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ETHNICITY AND CROSS-BORDER LENDING:
EVIDENCE FROM THE SYNDICATED LOAN MARKET

Presentata da: Daniela Arzu

Coordinatore Dottorato

Supervisore

Prof. Riccardo Fini

Prof. Emanuele Bajo

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To my mother, my sister and Giulio

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ABSTRACT

Whilst the connection between culture and financial intermediation across countries has received considerable attention, there is scant work on the role of local ethnicity in bank lending operations. To fill this void, we lean on the sociology literature to scrutinize the impact of local ethnicity characteristics on syndicated loan composition and size in cross-border lending. We specifically examine whether local demographics in the U.S. for a specific bank impact their contracting in the international syndicated loan market. Exploiting Gravity Models, we find a higher likelihood of syndication and volume in cross-border loans when there is overlap in local and foreign market ethnicity. To alleviate endogeneity concerns between ethnicity and bank lending, we conduct robustness tests on different sub-samples. This analysis reports a significant uptick in cross-border loans for merging banks which share ethnicity in their neighbourhood (or zip). Moreover, these loans are associated with lower spreads than other matched cross-border loans, which can be explained by lower asymmetric information.

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INTRODUCTION

In the beginning of the research about culture and finance, the topic was not considered fundamental by economists. Senior economists thought that looking into culture as a cause of different economic outcomes was useless. In those years every research had a strong mathematical component, and everything was seen as modellable through mathematics. The reason behind this, lays in the fact that the definition of culture was too broad, and they could not give a more circumscribed one. Moreover, it was seen as “cheap way” to motivate things, that otherwise could not be explicable ([Zingales 2015](#)) [1].

Nevertheless, things have rapidly changed in recent years because traditional model were seen to not be able to capture differences in economic outcomes across countries. In particular, the behaviour of the “homo economicus” was quite different across the globe, leading to enforce the research in the topic.

Of course, the problem of the broadness of the definition remained in the economic and finance literature. However, [Guiso, La Sapienza and Zingales \(2006\)](#) [2] gave a definition that later on was seen as guide to follow “*those customary beliefs and values that ethnic, religious, and social groups transmit fairly unchanged from generation to generation*”. This definition of culture has two main components: beliefs and values, which define respectively priors and preferences that can be inserted easily into an economic model ([Zingales 2015](#)) [1].

Individuals, that have certain values embedded in their culture, behave in different ways that have different economic outcomes. This is important to consider whenever thinking about growth policies, macroeconomic policies, and public finance. Culture influences on social level and on corporate level. So, it is interesting to see the effect of both them and the interaction between social and corporate effect ([Guiso, Sapienza, and Zingales 2006](#)) [2].

For these reasons, culture started to play a significant role in finance. This is because of the evidence provided by research carried on in recent years.

The main reason why researchers have led studies concerning culture and finance is because they observed behavioural differences across the globe that could not be explained easily by the classic economic

theories. Economic actors, such as investors, consumers, entrepreneurs responded and behaved differently and have a different influence on various economic outcomes, because of the background given by the country they were born, or they have lived or they have a connection (because of the heritage given by parents or relatives or because of possible relations with people with a certain origin or because of a self-identity issue).

This has led to an increasing body of literature concerning the impact of culture on different economic outcomes, see for example ([Guiso, Sapienza and Zingales 2003](#) [3]; [Stulz and Williamson 2003](#) [4]; [Guiso, Sapienza and Zingales 2006](#) [2]; [Giuliano 2007](#) [5]; [Fernandez and Fogli 2009](#) [6]; [Ahern, Daminelli and Fracassi 2015](#) [7]; [Braguinsky and Mityakov 2015](#) [8]).

In this dissertation we will extend literature about the connection between ethnicity and cross-border lending. We will investigate how the exposure to a certain ethnicity influences cross-border lending decisions. In particular, we want to understand whether having the exposure to a certain same ethnicity for both lenders and borrowers increases the probability for the lenders to take part in the syndication pool. Moreover, we will analyse whether being exposed to the same ethnic group leads to lower costs for the loans. To lead the investigation, we deploy a gravity model, which is a model highly used to understand the pattern of cross-border financial flows.

Nevertheless, the model might suffer from endogeneity. We expect that there might be an omitted variable problem that we plan to treat in robustness tests and in the future development of the research.

What we find in the first correlations and regressions is that if lenders are exposed to a certain ethnic group, they will take part in syndication pools for loans towards borrowers located in countries where that ethnic group is present.

Furthermore, we find that being exposed to the same ethnic group for lenders and borrowers leads to a decrease in costs of the syndicated loan.

All the results tend to differ across the different ethnic groups both in magnitude and significance, which is consistent with the literature, as different ethnicities have different degrees of self-identity and, consequently, higher or lower propensity to build networks with individuals of the same ethnic group.

Although we recognize a certain level of endogeneity, because of omitted variable problems, we stress that our main findings suggest that being exposed to a certain ethnicity leads to a higher probability of lending towards those firms located in area with the same ethnic exposure and at lower spreads. We have planned to conduct further analysis for the future development of the research.

The dissertation will be composed as follows. In Chapter 1 we will introduce an extensive literature review. In Section 2 of Chapter 1 we provide an anthropological and sociological perspective, which is a novelty into the economic and finance literature. In Section 3 we will provide definition and a research review of homophily, to understand better what it is and how this can be used into literature concerning syndicated loans. In Section 4 we give insights about research literature on syndicated loans. In Section 5, we will provide literature about the interaction between cross-border loans and individuals, in particular looking at culture and migrations.

