Cultural preferences and firm financing choices

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We document significant differences in the financing structure of small firms with managers of diverse cultural backgrounds. To isolate the effect of culture, we exploit cultural heterogeneity within a geographical area with shared regulations, institutions, and macroeconomic cycles. Our findings suggest that there exist significant cultural differences in the preference towards internal versus external funding and in the use of formal and informal sources of financing (bank loans and trade credit). Our results are robust to alternative explanations based on potential differences in credit constraints and in the distribution of cultural origins across industries, trading partners, and headquarters location.

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1. Introduction

In this paper we examine whether the cultural origin of firm managers affects the financing decisions of the firms they run. The notion that the cultural background of individuals can affect their own financial decisions is well established in the economics literature (see, for example, Guiso et al., 2004). At the same time, an influential body of literature dating back at least to Bertrand and Schoar (2003) has documented that individual characteristics of managers represent significant determinants of firm policies. Following the predictions of the managerial-style literature, we ask to what extent the financial preferences of managers—as shaped by their cultural origin—carry through into firm financial policies.

The empirical identification of the effect of management's cultural traits on firm financing decisions is challenging, because firms led by CEOs who belong to different cultural groups are usually headquartered in different countries. Being able to distinguish the role played by the cultural background of the manager from the role played by other country-specific factors is crucial, as differences in economic conditions (i.e., interest rates, inflation, or expectations about the business cycle), incentives provided by institutions and regulation (i.e., tax incentives), and geographic considerations (such as proximity to financial institutions) have been shown to affect financing choices. We overcome this empirical challenge by exploiting cultural differences in a sample of firms within a geographical area that shares a common regulatory, institutional, and macroeconomic setting: The autonomous province of South Tyrol in Northern Italy.

The South Tyrol province represents an excellent natural laboratory to assess whether differences in the cultural origin of firm managers affect firm financing choices. One of the richest areas in the European Union, South Tyrol is home to individuals who belong to two main cultural groups:

Italian and Germanic.[1] Both Italian and German are official languages and the two cultural groups share a common Catholic religious background and live next to each other within municipalities. However, they lead relatively segregated social lives: Children attend separate schools and individuals of Germanic (Italian) origin interact and socialize mostly with Germanic (Italian) peers. Importantly for our study, the province includes a large number of firms from a wide range of industry sectors, all subject to the same institutional environment and legal framework. Moreover, all firms in the province are privately held and most of them are small and owner-managed, which obviates any agency problems. Due to its uniqueness, the South Tyrol setting has been used in previous studies to investigate the influence of culture on several economic outcomes (see Sutter et al., 2015 and Angerer et al., 2016). While this empirical laboratory is highly specific, our results are of general interest, as one quarter of all jurisdictions in the world operate in more than one language (Leung, 2016). Notable examples include Belgium, Canada, Switzerland, and the European Union as a whole.

Exploring cultural differences across firm managers in South Tyrol is particularly well suited to address our research question because the two cultural groups differ significantly along several dimensions that can affect financing choices. To start with, we note that, in contrast to its Italian translation, the German word for debt, *Schuld*, is morally charged (meaning fault or guilt). In addition, German and Italian languages differ in their degree of future-time reference, an aspect that has been linked to financial behavior (Chen, 2013). Individuals from the two cultural groups also differ in their levels of social capital and trust, which have been associated with financial development and the recourse to formal or informal sources of debt (Guiso et al., 2004; Levine et al., 2017). Finally, another well-documented difference between individuals of Germanic and

[1] With "Germanic culture" we refer to people who speak German or a regional version of standard German.

Italian origin is their preference for interacting within formal institutions as opposed to more informal networks (Bandiera et al., 2010; Puntscher et al., 2014, Becker et al., 2016), which may similarly translate into different choices of financing sources (i.e. debt from financial institutions or from informal networks of suppliers or friends and family).

Following Guiso et al. (2006), we define culture as "*those customary beliefs and values that ethnic, religious, and social groups transmit fairly unchanged from generation to generation*". Throughout our analysis we proxy the cultural origin of firm managers with their names, under the assumption that managers with a Germanic (Italian) name share a common language. Consistently with the above definition, our premise is that speaking the same language is a necessary condition for social interaction and for spreading cultural values. Through a common language, parents transmit their beliefs and preferences vertically to their children and, similarly, peers transmit their values horizontally to other peers. Accordingly, we classify all managers of firms headquartered in South Tyrol as of Germanic or Italian origin based on their given names and surnames. Our approach is similar to the one in Grinblatt and Keloharju (2001), who also use a classification based on names to achieve intra-country cultural identification across two distinct language families.

In line with our predictions, we find significant differences with respect to financing decisions between firms managed by individuals of different cultural backgrounds. In particular, we find that (i) firms run by managers from the Italian cultural group are less capitalized than firms run by individuals from the Germanic group, and that (ii) this difference is mostly driven by a higher use of trade credit from companies run by individuals from the Italian cultural group. Consistently, we observe that firms led by individuals of Italian origin are also willing to provide more credit to their customers.

By construction, our setup allows us to exclude the possibility that the results are due to differences in institutional or macroeconomic conditions. In a series of robustness tests, we rule out further endogeneity concerns. Our results are not explained away by financial constraints and availability of bank credit to firms of different cultural groups (both in normal times and during the financial and sovereign crisis), nor by an endogenous sorting of managers of different cultural origin with certain firm characteristics. In fact, they continue to hold (i) within the more homogeneous sample of family firms that are managed by a family member; (ii) within the more homogeneous subsample of micro firms; (iii) by excluding the industry sectors that have a high concentration of CEOs from a single cultural group; (iv) by excluding the industry sectors that import the most and, hence, may differ in the terms of trade credit. Our results also hold on subsamples of firms that have been matched on size, industry, and location. Finally, to reinforce our interpretation of the existence of a causal link between culture and financing choices, we adopt an instrumental variable approach. Our instrument identifies the exogenous component of the cultural origin of the firms' manager by exploiting historical and geographical circumstances within the South Tyrol province that led to a larger concentration of the population of Italian origin in certain valleys and areas. Our findings consistently show that firms managed by an individual of Italian origin borrow more and rely more intensively on informal sources of financing. We conclude that managers from seemingly close cultures that live side-by-side can nevertheless display large and important differences in basic corporate finance decisions.

Our paper contributes primarily to the literature that analyzes the impact of culture on firm policies. Existing studies associate culture with corporate risk taking (Li et al., 2015), corporate governance (Griffin et al., 2017), firm performance (Frijns et al., 2016), and cash holdings (Chen et al., 2017). The papers most closely related to ours are those linking culture and firm financing (Chui et al.,

2002; Li et al., 2011; El Ghoul and Zheng, 2016; Levine et al., 2017). Our contribution to the literature is threefold. First, these studies rely mainly on cross-country differences to investigate the relation between culture and firm financing and, as such, may be unable to fully control for differences in regulatory, institutional, and economic settings (Karolyi, 2016). In contrast, our method follows an alternative strand of the literature that relies on the epidemiological approach, which attempts to separate culture from the environment by studying outcome variables of individuals whose cultures differ, but who share a common economic and institutional setting (Fernández, 2011). In this respect, our empirical design specifically addresses potential omitted variable biases linked to cross-country differences in institutional and regulatory structures, contract enforcement, and business practices.[2]

Second, while most related studies investigate publicly traded corporations, our sample firms are all privately held and mostly owner-managed. This feature brings three clear advantages: (i) Owner-managed firms are not prone to principal-agent problems; (ii) the cultural traits of managers are more likely to manifest themselves through firm financing policies; (iii) the risk of endogeneous sorting of managers from a given cultural group into firms with specific financing policies is minimized.

Third, our approach enables us to uncover new channels through which culture potentially affects the financing structure. As we will show, Schwartz's and Hofstede's cultural scores, which have been largely employed to establish the link between culture and firm financing (Chui et al., 2002; Li et al., 2011; El Ghoul and Zheng, 2016) are unlikely to be sufficiently different between the two cultural groups to explain our findings. Similarly, our results do not seem to be driven by linguistic

[2] Delis et al. (2017), Nguyen et al. (2017), and Pan et al. (2016) use this approach to assess the impact of culture on corporate performance and risk-taking.

differences in future-time reference, as in Chen (2013). Instead, we provide suggestive evidence that our findings are most likely to be explained by differences in the level of social capital and by broader cultural preferences for particular financing sources.

Our findings also make a more general contribution to the trade credit literature, by providing an additional explanation to the recourse to this type of financing in the presence of specialized financial intermediaries (Petersen and Rajan, 1997; Giannetti et al., 2011). The theoretical literature has mostly focused on transaction costs or information asymmetries to justify the co-existence of formal bank credit and informal trade credit. We suggest an additional explanation: The higher recourse to trade credit could simply reflect personal, culturally founded, preferences towards this informal source of financing.

The paper is organized as follows. Section 2 describes the institutional background, Section 3 outlines the research design, Section 4 presents the main empirical findings, Sections 5 and 6 include robustness checks and Section 7 concludes the paper.

2. Institutional Background

In 1915, the Triple Entente—United Kingdom, France, and Russia—signed a treaty with Italy, which stipulated that Italy should abandon its alliance with Germany and Austria-Hungary (the Triple Alliance) and instead join the war on the side of the Entente. In return, Italy was promised a number of territorial gains following the ultimate defeat of the German and Austro-Hungarian empires. Subsequently, in 1919, Austria ceded South Tyrol to Italy with the Treaty of Saint-Germain-en-Laye, thereby ending hundreds of years of Habsburg rule in the province.

At the time of its annexation, 89% of the population spoke German, 3% spoke Italian, and the remainder of the population spoke either Ladin or other languages of the Empire (Benvenuto, 2007). This was however to quickly change. In 1923, the fascist government initiated the "Italianization" of South Tyrol, which included a series of measures and economic incentives aimed at favoring the relocation of Italians from other parts of Italy to South Tyrol. During this period, the majority of German schools were closed and Italian was declared the only official language of the province.

Following the Second World War, the region of Trentino-Alto Adige (which includes the provinces of Trento and South Tyrol) was granted a special autonomous status, German and Italian were both recognized as official languages, incentives in favor of Italians were formally removed, and German-language education was re-introduced. However, since Italians were still the majority at the regional level, self-government of the Germanic minority was not possible until 1972, when the province of South Tyrol was explicitly granted an autonomous status. The 1972 agreement guarantees equal rights and opportunities to South Tyroleans of both language groups, and grants considerable legislative and executive independence from the national government in most matters of economic and social affairs.

As of the last census in year 2011 (ASTAT, 2015), 70% out of roughly half a million inhabitants in the South Tyrol reported German as their mother tongue, 26% reported Italian as their main language, and 4% identified themselves as Ladin speakers. The map in Figure 1 illustrates the linguistic composition of South Tyrol. The majority of the municipalities in South Tyrol are predominantly German speaking, although there is a large variation in the percentage of Italian speakers across towns ranging from 73% in the city of Bolzano to 0% in Martello, a town in the northwestern Vinschgau region that borders with Austria and Switzerland. As a consequence of

the "Italianization" process, the largest concentration of Italian speakers is located close to the cities of Bolzano and Merano. Although municipalities differ considerably on the proportion of Italian-speaking population, there is no geographic segregation between citizens within municipalities.

