion is defined by the objective matter of tax reduction and the subjective matter of intent (i.e., knowledge and consent), whereby conditional intent (i.e., approving acceptance) is sufficient. Tax evasion therefore does not take place in the case of missing sense of wrongdoing. Tax reduction occurs if taxes are not assessed at all, remain

partially unassessed, or are not paid on time. Tax evasion is a criminal offense that is subject to compulsory prosecution. However, German amnesty regulations allow tax payers to rectify transgressions without being held criminally liable. The possibility of self-denunciation applies if incorrect statements are corrected, incomplete entries are complemented, or omitted information is provided. Although considered a completed crime, a legally successful self-denunciation results in mandatory exemption from criminal conviction, while the consequences according to the tax laws remain in force. The incentives for self-denunciation derive from the avoidable punishment. An amount of evaded taxes exceeding 50,000 euros customarily leads to a suspended prison sentence. A monetary penalty is imposed above a threshold of 100,000 euros, and exceeding the one million mark results in at least two years of prison.

Over the recent years, tax amnesty has been extensively discussed in the media and the trade press. Judges and numerous associations have been giving their opinions, and parliamentary statements have been released. In the course of the data leak of two Swiss banks at the beginning of 2010, public pressure increased and initiated changes in tax amnesty regulations. The first substantial adjustment occurred in April 2011. The Federal Court's decision to exclude the possibility to submit partial self-denunciations was legally consolidated, and a financial penalty for evaded taxes above 50,000 euros was introduced. The second major change of the law came into effect in January 2015, when the requirements for an effective self-denunciation became more difficult to meet: The statute of limitation was extended from five to at least ten years; the threshold for impunity was lowered from 50,000 to 25,000 euros of evaded taxes; and penalties as well as interest rates were raised substantially, requiring evaders to have sufficient liquid resources.

In addition to legal changes, tax payers had to face the erosion of the bank secret. For instance, there have been several leaks of large amounts of bank data (January 2011: Swiss Leaks I; May 2012: Luxembourg Leaks; May 2013: Offshore Leaks; February 2015: Swiss Leaks II). After the Federal Constitutional Court gave an official permission, German authorities also kept buying tax data CDs offered by whistleblowers, usually containing names and balances of German customers of foreign banks. Because tax amnesty is only granted when a self-denunciation is submitted before the crime has been detected, these events have been affecting the decision to voluntarily disclose tax evasion as well.

3. Data and identification

3.1 Self-denunciations

We obtain data on self-denunciations from the federal states' ministries of finance. In two cases, data are publicly available on the official websites of the ministries (Hesse, North Rhine-Westphalia). For the remaining states, we directly contact the ministries to obtain the data. We are able to collect data for all 16 German states, spanning the period from 2010 to 2015, and partly 2016.

Most states count the number of self-denunciations on a quarterly basis. In some cases, data are available on a monthly basis, or only on a yearly or half-yearly one. Researchers usually prefer to measure their variables in a consistent way, which could involve either aggregating the information to the lowest frequency (i.e., yearly), or converting lower frequency observations to higher ones (e.g., by interpolation). While the former approach involves an unnecessary loss of information, the latter artificially increases the number of observations without providing additional insights.

To use the data in the most efficient way, we follow a third approach and analyze them in mixed frequency. Specifically, we use quarterly figures when available, and employ half-yearly or yearly observations otherwise. If monthly data are available, we calculate the quarterly equivalent. The reason is the likely lag in the chain of events of tax evasion news coverage, people's decision to disclose, and the actual receipt of the self-denunciation at the financial authority. When people decide to disclose their illegal behavior, it might take (the tax consultant) several weeks to prepare the documents necessary for the process to be effective. In addition, there are a few cases, in which the ministries' period of counting does not exactly match a quarter. Here, we calculate quarterly figures by dividing the numbers proportionally.

Two federal states provide their data disaggregated by fiscal districts. For North Rhine-Westphalia, quarterly numbers of self-denunciations are available as of 2014q1 for the districts Aachen, Bielefeld, Bochum, Bonn, Cologne, Düsseldorf, Essen, Hagen, Münster, and Wuppertal; from 2010q1 to 2013q4 the data refer to North Rhine-Westphalia as a whole. For

Rhineland-Palatinate, disaggregated data are available in the entire period for the districts Kaiserslautern, Koblenz, Mainz, Neustadt an der Weinstraße, and Trier.

Overall, the data refer to 30 regions (15 federal states and 15 fiscal districts). The total of 452 observations consists of 44 region-years, 11 region-half years, and 397 region-quarters. We use fixed effects to account for the mixed-frequency, mixed-area design of the data set.

Figure A1 in the Appendix shows the amounts of self-denunciations, for simplicity aggregated to the year and federal state level. With few exceptions, 2010 and 2014 are the years in which most self-denunciations were registered. To a large part, this is due to the two relevant law reforms discussed in the previous section. The figure also reveals considerable regional differences. In particular, there is both a north-south and an east-west gap, caused by differences in capital income and the proximity of the federal states in the southwest to Luxembourg, Switzerland, and Liechtenstein.

3.2 News coverage

We use newspaper stories on tax evasion to evaluate the effects on self-denunciations. The focus is on newspapers for several reasons. First, this type of media allows to consistently determine the amounts of relevant news over time. With online news outlets, for example, it would not be possible to achieve this kind of consistency, as new media still have been developing in recent years. This development implies a general variation in news amounts associated with the increasing popularity of online media, preventing comparisons over time. Second, digital full-text archives allow for an analysis of newspaper content, including keyword-based searches. Such data are not available for newscasts or radio news in Germany, for example. Third, in contrast to most online news outlets and television channels, Germany's newspaper landscape consists of a variety of local outlets, which allows to exploit spatial variation in the news coverage.

Our major source to extract reports on tax evasion is Genios, a German provider of business information, market data, and press archives. In the period under consideration, the company's newspaper archive offers consistent full-text access to 54 local and the three national daily

outlets Handelsblatt, Die Tageszeitung, and Die Welt. We complement the sample with the national daily newspapers Frankfurter Allgemeine Zeitung (publisher's archive), Frankfurter Rundschau (Nexis database), and Süddeutsche Zeitung (publisher's archive). The sample then includes all German national dailies, except for the tabloid Bild, for which data are not available here. The sample also comprises most of the largest local newspapers; it contains outlets from 8 out of the 10 largest (local) publishing companies; and the combined circulation of the local newspapers accounts for about 40% of the market (according to the second quarter of 2014; KEK, 2015). Table A1 provides a list of all newspapers in the sample and their area of circulation.

We extract all articles that contain the word “Steuerhinterziehung” (tax evasion) in their heading or subheading. In the period under consideration, the search retrieves 2,261 articles. We also checked related search terms, such as “Steuervermeidung” (tax engineering) and “Steuerbetrug” (tax fraud). However, these and other terms yield only a few hits. To simplify matters for readers, the press almost always uses “Steuerhinterziehung” as a catch-all term, even if it does not describe the issue at hand in the legally most precise way. Applying the principle of the “inverted pyramid” when structuring their articles, journalists include “Steuerhinterziehung” as a buzz word in the heading or subheading, so that readers can quickly recognize the topic of the report. Restricting our search query to the (sub)heading thus reduces the amount of false positives, i.e., reports mainly addressing a topic other than tax evasion. A prominent example of such false positives are soccer-related articles, which cite Uli Hoeneß' comments on last night's game, while briefly mentioning his legal problems due to tax evasion.

Inspecting the retrieved articles indicates that most of the coverage deals with events associated with individual tax crime, such as investigations, prosecution, or court rulings; discussions, implementations, and consequences of reforms aiming to fight tax evasion; data leaks that might expose tax defrauders; authorities buying or being offered tax CDs; other countries' behavior if it has implications for tax evasion in Germany; and economic damages of tax fraud.