Chapter 2 introduces the first study concerning ethnic homophily and the consequences on cross-border syndicated loans. What we observe is we find that if lenders are located in areas with the prevalence of a certain ethnic group, they tend to participate more in syndication pools for borrowers that are located in areas where there is that same ethnic prevalence.

In Chapter 3 we will introduce the second study concerning ethnic homophily and the consequences on costs of cross-border syndicated loans. We observe that whenever a lender is located in an area with a certain ethnic prevalence, it will be part of a syndication pool that issues at lower costs towards borrowers that are located in an area where there is that same ethnic prevalence, compared to those that are located in areas where there is not that same ethnic prevalence. Chapter 4 concludes.

1. LITERATURE REVIEW

1.1 CULTURE

Culture has been seen as a fundamental of economic institutions since the 30s. [Weber \(1930\)](#) [9] in his *Protestant ethic and the spirit of capitalism* assessed that some cultures are more prone to support financial institutions. Weber in his pioneering work has found how the Calvinist reformation has been one of the drivers of capitalism and the relative institutions. However, to understand better the connection between culture, institutions and economic outcomes, we need to dig down deeper into the historical perspective.

[Greif](#) in 1994 [10] provided evidence that an historical perspective on culture should be observed to understand the different levels of economic development around the world. [Greif \(1994\)](#) [10] observed trading between two groups, i.e. Genoese and Maghrebi. Genoese were individualist, while Maghribis were more collectivist. Maghribis heritaged Muslim values, although they were not Muslim. They felt a sense of group-belonging and they were Jewish. Maghribis migrated from Iraq to Tunisia. They kept social ties and communicated important information, reinforcing their self identification in the group.

Genoese were Christian, whose perspective is quite individualist. The main difference resulted in more information shared among Maghribis and less among Genoese. Moreover, their beliefs perpetrated in their institutional framework. Once the institutional framework is set to be a reflection of the culture, also the relations and the efficiency of trading is affected by it. An example of this is collectivism. Collectivists promote cooperation and they are able to sustain each other in situations more than individualist are able to ([Greif, 1994](#)) [10]. Often individualists are seen as inefficient, since collectivist and their group are able to create a network, leading to more Pareto efficient decisions. However, individualist, or small groups have more difficulties in making a change. ([Greif 1994](#)) [10]. This historical perspective provides us useful insights to understand that culture has always been an element of interest to understand economic phenomena. In particular, we think that self-identity has always been a key for cooperation, trust and their effect on economic outcomes. This leads us to two different concepts: ethnicity and homophily.

We believe that among all the characteristics the definition of ethnicity is the best to fit. Ethnicity is a process of self- identity, which is exactly the one used during censuses. Indeed, people when they take part in census questionnaire have to self-identify into one of the ethnicities proposed. Self-recognition,

together with homophily leads to an increasing interaction with individuals who self-identify into that same group.

If we apply social identity theory, high identifiers (i.e., individuals who strongly self-identify into a certain ethnic group) have higher levels of homophily they will prefer positive ingroup identification, leading to ingroup bias ([Brown 2000](#)) [11]. If an individual is more concerned about her own ethnic group, than ethnicity matters for social interaction. So, social identity theory suggests that homophily by high identifiers involves individuals with the same ethnicity that also have a strong self-identification into ethnicity ([Leszczensky and Pink 2019](#)) [12].

However, in the following chapters we will dig into the definition of ethnicity.

1.2 ETHNIC HOMOPHILY

Ethnic homophily is individuals prefer to have connections of the same ethnicity, instead of inter-ethnicity ones. In particular, this is relied to the sociological literature concerning ethnicity and makes us think that results in a stronger influence of ethnicity, compared to culture. This is because literature concerning ethnic homophily assesses that this phenomenon is the driver of social networks, especially in U.S. ([Wimmer and Lewis 2010](#)) [13]. The main problem in studies considering race and culture is the fact that they are seen as objective categories and not a process of self-identity, where subjectivity is the key, and it varies over individuals and over time. This self-identity process suggests that individuals feel different levels of ethnic identification ([Verkuyten 2005](#) [14]; [Umaña-Taylor et al. 2014](#) [15]).

The main assumption of social identity theory is that individuals have a positive feeling for social identities. Moreover, as stated even previously there is a positive influence between ingroup identification and ingroup bias ([Brown 2000](#)) [11]. Applying social identity to a relational setting ethnic homophily is even stronger when both of the parties of the relation have a strong sense of self-identification into that same ethnicity ([Leszczensky and Pink 2019](#)) [12]. This also describes our setting of research. We consider ethnic individuals who self-identify into that ethnicity in U.S. and in the other countries. In this way, both of the parties involved that influence lenders and borrowers do create a social network that can have further influences. Social identity theory influences intergroup relations, which consequently affects

attitudes and behaviour, group cohesion, performance and decision-making, leadership and social influence ([Brown 2000](#)) [11]. Moreover, social identity theory leads often to ingroup bias, even if there is no cause of having such a behaviour. Indeed, strength of self-identification in one group conducts to intergroup attitudes. In general, minorities have a higher ingroup identification and homogeneity; this is because social identity has a causal role on intra-group identification and cooperation ([Brown 2000](#)) [11].

Considering ethnic homophily, U.S. is one of the best fields in order to conduct studies. Indeed, U.S. social networks are ethnically homogeneous, and this is given by ethnic homophily, because of the tendency for different ethnic groups to have connections with people belonging to the same ethnic background.