3. Research Design

Our research design follows the epidemiological method (described extensively in Fernández, 2011), which aims to separate culture from the environment by studying the outcomes of individuals from different cultures who share a common economic and institutional setting. This approach presents obvious advantages in controlling for omitted variables and endogeneity compared to more standard methods such as the use of cross-country regressions. The epidemiological method is well suited for our purposes since South Tyroleans are all exposed to an identical economic and institutional environment and differ only in terms of belonging either to the Germanic or Italian culture. In order to assess the impact of managers' cultural origin on firm financing—and at the same time prevent cultural explanations from becoming simple ex-post rationalizations and reduce the risk of spurious correlations—we follow a tree-step procedure described as follows.

3.1 Step one: Hypothesis development

Our first step is to argue that individuals in South Tyrol of Germanic culture on one hand, and of Italian culture on the other hand, differ on their preferences towards financing sources. This link can be deduced from several studies, empirical observations, and anecdotal evidence.

First of all, we note that the German word for debt is *Schuld*, which can be translated into English as fault or guilt. This morally charged term contrasts with the more neutral Italian word for debt, *debito*, stemming from the Latin word *debere*, which simply means to owe something. Consistently with an overall negative view of debt, there is anecdotal evidence that borrowing for consumption purposes is often frowned upon in German-speaking countries. Thus, it is natural to assume that Italian-speaking individuals would favor a financing structure that relies relatively more on debt than German-speaking individuals.

Individuals of Italian and Germanic origin can also differ regarding their preference towards formal and informal sources of debt. Becker et al. (2016) study whether the cultural norms originating in the Habsburg Empire still endure today. They find that the Habsburg Empire, with its well-respected administration, increased citizens' liking of formal institutions, and that these preferences persist today among the descendants living in the 17 countries that used to be the territory of the Habsburg Empire. Puntscher et al. (2014) document that individuals of Italian origin living in South Tyrol state a stronger preference for informal friendship ties and a weaker preference for organizing themselves and interacting through formal associations compared to South Tyroleans of Germanic origin. All in all, these two studies suggest that South Tyroleans from the Italian (Germanic) cultural group have a preference for informal (formal) institutions. In a similar vein, Bandiera et al. (2010) find that there is a preference in Italy to hire managers through informal channels such as personal or family contacts, rather than formal channels like business contacts or head-hunters.

Guiso et al. (2004) directly link financial development—i.e. the reliance on formal rather than informal financing—to the level of social capital. Since social capital is an important determinant of the level of trust, and trust is a necessary condition for the development of financial markets,

social capital should also affect the level of financial development. By exploiting social capital differences at the province level in Italy (measured as participation in referenda and blood donations), they show that households located in low social-capital areas make more use of informal credit. Data on households' recourse to bank and informal financing are not available at intra-province level, making it difficult to directly test whether South Tyroleans of Italian and Germanic origin differ in their financing habits. However, a number of elements suggest that individuals of Germanic culture may be characterized by higher levels of social capital and trust. Puntscher et al. (2014) conduct a survey in the South Tyrol province and report higher levels of generalized trust in German-speaking citizens.[3] Similar to Guiso et al. (2004), in an untabulated analysis we explore the participation in referenda and find a positive correlation of 45.5% between the proportion of German-speaking population in the municipalities in South Tyrol according to the 2011 census and the participation to the referendum that took place in the same year. Following this argument, we would expect South Tyroleans from the Italian cultural group to resort more often to informal sources of debt.

Finally, the literature on managerial style predicts that managers' individual traits and preferences (including those arising from culture) are likely to affect the decisions they make concerning not only their household, but also their firms. Thus, based on the above arguments, we derive our main hypotheses: (i) Firm managers from the Italian cultural group are more likely to resort to debt relative to firm managers of the Germanic cultural group, and (ii) managers from the Italian

[3] Our own calculations using data from the European Value Survey (2008-2010) show that Austrians have significantly higher trust than Italians (at a 1% significance level). Culturally, Austrians and Italians are the closest to the two groups present in South Tyrol. The generalized level of trust is measured with the percentage of respondents answering positively to the question "Most people can be trusted". See http://www.europeanvaluesstudy.eu/.

cultural group are more likely to resort to informal forms of debt, such as trade credit, compared to managers from the Germanic cultural group.

3.2 Step two: Classification of the manager's cultural origin

The second step consists of classifying firm managers into their cultural group. We start by selecting firms headquartered in the South Tyrol province with data available on Orbis-Bureau van Dijk. Given that Italian law requires such companies to file and deposit annual reports with the local Chamber of Commerce, this set of firms includes essentially all the limited liability firms (Societa' per Azioni and Societa' a Responsabilita' Limitata) headquartered in the province. Through the NACE industry classification code, we exclude financial and real estate companies, due to their peculiar capital and debt structure. For the remaining sample firms, we retrieve the latest available data on the board composition (as of March 2016), and identify the CEO.

To establish whether the CEO is of Germanic or Italian cultural origin we proceed as follows. We utilize search algorithms that identify the most common: Germanic surnames; Germanic male given names; Germanic female given names; Italian surnames; Italian male given names; Italian female given names.[4] Subsequently, a CEO is classified as having a Germanic cultural origin if all his/her given names and surname can be found in the Germanic listings, while he/she is classified as having an Italian cultural origin if given names and surname are in the Italian lists. We require

[4] We retrieve Italian surnames from http://www.cognomix.it/origine-cognomi-italiani, which lists the most common Italian surnames explaining their origin. We obtain German and Austrian surnames, respectively, from https://de.wiktionary.org/wiki/Verzeichnis:Deutsch/Liste_der_h%C3%A4ufigsten_Nachnamen_Deutschlands and https://de.wiktionary.org/wiki/Verzeichnis:Deutsch/Liste_der_h%C3%A4ufigsten_Nachnamen_%C3%96sterreichs, which are based on telephone directories of the countries and were manually cleaned to eliminate foreign last names. Finally, first names come from http://www.vornamen-weltweit.de/maennlich-deutsch.php, http://www.vornamen-weltweit.de/weiblich-deutsch.php, and http://www.vornamen-weltweit.de/geographisch.php?land=4.

that *both* the given name *and* the surname are Germanic (Italian) for a CEO to be associated with a Germanic (Italian) origin. We manually double-check the allocation of CEOs to the two categories to ensure that such requirement is satisfied. In comparison to alternative classification criteria based only on the first name or on the surname, our approach enables us to achieve a neater identification of the origin of managers and reduce potential misclassification bias due, for example, to bilingual families. Bilingual families may lead to misclassification to the extent that managers whose parents speak different languages cannot be easily associated with one of the two cultures. Given that bilingual families are most likely to manifest themselves through mixed names (e.g., a Germanic first name and an Italian surname), constraining both names and surname of the manager to be of the same linguistic origin should minimize such instances. Our classification criterion is not overly restrictive, as only 5.8% of the managers in our sample firms have a discordant Germanic (Italian) first name and Italian (Germanic) surname.[5] Since we are interested in comparing the features of firms run by managers of Germanic and Italian origins, we discard managers with a different linguistic origin, which account for 2.1% of the sample firms. Some examples of how we have classified managers are provided in Appendix A.

3.3 Step three: Impact of the manager's culture on firm financing

The third and final step of our research approach is to show that the cultural background of the manager has an impact on the firm's choices of financing channels. We do so by regressing a number of firm financing outcome variables on the manager's cultural origin indicator obtained above.

[5] For robustness, we repeat our analysis by classifying the linguistic origin of CEOs on the basis of (i) their first name only, and (ii) their surname only. The results, available from the authors upon request, are qualitatively unchanged.

Our regression analysis exploits the cross-sectional variation in managers' culture and firm financing structure. We obtain information about the financing structure from Orbis. This database provides only the latest available information on the composition and characteristics of the top management of a firm. For consistency, in our main analyses we extract only the latest financial statements available (as of March 2016) for our sample firms. This ensures that the firm financial variables we look at refer to a time period when the manager was in charge of the company.[6]

Table 1 reports basic summary statistics on the cross section of our sample firms. Our key variable is the indicator variable *CEO of Italian origin*, which takes a value of one if the manager is classified as of Italian origin, and zero if he/she is classified as of Germanic origin. On average, 29.5% of the managers in the sample are of Italian origin. This is in line with the overall percentage of Italian-speaking population in South Tyrol, which was equal to 26.1% according to the 2011 Census (ASTAT, 2015). None of the firms in the sample is publicly traded and only 2.8% are large firms according to the definitions provided by the European Commission (i.e. turnover larger than 50m euros or total assets larger than 43m euros). To compare the financing structure of firms we use the following ratios: Total liabilities over total assets, as a measure of all debts the company is liable for; total debt over total assets, as a measure of recourse to formal financing (i.e. bank loans); and accounts payable over total assets as a measure of recourse to informal financing (i.e. trade credit). These will be the main dependent variables in our analysis. The financing structure of our firms is therefore very simplified and consists essentially of equity, bank loans and trade credit. To complement our analysis, we also include two variables to analyze the asset structure of the

[6] As we shall see below, all of the firms in the sample are privately held and most of them are small or micro firms. As a result, the cultural origin of the management of the company is unlikely to change over a relatively small time horizon. For robustness, in Section 5.2 we also exploit the panel dimension of the Orbis data.

firms' balance sheet: Cash over total assets, and accounts receivable over total assets, as a measure of how much credit a firm provides to its clients.

In Table 2 we compare the balance sheet structure of firms led by managers of Italian and Germanic origins by means of a standard two-sample t-test for differences in means. Our findings suggest that firms run by managers of Italian culture are less capitalized than firms run by managers of Germanic culture. However, this does not seem to translate into a larger recourse to traditional sources of debt, as indicated by a lower debt ratio. Instead, these firms are characterized by a higher usage of more informal sources of funding, such as trade credit (and debit). The two sets of companies also differ along other dimensions. Compared to their Germanic-led counterparties, firms with a manager of Italian origin, on average, grow at a slower speed, are smaller and younger, hold more cash, have a lower share of tangible assets, and are led by managers who are older and more likely to be female.

4. Main Results

In the remainder of the paper, we shift our analysis to a multivariate setting. Table 3 reports the estimates from OLS regressions where the dependent variables measure the firms' liability and asset structure. In all specifications, we add a set of standard control variables that previous literature has found to be significant determinants of firm capital structure. Firm-specific controls include: Size, asset tangibility, sales growth, capital expenditures, operating margin, and age. We also add some manager-specific variables to account for manager characteristics, other than the linguistic origin, that may impact capital and debt structure choices, i.e. age, age squared, and an indicator variable that takes a value of one if the manager is male and zero if female. Details on

how dependent and control variables are calculated are in Appendix B. All continuous variables in our analyses are winsorized at the 1% and 99% levels to minimize the impact of outliers. Also, we use beginning-of-the-year values for our balance sheet control variables to mitigate endogeneity concerns. Although our sample is cross-sectional, we add fiscal year end fixed effects to account for the fact that the latest year of available balance sheet data is not the same for all sample firms. Finally, we employ industry fixed effects, computed according to the 21 NACE classification groups, to capture industry-specific differences in the firm financing structure.

The results in Table 3 confirm the univariate findings that firms run by managers of Italian cultural origin are less capitalized than firms run by individuals of Germanic cultural origin. However, this difference does not translate into higher levels of bank loans, as the ratio of total debt over total assets is not significantly different between the two groups. Instead, the differences in capitalization seem to stem from a more intense use of informal sources of financing by managers of Italian origin. In the fourth and fifth columns of Table 3 we report the estimates from OLS regressions where the dependent variables are accounts payable over total assets, and a dummy variable (trade credit user) that takes a value of one if the firm uses trade credit—i.e. accounts payable are greater than zero—and zero otherwise. We find that firms led by managers of Italian origin resort significantly more to trade credit as a source of financing than companies run by managers of Germanic origin. This effect is economically significant: The ratio of trade credit to assets is on average 1.8 percentage points higher for firms where the manager is of Italian origin, explaining 9% of its total standard deviation.