We conduct simple text mining to further show that these topics actually dominate the coverage. Table A2 in the Appendix lists the 100 most frequently used terms in the extracted articles. Not surprisingly, the German word for tax evasion appears in the first rank, as well as word deviations (Steuersünder, Steuerhinterzieher) in following positions. The third most frequent

term is Hoeneß, the last name of Bayern Munich’s former star player and president, who was sentenced to prison for tax fraud in March 2014. The last name of Nadja Auermann, a famous model convicted of tax evasion, also appears in the list. Furthermore, the ranking includes the countries Schweiz (Switzerland) and Luxemburg (Luxembourg), two of the most common destinations for Germans to hide money. Terms that immediately relate to the context, such as Bank (bank), Selbstanzeige (self-denunciation), Finanzamt (tax authority), and Steuerfahnder (tax investigator), also suggest that the search procedure yields meaningful results. Finally, there are large amounts of words illustrating public efforts of fighting tax evasion, including Staatsanwaltschaft (prosecution), Gericht (court), Ermittlungen (investigations), Prozess (trial), Urteil (verdict), Anklage (indictment), Richter (judge), Strafe (sentence), Gefängnis (prison), Anwalt (lawyer), Bewährung (probation), and Razzia (raid).

We match the amounts of tax evasion news coverage and the amounts of self-denunciations by region r (federal state or fiscal district) and time t (quarter, half year, or year), i.e., news outputs are assigned to the observation units defined by the self-denunciation data. Because the six national newspapers can be read everywhere in Germany, we assume that their coverage might affect self-denunciations in all regions. In addition, we assume that the potential effects of reports of the local newspapers are largest in those regions, in which the outlets circulate. Thus, we measure the amount of tax evasion coverage a^* as the sum of articles in national newspapers a_{nt} and relevant local outlets $a_{l,t}$:

$$a_{rt}^* = \sum_{n=1}^N a_{nt} c_{nt} + \sum_{l_r=1}^{L_r} a_{l_r,t} c_{l_r,t} \quad (1)$$

To account for the varying importance of the newspapers in the sample, the national and local news amounts are weighted by the outlets’ within-sample circulation shares c_{nt} and $c_{l_r,t}$. These shares are calculated based on data from the German audit bureau of circulation (Informationsgesellschaft zur Feststellung der Verbreitung von Werbeträgern, IVW). Although the circulation data are provided on a quarterly basis, we only use the numbers of each year’s first quarter; doing so prevents the news variable from being affected by the seasonal patterns that usually characterize newspaper circulation.

Figure A2 in the Appendix shows the weighted news amounts by federal state and year. The continuous increase from 2011 to 2014 reflects the intensification of the public debate, as well as the expansion of anti-tax evasion measures. In addition, the patterns already hint at a positive relationship between the amounts of tax evasion reports and the number of self-denunciations.

3.3 Control variables

The design of the data set allows the empirical models to include year and region fixed effects. Year fixed effects control for calendar year-specific, unobserved differences in the amounts of self-denunciations and tax evasion news coverage; region fixed effects capture time-invariant differences across the regions in our sample, as well as differences in the definition of the geographical units (i.e., federal states vs. fiscal districts). We also include so-called observation unit dummy variables to account for the varying time windows the tax authorities use when counting self-denunciations; the set includes dummies for yearly and half-yearly counts; and in the case of quarterly observation units one dummy for each quarter. A region-specific, linear time trend further controls for unobserved developments over time.

An ideal media-independent proxy for the authorities' efforts to fight tax evasion is the amount of trials for tax frauds committed by ordinary people. This kind of data is not exactly available. However, the Federal Statistical Office provides the amount of trials for economic crime and tax evasion at the state-year level, which we use as the next best proxy. In addition, we construct variables that capture major changes and events affecting the risks and benefits of tax evasion from the tax defrauders' perspective (the "tax evasion environment"). First, we construct a dummy variable to account for tax authorities buying illegally obtained data that help to convict tax evaders. Due to their controversial nature, these tax CDs have been heavily discussed in the public, which makes it easy to identify the relevant purchases. We add two cases in which the authorities publicly considered buying a CD, because this might also affect the amounts of self-denunciations and tax evasion news coverage. It is reasonable to use two versions of the tax CD variable. In the first version, the purchases are coded in a way that their effect takes place only in the region that bought the CD. Because the CDs sometimes contain information about taxable persons living in other areas – and because the purchases often received national news coverage

– we code a second version that allows for effects everywhere in Germany. Next, we add dummy variables capturing the different legal regimes. Specifically, one dummy captures the time under the law against unreported income, which came into effect in April 2011 and limited the effectiveness of self-denunciations. The second dummy controls for the time beginning in January 2015, when the second major change in the law further restricted the scope of self-denunciations. Similarly, we control for two major changes resulting from landmark court decisions; the May 2010 resolution of the Federal Court to abolish the possibility of partial self-denunciations; and the November 2010 ruling of the Federal Constitutional Court, allowing the usage of illegally obtained tax data for criminal prosecution. Finally, we use dummy variables to capture the four tax data leaks in the period under consideration (Swiss Leaks I and II, Luxembourg Leaks, Offshore Leaks). A list of the tax evasion environment variables can be found in Table A3.

We refrain from using explicit controls for the developments associated with the Common Reporting Standard (a multilateral agreement on the exchange of data) and the Swiss-German treaty on the taxation of capital gains (which Germany failed to ratify). There are multiple events related to these agreements for which dummy variables could be constructed, such as the balloting, signing, taking effect, or rejection. However, these events often coincide with the timing of other changes already controlled for. Considering the rich sets of fixed effects in our models, the inclusion of such additional dummy variables would therefore lead to problems with multicollinearity.

3.4 Celebrity tax evasion trials

3.4.1 Sources and measurement

Variation in the amounts of tax evasion news coverage that is caused by celebrity tax scandals serves to identify causal effects on the number of self-denunciations. Celebrities, such as artists, athletes, politicians, or CEOs of large companies, usually receive a lot of public attention. They are often closely monitored by the media and misbehavior or criminal activities can quickly turn into scandals with large amounts of news coverage.

Unfortunately, there is no unique definition of what constitutes a tax scandal. In addition, it is conceivable that the media uses celebrities with tax issues in an opportunistic way. For example, times in which the public perceives tax evasion as a major problem of society, reader demand for tax scandals is likely higher than when there are other issues on the public agenda. Profit-maximizing media are known to cater to the changing preferences of their audiences (e.g., Mullainathan and Shleifer, 2005; Gentzkow and Shapiro, 2006, 2010; Chan and Suen, 2008), which might imply differences in discovering and producing stories about tax scandals. A similar effect could result from partisan media, as their inclination to report about politicians having tax issues likely depends on ideological proximity (e.g., Puglisi and Snyder, 2011). It is therefore necessary to obtain a comparable, media-independent measure of tax scandals or, to be more precise, supply of scandal material.

We propose to use the occurrence of celebrity tax evasion trials as such a measure. To identify these trials, we first conduct a comprehensive, keyword-based search in Nexis and Genios, using the query “steuerhinterziehung AND (hauptverhandlung* OR *urteil* OR (*öffentlich* *verhandlung*) OR (*öffentlich* *sitzung*))”, which implies any combination of the German word for tax evasion and different, truncated versions of the terms public trial and verdict. We carefully screen the retrieved articles for potential celebrities standing trial because of tax evasion. Based on this procedure, we identify a total of 202 potential celebrities, for which we can verify that they were brought to public trial at least once in the time from 2010q1 to 2016q2.

To rule out the possibility that the media only exploits some but not other trials to create tax scandals, we use a tax scandal-independent definition of celebrity status. Our preferred definition is based on Munzinger’s biographical archive. Munzinger is a German information provider specialized in lexica, dictionaries, and country profiles. Since 1913, the provider has been hosting an international biographical archive, containing biographies of outstanding personalities in all areas of society. The growth of the archive is limited to 1,400 biographical entries per year; and the ratio of German to international celebrities is 1:1. The decision to set up a new entry is mostly based on objective criteria, but also some discretion of the editors. For instance, these criteria specify that all German national and state ministers are included, or every board member of a DAX company. Board members of international companies are included when their companies’ yearly turnover exceeds 1 billion euros. For celebrities in sports and

culture, the criteria include positions, awards, and seniority. We check whether the people in our pool of 202 potential celebrities have an entry in Munzinger's archive and find matches with 15 personalities from Germany and 12 from abroad.

It is reasonable to verify that our results are robust to an alternative definition of celebrity status. For that purpose, we check which personalities have their own German Wikipedia page. Wikipedia makes new entries pass a relevance check of the topic, based on lists of context-related indicators. When the relevance of a personality is ambiguous, the decision about whether or not the celebrity deserves their own Wikipedia page is made by the community. Thus, we consider the Wikipedia consensus as kind of a crowd-sourced evaluation of celebrity status. From our pool of potential celebrities, we find that 49 personalities have German Wikipedia pages, among which are all 27 Munzinger celebrities.