Ethnic homogeneity in networks is given by the tendency of people of befriending and aggregating multiple subracial homophilies. This is especially true for Asians and the relative sublayers of the ethnic presence befriending with each other ([Wimmer and Lewis 2010](#)) [13].

There are different mechanisms that lead two individuals belonging to the same ethnic group to connect between each other: i. “Availability effect”, those two are the only individuals belonging to that same racial category; ii. “Propinquity effect”, individuals have connections with people they work together with, or they go to school with; iii. “Balancing”, individuals both know another person and they share the connection; iv. Sociality, individuals have high social skills; v. “Homophily”, individuals have a preference in connecting with people of the same racial/ethnic category.

These different mechanisms are not independent, there can be a category intersection whenever there can be different reasons among those explained before, why two connect with each other, or there can a networking intersection when the individuals tend to have high social skills and care about each other ([Wimmer and Lewis 2010](#)) [13].

Homophily, of course, is not the only reason why people connect more with some individuals than others, there are also other channels given by the opportunities due to a shared space, or work and school

opportunities and the environment in which people are involved (for example, a space with a low number of people increases the opportunity to create ties) ([Blau 1977](#)) [16].

Nevertheless, research has found that most of social network's homogeneity are driven by ethnic homophily ([Kao and Joyner 2006](#)) [17]. Considering Asians, there is a concentric circles theory developed by [Blau \(1977\)](#) [16] that suggests that sub-ethnicities, such as Chinese, Japanese, Korean prefer to connect as Chinese-Chinese, Japanese-Japanese, Korean-Korean. However, whenever in the shared space there is no presence of the same sub-ethnicity, they will easily connect with other subethnicities belonging to the same Asian group, leading to a sort of "Asian homophily".

[Wimmer and Lewis \(2010\)](#) [13] define ethnicity as a social construct, where individuals identify themselves into the different category according to their beliefs. Some individuals find themselves in a certain ethnicity because they share ancestry and culture, some other base their sense of belonging to a certain ethnic group because they share language, religion. Of course, in general, ethnicities are the result of the interaction between a sense of self-belonging and the categorization made by people. [Wimmer and Lewis \(2010\)](#) [13] underline that both categorization and self-identification should be considered and that often ethnicities are classified as compartments with a hierarchical order.

What we will do is to follow [Wimmer and Lewis \(2010\)](#) [13] in the definition of ethnicity. We will use the main hierarchical segment to categorise ethnicity, following the Census classification Asian, Black, Hispanic or Latino. Also, when considering the non-US countries, we have reclassified the ethnicities into these major groups, to make the ethnic categories homogeneous. We use this method for two reasons: 1. It considers the other people classification of ethnicity; 2. People in the census have to self-identify into one of these groups. So, we do use this application of ethnicity suggested by the literature, as we want to understand whether there is ethnic homophily also when considering international syndicated loans. moreover, in doing this, we exploit sociological literature concerning ethnicity, as we think that using a definition of ethnicity and culture that do not consider the self-identification process can be a limitation.

For this reason, now we dig deeper into the sociological literature concerning ethnicity.

1.3 ETHNICITY IN SOCIOLOGICAL LITERATURE: A FOCUS

The Oxford Dictionary defines ethnic group as a “group who share cultural background, religion, traditions, customs or descent”. However, this definition is far too simple and trivial and needs to be better stated and analysed ([Bell 2015](#)) [18]. Ethnicity describes the common background of a community. The identification of an ethnic group is based on two main elements: cultural traits and the fact that those traits identify a community which is set in a society composed of other different communities. According to [Anthony D. Smith \(2010\)](#) [19], an ethnic group shares historical experience, common culture and a relationship with the territory (even though the individuals do not inhabit the homeland or historic territory). Common culture is defined as the ensemble of language, religion, political affinities, customs, dresses and institutions.

Ethnic identity is made of tangible and intangible elements. Tangible ones are shared culture and physical characteristics, which amplify the sense of belonging to a community. Intangible ones are individual beliefs which tend to unify the members of the single ethnic group.

However, especially sociology literature has tried to give a clear definition, as many researchers look for a defined list of ethnicities, in order to carry on studies concerning ethnicity heterogeneity.

Ethnicity is seen by many anthropologists as one of the drivers of social interactions and they tend to reject the idea that is a biological feature given by nature. It is quite important to underline this concept as it is the key of our study. Ethnicity as result of social interactions motivates the reason why we deploy this concept: previous studies have only concentrated on cultural matters in lending decisions, as it is seen as one of the main solutions to lower information frictions between lending and borrower country. However, we investigate a different perspective, which has not been investigated previously. Indeed, we look at self-identity and belonging to an ethnicity group as a result of social interactions which helps to create connections also in the credit market.

Banking and finance field is made of social interactions between individuals, as they are both part of social sciences. However, we believe that previous studies combining socio-economic studies do not look that much into sociological literature and the deeper understanding of the concept of ethnicity as major

driver of the behaviour of economic actors. The importance of separating the concept of “culture” and “ethnicity” is quite essential because of the potential differences on economic outcome. As a matter of fact, when different dimensions of human behaviour are considered, the effects of the individual as economic actor might change consequently. As claimed previously, obviously we do not think that introducing the effects of “ethnicity” on economic outcomes might reject the economic fundamentals belonging to the “homo oeconomicus” ([Zingales 2015](#)) [1]; however, we claim that there might be a potential deviation from the previously found results, as the channels through which ethnicity and culture communicate are quite different ([Desmet et al. 2015](#)) [20].

