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THE DYNAMIC EFFECTS OF BANK REBRANDING AND FAMILIARITY BIAS

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The dynamic effects of bank rebranding and familiarity bias

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Abstract We analyze the dynamic effects of bank rebranding in a sample of Turkish banks. We hypothesize that bank rebranding resorts positive effects if the rebranding strategy exploits familiarity bias, which refers to the behavioral heuristic that investors favor firms they are more familiar with. We measure the effect of bank rebranding on depositor attitudes by the change in depositor discipline. In line with our hypothesis, rebranding from a foreign into a Turkish name (increased familiarity) is associated with reduced depositor discipline, while rebranding from a Turkish into a foreign name (reduced familiarity) is associated with increased depositor discipline instead. Local projections indicate that the positive familiarity bias effect of rebranding lasts up to four years.

Keywords depositor discipline; rebranding; familiarity bias

1. Introduction

In the last decades many organizations have pursued a corporate rebranding strategy in order to change their image and identity (Brown et al. 2006, Muzellec et al. 2003). Some do so because of mergers and acquisitions (Devlin and McKenchie 2008), while others want to boost their business by creating a new image or position in the market place (Mishra 2001, Kilic and Dursun 2006). Others are looking for a fresh start after difficult or financially distressed times, or are trying to create a global brand by harmonizing their different brands across national boundaries.[1] Whatever the motivations for rebranding may be, the firm envisages an enhanced brand position with a clearer message to its customers. Abandoning an established brand name, however, also entails the risk of sparking feelings of fear and resentment and may by consequence result in the loss of market share (e.g., Horsky and Swyngedouw 1987, Stuart and Muzellec 2004). Despite these clear risks, poorly performing firms may try to conceal their deplorable reputation by changing their name, since firms without track record are able to generate more revenues than firms with a poor track record (McDevitt 2011).

Branding might even be more crucial in the banking sector than in other services-related industries, because it is beyond doubt one of these industries where trust and confidence are especially vital. Given banks' nature as financial intermediaries, faced with asymmetric information and a maturity mismatch between assets and liabilities, they are inherently vulnerable to shocks in depositors' perceptions about the bank's quality and therefore susceptible to bank runs (e.g., Diamond and Dybvig 1983). According to Tadelis (1999), operating in an environment dominated by information asymmetries makes the corporate brand name the main source of a firm's reputation: perceptions of asset deterioration may, through an extreme form of depositor discipline, even trigger a bank run irrespective of ex-ante bank fundamentals. Brand reputation has the potential to mitigate this risk of perceived asset deterioration.[2] The trends towards increasing convergence in financial services and towards multiple banking channel options

[1] Muzellec et al. (2003) singles out four drivers of name changes: a change in ownership structure (mergers and acquisitions, spinoffs and demergers, privatizations and nationalizations), a change in corporate strategy (diversification and divestment, internationalization and localization), a change in competitive position (outdated image, erosion of market position, and reputational problems) and a change in the external environment (legal regulation, crises/catastrophes).

[2] The importance of marketing stimuli on consumer choice preferences asymmetric information, has been widely acknowledged in the marketing literature (e.g., Dawar and Parker 1994, Erdem and Swait 1998).

outside the physical bank may further attest the pivotal importance of branding in the interaction between depositors and financial institutions.[3]

In contrast to the substantial real world activity in corporate rebranding, however, the empirical literature focusing on the possible effects of name changes is surprisingly sparse, both within and beyond the financial sector. The extant literature primarily focuses on the valuation effects of rebranding and provides only mixed evidence. Horsky and Swyngedouw (1987), for example, find positive valuation effects for firms producing goods, whereas the opposite holds for financial firms. Karpoff and Rankine (1994) report that shareholder wealth effects of rebranding are quickly reversed in the post-announcement period. The dot-com phenomenon, however, exhibited that the management could capitalize on the adoption of rebranding strategies consonant with the market sentiment. Cooper et al. (2001) report that firms merely adding cosmetic 'dot-com' references to their brands realized substantial abnormal returns during the Internet bubble period. With the burst of the internet bubble, Cooper et al. (2005) document that corporate name changes, but now in the reverse direction, hence with the drop of 'dot-com' references, continued to produce wealth effects.

Concerning the financial services industry, there have been only a few published case studies and customer survey studies on rebranding episodes (e.g., Saunders and Watters 1993, Devlin and McKechnie 2008, M'Sallem et al. 2009).[4]. We choose to study the Turkish banking sector because it provides an excellent laboratory to test the depositors' response to bank rebranding, since the sector has seen a significant number of name changes and a considerable influx of foreign banks. We contribute to the literature on the effects of bank rebranding along the following three dimensions.

First, we verify whether the heterogeneous effects of rebranding strategies in a banking context can be attributed to **familiarity bias**. Familiarity bias is a specific behavioral heuristic in a broader class of name proximity-based heuristics that have been found to steer investor behavior

[3] Brand identity plays an especially important role for service firms, as it is often difficult to differentiate services based on tangible characteristics (Berry 2000). Branding helps by providing a soft conversion of intangible services to tangible services. As a result, the weight of brand names is considered especially significant in the services industry, since it serves as a risk-reducing tool in the consumer's pre-purchase evaluation (Onkvisit and Shaw 1989). A service brand also acts as a central element in building a long-term relationship between buyer and seller (Dall'Olmo Riley and de Chernatony 2000).

[4] In fact, the rebranding literature beyond financial companies also largely consists of case studies, which limit the generalizability of the findings. We refer to Miller et al. (2014), who provide an integrative review of the rebranding literature.

in the literature. Kumar et al. (2015) for instance show that funds managed by individuals with foreign-sounding names attract less capital. Early alphabet stocks are positively associated with turnover and firm value (Itzkowitz et al. 2016). Similar findings are reported for fluent stock names (Green and Jame 2013) and name memorability (Grullon et al. 2004). Familiarity bias specifically refers to the behavioral heuristic that investors favor firms they are more familiar with. Familiarity is usually measured in terms of geographical or linguistic proximity. Ackert at al. (2005) conclude from experiments that information about geographical proximity is not sufficient to induce familiarity-based responses; instead, investors exhibit familiarity bias when they are also exposed to the company's name.

In the finance literature, there is a great deal of evidence that investors tend to overweigh familiar assets in domestic setting (e.g., Coval and Moskowitz 1999, Huberman 2001) as well as in international portfolio allocation (e.g., French and Poterba 1991). We aim at identifying the role of familiarity bias in the effects of bank rebranding by considering the nature of the name change. We are particularly interested in whether the decision to rebrand a Turkish bank name into a foreign, unfamiliar, bank name provokes negative responses from the bank's depositors and conversely whether the decision to rebrand a foreign bank name into a Turkish one elicits feelings of familiarity and affinity with the bank among its depositors. One of the main reasons for this effect is that foreign-sounding, less recognizable names may trigger a stronger sense of in-group bias (Kumar et al. 2015). Individuals systematically have more trust in, and have more positive opinions about individuals from their own group, whereas individuals from other groups are less trusted and less-well regarded (Tajfel 1982). Along this line of reasoning, we conjecture that (Turkish) recognizable bank names may be expected to create a sense of familiarity, which, in turn, will lead depositors to exhibit more positive attitudes towards these banks and to exert less effort to scrutinize them.

Second, while the previous literature on bank rebranding concentrated on case studies employing customer surveys, we use **depositor discipline** as a generic tool to measure the effect of bank rebranding on the attitudes of bank depositors towards the bank. The idea behind depositor discipline is that depositors actively penalize bank risk by demanding higher deposit rates from and supplying fewer deposits to more risky banks (e.g., Martinez Peria and Schmukler 2001, Demirgüç-Kunt and Huizinga 2004, Karas et al. 2010). If bank rebranding succeeds in numbing depositor sensitivity to bank risk, i.e., a reduction in depositor discipline, we take this as

a proof of depositors' more positive attitude towards the new brand. If, instead, the new name is not well regarded, depositors will exert stronger discipline on rebranded banks. Our empirical hypothesis therefore is that depositors will exert less discipline on banks that rebrand from a foreign name to a more familiar (Turkish) name and more discipline on banks that opt to change their Turkish name to a less familiar foreign one. One of our empirical challenges will be to distinguish between familiarity bias and ethnocentric behavior or even resentment against foreigners. Indeed, customer choice may be also affected by ethnocentrism for a certain period of time (Balabanis et al. 2001, Morse and Shive 2011). Ethnocentric depositors are reluctant to make use of services provided by foreign-owned companies (De Ruyter et al. 1998). By controlling for foreign acquisitions, we increase our confidence that any observed relationship between rebranding and depositors' responses is not spuriously produced by foreign acquisitions, which should be always associated with ethnocentrism but not necessarily with familiarity.

Third we employ the **local projections method** of Jordà (2005) to assess whether the effects of rebranding on depositor attitudes are long-lived. This method has been used successfully and extensively in the macro literature as an alternative to VAR or SVAR methods for the study of dynamic effects and impulse response functions, but is relatively new to banking and has not been applied in the context of rebranding or depositor discipline before. It allows us to generate impulse responses of depositor discipline parameters to a specific type of name change, for example a change from a foreign to a Turkish name (our measure of increased familiarity). As a consequence we can make claims about how long the positive or negative effects of specific types of bank rebranding are expected to last.

In line with our familiarity bias hypothesis, our results show that rebranding from a foreign into a Turkish name (increased familiarity) is associated with reduced depositor discipline, while rebranding from a Turkish into a foreign name (reduced familiarity) is associated with increased depositor discipline instead. We also observe that depositors do not respond with more discipline to rebranding the bank from a Turkish to a foreign name when this name change is driven by a corresponding change of control (a foreign bank buying a control stake of a Turkish bank). This suggests our depositor discipline effects of name changes are indeed driven by familiarity bias and not by ethnocentricity, as in the latter case the scrutiny would especially increase in case of a foreign take-over, rather than the reverse. If banks change their foreign name into a Turkish one they enjoy reduced depositor discipline for a substantial amount of time, irrespective of any

changes of control. Our in depth analysis of the dynamic effects of bank rebranding through the local projections method reveal that this numbing effect of familiarity bias only peters out after 5 years, which is remarkably persistent for this kind of behavioral effect.

Several robustness checks are carried out to assess the sensitivity of our findings: (1) We disentangle the response of foreign currency depositors from the general response to make sure this is driven by the behavior individual depositors, (2) we include the introduction of the full deposit insurance scheme into our analysis; (3) we perform our analysis on a reduced sample to mitigate the unobserved heterogeneity; and (4) we apply a Heckman two-step method to reduce the selection bias to make sure our results are not driven by endogenous name changes. Our results remain qualitatively the same for all these robustness checks.

We organize this article as follows. In section 2, we describe the sample of banks, and present the results of the baseline depositor discipline model as our tool to assess the effect of name changes. In section 3, we provide some first results on the effects of name changes on depositor attitudes by enriching the baseline model with interactions between the bank fundamentals and broadly defined rebranding variables. In section 4, we present our main results and document familiarity bias among Turkish depositors. Section 5 shows that the earlier results are indeed driven by familiarity bias and not by change of control or by ethnocentrism. Section 6 employs the local projections method to document the dynamic effects of familiarity bias. Robustness checks are conducted in Section 7 for example to control for the introduction of deposit insurance and for selection. The final section concludes, and provides policy implications and avenues for further research.

2. Data and baseline model of depositor discipline

We concentrate on commercial banks in Turkey that operate in a relatively homogenous way, providing similar services and using similar resources. Commercial banks in Turkey have traditionally been operating as universal banks offering a broad range of products and services such as deposit-taking, commercial lending, trading financial instruments, insurance, leasing and investment banking. The Turkish banking sector is an increasingly attractive market for foreign

investors. The influx of foreign investors into the Turkish commercial banking sector provides a good testing ground for the verification of the familiarity bias hypothesis.[5] We collect an unbalanced panel of 91 Turkish banks from the various issues of Banks in Turkey published by the Banks Association of Turkey. This database is assembled by gathering annual balance sheets and income and expense statements for these banks from 1980 till 2016. Of the 91 banks, 42 banks are either branches of foreign banks abroad or are foreign subsidiaries (more than 50% of their shares are owned by non-residents), 49 banks are domestically owned commercial banks (more than 50% of their shares are owned by Turkish residents), and 15 banks are classified as state-owned deposit-taking banks (predominantly owned by the Turkish government).[6] For our main variables that measure bank risk and bank soundness, we only use public information available to depositors.

Our estimation strategy involves full sample estimations of price- and quantity depositor discipline equations. Before the liberalization of July 1980 the banking sector was largely under state control and practically no new banks were allowed to enter. In July 1980, as a result of the financial liberalization program, the interest rate ceilings on loans and deposits were removed, loan allocation policies in line with the pursued import substitution strategy were abandoned, and in order to open the banking sector to competition bank entry was allowed. We therefore choose the year 1980 as a starting point for our analysis. In order to assess whether and how bank rebranding affects depositors' sensitivity to bank risk we estimate a baseline depositor discipline model and then enrich the model with interactions between bank rebranding variables and bank fundamentals. This methodological approach is explained in detail in the next section.

[5] The Turkish banking landscape experienced substantial changes over the period 1980-2016. Following the financial liberalization in 1980, the total number of deposit-taking institutions had risen from 40 to 61 by the end of 2000. However, the 2001 financial crisis led to a consolidation of the banking market in which the number of banks dropped to 33 at the end of 2006. Afterwards, the system has undergone a stabilization period and 34 banks were operative by the end of 2016. The banking system experienced a sharp increase in the share of foreign banks as measured by the share in total numbers, increasing from 10% in 1980 to 61% in 2016. Although opposite dynamics were observed for state-owned banks over the same time period (in terms of numbers, a drop from 30% to 9%), they still have a substantial market share in terms of deposits and total assets.

[6] The sum is more than 91 as we observe for some banks a change in ownership over the sample period. Furthermore, our data structure is adjusted for mergers and acquisitions by generating a new bank after tracing such events. Mergers and acquisitions between two Turkish banks are traced through "The Banks Association of Turkey", which offers main historical events during the lifetime of operating and closed banks.