Table A4 provides a list of the personalities standing public trial and meeting our Munzinger or Wikipedia criteria. It includes former Italian Prime Minister Silvio Berlusconi, Russian businessman Mikhail Khodorkovsky, international soccer stars Maradona, Messi, and Neymar, as well as former Ukrainian Prime Minister Yulia Tymoshenko. Most notable German celebrities are model Nadja Auermann, former national soccer goalkeeper Oliver Kahn, former Volkswagen chairman Bernd Pischetsrieder, and Bayern Munich protagonist Uli Hoeneß. We can rule out that any of these celebrities obtained their Munzinger entry or Wikipedia page because of tax issues; each personality achieved celebrity status due some other talent or position. That is, our selection of personalities does not include any pure celebrity criminals.

It could be argued that our selection might not include all cases of prominent tax evasion trials. After all, we identify these cases based on news archives; and the media might have opportunistically decided not to cover some cases at all. However, we are convinced that this possibility can be ruled out, especially for the German celebrities: For a public trial to take place, the amount of evaded taxes needs to exceed 1 million euros. It is reasonable to assume that somebody, who already enjoys a celebrity status and commits a crime of such a severity, will not be spared by the press, regardless of potential media biases. Since we do not consider penalty orders – which might actually remain unnoticed – but non-secret trials, it is guaranteed that the public learns about the cases. We verify the robustness of our results when excluding foreign cases, because there are different rules for public trials in other countries.

Thus we construct separate instrumental variables for public trials in Germany and for those abroad. In addition, we prefer to have two versions of the instrument capturing domestic trials: One that allows the supply of scandal material to affect the news coverage within the region of the trial, and another one assuming effects on newspapers throughout Germany. Appeals are treated as public trials too, as long as they are not secret. If the location of an appeal deviates from the first court – which happens sometimes when the German Federal Court in Karlsruhe (Baden-Wuerttemberg) is put in charge – we still use the first court to code the region, to preserve the local origin of the celebrity and case. Another aspect is the timing. When a public trial starts, there is usually a surge of new details on the misbehavior of the defendant. Because a trial often closes with a verdict, there is also an increased likelihood of media coverage at that point. Thus it is reasonable to assume that the beginning and the end of the trials have the largest news value. Accordingly, our instruments count the number of opened and closed trials per quarter, half-year, or year, depending on the observation unit.

3.4.2 Instrument validity

A valid instrument must affect the outcome only through the endogenous variable and must not be affected by the endogenous regressor or the outcome. We argue that celebrities in public trials for tax evasion meet these conditions. The celebrity status causes the tax evasion news coverage to increase above its “normal” level. In turn, the additional amounts of news coverage raise the likelihood that people disclose their illegal behavior, to gain amnesty. This effect could be due to an increase in the awareness of what is legal and what not; because of people re-evaluating their chances of getting caught; or due to changing social norms.

However, is it possible that public trials involving celebrities affect the number of self-denunciations directly? In general, the public can only learn from these trials through the media. It might be possible that the people directly involved in the trial (e.g., lawyers, judges, witnesses, court assistances, or court journalists) have evaded taxes themselves, and decide to disclose their illegal activities due to their court exposure. However, even if such cases exist, their amount would be negligible, compared to the aggregated figures of self-denunciations. In

relation to the millions of Germans reading about a trial, the number of people immediately present at court is in the per mil range.

Another threat to the validity of the instrument is that the occurrence of celebrity trials could be affected by (a) the amount of self-denunciations; (b) the amount of tax evasion news coverage; or (c) a third variable that correlates with (a) or (b), such as public opinion about tax evasion or varying efforts of politicians, investigating authorities, and courts to fight tax fraud. While direct effects of (a) and (b) are technically impossible, it is necessary to discuss (c). In the case of a shift in public opinion or efforts, it is conceivable that there are more and tougher investigations, that prosecutors press charges more often, and that the number of celebrities standing public trial increases. However, even if such a chain of events could be observed in reality, it would not entail a violation of the exclusion restriction, as it usually takes more than one and sometimes several years until a public trial for tax evasion takes place: When investigation authorities suspect tax fraud, they first need to collect sufficient evidence before handing over the case to the prosecution. The prosecutor evaluates the case while having to respect the defendant's rights, which often delays the process. When the prosecution decides to press charges, it again takes several months until the trial takes place, because the court has to find an open slot in its schedule, while the defense will exercise its right to take time to prepare its case. In Germany, most cases of tax evasion that qualify for public trial are in the jurisdiction of regional courts (Landgerichte). In the period from 2010 to 2015, just the time between pressing charges and the start of the first trial amounted to an average of about seven months in these courts (Federal Statistical Office, 2016). There are no indications that this number differs when celebrities are involved.

To sum it up, even if an increase in self-denunciations or news coverage induces investigators, prosecutors, and judges to publicly trial celebrities more often, it is very unlikely that the plus in trials materializes in the same year as the increase in self-denunciations or news coverage – and especially not in the same quarter, the observation unit most of our data refer to. To verify the assumption that the timing of the openings and closings of celebrity trials in Germany is random, we check whether they correlate with the amount of trials involving ordinary people. Since our tax evasion environment variables – described in Section 3.3 – also reflect changes in authorities' efforts, we check for correlations with these variables as well.

Table 1: Correlations between domestic celebrity trials, common trials, and the tax evasion environment

	(1) Celebrity trials (Munzinger)	(2) Celebrity trials (Wikipedia)	(3) Celebrity trials (Munzinger)	(4) Celebrity trials (Wikipedia)
Common trials	0.000853 (0.00112)	0.0000538 (0.00213)		
Tax CD (regional effects)			0.0151 (0.0408)	0.199 (0.132)
Tax CD (national effects)			0.0243 (0.0220)	0.0121 (0.0375)
Law with stricter impunity prerequisites			0 (.)	0 (.)
Law against unreported income			0.0425 (0.0855)	0.0716 (0.122)
Federal Court ruling 2010q2			-0.0402 (0.0709)	0.0287 (0.159)
Federal Constitutional Court ruling 2010q4			0.0814 (0.0644)	0.145 (0.146)
Swiss Leaks I			-0.0507 (0.0694)	0.0219 (0.155)
Luxembourg Leaks			0.0502 (0.0596)	0.0622 (0.102)
Offshore Leaks			-0.0943* (0.0545)	-0.198** (0.0989)
Swiss Leaks II			0.0415 (0.0429)	-0.0167 (0.0629)
Intercept	-0.598 (1.241)	1.036 (2.389)	-1.936 (1.666)	-0.218 (2.919)
Year fixed effects	Yes	Yes	Yes	Yes
State fixed effects	Yes	Yes	No	No
Observation unit fixed effects	No	No	Yes	Yes
Region fixed effects	No	No	Yes	Yes
Time trend	No	No	Yes	Yes
R-square	0.403	0.520	0.268	0.433
Observations	96	96	452	452

Notes: OLS estimates. Robust standard errors in parentheses.

* p<0.10, ** p<0.05, *** p<0.01

Table 1 shows the resulting estimates. In Columns (1) and (2), we regress the number of celebrity trials on the amounts of common trials. The data on common trials are only available on a state-year basis, so that we aggregate the numbers of celebrity trials for this check accordingly. As the coefficients indicate, common trials do not predict the occurrence of celebrity trials, regardless of the celebrity criterion. In Columns (3) and (4), we check whether the amount of domestic celebrity trials is affected by the tax evasion environment variables. Only one coefficient is statistically different from zero here (Offshore Leaks, 5% and 10% level, respectively; the dummy indicating the law against unreported income drops out due to collinearity). Given that there is a high probability of one out of ten coefficients to be significant just by chance – and because the sign of the Offshore Leaks coefficient is implausible – we do not interpret this finding as a threat to the notion that the timing of celebrity trials is not affected by authorities’ efforts to fight tax evasion.

4. Results

The main variable pairs in question exhibit strong bivariate relationships. As Figure A3 illustrates, the amounts of self-denunciations and tax evasion articles correlate positively, especially when considering the quarterly and half-yearly observation units in the data. The relationship between tax evasion news and the occurrence of celebrity trials is also unambiguous. We observe larger amounts of news coverage when the number of trial openings or closings increases, regardless of the definition of celebrity status and the location of the trials (Figure A4).