Indeed, going deep in a different literature, compared to the more traditional about credit markets, manages to discover different channels through which economic actors interplay, as most of the effects on credit markets is driven by behavioural elements which usually are not considered ([Zingales 2015](#)) [1].

Moreover, going deep in this literature manages to give a more profound definition of ethnicity itself and differs our study from the others about culture and migration, where the only considered channel is the informational one.

1.4 THEORIES OF ETHNICITY

Ethnicity has different connotations. [Warner and Lunt \(1941\)](#) [21] claim that ethnicity is based on biological or purely social characteristics. However, there are three main approaches to define the concept of ethnicity, which tended to be seen as mutually exclusive, but that in most recent times are viewed as completing themselves.

“Primordialists” claim that ethnicity is a biologic condition and if it is a matter of social convention, it should be historically rooted.

On the other hand, “constructivists” and “instrumentalists” claim that ethnicity cannot be clearly identified as the concept is quite fuzzy. The definition of ethnicity that we apply for this study is the one connected to a self-identification process. Indeed, ethnic groups of a country are those considered determinant by

the citizens of a country itself. To be clearer, there must be a social consensus on the ethnic groups identified as present in the social fabric of the country ([Fearon, 2003](#)) [22].

1.4.1 ESSENTIALISTS

Essentialists' perspective of ethnicity is derived from their view of the population; essentialists claim that populations share common traits, some of which they are aware of and some other not. From this view of the population, a different concept of ethnicity is derived, the most extreme one, which is developed by "Primordialists", i.e. ethnicity directly stems from characteristics shared by a certain population.

Indeed, this school of thought sees ethnicity as a characteristic affecting an individual or a community that cannot change across time. Consequently, they perceive ethnicity as an existential characteristic that cannot change but tends to remain stable.

1.4.2 INSTRUMENTALISTS AND CONSTRUCTIVISTS

"Instrumentalists", on the other hand, see ethnicity as an individual's personal choice and does not depend on individual traits and does not derive from the cultural context. Moreover, they do not see "ethnicity" as biological trait of the individual.

"Constructivists", or "social constructivists" claim that ethnicity is a result of social interactions, between individuals and groups. Consequently, ethnic identity is not seen as an individual's choice; however, if the social conditions in which the individual lives change, also the ethnic identity evolves and changes. Social and political setting influences the social interactions and consequently the relationship between different ethnic groups. Furthermore, changes in social interactions influence the socially derived ethnic identity ([Encyclopedya Britannica](#) [23]).

As anticipated in previous paragraphs, United States will be our setting of analysis. Not only because it represents a mix of ethnicities and cultures that is difficult to find in another country, but also because the methodology deployed by the U.S. government to trace citizens' ethnicities is based on the self-identification of the individual. Indeed, this allows the individual to self-identify into an ethnic group, which is exactly in line with the concept of ethnicity suggested by anthropological literature.

This better definition of the concept of ethnicity leads to a differentiation of the possible influences of the economic actor self-identity and his/her influences on the economic outcomes. Indeed, all the previous literature concerning the relationship between cultural affinities/differences and finance gives only a small insight on the possible influences of individual behaviour on the several economic outcomes.

To be even clearer in the separation between the two concepts of ethnicity and culture, we refer to the following section.

1.5 ETHNICITY AND CULTURE

Since most of the literature in finance has focused on the differences in economic outcome dictated by cultural differences or affinities, we think that it is important to give a clear distinction between the two concepts of ethnicity and culture. Indeed, governments have also provided guidelines, in order to give a complete picture of the definitions of culture and ethnicity, in response to their citizens' demand. Most of the population, especially in U.S. asked to change the system in order to feel more represented in the categories, as they tend to be quite restrictive, and the sense of self-belonging is crucial for them to integrate in the social fabric. As example, in [Table 1](#) we find the distinction between culture and ethnicity provided by the Australian government.

Research in the field has found a strong link between ethnicity and culture: on the one hand, ethnic identity considers cultural norms, values and preferences; on the other hand, although cultural values do differ among ethnic groups, it is not true that ethnic group and cultural values do always overlap. Indeed, considering ethnic groups, there is a within-group variability in culture, which can also lead to severe consequences on the society ([Desmet et al. 2015](#)) [20]. Indeed, this differential between ethnic and culture fractionalization and the consequent diversity between individual often lead to socio-political conflicts ([Desmet et al. 2015](#)) [20].

To clarify the two concepts, we introduce the example of the United States, which will be also the principal setting of our research. From 2010 American citizens, beyond participate in the Census, are asked to fill in a questionnaire reporting their demographic and economic characteristics "American Community Survey", led by the U.S. Census Bureau. In the questionnaire, they are asked to recognize the ethnicity to

which they feel they belong to, by indicating whether they belong to “White”, “Black or African American”, “Asian”, “American Indian or Alaska Native”, “Hispanic or Latino”, “Native Hawaiian or Other Pacific Islander” and “Other”. Through this choice the American citizen is asked to self-identity into an ethnic group, that is the main feature of the definition of the concept of “ethnicity”. However, it is not true that those people that self-identify into an ethnic group might share the same cultural values. In [Figure 1](#), we observe two different maps of United States, in the first we observe the cultural groups that compose the nation ([Woodard 2012](#)) [23]; in the second, we find the ethnic groups that are located in U.S.. We can observe that ethnicity and culture do not always overlap, but they also tend to be clearly distinct ([Desmet et al. 2015](#)) [20]. Consequently, it is quite important to give the right definition of the concept, as the individuals considered and the potential economic outcomes to be studied might interact through different mechanisms (when considering culture or ethnicity definition) and, consequently, the economic outcomes.