We also observe that firms led by managers of Italian origin are willing to lend more credit to their customers, as confirmed by the positive and significant effect of the Italian cultural dummy on the ratio of accounts receivable to total assets reported in the last column. This result is consistent with

the larger use of trade credit among these firms found in the fourth column, and suggests that managers of Italian origin have a preference for this type of credit. The economic significance of the cultural dummy is of a similar order of magnitude for both usage and granting of trade credit. In the latter case, the cultural dummy explains 9.2% of the variation in the ratio of accounts receivable to total assets.[7]

Overall, the findings in Table 3 document that managers of Italian origin resort relatively more than managers of Germanic origin to external funding and, in particular, to informal firm financing arrangements. While we acknowledge that cultural traits are closely intertwined, we advance an explanation for which channels are most likely to be driving our results.

The lower recourse to external funding observed in firms run by Germanic managers is consistent with the preference for avoiding debt that can be associated with the morally charged reference to debt (*Schuld*) in the German language.

Our findings on the different use of trade credit can be explained with differences in both the level of trust/social capital between individuals of Germanic and Italian origin and the preference for interacting within formal or informal organizations. As discussed in Section 3, individuals of Italian cultural origin are associated with a lower level of generalized trust and a stronger

[7] A potential concern with the results of Table 3 is that many of the control variables could be endogenous to the cultural origin of the firms. To mitigate this concern, in Appendix C we re-run the estimations of Table 3 only with controls for firm and CEO age. The results remain qualitatively unchanged. We also repeat the estimations using the cultural origin of the Board of Directors of the firms, i.e. a dummy equal to one when the majority of the members of the board have an Italian origin, in lieu of the cultural origin of the CEO. Given that the sample firms are privately held and most of them are small, there is usually no distinction between ownership and management. In fact, the results of these estimations, contained in Appendix D, are very similar to the ones in Table 3.

preference for informal networks versus formal institutions, which are both consistent with a more intense use of informal financing sources for managers from this group.

Instead, our results cannot be convincingly explained by referring to standard classifications of cultural dimensions. Schwartz's and Hofstede's cultural measures have been widely used to explain cross-country differences in capital structure and trade credit. Specifically, Chui et al (2002) and Li et al. (2011) link capital structure to the Schwartz's indicators of embeddedness and mastery, while El Ghoul and Zheng (2016) link the use of trade credit to Hofstede's measures of collectivism, power distance, uncertainty avoidance and masculinity. While Schwartz's and Hofstede's scores for the population of South Tyrol are unavailable, the scores for Austria and Italy, which are the closest countries to our Germanic and Italian cultural groups, are fairly similar and fall within the same quartile in the distribution of all indicators except power distance.[8] Hence, it is unlikely that these score differences *per se* are sufficient to explain our results.

Similarly, newly proposed cultural metrics based on linguistic differences in future-time reference are unlikely to fully explain our results. Chen (2013) finds that individuals who speak a language in which future actions are typically expressed in present tense (i.e. weak future-time reference languages, such as German) display a stronger future-oriented behavior (in terms of savings, having a retirement account, exercising, or not smoking) than individuals who speak a language with a strong future-time reference (such as Italian). Chen et al. (2017) extend the argument to firm policies and find higher cash holdings in weak future-time reference language firms. Within our setting, the future-time reference argument should translate into higher cash ratios in firms run by managers of Germanic origin compared to those run by managers of Italian origin. The

[8] Authors' calculations (available upon request) based on Schwartz's and Hofstede's country indicators retrieved from https://www.researchgate.net/profile/Shalom_Schwartz and https://geert-hofstede.com, respectively.

estimates reported in the third column of Table 3 show instead that the difference in cash holdings across firms run by managers of different cultural background is economically unimportant and statistically insignificant. For this reason, we exclude cash holdings as a dependent variable in the rest of the analysis.[9]

In order to interpret our results in terms of choice/preference of the top management for different forms of financing, we need to ensure that the estimated coefficients are not capturing a spurious correlation between the cultural origin of the manager and other unobserved factors. In the remainder of the paper, we discuss and rule out several alternative interpretations of our results.

5. Controlling for Credit Supply

One alternative interpretation of our results is that firms led by a manager of Italian cultural origin are somehow constrained and forced to turn to trade credit in substitution for more formal sources of debt (Biais and Gollier, 1997; Burkart and Ellingsen, 2004). In this respect, our specifications already control for firm-specific variables that are commonly associated with financial constraints, such as size, asset tangibility, and firm age (see e.g., Kaplan and Zingales, 1997; Hadlock and Pierce, 2010; among many others). However, firms may be rationed in their access to external financing for reasons other than their financial health. This is the case, for example, when banks reduce lending due to liquidity or recapitalization constraints, as in the aftermath of the financial and European sovereign crises and with other shocks to the supply of credit (Khwaja and Mian, 2008; Jiménez et al., 2012). Additionally, firms' access to finance is reduced when bank

[9] The results are available from the authors upon request. We note that do not find a significant effect of cash in any of the subsequent specifications.

competition is low (Love and Peria, 2015). In geographical areas with few bank branches, those banks may use their market power and apply stringent conditions on lending.

5.1 Controlling for local credit supply

As a first step to investigate this alternative explanation, we control for the credit supply at the municipality level. In Table 4, we augment our basic specifications with the yearly aggregate logarithmic growth in bank loans in the municipality where the firm is headquartered. The data come from the statistical database of the Bank of Italy.[10] We do not have access to bank-firm data so we cannot directly identify which banks lend to our sample firms. However, we believe that the loan growth at the municipality level represents a good indicator of the availability and the ease of access of bank credit in the area where the company is located. Table 4 reports the OLS estimates from the specifications with the additional control variable; it has a smaller sample size because the dataset of the Bank of Italy reports aggregate bank loans for municipalities with at least three branches, and some of our sample firms are headquartered in municipalities with a smaller number of branches.[11] The main results of Table 3 are qualitatively unchanged after controlling for loan supply.

5.2 Controlling for a credit supply shock: The financial crisis

We next explore whether our results could be driven by a lower supply of credit to firms led by a manager of Italian cultural origin by exploiting a unique feature of the firms in our sample, namely, that all of them are privately held, and the majority of them are small firms. Thus, the management

[10] http://www.bancaditalia.it/statistiche/basi-dati/bds/index.html

[11] To overcome this problem, in untabulated results available upon request, we control for credit supply by including the number of bank branches operating in the firm municipality. The results are very similar to those reported in Table 4.

of our sample firms is likely to be stable over a short time horizon. We take advantage of this feature to overcome the limitation of the Orbis data on firm managers (which refer to the last available balance sheet date), and exploit the panel dimension of the financial statement data, by assuming that the cultural origin of the management of our companies is stable throughout the sample years. Balance sheet data on the sample firms are available on Orbis for the most recent ten years.

Looking at the entire ten-year panel enables us to address an additional critique to our findings, i.e. that our results may be driven by the differential impact of the financial and sovereign crisis on firms led by managers of different cultural origins. For example, Levine et al. (2017) find that culture matters in increasing the resilience to systemic banking crises in firms with high liquidity needs through trade credit, performance and employment. If firms led by a manager of Italian cultural origin were unable to secure credit from banks during the crisis, then the greater use of trade credit could simply be the result of these firms substituting for the unavailable institutional credit during this period. Moreover, existing studies have linked the manager's cultural origin with firm performance under competitive pressure (Nguyen et al., 2017). Our findings could then be consistent with a scenario where firms run by a manager of any cultural origin adopt similar policies in normal times, but managers of Italian culture did not react as well as managers of Germanic culture to the challenges imposed by the crisis. As a result, firms run by the former could be more constrained and forced to resort to informal sources of funding.

To assess whether this is the case, we re-estimate our baseline OLS specifications on the panel dataset of firms headquartered in the province, and evaluate whether the results observed in the cross-sectional dataset stem from the crisis period. For this purpose, we add the interaction between our indicator for CEO of Italian origin and a dummy variable *Crisis*, which takes a value

of one if the year of the financial statement coincides with the period of credit tightening in the South Tyrol province. The statistics on conditions of credit supply provided by the Bank of Italy (2007-2016) indicate that there was a credit contraction and a tightening in credit conditions in the province during years 2008-2013, and that such contraction relaxed from year 2014 onwards.[12] Therefore, we define two dummy variables accordingly: *Crisis*, which equals one for 2008-2013 and zero otherwise, and *Post Crisis* which equals one for the years 2014-2015 and zero otherwise. We interact each of these two dummies with our cultural origin dummy.

We present the results in Table 5, panels A and B. In panel A, we include industry and year fixed effects; the latter subsume the effect of the un-interacted *Crisis* and *Post Crisis* dummies. In panel B, we further control for time-unvarying unobserved heterogeneity at the firm level, by including firm fixed effects. The fixed effects in panel B subsume the effect of the un-interacted cultural origin dummy, but the interaction term provides us with a direct test for a differential behavior of firms led by a manager of Italian cultural origin relative to firms led by a manager of Germanic cultural origin during the crisis. In both panels, we account for the fact that observations of a same firm over time are not independent, and cluster the standard errors at the firm level.

The estimated coefficients for the dummy of Italian cultural origin in panel A of Table 5 largely confirm that firms led by managers of Italian origin are characterized by a larger recourse to informal sources of funding than firms run by managers of Germanic origin. Indeed, the coefficients of the un-interacted cultural origin dummy are positive and statistically significant in

[12] This period contrasts with the crisis period in Italy, which started in 2008 and continued until at least the end of our sample period. However, the South Tyrol province developed differently to the rest of Italy. In fact, it is the only Italian province that had a higher GDP level in 2015 than in 2007. Our results are qualitatively equal if we define a single *Crisis* dummy taking the value one from 2008 to 2015, coinciding with the crisis in Italy.

the last three columns, and have approximately the same magnitude as the coefficients in Table 3. These results suggest that the higher recourse to trade credit among firms managed by a manager of Italian cultural origin existed before the crisis, confirming our interpretation of the results as driven by preferences for informal credit among managers of this cultural group.

Furthermore, the coefficients of the interaction term with the *Crisis* dummy are inconsistent with the idea that firms led by a manager of Italian cultural origin were more constrained during the crisis and hence forced to obtain more trade credit to compensate for the lack of bank credit. First, the coefficients of this interaction term for the trade credit ratios (third and last columns in panel A) are small and statistically insignificant, suggesting that on average, firms led by managers of Italian origin were not more likely to resort to trade credit in the intensive margin during the crisis. Second, the coefficient of the interaction term of the crisis with the debt to assets ratio is positive and significant for the specification for debt to total assets, suggesting that firms led by a manager of Italian cultural origin *increased* their access to formal sources of credit during the crisis. The regressions in panel B of Table 5, which include firm fixed effects, further confirm this interpretation, by showing that, during the crisis, these firms obtained more credit from formal institutions (second column) and increased the provision of trade credit to their clients (last column). In line with the redistribution theory of trade credit, this result suggests that firms that have access to formal sources of credit are able to provide liquidity to their clients in times when bank credit is scarce (Garcia-Appendini and Montoriol-Garriga, 2013). Overall, these results suggest, if anything, that firms led by a manager of Italian cultural origin were less constrained than their Germanic-led counterparts, and do not support the idea that our main results are driven by a lack of access to formal credit by those firms.