4.1 Baseline specification

We estimate the causal effect of tax evasion news a^* on the amount of self-denunciations d in region r at time t using 2SLS:

$$a_{rt}^* = \beta_1 + \beta_2 trial_{rt}^{dom} + \beta_3 trial_t^{dom} + \beta_4 trial_t^{for} + \beta_5 X_{rt} + \varepsilon_{rt} \quad (2)$$

$$d_{rt} = \gamma_1 + \gamma_2 \hat{a}_{rt}^* + \gamma_3 X_{rt} + \epsilon_{rt} \quad (3)$$

Equation (2) denotes the first stage, including domestic trials with potential regional effects ($trial_{rt}^{dom}$), domestic trials with potential national effects ($trial_t^{dom}$), and foreign trials ($trial_t^{for}$). The instruments are excluded from Equation (3), the second stage. We estimate versions of the two equations that do and do not include the variable vector X_{rt} , which consists of the tax evasion environment controls, the year, observation unit, and region fixed effects, as well as the time trend. We prefer to not include the number of trials involving ordinary people in the baseline specification, because the underlying data are only available in more aggregated form and not at all for the year 2016. A robustness check in the next section indicates that this decision does not affect the results though. Finally, we refrain from including any lags or leads of the explanatory variables. It would be optimal to exploit the temporal dynamics of the data. However, lags and leads do not necessarily provide meaningful information in the context of this study. The reason is that media often anticipate developments, which causes the time series to be “contaminated” with expectations. For example, lagged values of the news coverage likely predict celebrity trials, because a trial can be expected when investigations suggest sufficiently severe transgressions.

Table 2 shows the OLS and IV estimates of the baseline specification, using the Munzinger celebrity definition. Columns (1) and (4) confirm the strong positive correlation between self-denunciations and tax evasion news. The first-stage estimates indicate that domestic celebrity trials only have a significant impact on the number of tax evasion articles when considering effects on the German-wide press. The estimated coefficient of 0.847 in Column (5) implies that one additional trial opening or closing leads to a 45% increase in tax evasion news. The lack of significance of effects limited to local newspapers could be explained by the celebrities usually being famous all over Germany, not just in their federal state or fiscal district. When Uli Hoeneß stood trial in Munich, for instance, the case was not only covered by Bavarian newspapers, but by outlets everywhere in the nation. Public trials abroad also have a highly significant effect on tax evasion news. Here, an additional trial opening or closing raises the amounts of tax evasion articles by 8%. Thus the size of the effect is smaller than that of domestic trials, which is plausible considering that German cases have a greater news value for German media. Jointly,

the three instruments have a high predictive power, as the F-statistics indicate. Hansen’s test on overidentifying restrictions supports the validity of the instruments. In the second-stage, the causal effect of tax evasion news on self-denunciations is positive and remains statistically significant at the 5% level when including the full set of controls and fixed effects. The IV coefficient has a similar size as its OLS counterpart. According to Column (6), a one standard deviation increase in the amounts of tax evasion coverage (= 1.19 weighted articles) causes approximately 101 additional self-denunciations, which equals 38% of the average number of self-denunciations per observation unit.

Table 2: Effect of news coverage on self-denunciations

	(1) Self-den. (OLS)	(2) Coverage (OLS)	(3) Self-den. (IV)	(4) Self-den. (OLS)	(5) Coverage (OLS)	(6) Self-den. (IV)
Tax evasion news coverage	123.3*** (13.85)		113.5*** (12.81)	75.01*** (26.15)		84.48** (39.94)
Domestic public trials (reg.)		-0.0760 (0.197)			0.0283 (0.116)	
Domestic public trials (nat.)		0.852*** (0.0448)			0.847*** (0.0444)	
Foreign public trials		0.664*** (0.0296)			0.156*** (0.0212)	
Controls	No	No	No	Yes	Yes	Yes
Year fixed effects	No	No	No	Yes	Yes	Yes
Observation unit fixed effects	No	No	No	Yes	Yes	Yes
Region fixed effects	No	No	No	Yes	Yes	Yes
Time trend	No	No	No	Yes	Yes	Yes
F-statistic, 1st stage			454.2			123.8
Hansen J, p-value			0.400			0.448
R-square	0.233	0.809	0.231	0.659	0.881	0.659

Notes: N = 452. Robust standard errors in parentheses. The controls include tax CDs, major legal changes and court rulings, tax data leaks, and a constant.

* p<0.10, ** p<0.05, *** p<0.01

4.2 Robustness

We confirm that the results hold when using the Wikipedia instead of the Munzinger criterion to determine celebrity status. Table A6 in the Appendix summarizes the results when using the larger base of celebrity trials. In the first stage (Columns 1 and 3), domestic trials do not have a significant effect on tax evasion news when including the controls and fixed effects. As a result, the F-statistic decreases, but remains well above 10. In the second stage, the news effect is estimated to be almost 1.7 times as large as in the baseline specification, remaining significant at the 5% level (Column 4).

As a next step, we include domestic and foreign trials separately in the models, to determine whether the results are possibly driven by one kind of trials. Table A7 shows the results based on domestic trials. The estimated coefficients are very similar to the baseline specification. However, the effect of tax evasion news on self-denunciations is estimated less precisely (Column 4). When using only foreign trials as an instrument (Table A8), the significance of the effect drops to the 10% level as well, but its size appears to be three times as large as in the baseline specification. Thus we can conclude that both domestic and foreign trials contribute to the effect on the self-denunciations.

Another modification relates to measuring the amounts of tax evasion news. We re-estimate the baseline model but refrain from weighting the article counts by newspaper circulation shares. This test serves to verify that the weighting procedure is not the factor responsible for the findings, as sampling weights sometimes result in overly heteroscedastic variables. In addition, the circulation weights cause the values of the news variable to be interpretable only in relative terms, whereas estimating the model with the unweighted data allows for statements about the absolute size of the effects. Table A9 provides the results of this modification. In the first stage, the instruments are still found to be good predictors of the tax evasion news coverage. One additional trial opening or closing leads to an increase of about 21 and 7 additional articles, depending on whether the trial takes place in Germany or abroad (Column 5). These effects correspond to 52.3% and 16.9% of the average news coverage, respectively. Again, both the OLS and the IV estimate of the news coefficient are significant at the 1% and 5% level. With every additional tax evasion article, there are about 3.4 more self-denunciations (Column 6). Opening or closing a celebrity tax evasion trial in Germany, for instance, thus translates into

70.8 additional self-denunciations.

It would be optimal if high-quality data on trials for tax evasion by ordinary people were available, to control for the efforts of authorities. Unfortunately, such data can only be obtained on a state-year basis, which is why we do not include common trials in the baseline specification. The estimation results in Table A10 suggest that this omission is not problematic. Here, we include the amounts of common trials for economic crime and tax evasion in Germany as a control variable, after disaggregating the yearly figures proportionally, to match the quarterly and half-yearly units of observation. The results indicate that the amounts of common trials slightly correlate with the number of self-denunciations. However, including this variable does not affect the coefficients of interest.

In the models discussed so far, standard errors are computed in a way to be robust to heteroscedasticity. To check whether correlation within regions affects the results, we compute clustered standard errors. As Columns (1) to (3) in Table A11 show, intra-region correlation is not an issue, the significance levels of the coefficients barely change. Considering that the data set has a distinct time dimension, it is also useful to check whether the results hold when calculating autocorrelation-robust standard errors. To be able to compute these standard errors in a consistent way, we discard all observations that are not measured on a quarterly basis. Columns (4) to (6) in Table A11 show the resulting estimates, using Newey-West standard errors. The coefficients are similar to the baseline specification, both in terms of size and statistical significance.

5. Conclusion

This study provides evidence on the effects of tax evasion news coverage on self-denunciations in Germany, using public trials for tax evasion by celebrities to identify these effects. Because celebrities are often considered role models, the combination of prominence and (alleged) criminal behavior guarantees the attention of the public, as reflected by substantial amounts of news coverage surrounding the trials. Based on this exogenous variation, IV estimates indicate that a one standard deviation increase in news about tax evasion results in approximately 38% more tax evaders being repentant than normally. For many unlawful tax payers, celebrity trials

are cautionary tales – in the sense that defrauders realize what could happen to them if they were caught. It is noteworthy that the effect has at least medium-term implications, because the chances of relapse are particularly small. At the moment of the self-denunciation, the tax authorities not only collect the missing fees – including interest and penalties – but also assess future taxes. Contrary to the post-audit effect described by DeBacker et al. (2015), participation in the tax amnesty thus decreases the chances of recidivism in the near future.