When considering ethnical identity and diversity, most of the literature has focused on macroeconomic patterns, instead of the microeconomic ones that, as we have seen in the previous paragraphs, they have been observed mostly through the cultural affinities/definitions.

Since our main aim is to investigate the relationship between banks’ ethnic exposure and international lending patterns, we would like to focus more on microeconomic patterns. However, in order to observe which are the mechanisms through which ethnicity has influenced on macroeconomic outcomes, we will have a brief look into the research concerning the relationship between ethnic diversity and economic outcomes.

1.6 ETHNIC HETEROGENEITY AND ECONOMIC CONSEQUENCES

Literature has deeply investigated which could be the consequences of highly ethnic heterogenous areas. Political scientists and sociologists have deeply investigated the issue, however, economists started taking care about this matter only in the last ten, fifteen years. The main doubt that occurred in the minds of economic academics is whether ethnic heterogeneity has positive or negative effects on the economic performance of a country.

On the one hand, having a highly heterogeneous population might lead policies which can be seen as inadequate by the minorities, who can feel oppressed, leading to potential internal conflicts and consequent political instability. On the other hand, this heterogeneity might lead to the interaction between different cultures, abilities and increase a country's productivity. ([Alesina and La Ferrara 2005](#)) [24].

First, ethnic heterogeneity can affect economic performance through "preferences" ([Alesina and La Ferrara 2005](#)) [24]. Indeed, this first channel stems from the definition of ethnicity which is directly linked to the anthropological concept of ethnicity. Indeed, self-identity and self-belonging to an ethnic group influence the behaviour and the relationships among individuals, affecting preferences and, consequently, utility of the overall ethnic group; indeed, whether the individual recognised herself into an ethnic group could influence positively the utility of the overall ethnic group ([Billig et al. 1971](#)) [25]. [Alesina and La Ferrara \(2000\)](#) [26] modelled this concept and found that in presence of a heterogeneous group the utility of an individual is positively correlated with the share of group in which the individual self-identifies and it is negatively correlated with the share of the group in which he does not feel to belong to.

Second, ethnic diversity can affect the relationship among individuals, as people prefer to transact with people who they feel are part of the same group, especially in presence of market imperfections ([Greif 1994](#) [10]; [Alesina and La Ferrara 2000](#) [26] and [2005](#) [24]). In case of asymmetric information, the self-identification to a certain ethnic group develops a sort of reputation mechanism ([Greif 1994](#)) [10]. Nevertheless, it is important to underline that also in the case where there are no market imperfections, ethnic identity triggers cooperation among individuals belonging to the same group ([La Ferrara, 2003](#)) [27].

Third, ethnic heterogeneity can be introduced in a production function ([Alesina and La Ferrara 2005](#)) [24]. [Alesina, Spolaore and Wacziarg \(2000\)](#) [28] deploy a production function where higher the heterogeneity, higher the number of individual skills and also the total output deriving from the production function. The general assumption of their model lays in the fact that higher the heterogeneity, higher the outcome. However, it should be underlined the trade-off between the positive effects of heterogeneity and the potential costs attached to it. Indeed, [Lazear \(1999\)](#) [29] manage to identify both the trade-off between

costs and gains of ethnic heterogeneity and also the optimal degree of ethnic heterogeneity, considering also the technology and the characteristics of the production unit.

[Wacziarg et al. \(2003\)](#) [30] also identify the size of the jurisdiction and the level of restrictions which tend to influence the balance between positive influence of diversity and the costs related to it. Indeed, the structure of the international trade affects the balance between the costs and the positive outcomes deriving from ethnic diversity. For example, if a country is affected by trade restrictions, ethnic diversity might decrease the level of international trade; while if a country is more open to international trade, then ethnic diversity might lead to different types of consumptions and increase the final outcome. Consequently, ethnic diversity can lead to a general increase of international trade. Indeed, the presence of a minority in a country i can be a connection with a country j , where that ethnic group is a majority, leading to a general enhancement of the trade between countries i and j ([Casella and Rauch 2003](#) [31]; [Alcalà and Ciccone 2004](#) [32]).

As underlined in the previous paragraphs, only a few of the mechanisms through which culture work as a connection between different countries have been investigated, but none of them have considered the definition of ethnicity. Moreover, the principal channel that they have investigated to be the one through which culture affects international trade and financial flows is the informational one. However, in cross-border lending the mechanisms of self-identification and network have never been investigated. Indeed, when branches tend to be in a highly heterogeneous area at ethnicity level, tend to have a deeper trust towards those ethnicities, facilitating cross-border lending versus those countries where that certain ethnic group is a majority. Consequently, it would be interesting to understand three possible mechanisms that have not been disentangled in unique research concerning ethnicity: information, transaction and network effects, to the extent that ethnic identity manages to ameliorate the costs attached to all three channels.

Moreover, since ethnicities often belong to minorities, also the political and institutional tissue should be investigated. [Aghion, Alesina and Trebbi \(2004a\)](#) [33] find that minorities tend to be present in those areas where the government tends to be more careful in defending the minorities. Consequently, if the branch is situated in that certain area might have also an internal policy which leads to higher level of

cross-border lending. Indeed, [Alesina, Baqir and Hoxby \(2004\)](#) [34] have modelled the formation of political jurisdictions, observing that ethnicity is crucial in the formation and organization of American cities. Finally, [Sethi and Somanathan \(2004\)](#) [35] find that preferences in the interaction among different ethnic groups are important to understand patterns of residential location.