In addition, the fourth column in both panels of Table 5 shows that during the financial crisis, firms led by managers of Italian origin were more likely to use trade credit in the extensive margin, compared to the firms led by managers of Germanic origin. This can be seen by the positive and statistically significant coefficient for the cultural origin variable when the dependent variable is the use of trade credit. This however did not translate in a use of larger amounts of trade credit in the intensive margin, as shown above. Collectively, the results in Table 5 suggest that firms led by a manager of Italian cultural origin are more likely to tap on this informal source of credit to obtain small amounts of credit and continue their operations, not because they are constrained, but because they have an easier access to this form of financing given that it is common practice within their cultural group.

Overall, the findings in this section show that our main results are robust to controlling for the local and temporary availability of bank credit. In the following sections, we will further explore whether our main result could be capturing other unobserved relationships between the cultural origin of the firms and the firms' financing outcomes, and not truly reflecting the preference for credit from their informal network of suppliers.

6. Robustness Checks and Additional Findings

In this section we address additional potential endogeneity concerns that may bias our analysis, in terms of both reverse causality and omitted variables. We also investigate if our main result carries through with other forms of finance than trade credit. Reverse causality or self-selection occurs if managers of a given cultural origin choose to work for firms with given characteristics. In our setting, this would be the case if managers of Italian (Germanic) origin were attracted by

companies with higher (lower) recourse to informal sources of financing. An omitted variable bias arises in the presence of additional factors that affect both the financing decisions of firms and the cultural origin of managers. We adopt three approaches to address endogeneity issues: Subsample analysis, a matching approach, and an instrumental variables estimation.

6.1 Subsample analysis

We address reverse causality concerns by replicating the results of Table 3 over subsamples of firms where self-selection is unlikely to occur. First, we restrict our analysis to the subsample of family firms where the manager is a family member. Such companies are typically founded and run by the same family over their entire life. This minimizes the possibility that managers of a given cultural origin choose to work for firms with certain characteristics. We retrieve information on the ownership structure of the sample firms from Orbis, and we classify a company as a family firm if one or several related individuals hold the majority of the shares. We then restrict our sample to those family firms whose manager is a family member, i.e. he/she is one of the majority shareholders or carries the surname of the controlling family.[13] Around 55% of the original sample firms satisfy the restrictions. Around 28% of these firms are led by a family of Italian cultural origin.

We re-estimate our main specification over the subsample of family firms, and report the estimates in panel A of Table 6. For the benefit of space, we only report the coefficients for the cultural origin dummy; however, the estimations in this table include all the controls of Table 3. The positive and significant coefficient of the *CEO of Italian origin* dummy for the regressions

[13] Our method may, in fact, underestimate the number of family firms in the sample as, following Italian law, women in South Tyrol retain their maiden name after marriage. This, however, is unlikely to introduce any bias in the analysis, as it is expected to affect family firms where the CEO is of either Italian or Germanic origin in the same way.

explaining trade credit variables confirms that the more intense recourse to informal financing is a general feature of these firms and is not caused by endogeneity. In terms of magnitude, the coefficients are only slightly larger than the ones in Table 3.

Second, we look into a potential endogenous matching of cultural origin of the manager and firm size. To the extent that firms where the manager is of Germanic origin are, overall, larger and better established than their Italian counterparts (see Table 2), our results could be capturing different financing policies driven by firm size. While we control for firm size in all our specifications, the effect may be non-linear. To overcome this issue, we perform the estimations over the more homogeneous subsample of micro firms, defined as firms with total assets up to 2 million euros. Results over the subsample of micro firms are presented in panel B of Table 6. They consistently show that firms where the manager is of Italian origin are less capitalized, have a preference for informal trade credit, and extend more credit to their clients. Once again, the coefficients are of similar magnitude as the ones found in Table 3.

Third, we address the possibility that managers of a given cultural group are concentrated in certain industry sectors. Figure 2 displays the distribution of the managers' cultural origin by industry. We note that, with few exceptions, Italian- and Germanic-led companies are represented relatively similarly in the various industries. The three business sectors that have the most unequal representation between the two cultures are energy (electricity, gas, steam, and air conditioning supply), manufacturing, and construction. While energy and manufacturing have the relatively highest concentration of companies led by a manager of Germanic origin, this situation is reversed for the construction sector. To ensure that our results cannot be explained away by these differences, we re-run our main regression on the subsample of firms that excludes the construction, manufacturing, and energy sectors. Estimates are reported in panel C of Table 6, and

they mirror our main results, with somewhat larger estimated coefficients for the trade credit variables than the corresponding ones of Table 3.

Fourth, we address the possibility that our results are driven by an omitted variable, namely, the terms of credit given by the firms' trading partners. The trade credit literature suggests that the terms of credit are largely invariant within an industry, and related to the nature of the traded good (Ng et al., 1999; Giannetti et al., 2011). Given that our estimations contain industry fixed effects, the coefficients obtained so far are unlikely to be biased due to differences across industries in the terms of trade credit. However, terms of trade differ within the euro area (ECB, 2011) and, hence, may be different for imported purchases compared to domestic purchases. Given the location of the South Tyrol area on the border with Austria and Switzerland, one potential concern is that firms with a manager of Germanic origin may be more likely to buy goods from these German-speaking countries, and that the observed differences are due to the different credit terms in these countries. Therefore, we need to ensure that our results cannot be mechanical explained by different trading patterns between the two cultures.

Unfortunately, Orbis does not disclose the amount of firms' imports. Thus, to control for this potential bias, we re-run our estimation over a subsample of firms that are less likely to be importers. The most import-intense sectors in South Tyrol are the manufacturing, and the wholesale and retail trade sectors, which account for about 95% of the province imports.[14] Therefore, in panel D of Table 6 we re-run our main regressions while excluding these two sectors. The significant coefficient estimates for the indicator of cultural origin confirm that firms led by

[14] This information was kindly provided to us by ISTAT and ASTAT.

managers of Italian origin are characterized by a larger recourse to informal financing than firms run by managers from the Germanic culture.

6.2 Matching

From the above subsample analysis, we conclude that the more intense recourse to informal financing is a general feature of firms led by managers of Italian cultural origin, and that it is not consistent with endogenous matching. In this section, we take this analysis one step further and compare the financing choices of Italian-led firms with their closest counterfactual led by a manager of Germanic cultural origin. That is, for each firm led by a manager of Italian origin, we find a set of Germanic-led firms with similar observable characteristics that may confound the relationship between cultural origin and financing outcome variables. We then perform a regression analysis using the subset of closest matches. Such a matching exercise should help to better identify the effect of the cultural origin of the manager on the firms' financing choices.

Following the discussion in the previous section, we first match firms in terms of size and industry sector, to control for differences in access to formal sources of credit, as well as for different terms of trade credit and selection of firms into certain sectors based on the cultural origin of the CEO. Specifically, we restrict the analysis to the set of firms with a manager of Italian origin for which there are at least two firms led by managers of Germanic origin in the same industry and size group (micro, small, medium, or large firms), and we re-run the regressions in Table 3 among the resulting subsample of comparable firms. Results from these estimations can be found in Table 7, panel A. The estimates are qualitatively very similar to the estimates in Table 3, suggesting that our results are not driven by a selection of firms led by a manager of Italian cultural origin into particular industries or size groups where the use of informal vs formal sources of financing may differ.

Given our unique setting where firms run by managers from either the Italian or the Germanic culture are headquartered in the same province, geographical considerations should be a second order concern.[15] Nevertheless, as a result of the Italianization of South Tyrol, Italian entrepreneurs who moved to the province ended up being geographically concentrated in few municipalities and specialized in certain industry sectors (Steininger, 2003). While the specialization by sector of economic activity disappeared following the 1972 agreement—and has been taken care of by matching on the industry sector—the concentration of Italians and firms led by a manager of Italian cultural origin in the valleys that are easily accessible from the rest of Italy survives essentially unchanged to this day. If firms led by a manager of Italian cultural origin are located in the valleys with easier access to services and infrastructures while firms led by managers of Germanic origin are predominantly headquartered in mountain villages, then failing to match by the location of the firms may bias our findings due to omitted variables linked to firm location. To address this concern, we refine the match by size and industry by adding a third dimension and restricting the sample to firms that are headquartered in the same administrative district ("circoscrizione"; there are eight districts in the South Tyrol province). Results of this matching exercise are found in Table 7, panel B. Once again, the results mirror our previous findings, suggesting that they are robust to a potential clustering of firms led by a manager of Italian cultural origin into specific locations.[16]

[15] See Degryse and Ongena (2005) and Agarwal and Hauswald (2010) for studies on how geographic proximity to financial institutions affects financial decisions.

[16] For robustness, in Appendix E we repeat the estimations of the panel over a subsample of family firms where the CEO is a family member and that are headquartered in the bilingual city of Bolzano. The advantage of this specification is that (i) family firms are typically founded and run by the same family over their entire life so the cultural origin of the management is more likely to be stable, and (ii) we can further control for differences in access to credit by focusing on a single city, the province's largest, in which several bank types are present and hence the local supply of credit is less constrained. Results in this analysis are consistent with the previous ones.

6.3 Instrumental variables

Our last approach to address endogeneity concerns is to use the proportion of the Italian-speaking population in the municipality where the firm is located as an instrument for the cultural origin of the manager.[17] Our choice of instrument follows a well-established praxis of using measures of the local availability of the characteristic of interest, which in our context is cultural origin. As such, our approach is very similar to that of Berger et al. (2005) who instrument an individual bank's size with the median size of banks in the local market, and to Bottazzi et al. (2008) who in a cross-country study instrument the fraction of how many partners have prior business experience in a venture capital firms with the fraction of deals made by a venture capital firm that has at least one partner with prior business experience in each country. In support to the relevance condition, we find that the first-stage regression of the Italian-origin manager dummy on the instrumental variable and all the included instruments yields a highly significant coefficient of 0.582 with a standard error of 0.022, and the first-stage *F*-statistic is 33.89. Results are contained in Table 8. Thus, the fraction of Italian speakers in the municipality is a good predictor of the cultural origin of the managers of the firms located in that municipality.

Our main identification assumption is that the proportion of Italian speakers in the municipality of the firm's headquarters is uncorrelated with a given firm's financing decisions. The "Italianization" of the South Tyrol area guarantees that this exclusion restriction holds. In fact, Italian immigrants concentrated mostly in the cities of Merano and Bolzano and the easily accessible valleys, while the more secluded mountain areas remained predominantly Germanic. Thus, the proportion of Italians in each municipality has been mainly driven by historical and

[17] We obtain data on the proportion of Italian speakers in each of the 60 municipalities in South Tyrol as of year 2011 from ASTAT (2015).

geographical reasons (Peterlini, 2009), and as such it should be orthogonal to the way firms finance themselves or structure their assets. Under this crucial condition, the instrument allows us to isolate the portion of the variation in the cultural origin of the firm's manager that is exogenous to the financing structure, and hence to better identify the causal link between cultural origin and financing structure.

Table 9 replicates the estimations of Table 3, by instrumenting the cultural origin of the manager with the fraction of Italian speakers in the municipality. The coefficients are thus the second-stage estimates of regressions of each outcome variable on the predicted values of the cultural origin. The results so obtained largely confirm the findings estimated with OLS: Companies run by managers from the Italian culture are less capitalized and make a greater use of informal trade credit than companies managed by CEOs from the Germanic culture. The economic and statistical significance of the IV estimates are larger than the OLS counterparts, suggesting that the OLS coefficients are a conservative estimate of the exogenous component of the effect of culture on the financing structure.[18]

[18] In fact, the IV estimates estimate a local average treatment effect (LATE), which is the average treatment effect among the "compliers", i.e. subpopulations that are induced by the instrument to change the value of the endogenous cultural origin. In our setup, the proportion of Italian speakers in a municipality is likely to have a larger effect on the cultural origin of the CEOs among industries where Italian and Germanic management is closer to the population distribution. The descriptive statistics in Table 1 show that the distribution of firms among Germanic and Italian cultural origin closely mirrors the population distribution. However, there are some industries where there is greater prevalence of one cultural group over the other. In fact, the coefficients found for the subsample of industries in which the distribution into Italian and Germanic cultural origin is more homogeneous (Table 6, panel C), are closer to the IV estimations found in this section.