The research design of this study is not without limitations though. The data we obtained from the ministries of finance refer to self-denunciations related to foreign capital accounts, often located in Switzerland or Liechtenstein. Thus our findings only apply to the evasion of capital gains tax, a tax category that merely represents a fraction of overall revenues. In addition, the data cannot reveal any insights into the potential heterogeneity of the media effects. If there was information on the demographics of individuals voluntarily disclosing tax evasion, it would be possible to investigate whether some people are more receptive to news coverage than others. The data do not contain, either, information that would allow to address the role of tax consultants in this context. For example, it would be interesting to evaluate whether these advisers act as additional intermediaries, i.e., if self-denunciations are often based on recommendations of consultants, compared to cases of clients approaching their advisers first. Finally, we cannot determine the exact mechanism that is responsible for the effect of tax evasions news coverage on people's participation in tax amnesties. Our findings could be driven by an increase in tax payers' knowledge about objective facts, such as the legality of behaviors, the probability of detection, or the severity of penalties. However, the effect could also be explained by changes in perceptions and subjective assessments. For instance, the abstract knowledge that tax evasion might lead to imprisonment could be a less crucial factor in tax payers' decision making than exposure to news reports with pictures of a celebrity that is led out of court in handcuffs.

Despite these limitations, the findings of this study have important implications. The results show that participation in tax amnesties is substantially affected by the media. Policy makers that are interested in maximizing revenues from tax amnesty programs not only need to pay attention to tax havens, data leaks, or court decisions, but may also want to account for news coverage on these issues. Specifically, the findings indicate that the way authorities, courts, and

the press deal with prominent tax evaders can be crucial for the behavior of ordinary people. Because celebrity trials have a signaling effect, it is important that famous personalities are not granted a bonus when they are tried; otherwise tax evasion might be encouraged. However, prosecutors and judges also have to resist the temptation of making an example of celebrities, because democratic societies are built on the equal treatment of their members, independent of fame. This argument applies to the media as well. It would be desirable if profit-maximizing outlets acted responsible and did not engage in sensationalist, prejudging coverage of celebrity trials, because of the potential effects on public opinion and verdicts.

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Appendix

Table A1: List of newspapers in the sample

Newspaper	Circulation
Aachener Nachrichten	Aachen
Aachener Zeitung	Aachen
Allgemeine Zeitung Mainz	Mainz
B.Z.	Berlin
Badische Zeitung	Baden-Wuerttemberg
Bayerische Rundschau	Bavaria
Berliner Kurier	Berlin
Berliner Morgenpost	Berlin
Berliner Zeitung	Berlin
Bonner General-Anzeiger	Bonn
Coburger Tageblatt	Bavaria
Darmstädter Echo	Hesse
Der Tagesspiegel	Berlin, Brandenburg
Die Tageszeitung	national
Die Welt	national
Express	Bonn, Cologne, Düsseldorf
Frankfurter Allgemeine Zeitung	national
Frankfurter Neue Presse	Hesse
Frankfurter Rundschau	national
Gelnhäuser Tageblatt	Hesse
Gießener Anzeiger	Hesse
Hamburger Abendblatt	Hamburg, Lower Saxony, Schleswig-Holstein
Hamburger Morgenpost	Hamburg
Handelsblatt	national
Heilbronner Stimme	Baden-Wuerttemberg
Kölner Stadt-Anzeiger	Bonn, Cologne, Düsseldorf
Kölnische Rundschau	Bonn, Cologne, Düsseldorf
Lampertheimer Zeitung	Hesse
Lausitzer Rundschau	Brandenburg, Saxony
Lauterbacher Anzeiger	Hesse
Leipziger Volkszeitung	Saxony, Thuringia
Main Spitze	Hesse
Main-Post	Bavaria
Märkische Allgemeine	Brandenburg
Mitteldeutsche Zeitung	Saxony-Anhalt
Münchner Abendzeitung	Bavaria
Neue Westfälische	Bielefeld
Neue Württembergische Zeitung	Baden-Wuerttemberg
Nordkurier	Mecklenburg-Western Pomerania
Nürnberger Nachrichten	Bavaria
Oberhessische Zeitung	Hesse
Ostthüringer Zeitung	Thuringia
Passauer Neue Presse	Bavaria
Potsdamer Neueste Nachrichten	Brandenburg
Reutlinger General-Anzeiger	Baden-Wuerttemberg
Rheinische Post	Bonn, Cologne, Düsseldorf, Wuppertal
Rhein-Zeitung	Koblenz, Mainz
Saarbrücker Zeitung	Saarland
Sächsische Zeitung	Saxony
Schweriner Volkszeitung	Mecklenburg-Western Pomerania
Süddeutsche Zeitung	national
Südkurier	Baden-Wuerttemberg
Südwest Presse	Baden-Wuerttemberg
Thüringer Allgemeine	Thuringia
Thüringische Landeszeitung	Thuringia
Trierischer Volksfreund	Trier
Usinger Anzeiger	Hesse
Westdeutsche Zeitung	Düsseldorf, Essen, Wuppertal
Wiesbadener Kurier	Hesse
Wiesbadener Tagblatt	Hesse

Table A2: Most common words in tax evasion news coverage

#	Word	Translation	Freq.	#	Word	Translation	Freq.
1	Steuerhinterziehung	tax evasion	5882	51	Beihilfe	abetment	464
2	Euro	euro	4323	52	Angeklagte	accused	455
3	Hoeneß	Hoeneß	3062	53	Auermann	Auermann	448
4	deutsche	German	2888	54	Vorwürfe	accusations	446
5	Millionen	millions	2251	55	Gefängnis	prison	444
6	Staatsanwaltschaft	prosecution	1908	56	Steuersünder	tax evader	426
7	Steuern	taxes	1795	57	Ermittler	investigator	422
8	Bank	bank	1438	58	Anwalt	lawyer	419
9	Gericht	court	1293	59	Steuerfahnder	tax investigator	419
10	Schweiz	Switzerland	1206	60	Firma	firm	401
11	Deutschland	Germany	1199	61	Post	mail	401
12	Selbstanzeige	self-denunciation	1199	62	Verdachts	suspicion	369
13	deutschen	German	1192	63	Fahnder	investigator	361
14	Geld	money	1184	64	Konto	account	357
15	schweizer	swiss	1085	65	Januar	January	354
16	München	Munich	1045	66	Selbstanzeigen	self-denunciations	353
17	Uli	Uli	1031	67	Regierung	government	349
18	Ermittlungen	investigations	995	68	Bewährung	probation	347
19	Politik	politics	924	69	Staatsanwalt	prosecutor	342
20	Bayern	Bavaria	864	70	Wolfgang	Wolfgang	338
21	Finanzamt	tax authority	853	71	USA	USA	337
22	Prozess	trial	825	72	Schwarzer	Schwarzer	334
23	Anklage	indictment	803	73	Monate	months	333
24	Urteil	verdict	802	74	CDU	CDU	329
25	Verfahren	process	799	75	Million	million	321
26	Berlin	Berlin	790	76	Sprecher	spokesperson	321
27	Fiskus	revenue board	774	77	Justiz	justice	320
28	Richter	judge	715	78	Luxemburg	Luxembourg	317
29	Banken	banks	701	79	Vorwurf	accusation	313
30	Kunden	customers	665	80	Razzia	raid	310
31	Frankfurt	Frankfurt	664	81	März	March	308
32	verurteilt	sentenced	641	82	Präsident	president	306
33	hinterzogen	evaded	611	83	Thomas	Thomas	306
34	Prozent	percent	603	84	Millionenhöhe	into the millions	304
35	Milliarden	billions	591	85	Konten	accounts	302
36	Staat	state	570	86	Verteidiger	defense lawyer	302
37	Landgericht	regional court	558	87	Koch	Koch	299
38	Zeit	time	556	88	Manager	manager	299
39	Daten	data	555	89	Dienstag	Tuesday	293
40	Haft	imprisonment	552	90	Finanzminister	minister of finance	293
41	ermittelt	investigates	535	91	Informationen	information	289
42	Angeklagten	accused	522	92	Münchner	Munich	289
43	Verdacht	suspicion	518	93	Woche	week	289
44	Behörden	authorities	516	94	Mai	May	288
45	Monaten	months	513	95	Geldstrafe	fine	287
46	Unternehmen	company	498	96	Geschäfte	business dealings	287
47	SPD	SPD	497	97	Amtsgericht	local court	285
48	Steuerhinterzieher	tax defrauder	494	98	Sommer	Sommer	284
49	Mitarbeiter	employee	483	99	später	later	283
50	Strafe	sentence	470	100	Unterlagen	documents	280

Notes: Based on all articles containing the word “Steuerhinterziehung” in the (sub)heading. Word counts obtained after removing stop words, punctuation, and numbers.