1.7 SYNDICATED LOANS

Syndicated loans are a special type of loans where the aim is not only providing finances, but also sharing the risk among participants.

Indeed, syndicated loans are structured in tranches: the loan is divided according to the share of risk the participants of the loan decide to hold. To be clearer, a syndicated loan is a loan that is especially addressed to firms for consistent projects, where the amount of money needed is quite important. In order to receive the loan, firms provide a white paper to the arranger of the pool, i.e. a financial institution that sets up the syndicated pool. The syndicated pool is made of a group of banks, named “participants” that decide whether to be part of it and, consequently, whether to finance the firms’ project, according to the white paper provided by the firm. Indeed, the paper should contain all information concerning the loan, together with information about the firm itself (e.g. risk level, solvency rate, etc).

The decision to take part in the syndicated loan is usually carried on basing it on the characteristics of the loan, as it is considered a method of financing that manages to share and diminish the risk for financial institutions.

Considering syndicated loans, research has been conducted concerning trust ([Sufi, 2007](#)) [36], culture ([Giannetti and Yafeh 2012](#)) [37] and relationship lending ([Yutao et al. 2015](#)) [36], but we will investigate better this literature in Study 1 and Study 2.

We want to extend the literature considering ethnicity exposure as one of the drivers for cross-border lending and syndicated loans, providing a further insight about the drivers of international financing decisions.

1.8 ETHNICITY AND CROSS-BORDER LENDING

Literature in this field is quite broad, since many researchers in the past have tried to understand which are the drivers (and the limits) of cross-border financial flows, either loans or equity. A pioneering study in this field dates back to 2005, whose name is “The Determinants of Cross-Border Equity Flows” by [Richard Portes and H el ene Rey](#) [39]. Their main finding indicates the role of information in influencing the patterns of international transactions. Moreover, the flows of assets depend on the size of the origin and destination country, together with trading costs (both information and technology costs), information transmission, information asymmetry and the efficiency of transactions. Their research focuses on portfolio investment equity flows and they use data from Cross-Border Capital, an eight years panel (1989-1996) and consider bilateral flows, so they have 14 origin and destination countries. In particular, data concern total activity (purchases and sales) by residents of the source country in the portfolio equity markets of the destination country. The methodology employed is a basic gravity model (which is usually used for goods trade), where the dependent variable is the flow of equity from the source country to the destination country and the countries are introduced in the regression through dummy variables which recognise western hemisphere (United States, Canada), East Asia (Japan, Hong Kong, Singapore), Europe (UK, Germany, France, Netherlands, Spain, Italy, Scandinavia), Non-Europe (Switzerland, Australia), and the information flows and transaction costs are given by the volume of telephone traffic from source to destination country, number of branches of destination country in source country, efficiency of the judicial system, effectiveness of the legal system in enforcing commercial contracts, lack of insider trading in stock markets, sophistication of financial markets (the last three specifications do not vary with time). Other important features are the level of openness of a country, which is defined by population and the market size, proxied by GDP. They find that market size, openness, efficiency of transactions and distance are the most important determinants of transaction flows. With their work [Portes and Rey \(2005\)](#) [39] used the gravity model in a different way from the classic one; indeed, they used it not only to explain trade transactions, but to evaluate the magnitude of cross-border financial flows between different countries. From this study on, the gravity model has been widely used in the literature considering cross-border flows. A second study by [Aviat and Courdacier \(2007\)](#) [40] analyses international asset portfolios

and lead their investigation through the use of a gravity model. Their dataset concerns 2001, only and they use bilateral trade flows, considering a worldwide scope. They find that not only information asymmetries justify cross-border flows, but that international trade flows and financial flows reinforce each other. Indeed, they find that trade in goods, assets and diversification should be examined together. The paper by [Lane and Milesi-Ferretti \(2004\)](#) [41] finds similar results to the previous study, such as the correlation between bilateral equity investment patterns and patterns of trade in goods; nevertheless, they also find that characteristics of the host country, such as common languages and common legal frameworks tend to increase the bilateral financial flows: richer countries tend to have a bigger share of foreign equity positions. To lead the study, they deploy data about international equity holdings at the end of 2001. They conduct the research using a model that connects bilateral equity holdings to bilateral trade in goods and services, giving also evidence of strong correlation between the two types of exchanges.

Larger bilateral positions are also associated with proxies for informational proximity. It further documents that the scale of aggregate foreign equity asset and liability holdings is larger for richer countries and countries with more developed stock markets. The idea underlying this research is dictated by the fact that it is quite useful understanding the geography of international investments, in order to understand the entire globalization mechanism. We also share their curiosity in our investigation about the potential deviations from what is called “the benchmark position” ([Lane and Milesi-Ferretti 2004](#)) [41]. The benchmark position theory claims that investors have the same portfolios, no matters their nationality, if the global economy is fully integrated and with no frictions in product or asset markets. Indeed, whenever there are contradictions about this theory, it is interesting understanding the reasons behind these deviations. Furthermore, they also try to investigate the cultural and informational differences that might influence the composition of the international portfolios. This point is quite important for our research as we have an interest quite in line with this reasoning, since we would like to understand whether the ethnicity differences might affect banking loans. The field is quite different, but the motivation driving our research questions are quite similar.