2.1. A baseline model of depositor discipline

Depositor discipline is our tool to measure the effect of bank rebranding on depositor attitudes towards the bank and to evaluate the importance of familiarity bias in this mechanism. To have a robust specification for assessing depositor discipline, we start by exploring which bank fundamentals, if any, depositors focus on when disciplining their banks. In particular we are looking for bank fundamentals that are observable and whose deterioration unambiguously leads to deposit outflows and deposit rate hikes. Only the joint information of both price and quantity reactions to bank risk yields conclusive evidence of depositor discipline (e.g., Park and Peristiani 1998, Martinez Peria and Schmukler 2001, Karas et al. 2013). Indeed, it is the estimation and interpretation of both quantity and price regressions that allow us to disentangle depositor discipline from other determinants of deposit market equilibria, like demand shifts or regulatory shocks. A positive relation between bank risk and deposit rates could, for example, be a reflection of a demand effect, with risky banks pursuing a more aggressive deposit expansion strategy to meet new loan demand. Our approach would reveal which of these hypotheses (discipline versus a demand shift) holds by also inspecting the quantity regression, where the relation between bank risk and deposit quantity would also be positive in case of a demand shift, but negative in the case of true depositor discipline.

We measure the reaction of deposit growth (Eq. 1) and deposit rates (Eq. 2) to bank risk taking, by estimating the following reduced-form equations:

$$\mathrm{DEPG}_{i,t} = \alpha_i + \alpha_t + \alpha_1 \mathrm{Risk}_{i,t-1} + \alpha_2 \mathrm{Controls}_{i,t} + \varepsilon_{i,t} \quad (1)$$

$$\mathrm{IDEP}_{i,t} = \beta_i + \beta_t + \beta_1 \mathrm{Risk}_{i,t-1} + \beta_2 \mathrm{Controls}_{i,t} + \mu_{i,t} \quad (2)$$

The reaction variables are the traditional variables used in the depositor discipline literature: $\mathrm{DEPG}_{i,t}$ is the first difference of the log of deposits for bank *i* during period *t*, whereas $\mathrm{IDEP}_{i,t}$ is the implicit deposit rate, measured as the annual interest expense over bank deposits. IDEP is the implicit deposit rate for the sum of insured and uninsured deposits. Table 1 provides summary

statistics of the dependent variables, bank fundamentals and bank controls for the sample period 1980-2016. We notice that the average yearly percentage change in deposits has been positive across banks and over time (17.25%). Dispersion of deposit growth is, however, high with a substantial difference between minimum and maximum values. On the other hand, the summary statistics of the implicit interest reveal that the banking sector has historically paid high deposit rates. This observation should not come as a surprise, since the Turkish banking sector has been historically pressured by its government to finance large budget deficits at high interest rates. Especially in the 1980s and 1990s, huge public sector deficits and their financing with high real interest rates from the domestic financial markets heavily disturbed the allocation of resources to the real sector (e.g., De Jonghe et al. 2012).

< INSERT TABLE 1 AROUND HERE>

The vector Risk represents the alternative risk measures CAP and LIQ[7]. These variables are included with a one-year lag to account for the fact that balance sheet and income statement information become available to the public with a certain delay. In line with the literature, we introduce accounting measures of bank-specific risks (e.g., Martinez Peria and Schmukler 2001, Demirgüç-Kunt and Huizinga 2004).[8] CAP is the ratio of total equity to total assets (the capital ratio). We expect that the capital ratio will, ceteris paribus, be positively related to deposit growth and negatively related to deposit rates. The summary statistics reveal that the average capital ratio in our sample equals 14.01%. LIQ is the ratio of liquid assets (such as cash, central bank debt and short-term government securities) to total deposits. As this ratio measures the bank's ability to cover deposit withdrawals, we expect a positive relationship with deposit growth and a negative one with the deposit rates. To moderate the inordinate influence of extreme values, we winsorize the aforementioned dependent and bank risk variables at the 2% level in both tails. Evidence of depositor discipline requires $\alpha_1 > 0$ and $\beta_1 < 0$ for CAP, LIQ, or both. The disturbance terms $\varepsilon_{i,t}$ and $\mu_{i,t}$ are independently distributed with mean zero and variance $\sigma^2_{i,t}$. Following most prior studies, we estimate our models with bank-fixed effects: α_i for the deposit growth specification

[7] We have tried other risk measures such as non-performing loans and return on assets but none of them proved to be the parameters used by depositors to discipline banks. In order to avoid potential overspecification problems, as in Demirgüç-Kunt and Huizinga (2004), we decided to proceed with the capital and liquidity ratio..

[8] Since most banks in our sample are not listed, relying on market information would severely restrict our dataset.

and β_i for the deposit rate specification to control for the unobserved heterogeneity across banks. To control for potentially heteroscedastic and potentially correlated error terms within an entity, we estimate heteroscedastic- and autocorrelation consistent standard errors. In all specifications, we include year dummy variables to account for macroeconomic fluctuations and other year-specific events that might influence the growth in deposits (i.e. α_t) or deposit rates (i.e. β_t). This is especially useful because Turkey experienced some spells of severe inflation and other macroeconomic disturbances in the period under study, but these are time-specific shocks common to all banks.

The vector Controls contains other bank-specific control variables that may affect the reaction variables. Size is calculated as the natural logarithm of total assets. Representing bank visibility and outreach, Branches is defined as the natural logarithm of the number of bank branches. As a measure of institutional maturity, Age represents the natural logarithm of number of years the bank exists. State banks are banks that predominantly owned by the government. Private banks are domestically owned commercial banks with more than 50% of shares owned by non-governmental Turkish residents. Foreign banks are either branches of internationally operating banks or local subsidiaries with 50% of their shares owned by non-residents. Private domestic banks serve as the reference group in the regressions. Investment banks and development banks are excluded to ensure the homogeneity of our sample.

2.2. Estimation results of the baseline model

We report the estimation results of Eq. 1 and Eq. 2 in Table 2, introducing the variables CAP and LIQ separately (columns 1-2 and columns 4-5 for the deposit growth and deposit rate equations, respectively) and jointly (column 3 and column 6 for the deposit growth and deposit rate equation, respectively). An increase in the capital ratio (CAP) is associated with higher deposit growth and lower deposit rates ($\alpha_1 > 0$ and $\beta_1 < 0$), which is direct evidence of the presence of depositor discipline[9]. In contrast, higher liquidity (LIQ), though also associated with higher deposit growth, leads to higher rather than lower deposit rates, suggesting a shift in banks'

[9] Conversely, depositors will punish banks with a lower capital ratio by decreasing the supply of funds, i.e. raising the average yield on deposits and reducing the quantity of deposits.

deposit demand rather than depositor discipline. Indeed more liquid banks seem to demand more deposits and pay higher deposit rates accordingly.

< INSERT TABLE 2 AROUND HERE>

The results unambiguously reveal that depositor discipline is mainly exerted through the capital ratio (CAP): depositors are found to supply more funds at lower deposit rates to banks that have increased their capitalization. This suggests that the capital ratio provides the most informative signal of bank risk to depositors. This is not surprising since solvency is a simple, accessible and powerful indicator of bank risk, i.e., bank capital cushions depositors against declining bank asset values. It also functions as a signal about the bank's resilience to credit, liquidity, operational, market, off balance sheet, legal, and macroeconomic risk and hence about the bank's probability of default. Therefore, the capital ratio has been used very extensively, as the main proxy for bank risk in earlier depositor discipline studies (e.g., Park and Peristiani 1998, Martinez-Peria and Schmukler 2001, Karas et al. 2010, Disli et al. 2013).

Large banks (Size) attract, relative to their smaller peers, more deposits without having to pay higher deposit rates. This may reflect that depositors perceive bigger banks as 'too-big to fail' Alternatively, size may also capture the effect of market power or of superior risk management skills. Indeed, De Jonghe et al. (2012), find that large Turkish banks manage their portfolio risk more efficiently and reach a more optimal risk/return profile. Banks with many branches (Branches) are not found to produce a comparative advantage in terms of deposit growth and deposit rates. As expected, bank age (Age) enters all specifications with a negative sign in the deposit growth regressions. Although state banks pay higher deposit rates, they exhibit lower deposit growth than domestic private banks. Although foreign banks also pay higher deposit rates, they do not enjoy a higher deposit growth than private domestic banks.

3. The general effects of bank rebranding

Having established the validity of the depositor discipline approach in our sample, we proceed by verifying whether our depositor discipline measure is a proper tool to evaluate the effects of bank rebranding. If the new name is perceived as very costly, involves a superficial facelift and/or is the ultimate reflection of bank problems, it will generate depositor distrust and suspicion, leading to more pronounced depositor discipline. Depositor discipline will, however, be mitigated if rebranding is perceived as being credible, persuasive, and re-energizing, leading to more customer loyalty and competitive differentiation. Therefore, we introduce bank rebranding variables and their interactions with bank capitalization and re-estimate the reduced form quantity –and price equations in Eq. 3 and Eq. 4, respectively[10]:

$$\mathrm{DEPG}_{i,t} = \alpha_i + \alpha_t + \alpha_1 \mathrm{Risk}_{i,t-1} + \alpha_2 \mathrm{Risk}_{i,t-1} \times \Delta\ \mathrm{NAME}_{i,t} + \alpha_3\ \Delta\ \mathrm{NAME}_{i,t} + \alpha_4 \mathrm{Controls}_{i,t} + \varepsilon_{i,t} \quad (3)$$

$$\mathrm{IDEP}_{i,t} = \beta_i + \beta_t + \beta_1 \mathrm{Risk}_{i,t-1} + \beta_2 \mathrm{Risk}_{i,t-1} \times \Delta\ \mathrm{NAME}_{i,t} + \beta_3\ \Delta\ \mathrm{NAME}_{i,t} + \beta_4 \mathrm{Controls}_{i,t} + \mu_{i,t} \quad (4)$$

The coefficients α_2 and β_2 identify the change in depositor discipline introduced by bank rebranding. If rebranding indeed numbs depositor sensitivity to bank capitalization, we expect $\alpha_2 < 0$ and $\beta_2 > 0$, while we expect $\alpha_2 > 0$ and $\beta_2 < 0$ if rebranding fuels depositor distrust and discipline instead. In all other cases, the effect of rebranding can be labeled as ambiguous.

As the effects of rebranding may wane over the course of time, rebranding may produce different depositor responses in the short-term and in the mid-to-long-term. In order to discriminate between the short-term and mid-to-long term effects of rebranding on depositor discipline, we use two versions for each rebranding dummy variable, while keeping other variables unchanged. We explore the short-run effect using a dummy variable which equals to 1

[10] We follow a similar empirical strategy to Disli et al. (2013), who exploit the depositor discipline framework to study the reaction of depositors after a bank appoints a former politician. The authors find that the presence of former politicians markedly affect depositor discipline; banks with former parliament members at the helm enjoy reduced depositor discipline, especially if the former politician's party is currently in power. However, this reduction in depositor discipline is partially or fully nullified if the politician is a former cabinet minister. This could be explained by the fact that former ministers were often part of controversial governments and thus generate negative reactions among depositors. Appointing ministers may be less effective at reducing depositor discipline because their presences often signal severe banking problems and because the additional government deposits they bring to the bank often leave upon their departure.

in the first three years following the brand redeployment, hence from *t=0* to *t=2*. We analyze whether the impact of bank rebranding on depositor discipline is persistent by setting the rebranding dummy variable equal to 1 for the first six years following the rebranding strategy, hence from *t=0* to *t=5*, and 0 otherwise.

Bank rebranding itself is not a homogenous process. We start by creating a general bank rebranding dummy variable retrieved via the annual bank balance sheet information and historical event information during the lifetime of operating and closed banks, both offered by the Banks Association of Turkey. This dummy variable Δ NAME is equal to 1 when a bank changes its name and 0 otherwise. Secondly, we discriminate between "small" and "big" name changes. The Δ NAME(BC) stands for a "big" name change, and refer to the creation of a completely new name, indicating a radical break away from the past, whereas the "small" name change refers to an evolutionary or cosmetic modification, hence still including a substantial or recognizable portion, of the old name. Table 3 shows that, from our sample of 91 Turkish banks over the period 1980-2016, 32 different banks changed their name at least once. As some of these 32 banks adopted the name change strategy more than once, we detect in total 55 name changes.[11] We classify 18 of them as "small" name changes and 37 as "big name" changes.

< INSERT TABLE 3 AROUND HERE>

The estimation results are presented in Table 4. Panel A looks into name changes per se, Panel B also differentiates between small and big name changes. In each panel, columns 1-2 represent the short-term effects, whereas columns 3-4 represent the mid-to-long-term effects. Furthermore, in each panel, columns 1 and 3 capture the deposit growth equation, whereas, columns 2 and 4 indicate the deposit rate equation. We estimate the most flexible specification, including CAP, LIQ and a full set of interactions. Although we report the coefficient estimates of the full model, we focus on the CAP variable and its interactions with the rebranding variables for the interpretation and discussion of the results, as CAP is the bank fundamental that unambiguously exhibits depositor discipline.

[11] Some banks clearly suffered from an identity crisis and engaged in repeated bank rebranding: four banks changed their names 3 times, two banks changed their names 4 times, and one bank even changed 6 times.

< INSERT TABLE 4 AROUND HERE>

Panel A of Table 4 reveals that that the adoption of a new bank name, on average, functions as a wake-up call for depositors. Specifically, the positive and significant coefficient of the interaction variable, i.e., (CAP × Δ NAME), in the short run (Column 1) as well as in the long run (Column 3), indicates that deposit growth becomes more sensitive to bank capital in the aftermath of a name change. Since the coefficient estimate of the interaction variable (CAP × Δ NAME) is not significant in Column 2 or Column 4, a name change does not affect the sensitivity of deposit rates to bank capital in either the short run or the long run. In balance, it seems that bank rebranding leads to an increase in depositor discipline.

In Panel B of Table 4 we add triple-interaction terms, whereby (CAP × Δ NAME) is multiplied with Δ NAME(BC), in order to verify whether big name changes have another effect on depositor discipline than small name changes. In the short-run, we still observe that the coefficient of (CAP × Δ NAME) is positive in the quantity equation (i.e. the sharing the same sign as the coefficient of the CAP variable), indicating higher depositor vigilance for banks with small incremental changes of their name. Indeed, when the bank opts for a small change in its name (CAP × Δ NAME), a 1% increase in CAP is now associated with 5.31% (summing coefficients = 1.28 + 4.03) more deposit growth, indicating that depositors are becoming substantially more sensitive to capital. The increase in depositor sensitivity also holds in the longer run. This effect is, however, absent for big name changes. In both the short run as well as in the long run (columns 1 and 3, i.e. the deposit growth equation) the increased depositor discipline effect is reversed for big name changes (*t*-tests reveal that the sum of relevant coefficients is not significantly different from 0 in either Column 1 (4.03 – 3.40) or Column 3 (2.55 – 2.05). Apparently, a slight change to the old name leads to persistently higher depositor discipline, whereas a more radical name change has no distinguishable effect on depositor discipline.