Table A3: Major changes and events affecting the tax evasion environment

Event	Region	Time
Tax CD		
purchase	North Rhine-Westphalia	2010q1
consideration	Bavaria	2010q1
purchase	Lower Saxony	2010q2
purchase	North Rhine-Westphalia	2010q2
purchase	North Rhine-Westphalia	2010q4
purchase	North Rhine-Westphalia	2011q4
purchase	North Rhine-Westphalia	2012q3
purchase	Saarland	2012q2
purchase	Kaiserslautern, Koblenz, Mainz, Neustadt, Trier	2012q4
purchase	Aachen, Bielefeld, Bochum, Bonn, Dusseldorf, Essen, Hagen, Cologne, Munster, Wuppertal	2013q4
purchase	Aachen, Bielefeld, Bochum, Bonn, Dusseldorf, Essen, Hagen, Cologne, Munster, Wuppertal	2014q4
consideration	Berlin	2016q1
Laws		
Law against unreported income	national	as of 2011q2
Stricter amnesty prerequisites	national	as of 2015q1
Court rulings		
Federal Court	national	as of 2010q2
Federal Constitutional Court	national	as of 2010q4
Leaks		
Swiss Leaks I	national	2010q1
Luxembourg Leaks	national	2012q2
Offshore Leaks	national	2013q2
Swiss Leaks II	national	2015q1

Table A4: Celebrities in public trials for tax evasion

Name	Place	Date(s)	Munzinger entry	German Wikipedia	Known for
Acar, Mehmet	Bremen	2016q1	no	yes	politician
Auermann, Nadja	Berlin	2011q2-2011q4; 2013q4-2015q1	yes	yes	model
Bartomeu, Josep Maria	Spain	2015q2-to date	no	yes	sports official
Berlusconi, Silvio	Italy	2011q1-2012q4; 2013q2; 2013q3	yes	yes	politician
Berlusconi, Pier Silvio	Italy	2014q1-2014q3; 2016q1	no	yes	entrepreneur
Cahuzac, Jérôme	France	2016q1-to date	no	yes	politician
Khodorkovsky, Mikhail	Russia	2010q4	yes	yes	entrepreneur
da Silva S. Júnior, Neymar	Brasil	2015q3-2016q1	yes	yes	athlete
Dolce, Domenico	Italy	2013q2; 2014q1-2014q2	yes	yes	fashion designer
Ehlert, Hans-Harald	Berlin	2013q3-2014q3; 2015q3	no	yes	CEO
Falk, Alexander	Hamburg	2010q3	yes	yes	entrepreneur
Finzelberg, Lothar	Saxony-Anhalt	2015q1-2015q2; 2015q4-to date	no	yes	politician
Fitschen, Jürgen	Bavaria	2015q2-2016q2	yes	yes	CEO
Gabbana, Stefano	Italy	2013q2-2016q2; 2014q1-2014q2	yes	yes	fashion designer
Ganswindt, Thomas	Bavaria	2011q1-2011q2	no	yes	CEO
Gribkowsky, Gerhard	Bavaria	2011q4-2012q2	no	yes	CEO
Haderthauer, Hubert	Bavaria	2015q4-2016q1	no	yes	forensic physician
Herman, Eva	Hamburg	2016q2	yes	yes	TV presenter
Hildebrandt, Bernd-Uwe	Saxony-Anhalt	2012q3	yes	yes	sports official
Hilpert, Axel	Brandenburg	2012q1-2012q2; 2014q2; 2016q2-to date	no	yes	entrepreneur
Hoeneß, Ulrich	Bavaria	2014q1	yes	yes	sports official
Inhofer, Karl	Bavaria	2015q3-2015q4	no	yes	public servant
Kahn, Oliver	Bavaria	2011q2	yes	yes	athlete
Lebedev, Platon	Russia	2010q4	no	yes	CEO

Lindner, Patrick	Bavaria	2010q2	yes	yes	artist
Magnitski, Sergei	Russia	2013q1-2013q3	no	yes	lawyer
Maradona, Diego	Italy	2012q1	yes	yes	athlete
Messi, Lionel	Spain	2016q2	yes	yes	athlete
Middelhoff, Thomas	Essen	2014q2-2014q4	yes	yes	CEO
Mišković, Miroslav	Serbia	2013q4-2016q2	no	yes	entrepreneur
Nannini, Gianna	Italy	2015q1-2015q3	yes	yes	artist
Cristina of Spain	Spain	2014q1-2014q4; 2016q1-to date	no	yes	monarch
Pischetsrieder, Bernd	Bavaria	2011q4	yes	yes	CEO
Profumo, Alessandro	Italy	2012q4-to date	yes	yes	CEO
Schelsky, Wilhelm	Bavaria	2010q4; 2014q4	no	yes	trade union leader
Schelter, Kurt	Brandenburg	2012q1-2012q2	yes	yes	politician
Schmid, Georg	Bavaria	2015q1	yes	yes	politician
Schreiber, Karlheinz	Bavaria	2010q1-2010q2; 2011q3-2013q4; 2013q4-2015q3	no	yes	lobbyist
Sommer, Theo	Hamburg	2014q1	yes	yes	journalist
Speck, Karsten	Brandenburg	2010q4	yes	yes	artist
Strauss, Max Josef	Bavaria	2010q2	no	yes	entrepreneur
Tymoshenko, Yulia	Ukraine	2012q2-to date	yes	yes	politician
Tönnies, Clemens	Bochum	2011q1-2011q3	yes	yes	sports official
Tsochatzopoulos, Akis	Greece	2013q1; 2013q2-2013q4; 2014q2	yes	yes	politician
Uckermann, Jörg	Cologne	2014q2-2014q4	no	yes	politician
Urdangarin, Iñaki	Spain	2016q1-to date	yes	yes	monarch
Weiß, Roland	Baden-Wuertt.	2014q4-2016q2	no	yes	politician
Wildmoser, Karl-Heinz	Bavaria	2010q2	no	yes	sports official
Wolter, Judith	Cologne	2014q2-2014q4	no	yes	politician

Table A5: Summary statistics of main variables

	Mean	SD	Min	Max
Number of self-denunciations	265.49	508.15	0.0	3884.0
Tax evasion articles	39.49	34.38	11.0	220.0
Tax evasion articles (weighted by circulation)	1.90	1.19	0.5	8.6
Munzinger celebrities				
- Domestic public trials (regional effects)	0.04	0.21	0.0	2.0
- Domestic public trials (national effects)	1.05	0.92	0.0	4.0
- Foreign public trials	1.16	1.17	0.0	4.0
Wikipedia celebrities				
- Domestic public trials (regional effects)	0.11	0.45	0.0	5.0
- Domestic public trials (national effects)	2.82	1.71	0.0	9.0
- Foreign public trials	1.84	1.60	0.0	7.0

Notes: N = 452.

Table A6: Effect of news coverage on self-denunciations (Wikipedia celebrity criteria)

	(1) Coverage (OLS)	(2) Self-den. (IV)	(3) Coverage (OLS)	(4) Self-den. (IV)
Tax evasion news coverage		119.6*** (13.37)		140.4** (55.82)
Domestic public trials (reg.)	0.0921 (0.0694)		-0.00451 (0.0643)	
Domestic public trials (nat.)	0.345*** (0.0178)		0.0352 (0.0304)	
Foreign public trials	0.434*** (0.0363)		0.241*** (0.0304)	
Controls	No	No	Yes	Yes
Year fixed effects	No	No	Yes	Yes
Observation unit fixed effects	No	No	Yes	Yes
Region fixed effects	No	No	Yes	Yes
Time trend	No	No	Yes	Yes
F-statistic, 1st stage		461.1		18.52
Hansen J, p-value		0.479		0.912
R-square	0.818	0.233	0.822	0.654

Notes: N = 452. Robust standard errors in parentheses. The controls include tax CDs, major legal changes and court rulings, tax data leaks, and a constant.