6.4 Other forms of financing

In light of our results and robustness checks, we interpret our findings as supportive of the preference expressed by managers of Italian culture for higher recourse to debt in general, and to informal sources of debt in particular. Consistently with this interpretation, one would also expect retained earnings to be lower and the use of other sources of informal financing to be larger in Italian-led firms than in Germanic-led firms. To investigate this point, we select a subsample of firms that provide information in their balance sheet (obtained from Aida-Bureau van Dijk) on retained earnings and shareholders' loans. Shareholders' loans are a form of financing provided by shareholders, which is widely used by small and medium sized firms in Italy for tax purposes and is classified as debt. Given their nature, shareholders' loans belong to the category of informal financing. We regress retained earnings over total assets as well as shareholders' loans over total assets on our set of control variables and present the findings in Table 10. In line with our predictions, we document significantly lower retained earnings in firms led by managers of Italian cultural origin. Those firms also show a higher proportion of shareholders' loans, although the coefficient is not statically significant, possibly due to the reduced sample size.

7. Overall Conclusions

This paper examines the relation between the cultural origin of firm managers and corporate financing behavior. Motivated by the evidence from previous literature on the relationship between social capital and financial development, on individuals' preferences for conducting economic activities within either formal institutions or informal networks, and on managerial style, we conjecture that the composition of firm liabilities can be shaped by culturally embedded preferences of their managers. Consistent with our conjecture, we find large and significant

differences in the financing structure of firms run by individuals of different cultural origin. Our method, which analyzes firms within a small geographical province in one country, ensures that these results are not driven by institutional, regulation, religious or economic differences associated with the different cultures. Through a series of robustness checks, we further rule out that our results are driven by omitted variables and other endogeneity concerns. Our results are consistent with the existence of culturally embedded preferences for different types of financing structures.

For the benefit of internal validity and identification, we have set up our analysis in one particular province in Italy that hosts two different cultural groups. While the setting of our study is highly specific, the results have, in general, a much wider external validity. In particular, the South Tyrol province has a level of GDP comparable to that of many advanced economies, and aligned with the average GDP of the European Union. Moreover, its residents are active in a wide range of sectors, from agriculture to manufacturing and services, and enjoy a high degree of industrialization. Thus, we believe that our results are informative on the effect of culture on the financing practices of firms in wider setups, particularly for advanced economies.

Our main results highlight culture as one of the drivers of the variation in the recourse to informal finance in a multi-cultural setup. In terms of policy implications, our results suggest that one-size-fits-all regulations aimed at incentivizing the access to formal sources of finance could have heterogeneous effects depending on the preferences of different cultural groups affected by the regulation. Similarly, our study suggests that financial education should be structured differently according to the preferences of the different target cultural groups.

References

Agarwal, S. and R. Hauswald, 2010. Distance and private information in lending. *Review of Financial Studies* 23, 1-32.

Angerer, S., D. Glätzle-Rützler, P. Lergetporer, and M. Sutter, 2016. Cooperation and discrimination within and across language borders: Evidence from children in a bilingual city. *European Economic Review* 90, 254-264.

ASTAT, 2015, Statistisches Jahrbuch für Südtirol 2014/Annuario statistico della Provincia di Bolzano 2014 (Table 3.18, p. 118). Autonome Provinz Bozen, Südtirol Landesinstitut für Statistik / Provincia Autonoma di Bolzano, Alto Adige, Istituto provinciale di statistica.

Bank of Italy, 2007-2016. L'economia delle Provincie autonome di Trento e di Bolzano. *Economie Regionali*, Filiali di Trento e Bolzano.

Bandiera, O., Guiso, L., Prat, A. and R. Sadun, 2010. Italian managers: Fidelity or performance. In: Boeri, T. (Ed.), The ruling class: Management and politics in modern Italy, Oxford University Press, 105-202.

Becker, S.O., Boeckh, K., Hainz, C. and L. Woessmann, 2016. The empire is dead, long live the empire! Long-run persistence of trust and corruption in the bureaucracy. *Economic Journal* 126, 40-74.

Benvenuto, O., 2007. South Tyrol in Figures 2008 (Table 11, p. 19). Provincial Statistics Institute of the Autonomous Province of South Tyrol, Bozen/Bolzano.

Berger, A., Miller, N., Petersen, M., Rajan, R. and J. Stein, 2005. Does function follow organizational form? Evidence from the lending practices of large and small banks. *Journal of Financial Economics* 76, 237-269.

Bertrand, M. and A. Schoar, 2003. Managing with style: The effect of managers on firm policies. *Quarterly Journal of Economics* 118, 1169-1208.

Biais, B., and C. Gollier, 1997. Trade credit and credit rationing. *Review of Financial Studies* 10, 903-937.

Bottazzi, L., Da Rin, M. and T. Hellmann, 2008. Who are the active investors? Evidence from venture capital. *Journal of Financial Economics* 89, 488-512.

Burkart, M. and T. Ellingsen, 2004. In-kind finance: A theory of trade credit. *American Economic Review* 94, 569-590.

Chen, K., 2013. The effect of language on economic behavior: Evidence from savings rates, health behaviors, and retirement assets. *American Economic Review* 103, 690-731.

Chen, S., Cronqvist, H., Ni, S. and Zhang, F., 2017. Languages and corporate savings behavior. *Journal of Corporate Finance*, *46*, 320-341.

Chui, A., Lloyd, A. and C. Kwok, 2002. The determination of capital structure: Is national culture a missing piece to the puzzle? *Journal of International Business Studies* 33, 99-127.

Degryse, H. and S. Ongena, 2005. Distance, lending relationships, and competition. *Journal of Finance* 60, 231-266.

Delis, M., Gaganis, C., Hasan, I. and F. Pasiouras, 2017. The effect of board directors from countries with different genetic diversity levels on corporate performance. *Management Science* 63, 231-249.

ECB, 2011. Monetary and financial developments. *Monthly Bulletin April*, European Central Bank, Frankfurt.

El Ghoul, S. and X. Zheng, 2016. Trade credit provision and national culture. *Journal of Corporate Finance* 41, 475-501.

Fernández, R., 2011. Does culture matter? In: Benhabib, J., Jackson, M.O. and A. Bisin (Eds), Handbook of social economics, Vol. 1A, North-Holland, 481-510.

Frijns, B., Dodd, O. and H. Cimerova, 2016. The impact of cultural diversity in corporate boards on firm performance. *Journal of Corporate Finance* 41, 521-541.

Garcia-Appendini, E. and J. Montoriol-Garriga, 2013. Firms as liquidity providers: Evidence from the 2007-2008 financial crisis. *Journal of Financial Economics* 109, 272-291.

Giannetti, M., Burkart, M. and T. Ellingsen, 2011. What you sell is what you lend? Explaining trade credit contracts. *Review of Financial Studies 24*, 1261-1298.

Griffin, D., Guedhami, O., Kwok, C.C.Y., Li, K. and L. Shao, 2017. National culture: The missing country-level determinant of corporate governance. *Journal of International Business Studies* 48, 740-762.

Grinblatt, M., and M. Keloharju, 2001. What makes investors trade? *Journal of Finance* 56, 589–616.

Guiso, L., Sapienza, P. and L. Zingales, 2004. The role of social capital in financial development. *American Economic Review* 94, 526-556.

Guiso, L., Sapienza, P. and L. Zingales, 2006. Does culture affect economic outcomes? *Journal of Economic Perspectives* 20, 23-48.

Hadlock, C.J. and J.R. Pierce, 2010. New evidence on measuring financial constraints: Moving beyond the KZ index. *Review of Financial Studies* 23, 1909-1940.

Jiménez, G., Ongena, S., Peydró, J-L., and J. Saurina, 2012. Credit supply and monetary policy: Identifying the bank balance-sheet channel with loan applications. *American Economic Review* 102, 2301-2326.

Kaplan, S.N. and L. Zingales, 1997. Do investment-cash flow sensitivities provide useful measures of financing constraints? *Quarterly Journal of Economics* 112, 169-215.

Karolyi, G.A., 2016. The gravity of culture for finance. *Journal of Corporate Finance* 41, 610-625.

Khwaja, A., and A. Mian, 2008. Tracing the impact of bank liquidity shocks: Evidence from an emerging market. *American Economic Review* 98, 1413-1442.

Leung, J.H.C., 2016. Negotiating language status in multilingual jurisdictions: Rhetoric and reality. *Semiotica* 209, 371-396.

Levine, R., Lin, C. and W. Xie, 2017. Corporate resilience to banking crises: The roles of trust and trade credit. *Journal of Financial and Quantitative Analysis*, forthcoming.

Li, K., Griffin, D., Yue, H. and L. Zhao, 2011. National culture and capital structure: Evidence from foreign joint ventures. *Journal of International Business Studies* 42, 477-503.

Li, K., Griffin, D., Yue, H. and L. Zhao, 2015. How does culture influence corporate risk-taking? *Journal of Corporate Finance* 23, 1-22.

Love, I. and M.S.M. Pería, 2015. How bank competition affects firms' access to finance. *World Bank Economic Review* 29, 413-448.

Ng, C.K., Smith, J.K. and R.L. Smith, 1999. Evidence on the determinants of credit terms used in interfirm trade. *Journal of Finance* 54, 1109-1129.

Nguyen, D.D., Hagendorff, J. and A. Eshraghi, 2017. Does CEO cultural heritage affect performance under competitive pressure? *Review of Financial Studies*, forthcoming.

Pan, Y. Siegel, S. and T.Y. Wang, 2016. Corporate risk culture. *Journal of Financial and Quantitative Analysis*, forthcoming.

Peterlini, O., 2009. The South-Tyrol autonomy in Italy, historical, political and legal aspects. In: Oliveira J. and P. Cardinal (Eds.), One country, two systems, three legal orders – Perspectives of evolution, Springer, 143-170.

Petersen, M.A. and R.G. Rajan, 1997. Trade credit: Theories and evidence. *Review of Financial Studies* 10, 661-691.

Puntscher, S., Hauser, C., Pichler, K. and G. Tappeiner, 2014. Social capital and collective memory: A complex relationship. *Kyklos* 67, 116-132.

Steininger, R., 2003. South Tyrol: A minority conflict of the twentieth century. Transaction Publishers.

Sutter, M., Angerer, S., Glätzle-Rützler, D. and P. Lergetporer, 2015. The effects of language on children's intertemporal choices. IZA Discussion Paper No. 9383.

Table 1. Summary statistics

This table reports OLS estimates for the cross section of sample firms headquartered in the South Tyrol province with a CEO of Italian or Germanic origin as of the latest available year prior to 2016. The origin of the CEO is determined as illustrated in Appendix A. Dependent and control variables are computed as explained in Appendix B.