As indicated in Eq. 3 and Eq. 4, the separate rebranding dummy variables are included in all regression analyses. For both of the panels of Table 4, most of the coefficients of individual name change variables do not enter significantly the regressions. There are no consistent first order effects of name changes on deposit growth or deposit rates.

4. Familiarity bias and bank rebranding

Having demonstrated how one can assess the dynamic effects of different types of bank rebranding with the use of depositor discipline concepts, we proceed with the empirical evaluation of the effect of familiarity bias in bank rebranding. To that purpose we discriminate between four types of name changes: Δ NAME(TT), i.e. the name change from a local Turkish brand name to another Turkish name; Δ NAME(TF), i.e. the name change from a local Turkish brand name to a foreign name; Δ NAME(FT), i.e. the name change from a foreign brand name to a Turkish name; and Δ NAME(FF), i.e. the name change from a foreign brand name to another foreign name. It can be seen from Table 3 that of 55 name changes, we classify 18 changes as Δ NAME(TT), 9 changes as Δ NAME(TF), 9 changes as Δ NAME(TF), and finally 19 name changes as Δ NAME(FF). We cannot reject the alternative hypothesis of familiarity bias if depositors prefer (irrespective of bank fundamentals) rebranding from foreign to Turkish names over rebranding from Turkish to foreign names.

We introduce these four directions of brand name changes and their interactions with bank capitalization in our baseline model and estimate the following reduced form equations:

$$\begin{aligned} \mathrm{DEPG}_{i,t} = {} & \alpha_i + \alpha_t + \alpha_1 \mathrm{Risk}_{i,t-1} + \alpha_2 \mathrm{Risk}_{i,t-1} \times \Delta\ \mathrm{NAME(TT)}_{i,t} + \alpha_3 \mathrm{Risk}_{i,t-1} \times \Delta\ \mathrm{NAME(TF)}_{i,t} + \\ & \alpha_4 \mathrm{Risk}_{i,t-1} \times \Delta\ \mathrm{NAME(FT)}_{i,t} + \alpha_5 \mathrm{Risk}_{i,t-1} \times \Delta\ \mathrm{NAME(FF)}_{i,t} + \alpha_6\ \Delta\ \mathrm{NAME(TT)}_{i,t} + \\ & \alpha_7\ \Delta\ \mathrm{NAME(TF)}_{i,t} + \alpha_8\ \Delta\ \mathrm{NAME(FT)}_{i,t} + \alpha_9\ \Delta\ \mathrm{NAME(FF)}_{i,t} + \alpha_{10} \mathrm{Controls}_{i,t} + \varepsilon_{i,t} \end{aligned} \tag{5}$$

$$\begin{aligned} \mathrm{IDEP}_{i,t} = {} & \beta_i + \beta_t + \beta_1 \mathrm{Risk}_{i,t-1} + \beta_2 \mathrm{Risk}_{i,t-1} \times \Delta\ \mathrm{NAME(TT)}_{i,t} + \beta_3 \mathrm{Risk}_{i,t-1} \times \Delta\ \mathrm{NAME(TF)}_{i,t} + \\ & \beta_4 \mathrm{Risk}_{i,t-1} \times \Delta\ \mathrm{NAME(FT)}_{i,t} + \beta_5 \mathrm{Risk}_{i,t-1} \times \Delta\ \mathrm{NAME(FF)}_{i,t} + \beta_6\ \Delta\ \mathrm{NAME(TT)}_{i,t} + \\ & \beta_7\ \Delta\ \mathrm{NAME(TF)}_{i,t} + \beta_8\ \Delta\ \mathrm{NAME(FT)}_{i,t} + \beta_9\ \Delta\ \mathrm{NAME(FF)}_{i,t} + \beta_{10} \mathrm{Controls}_{i,t} + \mu_{i,t} \end{aligned} \tag{6}$$

The coefficients of interaction terms in Eq. 5 (Eq. 6) capture the changes in sensitivity of deposit growth (deposit rates) to bank capitalization due to bank rebranding. Depositor sensitivity to bank capitalization is numbed if the estimated coefficients of the interaction terms are negative in Eq. 5 and positive in Eq. 6. Conversely, depositor sensitivity to bank capitalization is boosted by bank

rebranding if the coefficients of the interaction terms turn out to be positive in Eq. 5 and negative in Eq. 6. Each name change direction is a vector of two separate dummy variables, as we differentiate between short and long run effects of name changes on depositor discipline in the same way as we did in section 3.

< INSERT TABLE 5 AROUND HERE>

Table 5 – Panel A displays the estimation results of Eq. 5 and Eq. 6. We do not observe any effect on depositor discipline when a bank changes its Turkish name to another Turkish name (see the estimated coefficients of the interaction term $\mathrm{CAP} \times \Delta\,\mathrm{NAME(TT)}$ for different specifications). If we disentangle small and big name changes within the group of Turkish to Turkish rebranding[12] (see Table 5 – Panel B, coefficients of $\mathrm{CAP} \times \Delta\,\mathrm{NAME(TT)}$ and $\mathrm{CAP} \times \Delta\,\mathrm{NAME(TT)} \times \Delta\,\mathrm{NAME(TTBC)}$), we again find that small name changes seem to have an immediate and persistent wake-up call effect on depositors, while more drastic rebranding decisions do not.

When a Turkish name is rebranded into a foreign name, our results indicate a persistent increase in depositor discipline (coefficients of the interaction term $\mathrm{CAP} \times \Delta\,\mathrm{NAME(TF)}$ for different specifications). On average, a 1% increase (decrease) in CAP is associated with a 1.28% increase (decrease) in deposit growth. But when a bank changes its Turkish name into a foreign name ($\mathrm{CAP} \times \Delta\,\mathrm{NAME(TF)}$), this 1% increase in CAP is now associated with 3.16% (adding up coefficients 1.28 + 1.88) more deposit growth in the short run, indicating that depositors are becoming more sensitive to capitalization after the rebranding. In a similar manner, if an average bank increases its capital ratio with 1%, depositors will accept a deposit rate of about 0.28 percentage points lower. But changing the Turkish name to a foreign name increases this interest rate sensitivity to bank risk to 0.63 percentage points (adding up coefficients - 0.28 - 0.38). This increase in depositor discipline does not seem to be very transitory, since we derive the same conclusions in the mid-to-long run. These findings allow us to reject the null hypothesis that Turkish depositors are not subject to the familiarity bias. Apparently, the sudden "foreignness" of a bank makes depositors more rather than less vigilant about bank risk, as expressed by capitalization. Reversely, when a foreign name is changed into a Turkish one [coefficient

[12] Of the 18 name changes within the Turkish to Turkish pool, there are 11 instances recorded as a big name change.

estimate of the interaction term $\text{CAP} \times \Delta\ \text{NAME(FT)}$], depositors' sensitivity to bank risk is numbed completely in the short run, while this numbing effect tends to level off in the longer run. This indicates that the new Turkish bank name resonates well among depositors, making them less concerned about bank fundamentals especially in the first years after the name change. This allows us yet again to reject the null hypothesis that Turkish depositors are not subject to familiarity bias.

Finally, we observe an increase in in the capital sensitivity of deposit growth when a foreign name changes into another foreign name. This increase in depositor discipline is, however, only observable in the mid-to-long run [coefficients of the interaction term $\text{CAP} \times \Delta\ \text{NAME(FF)}$ in Column 3 of Panel A]. As it was the case for $\Delta\ \text{NAME(TT)}$, this effect seems again to be driven by small name changes. Within the pool of foreign names, small name changes are frowned upon by depositors, while big name changes do not elicit any response from depositors [adding up coefficients of $\text{CAP} \times \Delta\ \text{NAME(FF)}$ and $\text{CAP} \times \Delta\ \text{NAME(FFBC)}$ is not significantly different from 0 in Column 3 of Panel B].

In sum, we observe that the effects of rebranding yield a complex, though consistent picture, varying with the direction of name changes, the magnitude of name changes and time. Our findings in Table 5 provide evidence that a name change tends to provoke increased depositor vigilance, unless this name change involves a change from a foreign to a Turkish name, in which case the reverse is through. There is therefore clear and consistent evidence of familiarity bias among Turkish depositors. We also find that small name changes are generally related to wake-up call effects, while more drastic rebranding has no such effect. One possible explanation is that a radical break with the past is perceived as a more credible signal of the bank's capability to (re)build its reputation. Bosch and Hirschey (1989) find that, unlike minor name changes, major name change announcements cause positive valuation effects. This finding is also, to some extent, in line with the results of Cooper et al. (2005), who find that investors value the drop of dot-com references only in combination with major name changes. Our finding that the effect of a major name change is more positive than minor ones is not unusual in this respect.

As before, most of the coefficients of individual name change variables in Table 5 are insignificant at conventional levels, hinting at the absence of first order effects of name changes on both deposit growth and deposit rates.

5. Change of control and ethnocentrism

We also want to verify whether our findings are not confounding rebranding with changes of control, like a bank that is bought by a Turkish industrial holding or a foreign bank. This will also allow us to assess whether our results may be driven by ethnocentrism, rather than familiarity bias. Ethnocentric consumers exhibit a defensive reaction to the threat of foreign competition and, therefore, prefer domestic products over foreign alternatives (e.g., Shimp and Sharma 1985, De Ruyter et al. 1998). Hence, if the results are driven by ethnocentrism, then changes of control should be strongly rejected by depositors. If our results are truly driven by familiarity bias, then changes of control should be largely irrelevant once name changes are controlled for. Therefore, we include in our model an additional control variable $\Delta\,\mathrm{OWN}$ for major bank ownership changes. A major ownership change (change of control) occurs when the bank's current shareholders passes a particular threshold of 50% of equity.[13] Since not every rebranding case is caused by a change of control and not every change of control resulted in rebranding, we can estimate this specification and disentangle the name changes from change of control. Furthermore, there may exist a discrepancy between the timing of ownership change and the timing of rebranding. In the previous specifications, we already controlled for the timing of rebranding since we introduced short and long-run effects for different rebranding variables. We create another two binary variables discriminating between short and long run effects of change of control ownership changes; and introduce them in our equations as separate dummy variables. In Table 6, Panels $\mathrm{A}-\mathrm{B}$, we reproduce our estimates in Table 4, Panels $\mathrm{A}-\mathrm{B}$, respectively. In addition, we include ownership change dummy variables that are similarly defined as the different categories of rebranding dummy variables: $\Delta\mathrm{OWN(TT)}$ is when Turkish owners sell the

[13] Significant ownership changes over time are traced via the Banks Association of Turkey, which offers main historical events during the lifetime of operating and closed banks. Furthermore, significant ownership changes are relatively easily to trace through other sources as the Turkish banking sector has been traditionally characterized by a highly concentrated family ownership structure. This is why data from the Banks Association is double checked and completed where necessary with historical information from miscellaneous data sources, such as websites of banks and archives from the financial pages of Milliyet, a national daily.

bank to other Turkish owners; ΔOWN(TF) is when Turkish owners sell the bank to foreign owners; ΔOWN(FT) is when foreign owners sell the bank to Turkish owners; and ΔOWN(FF) is when foreign owners sell the bank to other foreign owners.[14]

We confirm that our findings for the different interactions between CAP and the direction of name changes are similar to our previous results. This indicates that changes in depositor discipline after a bank adopts a new name are not driven by major ownership changes. Specifically, for the Turkish to foreign classification, we again find the presence of familiarity bias. If we look at Turkish to foreign name changes in the short term, we notice that a name change without an ownership change sharply increases depositor discipline, i.e. the sensitivity to bank capital. Column 1 of Panel B shows that the interaction term CAP× Δ NAME(TF) enters the deposit equation with a statistically significant and large positive coefficient (1.24 + 7.09). However, this increased sensitivity is largely set off by an opposite effect if the name change is accompanied with a change from domestic to foreign ownership (1.24 + 7.09 – 6.74). Changing a Turkish bank name into a foreign one, that is, raises depositor caution especially if there is no corresponding change of control. This is fully in line with the idea of a familiarity bias, and runs counter to the hypothesis of ethnocentricity. Indeed, if our results were driven by ethnocentricity, the wake-up call effect of adopting a foreign name would be especially large in case of a foreign take-over, while we find the reverse.

Anecdotal evidence also appears to support these findings. In 2005, after the Dutch-Belgian financial institution Fortis Group purchased 89.34 percent shares of Disbank. The bank decided to change its name to Fortis Bank A.S. In 2006, seventy-five percent of Denizbank's were transferred to the French-Belgian partnered Dexia Group, but in this case, the buyer retained the name of the acquired company. Although both foreign parent companies were affected very badly by the global financial crisis, Denizbank recorded a real growth rate for deposits of 14.79% for the period 2006-2010, while the growth rate for the deposits of Fortis Turkey was only 2.02% for the period 2005-2010.

The same conclusions can be drawn for the deposit rate equation, i.e., we observe a heavier increase in depositor discipline if the name change from Turkish to foreign is unaccompanied

[14] In unreported results, we also replicate the estimations shown in Table 4, with the difference being that we include the interaction variable CAP×Δ OWN (for testing whether the sensitivity of depositors to risk changes when there is a major ownership change) and the independent dummy variable Δ OWN. Our previous results remain valid for this specification.

with a change in ownership (–0.27 – 3.33 versus –0.27 – 3.33 + 2.96).[15] Hence, in balance, we find that ownership changes seem to mitigate rather than drive the familiarity bias induced by the name change from Turkish to foreign. For the class of name changes from foreign to Turkish the inclusion of ownership changes does not seem to influence the observed familiarity bias at all. The earlier found reduction in depositor discipline in response to changing a foreign name into a Turkish is not mitigated by changes of control from foreign to Turkish, again suggesting that the result is driven by familiarity bias and not by the change of control at all.