* p<0.10, ** p<0.05, *** p<0.01

Table A7: Effect of news coverage on self-denunciations (only domestic trials as instruments)

	(1)	(2)	(3)	(4)
	Coverage (OLS)	Self-den. (IV)	Coverage (OLS)	Self-den. (IV)
Tax evasion news coverage		117.7*** (15.90)		71.25* (43.11)
Domestic public trials (reg.)	-0.131 (0.304)		0.0527 (0.122)	
Domestic public trials (nat.)	1.302*** (0.0614)		0.815*** (0.0489)	
Controls	No	No	Yes	Yes
Year fixed effects	No	No	Yes	Yes
Observation unit fixed effects	No	No	Yes	Yes
Region fixed effects	No	No	Yes	Yes
Time trend	No	No	Yes	Yes
F-statistic, 1st stage		252.2		125.7
Hansen J, p-value		0.181		0.836
R-square	0.646	0.232	0.872	0.659

Notes: N = 452. Robust standard errors in parentheses. The controls include tax CDs, major legal changes and court rulings, tax data leaks, and a constant.

* p<0.10, ** p<0.05, *** p<0.01

Table A8: Effect of news coverage on self-denunciations (only foreign trials as instrument)

	(1)	(2)	(3)	(4)
	Coverage (OLS)	Self-den. (IV)	Coverage (OLS)	Self-den. (IV)
Tax evasion news coverage		108.7*** (12.07)		246.3* (134.9)
Foreign public trials	1.069*** (0.0416)		0.106*** (0.0280)	
Controls	No	No	Yes	Yes
Year fixed effects	No	No	Yes	Yes
Observation unit fixed effects	No	No	Yes	Yes
Region fixed effects	No	No	Yes	Yes
Time trend	No	No	Yes	Yes
F-statistic, 1st stage		657.5		12.56
R-square	0.621	0.229	0.803	0.627

Notes: N = 452. Robust standard errors in parentheses. The controls include tax CDs, major legal changes and court rulings, tax data leaks, and a constant.

* p<0.10, ** p<0.05, *** p<0.01

Table A9: Effect of news coverage on self-denunciations (article counts not weighted by newspaper circulation)

	(1) Self-den. (OLS)	(2) Coverage (OLS)	(3) Self-den. (IV)	(4) Self-den. (OLS)	(5) Coverage (OLS)	(6) Self-den. (IV)
Tax evasion news coverage	5.280*** (0.676)		4.984*** (0.568)	4.015*** (1.079)		3.430** (1.426)
Domestic public trials (reg.)		3.519 (5.269)			0.856 (2.980)	
Domestic public trials (nat.)		18.15*** (1.056)			20.64*** (1.429)	
Foreign public trials		16.06*** (0.966)			6.658*** (0.597)	
Controls	No	No	No	Yes	Yes	Yes
Year fixed effects	No	No	No	Yes	Yes	Yes
Observation unit fixed effects	No	No	No	Yes	Yes	Yes
Region fixed effects	No	No	No	Yes	Yes	Yes
Time trend	No	No	No	Yes	Yes	Yes
F-statistic, 1st stage			269.6			82.46
Hansen J, p-value			0.375			0.845
R-square	0.233	0.773	0.232	0.667	0.881	0.666

Notes: N = 452. Robust standard errors in parentheses. The controls include tax CDs, major legal changes and court rulings, tax data leaks, and a constant.

* p<0.10, ** p<0.05, *** p<0.01

Table A10: Effect of news coverage on self-denunciations (including the amount of common trials as an additional control)

	(1) Self-den. (OLS)	(2) Coverage (OLS)	(3) Self-den. (IV)
Tax evasion news coverage	73.78*** (27.04)		86.54** (39.65)
Domestic public trials (reg.)		0.0290 (0.106)	
Domestic public trials (nat.)		0.845*** (0.0406)	
Foreign public trials		0.181*** (0.0211)	
Common domestic trials	0.662* (0.398)	0.00000959 (0.000308)	0.662* (0.398)
Controls	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Observation unit fixed effects	Yes	Yes	Yes
Region fixed effects	Yes	Yes	Yes
Time trend	Yes	Yes	Yes
F-statistic, 1st stage			147.2
Hansen J, p-value			0.343
R-square	0.669	0.890	0.669
Observations	409	409	409

Notes: Robust standard errors in parentheses. The controls include tax CDs, major legal changes and court rulings, tax data leaks, and a constant.

* p<0.10, ** p<0.05, *** p<0.01

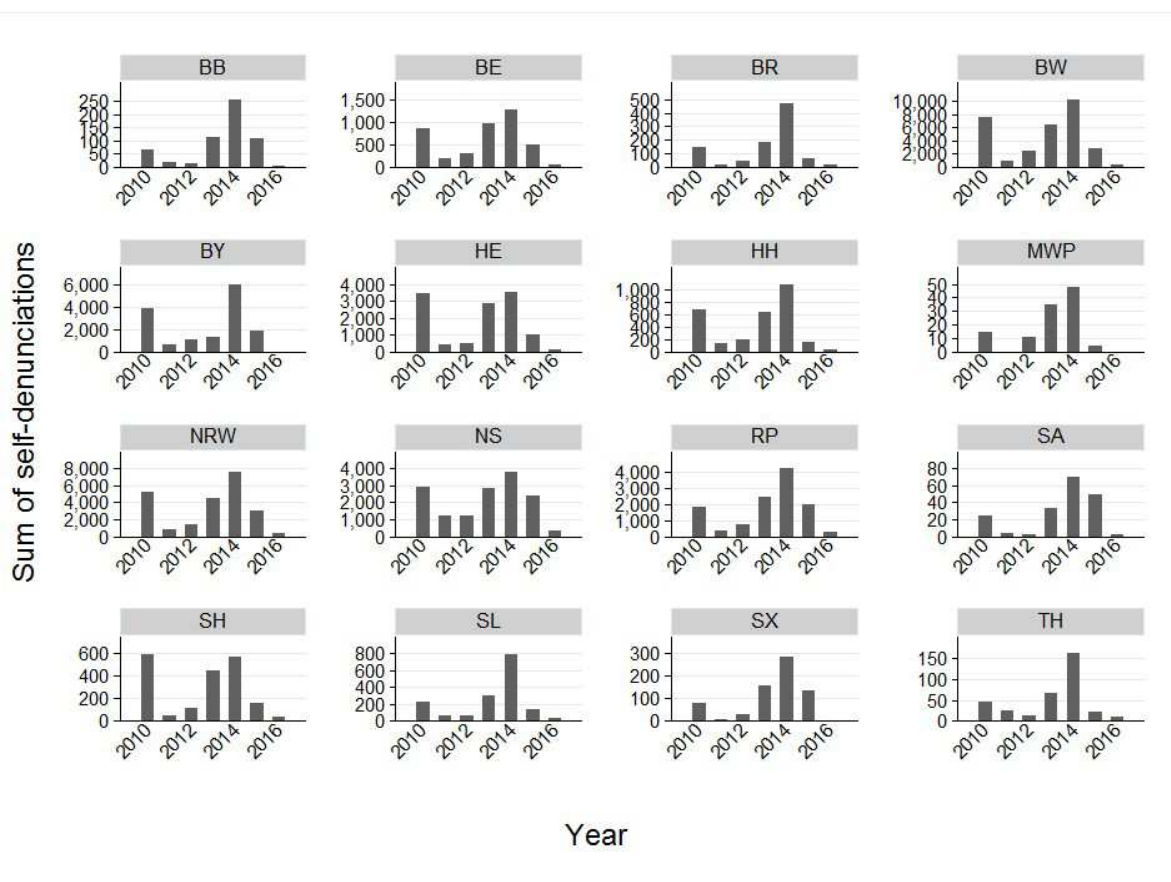
Table A11: Effect of news coverage on self-denunciations (alternative computation of standard errors)

	(1) Self-den. (OLS)	(2) Coverage (OLS)	(3) Self-den. (IV)	(4) Self-den. (OLS)	(5) Coverage (OLS)	(6) Self-den. (IV)
Tax evasion news coverage	75.01*** (22.76)		84.48*** (26.31)	124.4*** (36.54)		129.5*** (39.95)
Domestic public trials (reg.)		0.0283 (0.0900)			-0.0117 (0.112)	
Domestic public trials (nat.)		0.847*** (0.0312)			1.058*** (0.0509)	
Foreign public trials		0.156*** (0.0165)			0.100*** (0.0222)	
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observation unit fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Region fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Time trend	Yes	Yes	Yes	Yes	Yes	Yes
F-statistic, 1st stage			445.4			176.3
Hansen J, p-value			0.226			0.428
R-square	0.659	0.881	0.659	0.362	0.884	0.362
Observations	452	452	452	394	394	394

Notes: Columns (1) to (3): standard errors clustered by region in parentheses. Columns (4) to (6): autocorrelation- and heteroscedasticity-robust standard errors in parentheses. The controls include tax CDs, major legal changes and court rulings, tax data leaks, and a constant.