Variables	N	Mean	Std	p25	p50	p75
CEO cultural origin:						
CEO of Italian origin	4,003	0.294	0.456	0	0	1
Dependent variables:						
Total liabilities / Total assets	4,003	0.730	0.326	0.531	0.783	0.935
Total debt / Total assets	4,003	0.173	0.250	0	0.001	0.309
Cash / Total assets	3,857	0.104	0.159	0.004	0.031	0.138
Accounts Payable / Total assets	4,003	0.147	0.200	0	0.063	0.215
Accounts Receivable / Total assets	4,003	0.187	0.239	0	0.070	0.314
Firm control variables:						
Firm size	4,003	13.869	1.804	12.702	13.919	15.056
Asset tangibility	4,003	0.297	0.310	0.033	0.158	0.537
Sales growth	4,003	0.033	0.600	-0.127	0.010	0.143
Investment	4,003	0.038	0.083	0.003	0.015	0.044
Operating margin	4,003	0.277	1.010	0.030	0.086	0.234
Firm age	4,003	15.350	14.635	5	11	22
CEO control variables:						
CEO age	4,003	52.554	11.435	45	52	60
CEO is male	4,003	0.886	0.317	1	1	1

Table 2. T-tests for differences in mean values

This table reports mean values, standard deviations and t-tests of differences in means (with associated p-values) of dependent and control variables for the cross section of sample firms headquartered in the South Tyrol province with a CEO of Italian or Germanic origin as of the latest available year prior to 2016. Firm controls refer to the last available balance sheet date in Orbis (as of March 2016). The origin of the CEO is determined as illustrated in Appendix A. Dependent and control variables are computed as explained in Appendix B.

	CEO of Italian origin		CEO of Germanic origin			
Variables	Mean	Std	Mean	Std	t-test	p-value
Dependent variables:						
Total liabilities / Total assets	0.760	0.336	0.715	0.322	3.890	0.000
Total debt / Total assets	0.154	0.221	0.176	0.255	-2.652	0.008
Cash / Total assets	0.118	0.174	0.098	0.152	3.386	0.001
Accounts Payable / Total assets	0.170	0.217	0.139	0.193	4.259	0.000
Accounts Receivable / Total assets	0.214	0.256	0.176	0.229	4.326	0.000
Firm control variables:						
Firm size	13.439	1.955	14.079	1.706	-9.649	0.000
Asset tangibility	0.244	0.288	0.314	0.313	-6.760	0.000
Sales growth	0.001	0.661	0.039	0.561	-1.703	0.089
Investment	0.037	0.082	0.038	0.083	-0.470	0.639
Operating margin	0.234	1.081	0.295	0.985	-1.629	0.104
Firm age	14.107	12.678	16.025	15.347	-4.025	0.000
CEO control variables:						
CEO age	53.535	12.188	52.263	11.112	3.041	0.002
CEO is male	0.848	0.360	0.900	0.300	-4.371	0.000

Table 3. Cultural origin OLS regressions

This table reports OLS estimates for the cross section of sample firms headquartered in the South Tyrol province with a CEO of Italian or Germanic origin as of the latest available year prior to 2016. The origin of the CEO is determined as illustrated in Appendix A. Dependent and control variables are computed as explained in Appendix B. Standard errors are corrected for heteroskedasticity. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

	Total liabilities / Total assets	Total debt / Total assets	Cash / Total assets	Accounts payable / Total assets	Trade credit user	Accounts receivable / Total assets
CEO of Italian origin	0.029**	0.007	0.000	0.018**	0.053***	0.016**
	(0.011)	(0.008)	(0.006)	(0.007)	(0.015)	(0.008)
Firm size	-0.005	0.020***	-0.022***	0.001	0.051***	0.006**
	(0.004)	(0.002)	(0.002)	(0.002)	(0.004)	(0.002)
Asset tangibility	-0.016	0.218***	-0.114***	-0.147***	-0.037	-0.235***
	(0.019)	(0.016)	(0.008)	(0.011)	(0.027)	(0.011)
Sales growth	0.009	-0.003	0.007*	0.008	0.013	0.018***
	(0.008)	(0.007)	(0.004)	(0.006)	(0.012)	(0.006)
Investment	-0.063	0.197***	-0.119***	-0.019	0.062	-0.194***
	(0.073)	(0.051)	(0.024)	(0.041)	(0.085)	(0.033)
Operating margin	-0.012**	-0.014**	0.011***	-0.015***	-0.011	-0.001
	(0.006)	(0.005)	(0.002)	(0.003)	(0.008)	(0.002)
Firm age	-0.005***	-0.002***	0.001***	-0.001***	-0.002***	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)
CEO age	0.003	0.002	0.000	0.003	0.008*	0.005**
	(0.003)	(0.002)	(0.001)	(0.002)	(0.004)	(0.002)
CEO age squared	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CEO is male	-0.009	0.015	0.007	-0.020*	0.011	-0.009
	(0.016)	(0.011)	(0.008)	(0.011)	(0.022)	(0.012)
Constant	0.865***	-0.270***	0.441***	0.264***	-0.109	-0.088
	(0.121)	(0.087)	(0.057)	(0.088)	(0.160)	(0.083)
Observations	4,003	4,003	3,857	4,003	4,003	4,003
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls for fiscal year end	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	0.091	0.116	0.141	0.101	0.042	0.164

Table 4. Controlling for bank loan growth

This table reports OLS estimates for the cross section of sample firms headquartered in the South Tyrol province with a CEO of Italian or Germanic origin as of the latest available year prior to 2016. The origin of the CEO is determined as illustrated in Appendix A. Dependent and control variables are computed as explained in Appendix B. Standard errors are corrected for heteroskedasticity. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

	Total liabilities / Total assets	Total debt / Total assets	Accounts payable / Total assets	Trade credit user	Accounts receivable / Total assets
CEO of Italian origin	0.027**	0.021**	0.018**	0.050***	0.013
	(0.013)	(0.009)	(0.008)	(0.017)	(0.009)
Firm size	-0.006	0.020***	-0.000	0.044***	0.006**
	(0.004)	(0.003)	(0.002)	(0.005)	(0.003)
Asset tangibility	-0.022	0.197***	-0.138***	-0.037	-0.242***
	(0.022)	(0.019)	(0.013)	(0.031)	(0.013)
Sales growth	0.012	-0.000	0.008	0.018	0.019***
	(0.009)	(0.007)	(0.007)	(0.013)	(0.007)
Investment	-0.046	0.179***	-0.024	-0.048	-0.229***
	(0.089)	(0.058)	(0.051)	(0.102)	(0.041)
Operating margin	-0.010*	-0.008	-0.015***	-0.005	0.001
	(0.006)	(0.006)	(0.004)	(0.008)	(0.003)
Loan growth (municipality)	0.050	-0.081***	0.033	0.088	0.066**
	(0.041)	(0.030)	(0.026)	(0.057)	(0.030)
Firm age	-0.005***	-0.002***	-0.001***	-0.002**	-0.000
	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)
CEO age	0.002	0.001	0.002	0.010*	0.006**
	(0.003)	(0.003)	(0.002)	(0.005)	(0.002)
CEO age squared	-0.000	-0.000	-0.000	-0.000*	-0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CEO is male	-0.011	0.008	-0.021*	-0.002	-0.016
	(0.018)	(0.012)	(0.012)	(0.025)	(0.014)
Constant	0.900***	-0.247**	0.285***	-0.176	-0.107
	(0.136)	(0.111)	(0.107)	(0.201)	(0.110)
Observations	3,035	3,035	3,035	3,035	3,035
Industry FE	Yes	Yes	Yes	Yes	Yes
Controls for fiscal year end	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	0.080	0.101	0.090	0.033	0.159

Table 5. Credit supply and the use of formal sources of credit during the financial crisis

This table reports estimates for the panel of firms headquartered in the South Tyrol province with a CEO of Italian or Germanic origin over the years 2006-2015. CEO of Italian origin is a dummy variable which is constructed as illustrated in Appendix A. Crisis (Post crisis) is a dummy variable which equals one for the years 2008-2013 (2014-2015) and zero otherwise. All regressions include year fixed effects and controls for the following time-varying firm-specific variables: Firm size, asset tangibility, sales growth, investment, operating margin, age. Estimations in panel A include industry fixed effects and CEO characteristics: Age, age squared, gender. Estimations in panel B include firm fixed effects. Dependent and control variables are defined in Appendix B. Standard errors are clustered at the firm level. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

	Total liabilities / Total assets	Total debt / Total assets	Accounts payable / Total assets	Trade credit user	Accounts receivable / Total assets
	Panel A: Estimations with industry fixed effects				
CEO of Italian origin	0.013	0.003	0.018**	0.055***	0.018*
	(0.012)	(0.011)	(0.008)	(0.014)	(0.010)
CEO of Italian origin * Crisis	0.012	0.024***	0.007	0.035***	0.013
	(0.009)	(0.009)	(0.007)	(0.013)	(0.008)
CEO of Italian origin * Post crisis	-0.000	-0.004	-0.002	-0.004	-0.006
	(0.012)	(0.012)	(0.010)	(0.019)	(0.011)
Observations	27,844	27,844	27,844	27,844	27,844
Firm-level controls	Yes	Yes	Yes	Yes	Yes
CEO characteristics	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Firm FE	No	No	No	No	No
Year FE	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	0.127	0.112	0.153	0.060	0.218
	Panel B: Estimations with firm fixed effects				
CEO of Italian origin * Crisis	0.011	0.023***	-0.002	0.044***	0.016**
	(0.008)	(0.008)	(0.006)	(0.012)	(0.007)
CEO of Italian origin * Post crisis	0.018*	0.004	-0.006	0.023	0.007
	(0.010)	(0.010)	(0.008)	(0.018)	(0.009)
Observations	27,845	27,845	27,845	27,845	27,845
Number of firms	4,845	4,845	4,845	4,845	4,845
Firm-level controls	Yes	Yes	Yes	Yes	Yes
CEO characteristics	No	No	No	No	No
Industry FE	No	No	No	No	No
Firm FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	0.064	0.039	0.043	0.041	0.037

Table 6. Subsample analysis

This table reports estimates for the cross-section of firms headquartered in the South Tyrol province with a CEO of Italian or Germanic origin as of the latest available year prior to 2016. The sample in panel A (B) [C] {D} is restricted to those family firms whose CEO is a family member (is restricted to firms with total assets of up to 2m euros) [excludes the construction, manufacturing, and energy sectors] {excludes the manufacturing and wholesale and retail trade sectors}. CEO of Italian origin is a dummy variable which is constructed as illustrated in Appendix A. All regressions include industry and controls for firm size, asset tangibility, sales growth, investment, operating margin, age, CEO characteristics (age, age squared, gender), and fiscal year end. Dependent and control variables are defined in Appendix B. Standard errors are corrected for heteroscedasticity. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

	Total liabilities / Total assets	Total debt / Total assets	Accounts payable / Total assets	Trade credit user	Accounts receivable / Total assets
			Panel A: Family firms		
CEO of Italian origin	0.032**	0.016	0.020**	0.064***	0.022*
	(0.015)	(0.011)	(0.009)	(0.021)	(0.011)
Observations	2,217	2,217	2,217	2,217	2,217
Adj. R-squared	0.091	0.107	0.099	0.018	0.136
			Panel B: Micro firms		
CEO of Italian origin	0.039**	0.001	0.026***	0.074***	0.027**
	(0.015)	(0.009)	(0.009)	(0.020)	(0.011)
Observations	2,515	2,515	2,515	2,515	2,515
Adj. R-squared	0.083	0.099	0.077	0.026	0.124
			Panel C: Excluding culturally heterogeneous industries		
CEO of Italian origin	0.033**	0.013	0.031***	0.091***	0.025**
	(0.015)	(0.009)	(0.009)	(0.019)	(0.010)
Observations	2,460	2,460	2,460	2,460	2,460
Adj. R-squared	0.093	0.105	0.100	0.046	0.175
			Panel D: Excluding importing industries		
CEO of Italian origin	0.022	0.007	0.017**	0.045***	0.011
	(0.014)	(0.009)	(0.007)	(0.016)	(0.008)
Observations	3,615	3,615	3,615	3,615	3,615
Adj. R-squared	0.078	0.128	0.105	0.054	0.164