< INSERT TABLE 6 AROUND HERE>

6. Local projections to assess the dynamic effects of bank rebranding

To achieve a more complete understanding of the dynamic effects of bank rebranding on depositor vigilance, we use the local projections method introduced by Jordà (2005) to derive impulse responses. In contrast to conventional panel data models, this approach estimates the effects of name shocks at different horizons, which allows us to isolate the one-time name shock and its subsequent dynamic effects on depositor discipline. Hence, this method generates an impulse response of the outcome variables (deposit growth and deposit rates) to name change shocks, based on the coefficient estimates derived from a sequence of regressions. In effect, an impulse response reflects the revision in the forecast of an outcome variable at a future horizon $h + t$ to a (name) shock at time t. More formally, we estimate effect of a rebranding episode for bank i at time t on the capital sensitivity of the outcome variables in year $h + t$ (with $h = 0,..,5$) through the estimation of the following sequence of equations:

[15] For the deposit rate equations, the effects of ownership in Panel A of Table 6 appear to occur gradually and only manifest in the longer run.

$$y_{i,t+h} - y_{i,t-1} = \alpha_i^h + \alpha_t^h \alpha_t + \alpha_1^h \alpha_1 \text{Risk}_{i,t-1} + \alpha_2^h \text{Risk}_{i,t-1} \times \Delta\ \text{NAME(TT)}_{i,t} + \alpha_3^h \text{Risk}_{i,t-1} \times \Delta\ \text{NAME(TF)}_{i,t} + \alpha_4^h \text{Risk}_{i,t-1} \times \Delta\ \text{NAME(FT)}_{i,t} + \alpha_5^h \text{Risk}_{i,t-1} \times \Delta\ \text{NAME(FF)}_{i,t} + \alpha_6^h\ \Delta\ \text{NAME(TT)}_{i,t} + \alpha_7^h\ \Delta\ \text{NAME(TF)}_{i,t} + \alpha_8^h\ \Delta\ \text{NAME(FT)}_{i,t} + \alpha_9^h\ \Delta\ \text{NAME(FF)}_{i,t} + \alpha_{10}^h \text{Controls}_{i,t} + \varepsilon_{i,t+h} \quad (10)$$

Where the dependent variable either represents the cumulative growth in the volume of deposits or the implicit deposit rate. The impulse response of Δ NAME(TT) is depicted by $\{\alpha_2^h\}_{h=0}^5$ and represents the annual change in capital sensitivity of the dependent variable when the bank adopts another Turkish name. The same reasoning applies for the three other name change classifications.

< INSERT FIGURE 1 AROUND HERE>

Figure 1 shows the response of the capital sensitivity of deposit growth and deposit rates for the four name change shocks. Responses are given in solid lines, while the grey areas represent 90% confidence intervals. The features of these impulse responses largely confirm our previous results and, in addition, allow us to trace the propagation of different name shocks through time. The observed dynamics suggest that the sensitivity of deposit growth (Fig. 1A) or deposit rates (Fig. 1E) to bank capital was largely unaffected to innovations in rebranding from Turkish to other Turkish names. We derive the same conclusions for rebranding from foreign to other foreign bank names (Fig. 1D and Fig. 1H). The response of deposit growth (Fig. 1B) or deposit rates (Fig. 1F) to name changes from Turkish to foreign reveals a persistent increase in the capital sensitivity, again confirming that foreign bank names lead to more scrutiny by depositors. A name change from foreign to Turkish yields, albeit in the short run, the opposite picture, i.e., the sensitivity to capital decreases in both the response of deposit growth (Fig. 1C) and deposit rates (Fig. 1H). This drop in sensitivity only peters out five years after the occurrence of this particular rebranding episode, to some extent adjusting our earlier claim of only short run effects. Five years of reduced discipline through a pure familiarity bias mechanism is in a way a surprisingly persistent effect. In sum, the local projections provide further evidence in line with the familiarity bias hypothesis.

7. Robustness and extensions

In this section, we consider several robustness checks and extensions of our main findings. For the sake of clarity, in what follows we will only report CAP and its interactions with the rebranding variables as these, and especially the interactions with the Turkish to foreign and foreign to Turkish name changes, are our main variables of interest. (see also Karas et al. 2013 or Disli et al. 2013). The results of the full-fledged models are available upon request.

7.1. Familiarity bias and foreign currency depositors

Our results in the previous sections indicate that Turkish depositors on average respond with more trust and less scrutiny if banks change their foreign name into a more familiar Turkish name and vice versa. We have interpreted this result as evidence of familiarity bias at the level of Turkish depositors. In what follows, we examine whether this finding varies with the composition of the deposit portfolio. In particular, we are interested in verifying whether banks with a relatively high number of foreign deposit accounts respond differently to directed name changes.

Presumably, foreign deposit account holders exhibit more outgroup orientation and, hence, are less prone to rebranding involving greater name familiarity. This interpretation is further strengthened by the observation that foreign deposit accountholders often have to resist informal pressures from policymakers, especially when the currency is under pressure, to swap their savings into liras (e.g., Financial Times 2016).

We estimate the following set of equations:

$$\begin{aligned}\mathrm{DEPG}_{i,t} = {} & \alpha_i + \alpha_t + \alpha_1 \mathrm{Risk}_{i,t-1} + \alpha_2 \mathrm{Risk}_{i,t-1} \times \Delta\ \mathrm{NAME(TT)}_{i,t} + \alpha_3 \mathrm{Risk}_{i,t-1} \times \Delta\ \mathrm{NAME(TT)}_{i,t} \times \mathrm{FD}_{i,t} + \\ & \alpha_4 \mathrm{Risk}_{i,t-1} \times \Delta\ \mathrm{NAME(TF)}_{i,t} + \alpha_5 \mathrm{Risk}_{i,t-1} \times \Delta\ \mathrm{NAME(TF)}_{i,t} \times \mathrm{FD}_{i,t} + \alpha_6 \mathrm{Risk}_{i,t-1} \times \Delta\ \mathrm{NAME(FT)}_{i,t} + \\ & \alpha_7 \mathrm{Risk}_{i,t-1} \times \Delta\ \mathrm{NAME(FT)}_{i,t} \times \mathrm{FD}_{i,t} + \alpha_8 \mathrm{Risk}_{i,t-1} \times \Delta\ \mathrm{NAME(FF)}_{i,t} + \alpha_9 \mathrm{Risk}_{i,t-1} \times \Delta\ \mathrm{NAME(FF)}_{i,t} \times \mathrm{FD}_{i,t} + \\ & \alpha_{10}\ \Delta\ \mathrm{NAME(TT)}_{i,t} + \alpha_{11}\ \Delta\ \mathrm{NAME(TF)}_{i,t} + \alpha_{12}\ \Delta\ \mathrm{NAME(FT)}_{i,t} + \alpha_{13}\ \Delta\ \mathrm{NAME(FF)}_{i,t} + \alpha_{14} \mathrm{Controls}_{i,t} + \varepsilon_{i,t}\end{aligned} \tag{8}$$

$$\begin{aligned}\mathrm{IDEP}_{i,t} = {} & \beta_i + \beta_t + \beta_1 \mathrm{Risk}_{i,t-1} + \beta_2 \mathrm{Risk}_{i,t-1} \times \Delta\ \mathrm{NAME(TT)}_{i,t} + \beta_3 \mathrm{Risk}_{i,t-1} \times \Delta\ \mathrm{NAME(TT)}_{i,t} \times \mathrm{FD}_{i,t} + \\ & \beta_4 \mathrm{Risk}_{i,t-1} \times \Delta\ \mathrm{NAME(TF)}_{i,t} + \beta_5 \mathrm{Risk}_{i,t-1} \times \Delta\ \mathrm{NAME(TF)}_{i,t} \times \mathrm{FD}_{i,t} + \beta_6 \mathrm{Risk}_{i,t-1} \times \Delta\ \mathrm{NAME(FT)}_{i,t} + \\ & \beta_7 \mathrm{Risk}_{i,t-1} \times \Delta\ \mathrm{NAME(FT)}_{i,t} \times \mathrm{FD}_{i,t} + \beta_8 \mathrm{Risk}_{i,t-1} \times \Delta\ \mathrm{NAME(FF)}_{i,t} + \beta_9 \mathrm{Risk}_{i,t-1} \times \Delta\ \mathrm{NAME(FF)}_{i,t} \times \mathrm{FD}_{i,t} + \\ & \beta_{10}\ \Delta\ \mathrm{NAME(TT)}_{i,t} + \beta_{11}\ \Delta\ \mathrm{NAME(TF)}_{i,t} + \beta_{12}\ \Delta\ \mathrm{NAME(FT)}_{i,t} + \beta_{13}\ \Delta\ \mathrm{NAME(FF)}_{i,t} + \beta_{14} \mathrm{Controls}_{i,t} + \varepsilon_{i,t}\end{aligned} \tag{9}$$

Where FD is a dummy variable that equals 1 if a bank's ratio of number of foreign deposit accounts to total number of deposit accounts belongs to the upper quantile, and 0 if this is not the case. Our conjecture that banks with a higher share of foreign deposit accounts should be less susceptible to familiarity bias will be confirmed if we observe that the increased depositor sensitivity in case of a Turkish to foreign name change is mitigated for banks with a lot of foreign deposit accounts, i.e., when a positive α_4 (negative β_4) is compensated by a negative α_5 (positive β_5) for the deposit growth (deposit rate) equations. The reverse reasoning applies for banks that drop their foreign name in favor of a Turkish one. Here, familiarity bias will be mitigated for the high FD banks if a negative sign for α_6 (positive sign β_6) is compensated by a positive sign for α_7 (negative sign for β_7). The evidence provided by Table 7, Panel A, indeed suggests that our earlier observation of increased depositor sensitivity for Turkish to foreign name changes largely disappears for banks with a high share of foreign deposit accounts in both the short run as well as in the mid-to-long run. Similarly, the earlier observed drop in depositor sensitivity to bank capital for banks that change their foreign name into a Turkish one completely disappears for banks with a high share of deposit accounts. These findings reinforce the conjecture that our results are indeed driven by familiarity bias at the level of individual Turkish Lira deposit account holders.

< INSERT TABLE 7 AROUND HERE>

7.2. Limited versus the blanket guarantee period

The literature on depositor discipline suggests that the introduction of deposit insurance schemes as a response to a banking crisis undercuts the discipline of affected depositors (see Karas et al., 2013). The Turkish government instituted full deposit coverage as a response to the collapse of three small banks on May 5, 1994, to reinstate confidence in the banking system. This blanket guarantee was in place for a substantial amount of time, and was even reinforced during the second major banking crisis in 2000. With the stabilization of the banking sector in the aftermath of the 2000-crisis, the insurance coverage was initially limited to 50 thousand TL in July 2004, and subsequently increased to 100 thousand TL in February 2013. Results in Panel B of Table 7 replicate those in Panel B of Table 5, adding an interaction between the bank fundamentals, CAP and LIQ, and a full deposit insurance dummy variable (DI). As in Disli et al. (2013), we set DI equal to one for the full blanket guarantee period (1994-2003) and zero otherwise. Hence, this strategy enables us to examine whether depositors' behavioral responses to rebranding still hold if we also differentiate depositors' sensitivity to bank capital with respect to limited versus blanket guarantee periods.

The results show that our central findings are unaffected by the introduction of a blanket guarantee dummy variable. Turkish depositors still reward name switches from foreign to Turkish with less scrutiny, while name switches in the opposite direction are frowned upon, again supporting the familiarity bias hypothesis. In addition, big name changes are still preferred over small name changes. Further, as found before by Önder and Özyildirim (2008) and Disli et al. (2013), the estimates reveal that in Turkey, either the introduction of a blanket deposit guarantee system was not fully credible, or depositors still feared costs related to the recovery of deposits in case of failure (i.e. costs due to late payments and the foregone interest earnings).[16]

7.3. Reduced sample test

[16] In fact, in developing countries, it is frequently encountered that deposit insurance schemes are not fully credible. Using a sample of banks from Argentina, Chile and Mexico, Martinez Peria and Schmukler (2001) find that small insured depositors still react to bank risk after the introduction of deposit insurance.

In the previous specifications, no restrictions were placed on the sample in order to draw general conclusions. The original sample consisted of both rebranded and non-rebranded financial intermediaries for the period 1980-2016. Therefore, it cannot be excluded that part of our results are driven by selection. If banks with an unobserved problem are more likely to rebrand at the moment their problem is revealed, or if banks are more likely to rebrand after they have been subjected to a merger or acquisition, the result may be a spurious correlation between rebranding and increased depositor discipline. Indeed, most of the rebranding in the US and EU banking industries for example occurred because of mergers and acquisitions (Lambkin and Muzellec, 2008). Also in Turkey some of the rebranding was a result of the sale or merger of some failed banks through public intervention after the banking crises of 1994 and 2000. For example, after the 2000 crisis, twenty-two financially distressed banks were restructured and recapitalized before they were privatized (BRSA 2010).

To alleviate this concern, as described in Footnote 5, note that our dataset is already adjusted to take into account mergers and acquisitions. This immediately excludes that our results would be driven by the sale or the merger of failed banks after the banking crises of 1994 and 2000, since these are effectively excluded from our basic dataset and regression results. We also note that the bank-fixed effects included in our analyses help alleviate some of the unobserved heterogeneity concerns. To limit further this unobserved heterogeneity that may be correlated with both the depositor response to bank risk and bank rebranding, we restrict our estimation sample to banks that have rebranded in the sample period. We reproduce the results of Table 5 using this reduced sample and present the new results in Panel C of Table 7. Although the number of bank-year observations drops markedly from 1526 to 673, the results are very similar in terms of the signs and relative significance of the coefficients. We find the same familiarity bias when Turkish names are changed into foreign ones (more discipline, in both short and long run), and when foreign names are changed into Turkish ones (less discipline, in the short run), already giving us some confidence that the main results are not driven by unobserved heterogeneity in bank rebranding.

7.4. Selection

In the previous estimates, we included bank-specific effects in order to control for unobserved bank heterogeneity. However, there could still be unobserved time-varying bank-specific variables that affect both deposit growth and deposit rates and the bank's propensity to change its name. For example banks in dire financial health may face higher deposit rates and may at the same time be more likely to change their name. In the presence of this type of selection problem, standard linear regression may produce biased estimates for the effects of name changes on deposit growth and deposit rates. In line with Campa and Kedia (2002) and Villalonga and Amit (2006), we employ the Heckman (1979) two-stage treatment procedure to address this potential selection bias. Specifically, we employ a two-step random effects parametric approach as discussed by Vella and Verbeek (1999), which is an extension of Heckman's two step procedure to a panel data context. We build on the previous analysis, in which we additionally included ownership changes. In the first stage, the name change variable is regressed against the same control variables as in the previous model as well as against three additional variables that distinguish between banks that change their names and those that do not (i.e. conditioning variables). To assess the prevalence of self-selection, the main equations include a correction factor based on inverse Mill's ratios (Heckman's Lambdas, λ) constructed from the estimates from the first-stage probit.[17] We estimate for both the short run and the long run a probit model for each rebranding typology to identify the determinants of each type of name change.[18] The explanatory variables in these selection equations are all lagged by one year, and the conditioning variables include two measures for corporate soundness ($z-\text{score}$ and LIQ, see, e.g., Kapferer 2008, Muzellec et al. 2003), and a measurement for capturing multimarket contact (MMC, see, Shankar 1999, Bronnenberg 2008). The $z-\text{score}$ is calculated as $\frac{\text{Mean(EQ/TA+ROA)}}{\text{St.Dev.(ROA)}}$, i.e. the average capitalization $\left(\text{EQ/TA} = \frac{\text{Equity}}{\text{Total Assets}}\right)$ and return on assets (ROA) during the four preceding years over the 4-year standard deviation of the return on assets.[19] Banks with lower z-

[17] Notice that the model allows for the same control variables included in selection as well as main equations, control variables that only influence the main model of depositor discipline, and for identifying variables whose influence is limited to the endogenous rebranding variables.