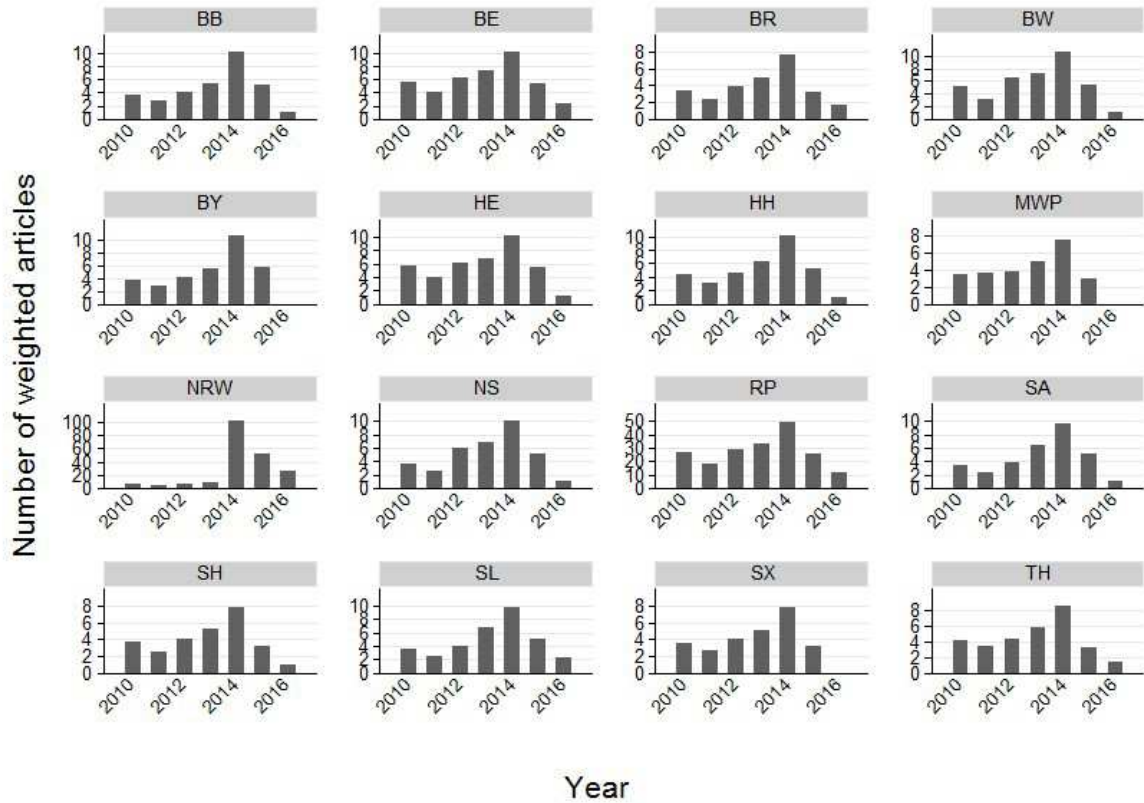
* p<0.10, ** p<0.05, *** p<0.01

Figure A1: Yearly amounts of self-denunciations, by federal state



Notes: BB: Brandenburg; BE: Berlin; BR: Bremen; BW: Baden-Wuerttemberg; BY: Bavaria; HE: Hesse; HH: Hamburg; MWP: Mecklenburg-Western Pomerania; NRW: North Rhine-Westphalia; NS: Lower Saxony; RP: Rhineland-Palatinate; SA: Saxony-Anhalt; SH: Schleswig-Holstein; SL: Saarland; SX: Saxony; TH: Thuringia.

Figure A2: Yearly amounts of weighted articles, by federal state



Notes: BB: Brandenburg; BE: Berlin; BR: Bremen; BW: Baden-Wuerttemberg; BY: Bavaria; HE: Hesse; HH: Hamburg; MWP: Mecklenburg-Western Pomerania; NRW: North Rhine-Westphalia; NS: Lower Saxony; RP: Rhineland-Palatinate; SA: Saxony-Anhalt; SH: Schleswig-Holstein; SL: Saarland; SX: Saxony; TH: Thuringia.

Figure A3: Self-denunciations and tax evasion news coverage

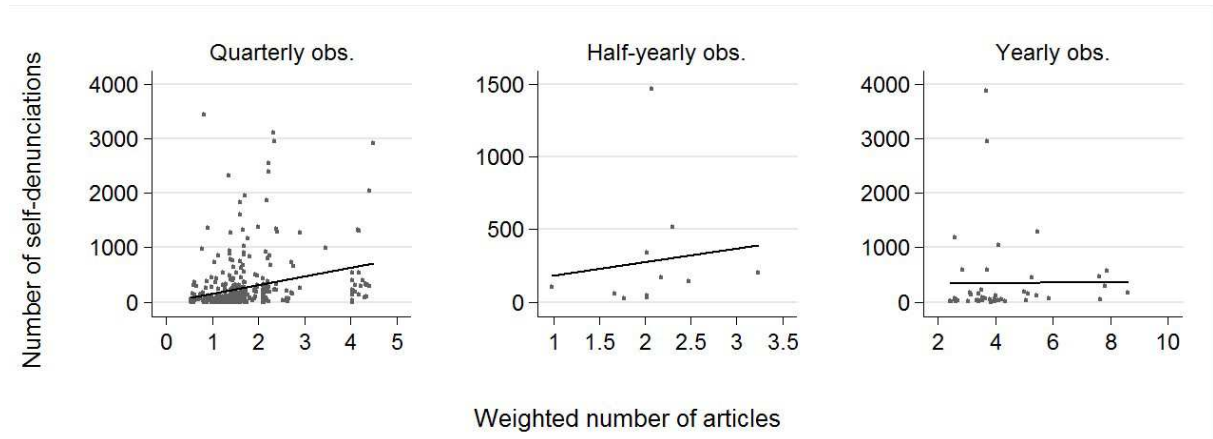
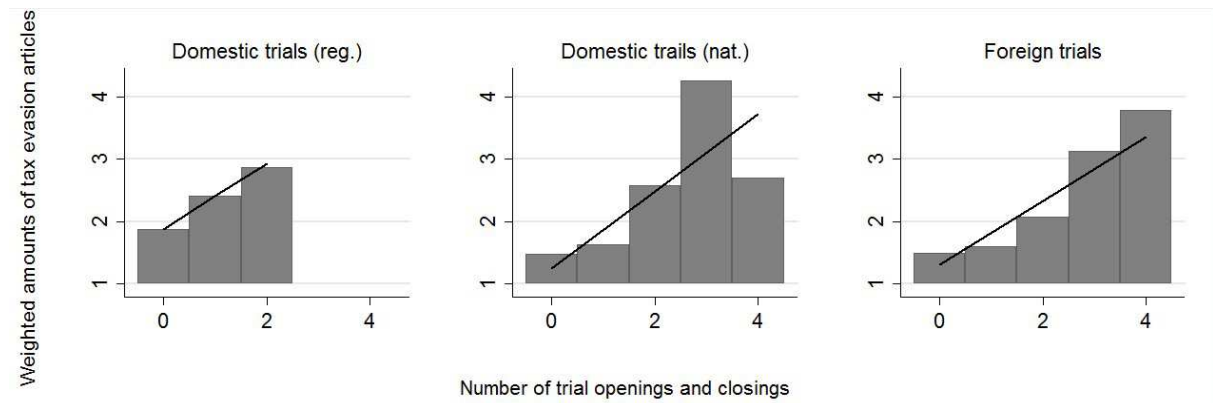


Figure A4: Tax evasion news coverage and celebrity trials

(a) Munzinger celebrities



(b) Wikipedia celebrities