Table 7. Matching by size, industry, and location

In panel A, each firm led by a CEO of Italian origin is matched with firms led by a CEO of Germanic origin of the same size and industry. In panel B, firms are additionally matched in terms of the administrative district where the firms are headquartered. All firms are headquartered in South Tyrol. CEO of Italian origin is a dummy variable which is constructed as illustrated in Appendix A. All regressions include the following variables: Firm size, asset tangibility, sales growth, investment, operating margin, age, industry fixed effects, CEO characteristics (age, age squared, gender), and fiscal year end. Dependent and control variables are defined in Appendix B. Standard errors are robust to heteroscedasticity. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

	Total liabilities / Total assets	Total debt / Total assets	Accounts payable / Total assets	Trade credit user	Accounts receivable / Total assets
			Panel A: Matched by industry and size		
CEO of Italian origin	0.028**	0.006	0.018**	0.053***	0.016**
	(0.011)	(0.008)	(0.007)	(0.015)	(0.008)
Observations	3,993	3,993	3,993	3,993	3,993
Adj. R-squared	0.093	0.116	0.101	0.042	0.164
			Panel B: Matched by industry, size, and location		
CEO of Italian origin	0.030***	0.007	0.048***	0.018**	0.014*
	(0.012)	(0.008)	(0.016)	(0.007)	(0.008)
Observations	3,633	3,633	3,633	3,633	3,633
Adj. R-squared	0.084	0.111	0.036	0.094	0.158

Table 8. First stage instrumental variable estimation

This table reports estimates from the first stage of instrumental variable regressions where the Italian origin of CEOs is instrumented with the proportion of Italian-speaking population in the municipality where the firm is headquartered. The sample includes firms headquartered in the South Tyrol province with a CEO of Italian or Germanic origin as of the latest available year prior to 2016. The origin of the CEO is determined as illustrated in Appendix A. Dependent and control variables are computed as explained in Appendix B. Standard errors are corrected for heteroskedasticity. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

	CEO is of Italian origin
Percentage of Italians in the municipality of the firm's headquarters	0.582***
	(0.022)
Firm size	-0.031***
	(0.004)
Asset tangibility	0.001
	(0.025)
Sales growth	-0.031***
	(0.011)
Investment	0.021
	(0.078)
Operating margin	0.002
	(0.008)
Firm age	-0.000
	(0.000)
CEO age	-0.010**
	(0.004)
CEO age squared	0.000***
	(0.000)
CEO is male	-0.041*
	(0.022)
Constant	0.872***
	(0.150)
Observations	4,003
Industry FE	Yes
Controls for fiscal year end	Yes
R-squared	0.199
F-test statistic	33.89

Table 9. Second stage instrumental variable estimation

This table reports estimates from the second stage of instrumental variable regressions where the Italian origin of CEOs is instrumented with the proportion of Italian-speaking population in the municipality where the firm is headquartered. The sample includes firms headquartered in the South Tyrol province with a CEO of Italian or Germanic origin as of the latest available year prior to 2016. The origin of the CEO is determined as illustrated in Appendix A. Dependent and control variables are computed as explained in Appendix B. Standard errors are corrected for heteroskedasticity. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

	Total liabilities / Total assets	Total debt / Total assets	Accounts payable / Total assets	Trade credit user	Accounts receivable / Total assets
CEO of Italian origin	0.138***	-0.063***	0.068***	0.141***	0.055***
	(0.029)	(0.022)	(0.018)	(0.040)	(0.020)
Firm size	-0.002	0.018***	0.002	0.053***	0.007***
	(0.004)	(0.002)	(0.002)	(0.004)	(0.002)
Asset tangibility	-0.007	0.212***	-0.143***	-0.030	-0.232***
	(0.020)	(0.017)	(0.011)	(0.027)	(0.011)
Sales growth	0.012	-0.005	0.010	0.016	0.019***
	(0.009)	(0.007)	(0.006)	(0.012)	(0.006)
Investment	-0.049	0.189***	-0.013	0.072	-0.190***
	(0.074)	(0.052)	(0.042)	(0.085)	(0.033)
Operating margin	-0.014**	-0.013**	-0.016***	-0.013	-0.002
	(0.006)	(0.005)	(0.003)	(0.008)	(0.003)
Firm age	-0.005***	-0.002***	-0.001***	-0.002***	-0.000
	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)
CEO age	0.004	0.002	0.003*	0.009**	0.005***
	(0.003)	(0.002)	(0.002)	(0.004)	(0.002)
CEO age squared	-0.000*	-0.000	-0.000**	-0.000*	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CEO is male	-0.000	0.009	-0.016	0.017	-0.006
	(0.016)	(0.011)	(0.011)	(0.023)	(0.012)
Constant	0.754***	-0.199**	0.214**	-0.198	-0.126
	(0.122)	(0.088)	(0.088)	(0.165)	(0.084)
Observations	4,003	4,003	4,003	4,003	4,003
Industry FE	Yes	Yes	Yes	Yes	Yes
Controls for fiscal year end	Yes	Yes	Yes	Yes	Yes

Table 10. Additional forms of financing

This table reports OLS estimates for the cross section of sample firms headquartered in the South Tyrol province with a CEO of Italian or Germanic origin as of the latest available year prior to 2016. Only firms that provide information in their balance sheet on retained earnings and shareholders' loans are included. The origin of the CEO is determined as illustrated in Appendix A. Dependent and control variables are computed as explained in Appendix B. Standard errors are corrected for heteroskedasticity. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

	Retained earnings / Total assets	Shareholders' loans / Total assets
CEO of Italian origin	-0.015**	0.011
	(0.008)	(0.007)
Firm size	0.020***	-0.008***
	(0.003)	(0.002)
Asset tangibility	-0.006	0.072***
	(0.014)	(0.017)
Sales growth	0.007	-0.004
	(0.007)	(0.008)
Investment	0.053	-0.045
	(0.046)	(0.041)
Operating margin	0.017***	0.019***
	(0.005)	(0.007)
Firm age	0.000**	-0.001***
	(0.000)	(0.000)
CEO age	-0.003	-0.006***
	(0.002)	(0.002)
CEO age squared	0.000	0.000***
	(0.000)	(0.000)
CEO is male	-0.003	0.009
	(0.011)	(0.010)
Constant	-0.224***	0.206***
	(0.064)	(0.066)
Observations	3,432	2,491
Industry FE	Yes	Yes
Controls for fiscal year end	Yes	Yes
Adj. R-squared	0.051	0.073

Figure 1. Language groups in South Tyrol

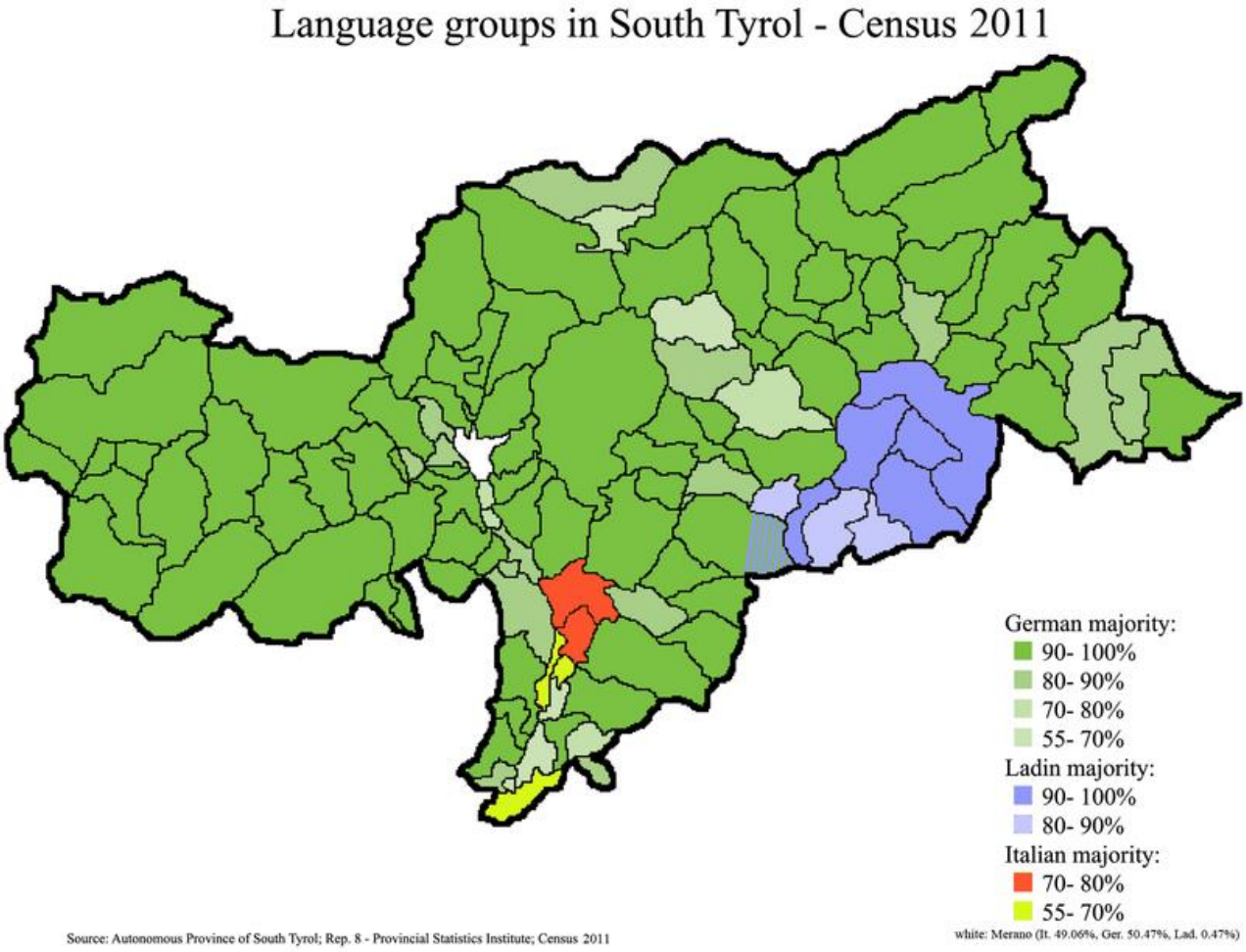
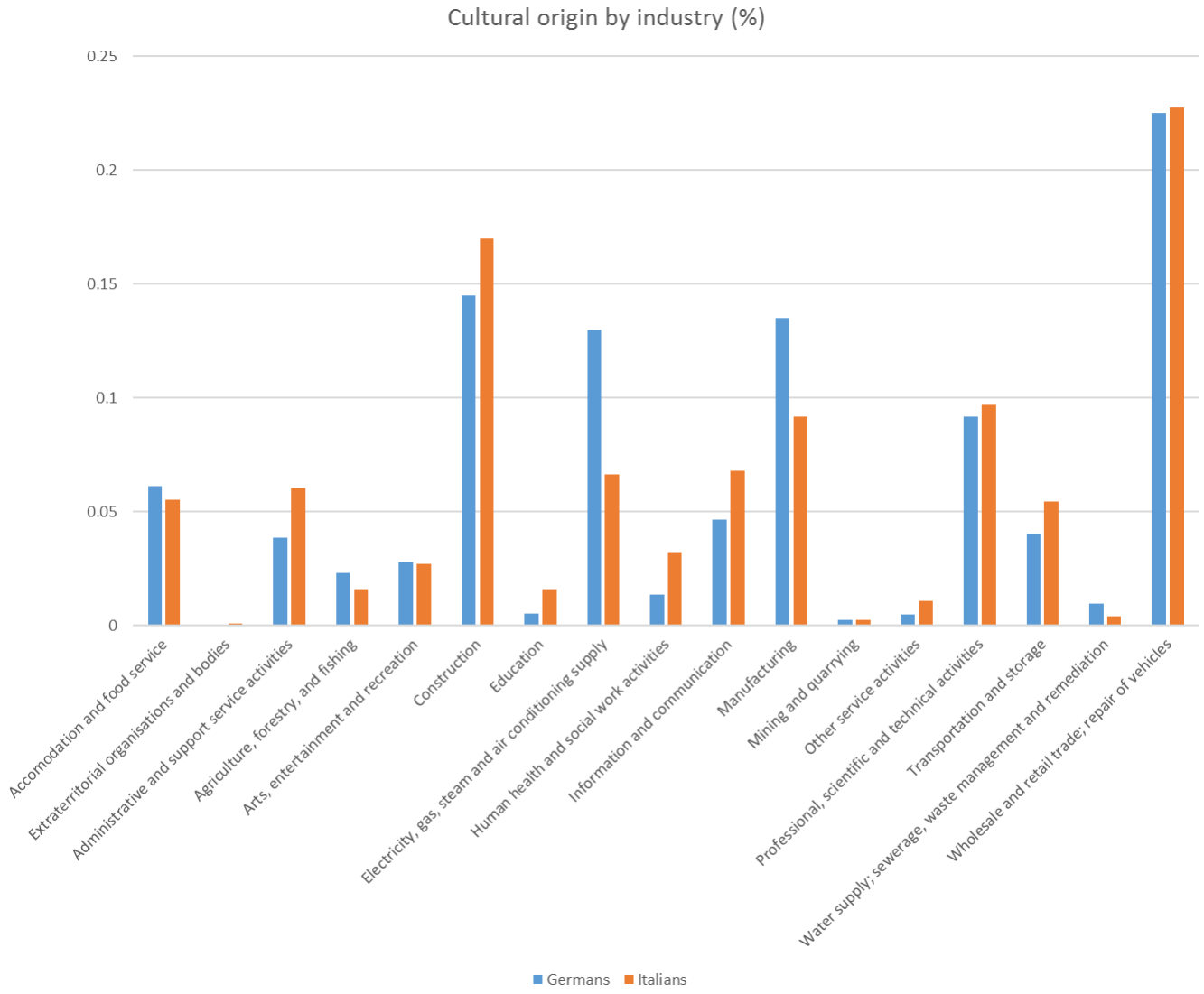