[18] For each rebranding typology, we thus have two probit regression estimates: one in the short-run and the other one in the long-run.

[19] To avoid losing observations over the sample period 1980-2010, our z-scores run from 1977 onwards.

scores are considered to be more risky, i.e. are closer to default. Secondly, the liquidity variable is a measure of the bank's ability to meet its short-term obligations and it is computed as the ratio of liquid assets to total deposits. Thirdly, bank-rebranding efforts are usually associated with the ability to attract or retain depositors. In particular, banks may pursue a rebranding strategy in order to invoke deposit growth along the intensive margin (the response of current depositors to changes in bank name) as well as the extensive margin (additional customers who deposit their money at the rebranded bank) of deposit supply. The theory of multimarket contact suggests that mutual forbearance will show up when the correlation between two firms is high in terms of geographical coverage. For example, a bank branch that pursues an aggressive growth strategy in a particular region may trigger retaliatory actions by rivals not only in that region but also in other regions.[20] The introduction of a new brand may depend on whether the bank is in contact with its competitors in other markets as well, and may be less likely if strong reactions are expected because of high levels of multimarket contact.[21]

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[20] On the bank-level, we measure multimarket contact (MMC) by considering the number of geographical contacts between banks (De Bonis and Ferrando, 2000; Coccorese and Pellechia, 2009; Aysan et al., 2013). Let D_{ij} be equal to 1 if bank i operates in province j, and 0 otherwise, for i = 1,…, n, and j = 1,…, m. We construct a symmetric $(n \times n)$ matrix $A = (a_{ik})$, where its generic element $a_{ik} = \sum_{j=1}^{m} D_{ij} D_{kj}$ represents the number of markets in which bank i meets bank k, while the diagonal element a_{ii} measures the number of markets serviced by bank i. However, as in some markets the interactions between banks is heavier, we introduce a quadratic weighting structure by using the market shares in the calculation of multimarket contact. Therefore, we first produce an $(n \times m)$ matrix, with its generic element representing the share of the number of branches of bank i in market j, calculated as $S_{ij} = B_{ij} / \sum_{i=1}^{n} B_{ij}$. We proceed with the calculation of a symmetric $(n \times n)$ matrix $R = (r_{ik})$, where $r_{ik} = \sum_{j=1}^{m} S_{ij} S_{kj}$ is a weighted measure that captures the relative importance of bank i and bank k in the respective markets. In one specific year t, our indicator of multimarket contact for bank i is calculated as $MMC_i = \frac{\sum_{k \neq i} r_{ik} \delta_{ik}}{\sum_{k \neq i} \delta_{ik}}$, where $\delta_{ik} = \begin{cases} 1 \text{ if } a_{ik} > 0 \\ 0 \text{ if } a_{ik} = 0 \end{cases}$. We repeat this calculation for every period t, so to arrive at $MMC_{i,t}$.

[21] The presence of these three variables in the selection equation is appropriate for the following reasons. The z-score is a condense measure of bank stability. It is unobservable to depositors, as they have neither access to the information needed for its calculation nor the sophistication to do so or to interpret the results. However, banks are more aware of their potential instability and health problems may reach a critical point at which a redefinition of the business model is called for, often symbolized by a new name (Muzellec et al. 2003). We apply the same reasoning for the liquidity variable; banks with liquidity problems, which are often caused by an erosion of deposit base, may want to reinstate confidence among depositors by turning a new page using the rebranding device. Banks with higher liquidity also have higher deposit growth rates and higher deposit rates (see the findings in Section 2), implying that liquidity is a demand and not a supply shifter. So, although liquidity is separately related to deposit rates and deposit growth, it is not related to the depositor discipline we employ in this paper to measure the effects bank rebranding (see also Disli et al., 2013). Introducing a new bank name can be viewed as an attempt to retain their current customers or to attract new customers from competitors (Lam et al. 2010). However, in a multimarket setting, banks should take into account that the introduction of a new brand may invoke possible retaliatory actions by competitors. Shankar (1999) has shown that the introduction of a brand and the related advertising spending is lower if the firm has high multimarket contact with its competitors.

Table 8 – Panel A presents the probit specifications, which is the first-stage of the Heckman procedure. Irrespective of the direction of the name change, we generally find that banks with high MMC are less inclined to change their names, which is consistent with the theory of mutual forbearance in multimarket settings. We also find that rebranding from a foreign name to a Turkish bank name is more often observed when these banks are insolvent and illiquid. In the short-run, liquidity problems also explain the rebranding from a foreign name to another foreign name. Furthermore, in each probit regression, we include the corresponding change of control variable. For instance, for ΔNAME(TF) and ΔNAME(FT) typologies we, respectively, use ΔOWN(TF) and ΔOWN(FT) as independent variables. It seems that some, but not all, of the variation in rebranding is attributable to ownership changes. This finding confirms earlier evidence and contentions that rebranding cases often follow a change in ownership (e.g., Devlin and McKenchie, 2008; Muzellec and Lambkin 2006; Kapferer, 2008).

< INSERT TABLE 8 AROUND HERE>

The fitted values from the first-stage probit are then employed to generate the correction parameter for self-selection (inverse of Mill's ratio). In the second stage analysis, we include the inverse of Mill's ratios. Table 8 – Panel B confirms our previous findings that in general rebranding leads to an increase in depositor discipline, unless this name change involves a direction from foreign to Turkish. As the effect of bank rebranding on depositor discipline varies with the direction of name change and with time (short run versus long run effects), we differentiate between these choices, and include simultaneously the inverse of Mill's ratios (i.e. lambdas): for changing name within the pool of Turkish names, for changing name within the pool of foreign names, and for name changes between these two pools. Although the inverse of Mill's ratios reveals that sample selection is important in most regression models, our previous findings remain largely unaffected by their inclusion.[22] We again find that depositors respond to small Turkish name changes with increased scrutiny, and that they exert more discipline to their bank when it drops its Turkish name in favor of a foreign one, unless this name change is

[22] Significant positive lambdas imply that factors that induce rebranding to self-select into particular bank-years are related to higher deposit growth (or an increase in the implicit deposit rate).

accompanied with a change from domestic to foreign control. We find, that is, again evidence in support to the familiarity bias hypothesis and in contrast with ethnocentricity.

8. Conclusions

We analyze the dynamic effects of bank rebranding in a sample of Turkish banks. There are good reasons to assume that rebranding is especially tricky in a service industry with asymmetric information like banking. Our main hypothesis and contribution to the literature is that bank rebranding resorts positive effects especially if the rebranding strategy exploits familiarity bias. Familiarity bias refers to the behavioral heuristic that investors favor firms they are more familiar with.

We measure familiarity by the nature of the bank rebranding: when a bank changes its foreign name into a Turkish one its familiarity increases and conversely when a bank changes its Turkish name into a foreign one. Rather than evaluating the effects of bank rebranding through measuring its shareholder wealth effects or conducting a case study analysis, we employ a depositor discipline framework to measure how bank rebranding affects depositor sensitivity to bank risk. In this framework, rebranding is perceived as effective and positive for the bank if it numbs the sensitivity of depositors to bank risk, while the rebranding is ineffective or even counterproductive if depositor vigilance is boosted instead.

Our results indicate that, in general, depositors show emotional attachment to legacy brands. Bank rebranding is ineffective at best and often counterproductive. The effect of bank rebranding on depositor discipline is, however, found to vary with the direction of the name change (foreign to Turkish versus Turkish to foreign) and with time (short run versus long run effects). In line with our familiarity bias hypothesis, rebranding from a foreign into a Turkish name (increased familiarity) is associated with reduced depositor discipline, while rebranding from a Turkish into a foreign name (reduced familiarity) is associated with increased depositor discipline.

Depositors respond with more discipline when banks change their Turkish name into a foreign, unless this name change is driven by a corresponding change of control (a foreign bank buying a control stake of a Turkish bank). This suggests our depositor discipline effects of name

changes are indeed driven by familiarity bias and not by ethnocentricity, as in the latter case the scrutiny would especially increase in case of a foreign take-over, rather than the reverse.

If banks change their foreign name into a Turkish one they enjoy reduced depositor discipline for a substantial amount of time, irrespective of any changes of control. While initial regressions suggest that this effect is relatively short-lived, our more precise inspection of the impulse responses through the local projections method reveal that this numbing effect of the familiarity bias only peters out after 4 years, which is remarkably persistent for this kind of behavioral effect.

The fact that both the wake-up call effect of Turkish to foreign name changes and the lullaby effect of foreign to Turkish name changes are absent in banks with many foreign deposit accounts, is fully in line with the hypothesis that our results are indeed driven by familiarity bias at the level of individual depositors. Estimations on a reduced sample and Heckman selection estimations also reveal that the results are most likely not driven by selection of banks that are less healthy or have less multimarket contacts into name changes.

Our results, that is, suggest that rebranding can have desirable effects for the bank for a considerable amount of time if the rebranding succeeds in appealing to the familiarity bias of depositors, but also that at least some, if not most, of the bank rebranding is plainly inefficient in terms of improving the direct access to deposits or boosting depositors' perceptions about the reliability of the bank. Why banks engage in these seemingly inefficient episodes of rebranding and what other trade-offs may be involved, we defer to further research.

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Table 1: Summary statistics

Variable	Description	Obs.	Mean	Std. Dev.	Min.	Max.
Market reaction variables						
DEPG	The first difference of the log of the volume of deposits	1528	0.1725	0.6096	-1.5665	2.0995
IDEP	Annual interest expenses to deposits	1580	0.2721	0.3842	0.0183	2.3280
Risk variables						
CAP	Ratio of book value of equity (assets - liabilities) to total assets	1598	0.1401	0.1442	0.0089	0.7265
LIQ	Ratio of liquid assets (cash, central bank debt, and short term securities) to total deposits	1580	1.8187	3.3638	0.2737	19.2611
Control variables						
Size	Natural logarithm of the book value of total assets expressed in USD	1598	19.9400	2.3944	10.9425	25.3905
Branches	Natural logarithm of the total number of bank branches	1601	3.1162	2.3456	0.0000	7.5033
Age	Natural logarithm of the number of years the bank exists	1601	3.1895	1.1237	0.0000	5.0370
State banks	Banks that are predominantly owned (>50% of shares) by the government	1601	0.1349	0.3417	0.0000	1.0000
Foreign banks	Either branches of international operating banks, or banks predominantly owned by non-residents	1601	0.3785	0.4852	0.0000	1.0000

Table 2: A benchmark model for depositor discipline

The estimated model for Spec.1 – Spec.3 is $DEPG_{i,t} = \alpha_i + \alpha_t + \alpha_1 Risk_{i,t-1} + \alpha_2 Controls_{i,t} + \varepsilon_{i,t}$. The dependent variable DEPG is calculated as the first difference of the log of deposits. The estimated model for Spec.4 – Spec.6 is $IDEP_{i,t} = \alpha_i + \alpha_t + \alpha_1 Risk_{i,t-1} + \alpha_2 Controls_{i,t} + \mu_{i,t}$. The variable IDEP is the implicit deposit rate on deposits, calculated as the annual interest expenses divided by total bank deposits. The Risk-vector represents the alternative risk measures CAP and LIQ. The CAP variable is book value of equity (assets – liabilities) to total assets. The LIQ variable is equal to liquid assets (such as cash, central bank debt and short term government securities) to total deposits. The Risk-vector is included with a one year lag to account for the fact that balance sheet and income statement information is available to the public with a certain delay. To moderate the inordinate influence of extreme values, we winsorize abovementioned dependent and bank risk variables at the 2% level in both tails. Size is the natural logarithm of total assets. Branches is the natural logarithm of the number of bank branches. The Age variable is the natural logarithm of the number of years the bank exists. State banks are predominantly owned by the government. Private banks are domestically owned commercial banks with more than 50% of shares owned by Turkish residents. Foreign banks are either branches of international operating banks or when 50% of their shares are owned by non-residents. Private domestic banks serve as the reference group. Year dummy variables (i.e. α_t) are included in all specifications but their coefficient estimates are not reported. Standard errors (in parentheses) are corrected for clustering at bank level. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

	DEPG			IDEP		
	(1)	(2)	(3)	(4)	(5)	(6)
CAP	**1.7529*** **		**1.4119*** **	**-0.1507** **		**-0.2634*** **
	(0.235)		**(0.252)**	**(0.074)**		**(0.081)**
LIQ		0.0621***	0.0519***		0.0153***	0.0172***
		(0.010)	(0.009)		(0.004)	(0.004)
Size	0.2337***	0.1660***	0.2220***	0.0079	0.0145	0.0040
	(0.048)	(0.049)	(0.051)	(0.026)	(0.025)	(0.025)
Branches	-0.0115	-0.0184	0.0088	-0.0174	-0.0056	-0.0106
	(0.042)	(0.037)	(0.042)	(0.021)	(0.020)	(0.020)
Age	-0.1600**	-0.1998***	-0.1455*	-0.0384	-0.0235	-0.0336
	(0.073)	(0.072)	(0.084)	(0.042)	(0.034)	(0.034)
State banks	-0.6934***	-0.5686**	-0.6542***	0.2621***	0.2591***	0.2750***
	(0.238)	(0.221)	(0.233)	(0.060)	(0.060)	(0.067)
Foreign banks	-0.0504	-0.1366*	-0.0916	0.1085**	0.1033**	0.0949**
	(0.064)	(0.075)	(0.069)	(0.049)	(0.046)	(0.044)
Bank fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,526	1,526	1,526	1,528	1,526	1,526
R-squared	0.917	0.918	0.923	0.205	0.229	0.237

Table 3: Number of rebranding episodes

		Number
Total number of banks		91
General name change		
ΔName	Number of name changes	55
ΔName(BC)	Number of big name changes, i.e., name changes that bear no semantic relation to the bank's prior name	37
Name change directions		
ΔName(TT)	Number of name changes from a local Turkish brand name to another Turkish name	18
ΔName(TF)	Number of name changes from a local Turkish brand name to a foreign name	9
ΔName(FT)	Number of name changes from a foreign brand name to a Turkish name	9
ΔName(FF)	Number of name changes from a foreign brand name to another foreign name	19

Table 4: Measuring the effect of bank rebranding as a change in depositor discipline.