Further studies, such as [Buch \(2005\)](#) [42] and [Papaioannou \(2009\)](#) [43] investigate the international banking patterns and drivers. [Buch \(2005\)](#) [42] analyses if distance might have any influence on the level of international bank lending and whether this distance might have a decreasing importance, thanks to technology development. He finds that distance matters and this result still holds, although the technology advances. [Papaioannou \(2009\)](#) [43] investigates the role of institution in the development of international banking. He finds that a good institution leads to a higher development of international banking; indeed, uncorrupted countries tend to have a higher level of foreign banking flows. Moreover, European Integration leads to a higher interchange of financial flows between member states. Considering the Euro-zone, [Heuchemer et al. \(2009\)](#) [44] have investigated its determinants of cross-border lending. Their main contribution stays in the fact that they modelled political and cultural affinities, together with distance and borders. Consequently, they find that these affinities between member-states of the Euro zone tend to increase their levels of cross-border loans. They conduct the research exploiting a unique dataset of bilateral lending between European Countries from 1999 and 2006 through a gravity model. Although they examine financial transactions, they consider also transportation costs (due to physical distance) beyond information costs, implying that it is not only a matter of cultural or political affinities driving the cross-border transactions. [Brei and von Peter \(2018\)](#) [45] also empirically examine distance effect and find that, although in banking there are no transportation costs, distance still matters in financial flows, since information costs influence the frequency of the exchanges. They show that distance is still a valid problem when considering international finance, and it should be considered when treating cross-border banking, as distance tends to lower intensity of cross-border banking, no matter the transportation costs are immaterial.

Considering migration, two important papers investigate the relationship between migration and cross-border financial flows: (i) migration and cross-border equity portfolio flows ([Kugler and Rapoport 2011](#)) [46]; (ii) migration and cross-border financial flows ([Kugler et al. 2018](#)) [47]. They both use a gravity model to lead the analysis. Moreover, the main underlying finding is that migrants (especially skilled ones) tend to decrease the information frictions between countries and their presence leads to an increase

of cross-border financial flows. In particular, the effect is driven by skilled migrants and it is stronger between countries that are close to each other at cultural level.

The main paper that discusses the topic of cross-border financial flows and migration is the one by [Kugler et al. \(2018\)](#) [47]. However, their main channel through which they increase financial flows is the information one: they claim that the presence of (especially skilled) migrants tends to diminish the informational friction from the host country to the origin country, leading to an increase in the loans between the two countries. The paper focuses more on migration flows and the ability of these movements to diminish the informational friction from one country to the other. Moreover, considering migrants might introduce a sample bias, as those migrants that ask for a loan in a foreign country have probably moved to the foreign country for better job opportunities, considering their level of education. Indeed, in order to be part of a foreign country's financial system, the migrant has the appropriate knowledge. Consequently, she/he is going to ask for it, because she/he already knows that her/his economic level would make the lender accept her/his request for a loan ([Kugler et al. 2018](#)) [47].

Considering cross-border financial flows, the literature is quite extensive, and the motivation implied in those studies is quite similar to the motivation of our study, i.e. the further investigation of the drivers of cross-border lending decisions.

For the reasons explained in the previous paragraphs we develop Proposition 1 and 2 that will be explained even better in the respective Study 1 and 2.

Proposition 1: *A financial institution exposed to a certain ethnicity will take part in a syndication pool for a loan to borrowers located in a country with a high presence of that same ethnic group.*

Proposition 2: *Exposure to a certain ethnic group for a lender leads to lower costs of the syndicated loan towards those borrowers located in a foreign country that has the same ethnic prevalence.*

However, previous studies observed only cross-border differences thanks to migration, without considering the within-country ethnic differences, which might lead to different results. Most of the literature that considers within-country self-identity variation is focused on the relationship between

religion and investment decisions. Indeed, past research investigated the impact of within country differences in religion on risk preferences and portfolio choices ([Gilles and Hui 2009](#)) [48] and also on strategic alliances at interstate level ([Shi and Tang 2015](#)) [49] . However, ethnic differences within- U.S. states and their impact on cross-border lending decisions has not been investigated. Our research aims also at filling the gap in literature concerning ethnic identity and bank lending decisions within a single country and cross-country.

1.9 TABLES

Table 1 – Ethnicity and culture: differences issued by governments. (Source: Australia Government, Department of Home Affairs)

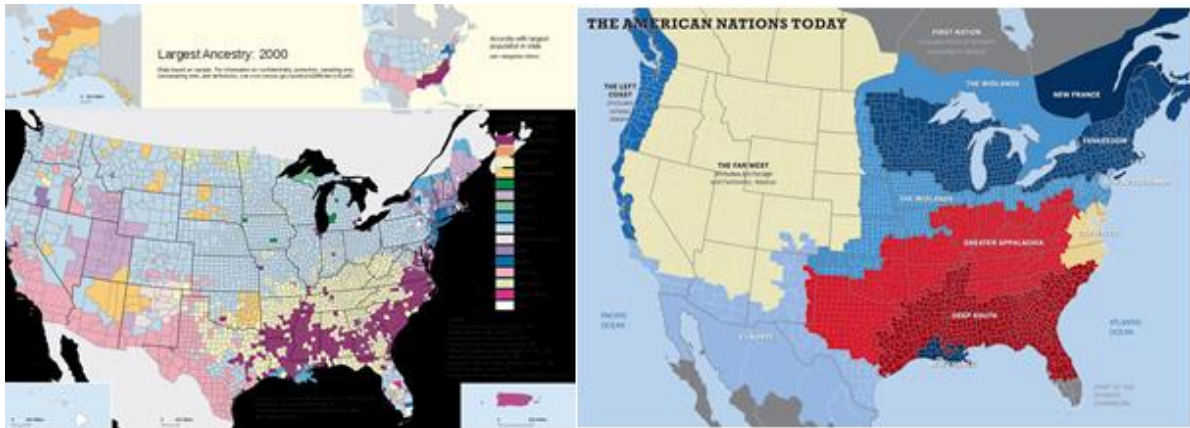
ETHNICITY	CULTURE
Sense of self-identification and peoplehood.	It is an abstract concept.
Physical characteristics such as skin colour or bloodline.	It is diverse, dynamic and ever-changing
Linguistic characteristics such as language or dialect.	It is the shared system of learned and shared values, beliefs and rules of conduct that make people behave in a certain way.
Behavioural or cultural characteristics such as religion or customs	It is the standard for perceiving, believing, evaluating and acting.
Environmental characteristics such as living in the same area or sharing the same place of origin.	Not everyone knows everything about their own culture.