Figure 2. Cultural origin by industry



Appendix A. Manager classification

We classify a CEO as of Italian origin if all his/her given names and surname are Italian. We classify a CEO as of Germanic origin if all his/her given names and surname are Germanic. If the given name is common to both Italian and Germanic languages, we classify the CEO origin based on the surname. Foreign CEOs and CEOs with discordant given names and surname are excluded. The following are some examples of CEO classification.

Name and surname	Criteria	Classification
Claudio La Spisa	Italian given name and surname	Italian
Georg Koessler	Germanic given name and surname	Germanic
Marco Fuchs	Italian or Germanic given name; Germanic surname	Germanic
Marco Iori	Italian or Germanic given name; Italian surname	Italian
Paolo Stocker	Italian given name; Germanic surname	Excluded
Guenther Longo	Germanic given name; Italian surname	Excluded
Youjun Luan	Foreign given name and surname	Excluded

Appendix B. Variable definitions

Variable	Calculation	Source
CEO of Italian origin	Dummy=1(=0) if manager is of Italian (Germanic) origin	Lists of Italian and German/Austrian most common names and surnames. Telephone directories
Total liabilities / Total assets	(Non-current liabilities + current liabilities) / Total assets	Orbis BvD
Total debt / Total assets	(Loans + long term debt) / Total assets	Orbis BvD
Cash / Total assets	Cash and cash equivalent / Total assets	Orbis BvD
Accounts payable / Total assets	Creditors / Total assets	Orbis BvD
Trade credit user	Dummy=1 if Creditors > 0	Orbis BvD
Accounts receivable / Total assets	Debtors / Total assets	Orbis BvD
Firm size	ln(total assets)	Orbis BvD
Asset tangibility	Tangible fixed assets / Total assets	Orbis BvD
Sales growth	$\ln(sales) - \ln(sales)_{-1}$	Orbis BvD
Investment	(Tangible fixed assets – tangible fixed $assets_{-1}$ + depreciation) / Total assets	Orbis BvD
Operating margin	Ebitda / Sales	Orbis BvD
Firm age	Firm age in years	Orbis BvD
CEO age	CEO age in years	Orbis BvD
CEO is male	Dummy=1 if CEO is male	Orbis BvD
Loan growth (municipality)	ln(total bank loans in municipality) – $\ln(\text{total bank loans in municipality})_{-1}$	Bank of Italy statistical database
Instrumental variable	Proportion of Italian-speaking population in the municipality where firm is headquartered	Italian census 2011
Retained earnings / Total assets	Retained earnings / Total assets	Aida BvD
Shareholders' loans / Total assets	Shareholders' loans / Total assets	Aida BvD

Appendix C. Regressions without potentially endogenous control variables

This table reports OLS estimates for the cross section of sample firms headquartered in the South Tyrol province with a CEO of Italian or Germanic origin CEO of Italian or Germanic origin as of the latest available year prior to 2016 after removing potentially endogenous control variables. The origin of the CEO is determined as illustrated in Appendix A. Dependent and control variables are computed as explained in Appendix B. Standard errors are corrected for heteroskedasticity. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

	Total liabilities / Total assets	Total debt / Total assets	Accounts Payable / Total assets	Trade Credit User	Accounts Receivable / Total assets
CEO of Italian origin	0.033***	-0.023***	0.028***	0.026*	0.036***
	(0.011)	(0.008)	(0.007)	(0.015)	(0.009)
Firm age	-0.006***	-0.000*	-0.002***	-0.001	-0.001***
	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)
CEO age	0.002	0.002	0.003	0.009**	0.006***
	(0.003)	(0.002)	(0.002)	(0.004)	(0.002)
CEO age squared	-0.000	-0.000	-0.000*	-0.000	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Constant	0.781***	0.116*	0.093*	0.442***	0.029
	(0.084)	(0.065)	(0.050)	(0.117)	(0.056)
Observations	4,003	4,003	4,003	4,003	4,003
Adj. R-squared	0.072	0.002	0.018	0.004	0.007

Appendix D. Italian Board of Directors and firm financing choices

This table reports estimates for the cross section of firms headquartered in the South Tyrol province with a board of directors of Italian or Germanic origin as of the latest available year prior to 2016. BoD of Italian origin is a dummy variable equal to one if the majority of the members of the Board of Directors is of Italian origin, zero otherwise. All regressions include industry and year fixed effects. Dependent and control variables are defined in Appendix B. Standard errors are robust to heteroscedasticity. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

	Total liabilities / Total assets	Total debt / Total assets	Accounts Payable / Total assets	Trade Credit User	Accounts Receivable / Total assets
BoD of Italian origin	0.036***	0.013	0.020***	0.058***	0.020**
	(0.012)	(0.008)	(0.007)	(0.016)	(0.009)
Firm size	-0.005	0.021***	0.000	0.052***	0.005**
	(0.004)	(0.002)	(0.002)	(0.004)	(0.002)
Asset tangibility	-0.011	0.214***	-0.141***	-0.031	-0.232***
	(0.020)	(0.017)	(0.011)	(0.027)	(0.011)
Sales growth	0.008	-0.004	0.009	0.014	0.019***
	(0.009)	(0.007)	(0.006)	(0.012)	(0.006)
Investment	-0.065	0.217***	-0.016	0.096	-0.173***
	(0.076)	(0.053)	(0.043)	(0.087)	(0.034)
Operating margin	-0.014**	-0.016***	-0.016***	-0.014*	-0.002
	(0.006)	(0.006)	(0.003)	(0.008)	(0.002)
Firm age	-0.005***	-0.002***	-0.001***	-0.003***	0.000
	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)
CEO age	0.002	0.002	0.002	0.010**	0.005**
	(0.003)	(0.002)	(0.002)	(0.004)	(0.002)
CEO age squared	-0.000	-0.000	-0.000	-0.000*	-0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CEO is male	-0.010	0.014	-0.024**	0.013	-0.013
	(0.016)	(0.011)	(0.011)	(0.023)	(0.013)
Constant	0.881***	-0.284***	0.281***	-0.171	-0.078
	(0.126)	(0.090)	(0.092)	(0.167)	(0.086)
Observations	3,779	3,779	3,779	3,779	3,779
Industry FE	Yes	Yes	Yes	Yes	Yes
Controls for fiscal year end	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	0.088	0.113	0.099	0.043	0.163

Appendix E. Credit supply and the use of formal sources of credit for family firms in Bolzano city during the financial crisis

This table reports estimates for the panel of family firms headquartered in the city of Bolzano in the South Tyrol province over the years 2006-2015. CEO of Italian origin is a dummy variable which is constructed as illustrated in Appendix A. Crisis (Post crisis) is a dummy variable which equals one for the years 2008-2013 (2014-2015) and zero otherwise. All regressions include year fixed effects and control for the following time-varying firm-specific variables: Firm size, asset tangibility, sales growth, investment, operating margin, age. Estimations in panel A also include industry fixed effects and CEO characteristics (age, age squared, gender). Estimations in panel B include firm fixed effects. Dependent and control variables are defined in Appendix B. Standard errors are clustered at the firm level. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

	Total liabilities / Total assets	Total debt / Total assets	Accounts Payable / Total assets	Trade Credit User	Accounts Receivable / Total assets
			Panel A: Industry fixed effects		
CEO of Italian origin	0.001	-0.017	0.027*	0.045*	0.017
	(0.018)	(0.018)	(0.016)	(0.024)	(0.018)
CEO of Italian origin * Crisis	0.029	0.055***	-0.001	0.003	0.023
	(0.020)	(0.019)	(0.017)	(0.028)	(0.020)
CEO of Italian origin * Post crisis	-0.020	0.008	0.001	0.032	0.016
	(0.029)	(0.026)	(0.023)	(0.044)	(0.027)
Observations	4,255	4,255	4,255	4,255	4,255
Firm-level controls	Yes	Yes	Yes	Yes	Yes
CEO characteristics	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Firm FE	No	No	No	No	No
Year FE	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	0.162	0.127	0.118	0.037	0.173
			Panel B: Firm fixed effects		
CEO of Italian origin * Crisis	0.006	0.044***	-0.009	0.030	0.037**
	(0.016)	(0.017)	(0.015)	(0.028)	(0.015)
CEO of Italian origin * Post crisis	-0.008	-0.001	-0.014	0.043	0.036*
	(0.021)	(0.021)	(0.020)	(0.041)	(0.021)
Observations	4,255	4,255	4,255	4,255	4,255
Firm-level controls	Yes	Yes	Yes	Yes	Yes
CEO characteristics	No	No	No	No	No
Industry FE	No	No	No	No	No
Firm FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	0.091	0.055	0.050	0.034	0.033