The DEPG is calculated as the first difference of the log of deposits. The IDEP is the implicit deposit rate on deposits, calculated as the annual interest expenses divided by total bank deposits. The Risk-vector represents the alternative risk measures CAP and LIQ. The CAP variable is book value of equity (assets – liabilities) to total assets. The LIQ variable is equal to liquid assets (such as cash, central bank debt and short term government securities) to total deposits. The Risk-vector is included with a one year lag to account for the fact that balance sheet and income statement information is available to the public with a certain delay. To moderate the inordinate influence of extreme values, we winsorize abovementioned dependent and bank risk variables at the 2% level in both tails. The rebranding variables are: ΔNAME is equal to 1 when a bank changes its name, and 0 otherwise; Δ NAME(BC) is a "big" name change and is equal to 1 when there is a completely new name created, and 0 otherwise. Year dummy variables are included in all specifications but their coefficient estimates are not reported. For both the deposit growth equation as well as the deposit rate equation, we estimate two versions of the rebranding variables, while keeping other variables unchanged, to discriminate between the short term (columns 1 and 2) and long term impact (columns 3 and 4) of rebranding on depositor discipline. We explore the short-run effect using a dummy variable set equal to 1 in the first three years after the bank is rebranded. The long-run impact of rebranding is verified using a dummy variable set, equaling to 1 for the first six years after the rebranding, and 0 otherwise. Size is the natural logarithm of total assets. Branches is the natural logarithm of the number of bank branches. The Age variable is the natural logarithm of the number of years the bank exists. State banks are predominantly owned by the government. Private banks are domestically owned commercial banks with more than 50% of shares owned by Turkish residents. Foreign banks are either branches of international operating banks or when 50% of their shares are owned by non-residents. Private domestic banks serve as the reference group. Year dummy variables (i.e. α_t) are included in all specifications but their coefficient estimates are not reported. Standard errors (in parentheses) are corrected for clustering at bank level. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

	Panel A				**Panel B**			
	Short term effects of ΔName		Long term effects of ΔName		Short term effects of ΔName		Long term effects of ΔName	
	DEPG	IDEP	DEPG	IDEP	DEPG	IDEP	DEPG	IDEP
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
CAP	**1.2804*** **	**-0.2839*** **	**1.2112*** **	**-0.2674*** **	**1.2774*** **	**-0.2726*** **	**1.2122*** **	**-0.2619*** **
	(0.235)	**(0.082)**	**(0.241)**	**(0.082)**	**(0.237)**	**(0.077)**	**(0.242)**	**(0.076)**
CAP x ΔName	**1.0857***	**0.1120**	**1.1168** **	**0.0388**	**4.0302*** **	**-0.5107**	**2.5455*** **	**-0.1779**
	(0.558)	**(0.296)**	**(0.543)**	**(0.220)**	**(1.513)**	**(0.554)**	**(0.611)**	**(0.410)**
CAP x ΔName(BC)					**-3.3983** **	**0.7804**	**-2.0545** **	**0.3650**
					(1.574)	**(0.533)**	**(0.794)**	**(0.423)**
LIQ	0.0564***	0.0159***	0.0567***	0.0156***	0.0564***	0.0162***	0.0571***	0.0156***
	(0.009)	(0.005)	(0.011)	(0.005)	(0.009)	(0.004)	(0.011)	(0.005)
LIQ x ΔName	-0.0432**	0.0106	-0.0212	0.0063	-0.1004**	0.0514***	-0.0367	0.0210
	(0.017)	(0.015)	(0.016)	(0.010)	(0.039)	(0.016)	(0.028)	(0.019)
LIQ x ΔName(BC)					0.0598	-0.0646***	0.0187	-0.0271
					(0.043)	(0.020)	(0.030)	(0.019)
ΔName	**-0.0441**	**-0.0041**	**-0.0294**	**-0.0076**	**-0.2688**	**0.1147**	**-0.1965**	**0.0822**
	(0.095)	**(0.049)**	**(0.091)**	**(0.049)**	**(0.240)**	**(0.084)**	**(0.146)**	**(0.057)**
ΔName(BC)					**0.2876**	**-0.1758***	**0.2698***	**-0.1476** **
					(0.260)	**(0.103)**	**(0.138)**	**(0.073)**
Size	0.2243***	0.0037	0.2192***	0.0039	0.2230***	0.0082	0.2155***	0.0083
	(0.051)	(0.025)	(0.051)	(0.025)	(0.051)	(0.025)	(0.050)	(0.025)
Branches	0.0010	-0.0105	0.0045	-0.0106	0.0010	-0.0122	0.0075	-0.0133
	(0.039)	(0.020)	(0.038)	(0.020)	(0.039)	(0.020)	(0.038)	(0.021)
Age	-0.1437*	-0.0396	-0.1598*	-0.0371	-0.1423*	-0.0365	-0.1665**	-0.0318
	(0.083)	(0.034)	(0.083)	(0.035)	(0.083)	(0.035)	(0.083)	(0.035)
State banks	-0.6240***	0.2806***	-0.6156***	0.2756***	-0.5589***	0.2834***	-0.5943***	0.2859***
	(0.213)	(0.066)	(0.212)	(0.066)	(0.178)	(0.068)	(0.200)	(0.064)
Foreign banks	-0.0762	0.0936**	-0.0819	0.0934**	-0.0659	0.0887**	-0.0825	0.0959**
	(0.066)	(0.043)	(0.066)	(0.044)	(0.061)	(0.037)	(0.061)	(0.038)
Bank fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,526	1,526	1,526	1,526	1,526	1,526	1,526	1,526
R-squared	0.923	0.241	0.923	0.239	0.924	0.265	0.924	0.254

Table 5: Familiarity bias and bank rebranding

The DEPG is calculated as the first difference of the log of deposits. The IDEP is the implicit deposit rate on deposits, calculated as the annual interest expenses divided by total bank deposits. The Risk-vector represents the alternative risk measures CAP and LIQ. The CAP variable is book value of equity (assets – liabilities) to total assets. The LIQ variable is equal to liquid assets (such as cash, central bank debt and short term government securities) to total deposits. The Risk-vector is included with a one year lag to account for the fact that balance sheet and income statement information is available to the public with a certain delay. To moderate the inordinate influence of extreme values, we winsorize abovementioned dependent and bank risk variables at the 2% level in both tails. The rebranding variables are Δ NAME(TT), Δ NAME(TF), Δ NAME(FT), Δ NAME(FF), Δ NAME(TTBC) and Δ NAME(FFBC). Δ NAME(TT) equals to 1 when there is a name change from a local Turkish brand name to another Turkish name, and otherwise 0; Δ NAME(TF) equals to 1 when there is a name change from a local Turkish brand name to a foreign name, and otherwise 0; Δ NAME(FT) equals to 1 when there is a name change from a foreign brand name to a Turkish name, and otherwise 0; Δ NAME(FF) equals to 1 when there is a name change from a foreign brand name to another foreign name, and otherwise 0; Δ NAME(TTBC) equals to 1 when there is a big name change within the pool of Turkish name changes, and otherwise 0; NAME(FFBC) equals to 1 when there is a big name change within the pool of foreign name changes, and otherwise 0. For both the deposit growth equation as well as the deposit rate equation, we estimate two versions of the rebranding variable, while keeping other variables unchanged, to discriminate between the short term (Spec. 1 and 2) and long term impact (Spec. 3 and 4) of rebranding on depositor discipline. We explore the short-run effect using a dummy variable set equal to 1 in the first three years after the bank is rebranded. The long-run impact of rebranding is verified using a dummy variable set, equaling to 1 for the first six years after the rebranding, and 0 otherwise. Size is the natural logarithm of total assets. Branches is the natural logarithm of the number of bank branches. The Age variable is the natural logarithm of the number of years the bank exists. State banks are predominantly owned by the government. Private banks are domestically owned commercial banks with more than 50% of shares owned by Turkish residents. Foreign banks are either branches of international operating banks or when 50% of their shares are owned by non-residents. Private domestic banks serve as the reference group. Year dummy variables are included in all specifications but their coefficient estimates are not reported. Standard errors (in parentheses) are corrected for clustering at bank level. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

	Panel A				Panel B			
	Short term effects of ΔName		Long term effects of ΔName		Short term effects of ΔName		Long term effects of ΔName	
	DEPG	IDEP	DEPG	IDEP	DEPG	IDEP	DEPG	IDEP
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
CAP	**1.2791*** **	**-0.2760*** **	**1.1822*** **	**-0.2596*** **	**1.2525*** **	**-0.2701*** **	**1.1632*** **	**-0.2579*** **
	(0.232)	**(0.080)**	**(0.238)**	**(0.079)**	**(0.234)**	**(0.077)**	**(0.241)**	**(0.075)**
CAP x ΔName(TT)	**0.3907**	**0.2746**	**0.4984**	**0.3749***	**3.5313*** **	**-0.2797**	**2.5526*** **	**0.1401**
	(0.716)	**(0.197)**	**(0.719)**	**(0.202)**	**(1.292)**	**(0.373)**	**(0.694)**	**(0.303)**
CAP x ΔName(TTBC)					**-3.2526** **	**0.7514***	**-2.6288** **	**0.3876**
					(1.575)	**(0.393)**	**(1.056)**	**(0.333)**
CAP x ΔName(TF)	**1.8809*** **	**-0.3575** **	**1.5360*** **	**-0.3337** **	**1.9311*** **	**-0.4014** **	**1.6357*** **	**-0.3946** **
	(0.455)	**(0.165)**	**(0.358)**	**(0.158)**	**(0.456)**	**(0.167)**	**(0.370)**	**(0.156)**
CAP x ΔName(FT)	**-1.8476*** **	**2.1540*** **	**-0.3459**	**1.5240** **	**-1.7698*** **	**2.1488*** **	**-0.2536**	**1.5297** **
	(0.507)	**(0.366)**	**(1.152)**	**(0.659)**	**(0.505)**	**(0.379)**	**(1.168)**	**(0.625)**
CAP x ΔName(FF)	**1.6143**	**0.3321**	**1.5240***	**-0.1188**	**3.4110**	**-0.2682**	**2.4674*** **	**-0.2857**
	(1.091)	**(0.511)**	**(0.802)**	**(0.273)**	**(2.443)**	**(1.217)**	**(0.669)**	**(0.496)**
CAP x ΔName(FFBC)					**-3.9310**	**0.3628**	**-2.4594** **	**0.2579**
					(2.467)	**(1.304)**	**(1.062)**	**(0.600)**
LIQ	0.0552***	0.0163***	0.0555***	0.0159***	0.0554***	0.0163***	0.0558***	0.0160***
	(0.010)	(0.005)	(0.011)	(0.005)	(0.010)	(0.004)	(0.011)	(0.005)
LIQ x ΔName(TT)	-0.0107	-0.0329***	-0.0073	-0.0331***	-0.1229	0.0258	0.0862	0.0039
	(0.027)	(0.007)	(0.024)	(0.008)	(0.142)	(0.030)	(0.095)	(0.025)
LIQ x ΔName(TTBC)					0.1228	-0.0619**	-0.0826	-0.0398*
					(0.144)	(0.030)	(0.096)	(0.024)
LIQ x ΔName(TF)	-0.0063	0.0319	0.0575	0.0177	-0.0030	0.0333	0.0607	0.0195
	(0.079)	(0.024)	(0.050)	(0.018)	(0.078)	(0.026)	(0.047)	(0.018)
LIQ x ΔName(FT)	0.5319***	-0.3076**	0.2937	-0.1644	0.5073***	-0.2920**	0.2725	-0.1528
	(0.136)	(0.138)	(0.193)	(0.134)	(0.129)	(0.146)	(0.190)	(0.136)
LIQ x ΔName(FF)	-0.0406***	0.0202*	-0.0117	0.0097	-0.0632	0.0423	-0.0223	0.0178
	(0.015)	(0.012)	(0.017)	(0.011)	(0.052)	(0.031)	(0.026)	(0.022)
LIQ x ΔName(FFBC)					0.0002	-0.0387	0.0106	-0.0160
					(0.051)	(0.033)	(0.033)	(0.022)
ΔName(TT)	**0.0544**	**0.0281**	**0.0779**	**-0.0105**	**0.0863**	**0.0684**	**-0.0607**	**0.0025**
	(0.171)	**(0.052)**	**(0.146)**	**(0.038)**	**(0.249)**	**(0.051)**	**(0.163)**	**(0.046)**
ΔName(TTBC)					**-0.3150**	**-0.1136**	**0.0254**	**-0.0713**
					(0.406)	**(0.088)**	**(0.349)**	**(0.077)**
ΔName(TF)	**-0.2153**	**-0.0035**	**-0.1152**	**0.0145**	**-0.2151**	**-0.0040**	**-0.1278**	**0.0099**
	(0.167)	**(0.051)**	**(0.145)**	**(0.047)**	**(0.167)**	**(0.055)**	**(0.144)**	**(0.049)**
ΔName(FT)	**0.1121**	**-0.0849**	**0.1035**	**-0.1372**	**0.1196**	**-0.0978**	**0.1239**	**-0.1499**
	(0.214)	**(0.141)**	**(0.155)**	**(0.087)**	**(0.213)**	**(0.147)**	**(0.151)**	**(0.095)**
ΔName(FF)	**-0.3067**	**0.0190**	**-0.3029**	**0.0624**	**-0.5035**	**0.1538**	**-0.4168**	**0.1646**
	(0.216)	**(0.090)**	**(0.184)**	**(0.089)**	**(0.373)**	**(0.150)**	**(0.253)**	**(0.111)**
ΔName(FFBC)					**0.5984**	**-0.2028**	**0.3569***	**-0.1966**
					(0.400)	**(0.261)**	**(0.213)**	**(0.170)**
Size	0.2233***	0.0078	0.2200***	0.0056	0.2301***	0.0090	0.2288***	0.0064
	(0.051)	(0.025)	(0.050)	(0.025)	(0.052)	(0.025)	(0.052)	(0.026)
Branches	0.0027	-0.0130	-0.0010	-0.0104	-0.0048	-0.0124	-0.0080	-0.0108
	(0.038)	(0.020)	(0.038)	(0.019)	(0.038)	(0.020)	(0.039)	(0.021)
Age	-0.1472*	-0.0345	-0.1665**	-0.0336	-0.1523*	-0.0361	-0.1717**	-0.0333
	(0.082)	(0.034)	(0.080)	(0.034)	(0.082)	(0.035)	(0.081)	(0.035)
State banks	-0.6376***	0.2901***	-0.6181***	0.2824***	-0.5212***	0.2839***	-0.5630***	0.2836***
	(0.216)	(0.065)	(0.215)	(0.063)	(0.172)	(0.070)	(0.184)	(0.066)
Foreign banks	-0.0195	0.0871**	-0.0198	0.0770*	-0.0317	0.0889**	-0.0345	0.0861*
	(0.067)	(0.038)	(0.073)	(0.045)	(0.068)	(0.037)	(0.076)	(0.043)
Bank fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,526	1,526	1,526	1,526	1,526	1,526	1,526	1,526
R-squared	0.925	0.272	0.925	0.259	0.926	0.284	0.926	0.270

Table 6: Impact of different typologies of rebranding and ownership changes on depositor discipline

The DEPG is calculated as the first difference of the log of deposits. The IDEP is the implicit deposit rate on deposits, calculated as the annual interest expenses divided by total bank deposits. The Risk-vector represents the alternative risk measures CAP and LIQ. The CAP variable is book value of equity (assets – liabilities) to total assets. The LIQ variable is equal to liquid assets (such as cash, central bank debt and short term government securities) to total deposits. The Risk-vector is included with a one year lag to account for the fact that balance sheet and income statement information is available to the public with a certain delay. To moderate the inordinate influence of extreme values, we winsorize abovementioned dependent and bank risk variables at the 2% level in both tails. The rebranding variables are Δ NAME(TT), Δ NAME(TF), Δ NAME(FT), Δ NAME(FF), Δ NAME(TTBC) and Δ NAME(FFBC). Δ NAME(TT) equals to 1 when there is a name change from a local Turkish brand name to another Turkish name, and otherwise 0; Δ NAME(TF) equals to 1 when there is a name change from a local Turkish brand name to a foreign name, and otherwise 0; Δ NAME(FT) equals to 1 when there is a name change from a foreign brand name to a Turkish name, and otherwise 0; Δ NAME(FF) equals to 1 when there is a name change from a foreign brand name to another foreign name, and otherwise 0; Δ NAME(TTBC) equals to 1 when there is a big name change within the pool of Turkish name changes, and otherwise 0; NAME(FFBC) equals to 1 when there is a big name change within the pool of foreign name changes, and otherwise 0. The ownership change variables are: Δ OWN(TT) equals 1 when a Turkish owner sells the bank to another Turkish owner, and 0 otherwise. Δ OWN(TF) equals 1 when Turkish owners sell the bank to foreign owners, and 0 otherwise. Δ OWN(FT) equals 1 when foreign owners sell the bank to Turkish owners, and 0 otherwise. Δ OWN(FF) equals 1 when foreign owners sell the bank to other foreign owners, and 0 otherwise. The coefficients on Δ NAME(TF) and Δ NAME(FT) are our main measures for the presence of familiarity bias.

Although the variable LIQ as well as its interactions with rebranding and ownership change variables are included in all specifications, in order to facilitate the interpretation of results their coefficient estimates are not reported as only the CAP variable proved to be unambiguously leading to depositor discipline in Table 2. Since the purpose of this paper is to uncover whether depositors' assessment of bank fundamentals differ with the introduction of a new name, we also do not report the first-order effects of name changes on the reaction variables. The full results are available upon request. Year dummy variables are included in all specifications but their coefficient estimates are not reported. For both the deposit growth equation as well as the deposit rate equation, we estimate two versions of the rebranding variable, while keeping other variables unchanged, to discriminate between the short term (Spec. 1 and 2) and long term impact (Spec. 3 and 4) of rebranding on depositor discipline. We explore the short-run effect using a dummy variable set equal to 1 in the first three years after the bank is rebranded. The long-run impact of rebranding is verified using a dummy variable set, equaling to 1 for the first six years after the rebranding, and 0 otherwise. Standard errors (in parentheses) are corrected for clustering at bank level. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

	Panel A				Panel B			
	Short term effects of ΔName		Long term effects of ΔName		Short term effects of ΔName		Long term effects of ΔName	
	DEPG	IDEP	DEPG	IDEP	DEPG	IDEP	DEPG	IDEP
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
CAP	1.2700***	-0.2903***	1.2547***	-0.2778***	1.2440***	-0.2710***	1.2142***	-0.2656***
	(0.235)	(0.088)	(0.238)	(0.085)	(0.237)	(0.083)	(0.242)	(0.081)
CAP x ΔName(TT)	0.9849	-0.0678	1.4823*	-0.1336	3.7702***	-0.4459	2.7368***	-0.0004
	(0.984)	(0.211)	(0.785)	(0.218)	(1.398)	(0.421)	(0.738)	(0.290)
CAP x ΔName(TTBC)					-2.8012*	0.5660	-1.4111	-0.0438
					(1.552)	(0.437)	(1.234)	(0.392)
CAP x ΔName(TF)	6.7135***	-3.1587**	4.0961***	-2.6917**	7.0910***	-3.3258**	4.6270***	-2.7082**
	(2.012)	(1.530)	(1.273)	(1.337)	(2.059)	(1.566)	(1.314)	(1.326)
CAP x ΔName(FT)	-1.8775**	1.5684***	1.7691**	0.8247	-1.7660*	1.6138***	1.7624*	0.9681
	(0.883)	(0.345)	(0.861)	(0.747)	(0.893)	(0.355)	(0.919)	(0.694)
CAP x ΔName(FF)	1.1979	0.1795	1.8411	-0.6789*	3.1978	-0.7808	3.8751***	-1.2638***
	(1.138)	(0.546)	(1.308)	(0.393)	(2.196)	(1.049)	(1.229)	(0.420)
CAP x ΔName(FFBC)					-3.6206*	0.9258	-4.0129***	1.2642**
					(2.159)	(1.125)	(0.934)	(0.488)
CAP x ΔOwn(TT)	-1.1693	0.4990***	-1.1813**	0.5401***	-1.0994	0.4865***	-1.2131*	0.5330***
	(0.813)	(0.116)	(0.558)	(0.143)	(0.926)	(0.113)	(0.726)	(0.150)
CAP x ΔOwn(TF)	-6.3932***	2.7584	-2.7389**	2.4311*	-6.7378***	2.9560*	-3.3021**	2.5250*
	(2.324)	(1.691)	(1.279)	(1.377)	(2.376)	(1.729)	(1.307)	(1.362)
CAP x ΔOwn(FT)	1.0805	1.4459	-2.5321***	0.7678	0.8636	1.4142	-2.3455***	0.6432
	(1.720)	(0.931)	(0.852)	(0.612)	(1.765)	(0.984)	(0.841)	(0.610)
CAP x ΔOwn(FF)	0.6454	0.2915	-0.2902	0.7351**	0.2709	-0.5391	-0.4382	0.0705
	(0.759)	(0.780)	(0.807)	(0.295)	(0.834)	(0.904)	(0.843)	(0.283)
Full flexible model	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bank fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,526	1,526	1,526	1,526	1,526	1,526	1,526	1,526
R-squared	0.926	0.282	0.926	0.270	0.927	0.295	0.927	0.285

Table 7: Sensitivity analysis

The DEPG is calculated as the first difference of the log of deposits. The IDEP is the implicit deposit rate on deposits, calculated as the annual interest expenses divided by total bank deposits. The Risk-vector represents the alternative risk measures CAP and LIQ. The CAP variable is book value of equity (assets – liabilities) to total assets. The LIQ variable is equal to liquid assets (such as cash, central bank debt and short term government securities) to total deposits. The Risk-vector is included with a one year lag to account for the fact that balance sheet and income statement information is available to the public with a certain delay. To moderate the inordinate influence of extreme values, we winsorize abovementioned dependent and bank risk variables at the 2% level in both tails. The rebranding variables are Δ NAME(TT), Δ NAME(TF), Δ NAME(FT), Δ NAME(FF), Δ NAME(TTBC) and Δ NAME(FFBC). Δ NAME(TT) equals to 1 when there is a name change from a local Turkish brand name to another Turkish name, and otherwise 0; Δ NAME(TF) equals to 1 when there is a name change from a local Turkish brand name to a foreign name, and otherwise 0; Δ NAME(FT) equals to 1 when there is a name change from a foreign brand name to a Turkish name, and otherwise 0; Δ NAME(FF) equals to 1 when there is a name change from a foreign brand name to another foreign name, and otherwise 0; Δ NAME(TTBC) equals to 1 when there is a big name change within the pool of Turkish name changes, and otherwise 0; NAME(FFBC) equals to 1 when there is a big name change within the pool of foreign name changes, and otherwise 0. Sensitivity of foreign currency depositors (Panel A): FD is a dummy variable that equals 1 if a bank's ratio of number of foreign deposit accounts to total number of deposit accounts belongs to the upper quantile, and 0 if this is not the case. Deposit insurance effects (Panel B): DI takes the value one for the full deposit insurance period 1994–2003, and zero otherwise. The sample in Panel C only includes banks that have ever changed their names. Although the variable LIQ as well as its interactions with rebranding variables are included in all specifications, in order to facilitate the interpretation of results their coefficient estimates are not reported as only the CAP variable proved to be unambiguously leading to depositor discipline in Table 2. Since the purpose of this paper is to uncover whether depositors' assessment of bank fundamentals differ with the introduction of a new name, we also do not report the first-order effects of name changes on the reaction variables. The full results are available upon request. Year dummy variables are included in all specifications but their coefficient estimates are not reported. For both the deposit growth equation as well as the deposit rate equation, we estimate two versions of the rebranding variable, while keeping other variables unchanged, to discriminate between the short term (Spec. 1 and 2) and long term impact (Spec. 3 and 4) of rebranding on depositor discipline. We explore the short-run effect using a dummy variable set equal to 1 in the first three years after the bank is rebranded. The long-run impact of rebranding is verified using a dummy variable set, equaling to 1 for the first six years after the rebranding, and 0 otherwise. Standard errors (in parentheses) are corrected for clustering at bank level. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

Panel A: Sensitivity of foreign currency depositors				
	Short term effects of ΔName		Long term effects of ΔName	
	DEPG	IDEP	DEPG	IDEP
	(1)	(2)	(3)	(4)
CAP	1.2718***	-0.2807***	1.1669***	-0.2679***
	(0.233)	(0.077)	(0.240)	(0.076)
CAP x ΔName(TT)	0.2653	0.0788	0.3555	0.2279
	(0.704)	(0.205)	(0.663)	(0.161)
CAP x ΔName(TT) x FD	2.2632	1.7307***	1.0734	1.5254**
	(3.065)	(0.600)	(3.229)	(0.615)
CAP x ΔName(TF)	7.0835**	-2.2361***	5.4793**	-1.6118***
	(2.709)	(0.665)	(2.459)	(0.601)
CAP x ΔName(TF) x FD	-5.5467**	1.9775***	-4.3273*	1.4087**
	(2.658)	(0.666)	(2.439)	(0.567)
CAP x ΔName(FT)	-1.8501***	2.1297***	-0.3103	1.5637***
	(0.609)	(0.309)	(1.364)	(0.594)
CAP x ΔName(FT) x FD	2.5999**	-2.5296***	0.5450	-1.8186***
	(1.099)	(0.629)	(1.218)	(0.575)
CAP x ΔName(FF)	3.9080***	1.8384***	2.8689***	-0.0802
	(1.191)	(0.656)	(0.626)	(0.276)
CAP x ΔName(FF) x FD	-3.7690***	-1.7895***	-3.5050***	-0.0921
	(1.319)	(0.567)	(0.630)	(0.304)
Full flexible model	Yes	Yes	Yes	Yes
Bank fixed effects	Yes	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes	Yes
Observations	1,526	1,526	1,526	1,526
R-squared	0.926	0.288	0.926	0.269
Panel B: Limited versus full blanket guarantee period				
	(1)	(2)	(3)	(4)
CAP	1.2356***	-0.3968***	1.1887***	-0.3773***
	(0.220)	(0.085)	(0.225)	(0.078)
CAP x DI	0.8762**	0.2811	0.6414*	0.3512
	(0.399)	(0.253)	(0.383)	(0.265)
CAP x ΔName(TT)	3.1149**	-0.3150	2.1691***	0.0145
	(1.326)	(0.441)	(0.705)	(0.402)
CAP x ΔName(TTBC)	-3.5148**	0.8074*	-2.8209***	0.4443
	(1.520)	(0.425)	(0.977)	(0.370)
CAP x ΔName(TF)	1.2625**	-0.5032*	1.1178**	-0.5642**
	(0.566)	(0.267)	(0.510)	(0.280)
CAP x ΔName(FT)	-2.4938***	1.9692***	-0.8296	1.2835*
	(0.590)	(0.461)	(1.193)	(0.693)
CAP x ΔName(FF)	3.1416	-0.2379	1.7518**	-0.4014
	(2.502)	(1.222)	(0.825)	(0.627)
CAP x ΔName(FFBC)	-3.6142	0.3349	-1.5848	0.2204
	(2.564)	(1.285)	(1.262)	(0.707)
Full flexible model	Yes	Yes	Yes	Yes
Bank fixed effects	Yes	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes	Yes
Observations	1,526	1,526	1,526	1,526
R-squared	0.927	0.294	0.926	0.279
Panel C: Reduced sample test - only banks that have ever changed their names				
	(1)	(2)	(3)	(4)
CAP	1.3294***	-0.3964***	1.1050**	-0.3906***
	(0.359)	(0.079)	(0.406)	(0.090)
CAP x ΔName(TT)	2.0822	0.2211	2.2626***	0.2260
	(1.486)	(0.476)	(0.714)	(0.363)
CAP x ΔName(TTBC)	-1.7108	0.2582	-2.1044**	0.2689
	(1.778)	(0.474)	(0.903)	(0.346)
CAP x ΔName(TF)	1.8663***	-0.3549*	1.7803***	-0.3986**
	(0.480)	(0.188)	(0.442)	(0.151)
CAP x ΔName(FT)	-1.3564*	2.0586***	0.2636	1.4276**
	(0.757)	(0.363)	(1.272)	(0.592)
CAP x ΔName(FF)	3.5136	-0.0685	2.2819***	-0.0072
	(2.423)	(1.191)	(0.746)	(0.530)
CAP x ΔName(FFBC)	-3.4887	0.2762	-1.8046*	0.0579
	(2.528)	(1.251)	(1.068)	(0.629)
Full flexible model	Yes	Yes	Yes	Yes
Bank fixed effects	Yes	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes	Yes
Observations	673	673	673	673
R-squared	0.918	0.371	0.918	0.347

Table 8: Familiarity bias after controlling for selection in rebranding via Heckman two-stage treatment effects.

Panel A presents the 1st step of Heckman 2-step treatment model. The dependent variables are: Δ NAME(TT) equals to 1 when there is a name change from a local Turkish brand name to another Turkish name, and otherwise 0; Δ NAME(TF) equals to 1 when there is a name change from a local Turkish brand name to a foreign name, and otherwise 0; Δ NAME(FT) equals to 1 when there is a name change from a foreign brand name to a Turkish name, and otherwise 0; Δ NAME(FF) equals to 1 when there is a name change from a foreign brand name to another foreign name, and otherwise 0. Explanatory variables are all lagged with one year: the $z-score$, a measure of bank stability, is defined by z = Mean(EQ/TA + ROA)/St.Dev.(ROA), i.e. average capitalization (Equity/Total Assets) and return on assets (ROA) during the four preceding years over the 4-year standard deviation of the return on assets; MMC is a bank-specific measure of multimarket contact by considering the number of interprovincial weighted contacts between banks; LIQ is defined as the ratio of liquid assets to total deposits; Δ OWN(TT) equals 1 when Turkish owners sell the bank to another Turkish owners, and 0 otherwise; Δ OWN(TF) equals 1 when Turkish owners sell the bank to foreign owners, and 0 otherwise; Δ OWN(FT) equals 1 when foreign owners sell the bank to Turkish owners, and 0 otherwise.; Δ OWN(FF) equals 1 when foreign owners sell the bank to another foreign owners, and 0 otherwise; Size is the natural logarithm of total assets; Branches is the natural logarithm of the number of bank branches; Age is the natural logarithm of the number of years the bank exists. Standard errors are in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels, respectively. *Panel B* is the 2nd step of Heckman 2-step treatment model. The DEPG is calculated as the first difference of the log of deposits. The IDEP is the implicit deposit rate on deposits, calculated as the annual interest expenses divided by total bank deposits. The Risk-vector represents the alternative risk measures CAP and LIQ. The CAP variable is book value of equity (assets – liabilities) to total assets. The LIQ variable is equal to liquid assets (such as cash, central bank debt and short term government securities) to total deposits. The Risk-vector is included with a one year lag to account for the fact that balance sheet and income statement information is available to the public with a certain delay. To moderate the inordinate influence of extreme values, we winsorize abovementioned dependent and bank risk variables at the 2% level in both tails. Rebranding variables not explained in the description of Panel A: Δ NAME(TTBC) equals to 1 when there is a big name change within the pool of Turkish name changes, and otherwise 0; NAME(FFBC) equals to 1 when there is a big name change within the pool of foreign name changes, and otherwise 0. For an explanation of ownership change variables we refer to the description of *Panel A*. Although the variable LIQ as well as its interactions with rebranding and ownership change variables are included in all specifications, in order to facilitate the interpretation of results their coefficient estimates are not reported as only the CAP variable proved to be unambiguously leading to depositor discipline in Table 2. *State banks* are predominantly owned by the government. *Foreign banks* are either branches of international operating banks or when 50% of their shares are owned by non-residents. Private domestic banks serve as the reference group. Year dummy variables are included in all specifications but their coefficient estimates are not reported. $\lambda_{NAME(TT)}$ is the inverse of the Mill's ratio for being rebranding from a local Turkish brand name to a another Turkish name; $\lambda_{NAME(TF)}$ is the inverse of the Mill's ratio for being rebranding from a local Turkish brand name to a foreign name; $\lambda_{NAME(FT)}$ is the inverse of the Mill's ratio for being rebranding from a foreign name a Turkish name; $\lambda_{NAME(FF)}$ is the inverse of the Mill's ratio for being rebranding from a foreign brand name to a another foreign name. For both the deposit growth equation as well as the deposit rate equation, we estimate two versions of the rebranding variable, while keeping other variables unchanged, to discriminate between the short term (Spec. 1 and 2) and long term impact (Spec. 3 and 4) of rebranding on depositor discipline. We explore the short-run effect using a dummy variable set equal to 1 in the first three years after the bank is rebranded. The long-run impact of rebranding is verified using a dummy variable set, equaling to 1 for the first six years after the rebranding, and 0 otherwise. Standard errors (in parentheses) are corrected for clustering at bank level. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

Panel A: 1st step of Heckman 2-step treatment model

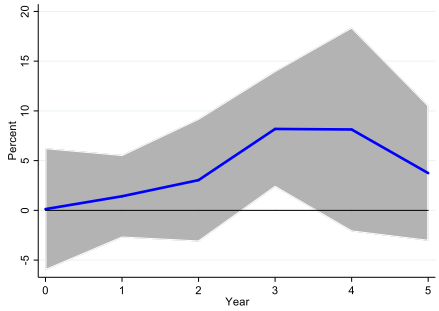
	Δname(TT)		Δname(TF)		Δname(FT)		Δname(FF)	
	Short term	Long term	Short term	Long term	Short term	Long term	Short term	Long term
z-score	-0.0009	-0.0012	-0.0049	0.0017	-0.0537*	-0.0094	-0.0125	-0.0122*
	(0.003)	(0.003)	(0.007)	(0.004)	(0.028)	(0.010)	(0.009)	(0.007)
MMC	-0.1183*	-0.0912**	-0.1430**	-0.0595	-0.1073	-0.0787	0.0130	0.0141
	(0.063)	(0.045)	(0.072)	(0.046)	(0.122)	(0.070)	(0.035)	(0.028)
LIQ	-0.1227	-0.1510*	-0.1145	-0.0572	-0.4110*	-0.4882**	-0.0529**	0.0001
	(0.083)	(0.088)	(0.142)	(0.074)	(0.214)	(0.208)	(0.026)	(0.020)
ΔOwn(TT)	1.7062***	1.7368***						
	(0.333)	(0.306)						
ΔOwn(TF)			4.2274***	4.5641***				
			(0.716)	(0.777)				
ΔOwn(FT)					1.9438***	2.3402***		
					(0.374)	(0.382)		
ΔOwn(FF)							1.7845***	1.6709***
							(0.336)	(0.261)
Size	-0.0759***	-0.1039***	-0.0786**	-0.0464	-0.1255**	-0.2145***	-0.0264	-0.0349*
	(0.028)	(0.026)	(0.039)	(0.035)	(0.050)	(0.051)	(0.021)	(0.021)
Branches	-0.0651	0.0314	0.2265	0.0457	-0.1435	0.0394	-0.4280***	-0.3441***
	(0.145)	(0.132)	(0.212)	(0.184)	(0.242)	(0.175)	(0.119)	(0.104)
Age	-0.5333***	-0.5684***	-0.9154***	-1.0856***	-0.1801	-0.3662*	-0.4315***	-0.4522***
	(0.154)	(0.152)	(0.271)	(0.276)	(0.172)	(0.195)	(0.101)	(0.103)
Bank-random effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel B: 2nd step of Heckman 2-step treatment model

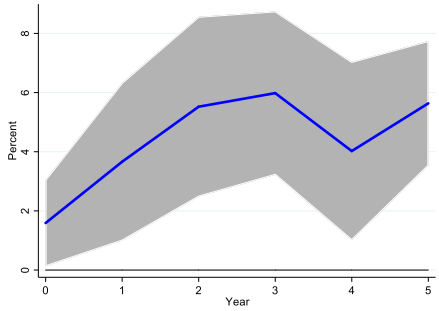
	Short term effects of ΔName		Long term effects of ΔName		Short term effects of ΔName		Long term effects of ΔName	
	DEPG	IDEP	DEPG	IDEP	DEPG	IDEP	DEPG	IDEP
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
CAP	0.9885***	-0.3320***	1.0227***	-0.3149***	0.9681***	-0.3199***	0.9872***	-0.2950***
	(0.127)	(0.063)	(0.131)	(0.066)	(0.127)	(0.062)	(0.131)	(0.067)
CAP x ΔName(TT)	1.3252*	-0.1400	1.5874**	-0.1085	5.1291***	-0.9635	3.3467***	-0.2515
	(0.708)	(0.347)	(0.640)	(0.317)	(1.469)	(0.717)	(1.049)	(0.503)
CAP x ΔName(TTBC)					-4.9236***	1.1041	-2.7550**	0.2452
					(1.644)	(0.803)	(1.265)	(0.609)
CAP x ΔName(TF)	7.1490***	-3.1615***	4.9291**	-2.8104***	6.9282***	-3.1621***	4.9945**	-2.7467***
	(2.202)	(1.079)	(2.153)	(1.064)	(2.241)	(1.094)	(2.154)	(1.044)
CAP x ΔName(FT)	-1.9018**	0.9527**	1.1519	0.6206	-1.9715**	1.0449**	0.7227	0.8843**
	(0.906)	(0.444)	(0.897)	(0.445)	(0.904)	(0.442)	(0.908)	(0.447)
CAP x ΔName(FF)	-0.8656	0.4444	0.1667	-0.1293	-0.4303	-0.2622	1.2614	-0.5614
	(0.756)	(0.370)	(0.610)	(0.301)	(1.412)	(0.689)	(0.778)	(0.380)
CAP x ΔName(FFBC)					-1.3936	0.6239	-2.3534**	1.0007**
					(1.748)	(0.854)	(0.943)	(0.458)
CAP x ΔOwn(TT)	-1.3505***	0.4989**	-1.3500***	0.5311**	-1.2628**	0.4799*	-1.3059***	0.4972**
	(0.510)	(0.250)	(0.459)	(0.227)	(0.519)	(0.254)	(0.485)	(0.236)
CAP x ΔOwn(TF)	-8.1226***	3.4190***	-3.9393*	2.7648**	-7.9483***	3.4894***	-4.0710*	2.7613***
	(2.349)	(1.150)	(2.192)	(1.083)	(2.375)	(1.160)	(2.195)	(1.061)
CAP x ΔOwn(FT)	1.4278	1.7813***	-1.9037**	0.6704*	1.5378	1.6709***	-1.4100*	0.4755
	(1.221)	(0.598)	(0.788)	(0.389)	(1.227)	(0.599)	(0.807)	(0.392)
CAP x ΔOwn(FF)	1.2904	0.2255	0.2995	0.4425	1.4447	-0.7497	0.6374	-0.2642
	(0.921)	(0.451)	(0.680)	(0.335)	(1.038)	(0.507)	(0.752)	(0.364)
$\lambda_{Name(TT)}$	-2.2387***	0.7175***	0.2444*	-0.1671**	-2.1858***	0.6590***	0.2697**	-0.1488**
	(0.199)	(0.098)	(0.136)	(0.068)	(0.200)	(0.098)	(0.137)	(0.067)
$\lambda_{Name(TF)}$	1.9514***	-0.6700***	0.0130	0.0408	1.9491***	-0.6586***	-0.0097	0.0161
	(0.112)	(0.055)	(0.183)	(0.091)	(0.112)	(0.055)	(0.183)	(0.090)
$\lambda_{Name(FT)}$	-0.2142***	0.0948**	-0.3483***	0.1425***	-0.2476***	0.1265***	-0.3532***	0.1386***
	(0.081)	(0.040)	(0.027)	(0.013)	(0.082)	(0.040)	(0.027)	(0.013)
$\lambda_{Name(FF)}$	0.3116	-0.1570	0.2568***	-0.0529***	0.4604	-0.2990*	0.2581***	-0.0549***
	(0.360)	(0.177)	(0.038)	(0.019)	(0.363)	(0.177)	(0.038)	(0.018)
Full flexible model	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bank-random effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,478	1,478	1,478	1,478	1,478	1,478	1,478	1,478
R-squared	0.945	0.396	0.951	0.432	0.945	0.416	0.952	0.449

Figure 1: Impulse response of the change in capital sensitivity derived from local projections.

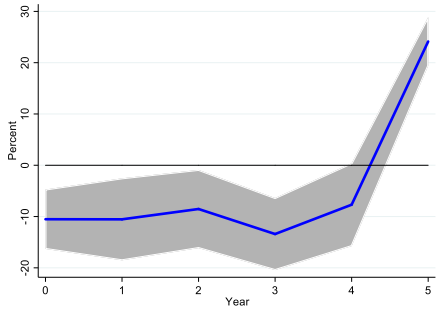
A. Response of DEPG to Δ NAME(TT)



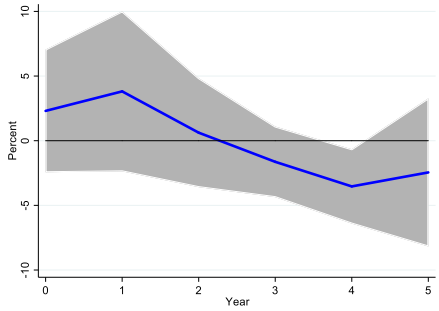
B. Response of DEPG to Δ NAME(TF)



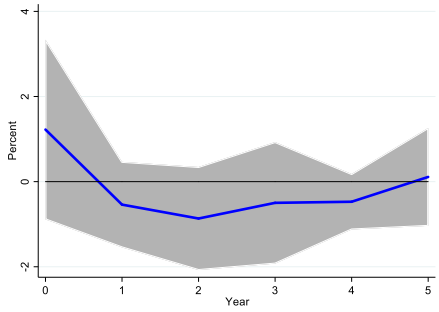
C. Response of DEPG to Δ NAME(FT)



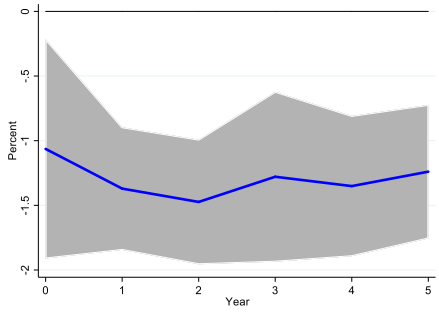
D. Response of DEPG to Δ NAME(FF)



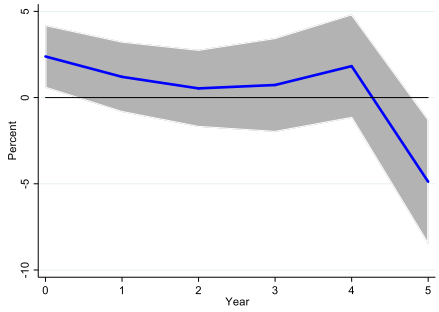
E. Response of IDEP to Δ NAME(TT)



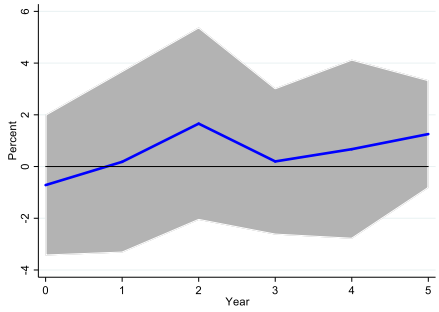
F. Response of IDEP to Δ NAME(TF)



G. Response of IDEP to Δ NAME(FT)



H. Response of IDEP to Δ NAME(FF)



Note: Horizon is annual; The gray areas represent 90 percent confidence intervals.