1.10 FIGURES

Figure 1 – Representation of ethnicity and culture in U.S.

On the left the division of U.S. according to ethnical groups (U.S. Census Bureau); on the right, the division of U.S. according to cultural groups.

(Source: American Nations: A History of the Eleven Rival Regional Cultures of North America)



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STUDY 1

ETHNICITY AS A DRIVER OF SYNDICATED LOANS

ISSUANCES: THE CASE OF UNITED STATES.

2.1 INTRODUCTION

The aim of the research is to understand whether local exposure to certain ethnic groups drives cross-border lending decisions towards those countries where there is a prevalence of those ethnic groups. Recent literature has tried to understand which are the main drivers of cross-border lending decisions, mainly focusing on cross-country differences or affinities that might influence both the volume and cost of international loans. Considering cross-border financial flows, literature has focused mainly on mergers and acquisitions ([Moshirian et al., 2022](#)) [1], investments ([Van Nieuwerburgh and Stijn, 2010](#)) [2] and equity flows ([Portes and Rey, 2005](#)) [3].

Research focused on international banking decisions is still underdeveloped. However, [Kugler et al. \(2018\)](#) [4] have started the investigation concerning possible drivers of cross-border financial flows, with a small focus on banking loans and the influence of skilled migrants on cross-border lending decisions. They have deployed a cross-country perspective and focused only on a certain segment of banking loans. Although the reason underlying the research question is the same, i.e. understanding the possible drivers of international banking loans, the focus is quite different as our aim is to understand whether the neighbour ethnic exposure of a bank might impact the international banking decisions. Indeed, we discuss that if a bank is inserted in a highly ethnically heterogeneous context, then it will tend to issue a higher number of international loans. Moreover, we focus on a within-country ethnic variation, using United States as field of investigation, in order to understand whether within country ethnic differences might lead to higher international loans towards those countries where there is a matched ethnic identity. We base our study on an anthropological definition of ethnicity, i.e. “*ethnicity can be defined as a self-identification process deployed by individuals and groups to unify, organize and move populations to achieve larger goals*” ([Fearon 2003, Encyclopaedia Britannica](#)). [5] [6]

Recent research has focused on the influence of culture on different economical outcomes ([Licht et al. 2005, Li et al. 2013](#))[7] [8] such as corporate governance ([Licht et al. 2005](#)) [7], risk-taking ([Li et al. 2013](#)) [8], mergers and acquisitions ([Ahern et al. 2015](#)) [9], capital structure ([Chui et al. 2002, Li et al 2011](#)) [10] [11] and lending decisions ([Giannetti and Yafeh 2012, Fisman et al 2017](#)) [12] [13]. Previous research

highly focuses on cross-country variation in ethnicity, but we argue that ethnicity can be quite diverse within a country. This is one of the reasons why we provide the case of United States.

In United States citizens feel to be part of different ethnicities (such as White, Black, Asian, Japanese, Korean, Vietnamese, Filipino, American Indian Alaska Native, Native Hawaiian Pacific Islander, Samoan, Chamorro and Hispanic or Latino, Mexican, Puerto Rican, Cuban) and belong to diverse religion groups (such as Protestant, Catholic, Mormon, Jewish, Muslim, Hindu, Buddhist, Sikhist). We have decided to perform the analysis in U.S. at ZCTA level, as the differences in terms of ethnicities and ethnic related characteristics such as languages are highly different within the country. For example, New York is the city with the higher concentration of different languages, almost 800 different languages ([The Economist 2011](#)) [14] and where almost 40% of the population is foreign born ([New York City Department of City Planning Population Division 2005](#)) [15]. If we consider California, we see that is the State with the highest number of immigrants, reaching almost 30%, which means 11 million people ([Johnson et al. 2021](#)) [16].

This single country field of experiment allows us to deeply investigate the relationship between matching ethnicity and international bank lending decisions. We want to understand whether having matching ethnicity, in terms of common minority of a population served by the banks' network in U.S., influences cross-border lending decisions. We analyse whether banks' and borrowers' exposure to the same ethnicity leads to higher international lending and whether this effects remain when we focus on ethnic groups in the banks' neighbourhood and control for foreign loans issued by those banks towards countries having the same ethnic group, respectively. To be clearer, if Union Bank's ethnic exposure, to say, to the Asian race in Silicon Valley area increased by 6%, driven by new residents, we would look at changes in Union Bank's participation in foreign loans issued to companies in Asia and other countries having a significant presence of Asian ethnicity over the same-period or in the immediately following one. Our major hypothesis wants to investigate whether a bank's exposure to a certain ethnic group in the U.S., flows through to international lending decisions.

We provide two major explanations that give credit to the relationship between matching ethnicity in domestic and cross-border lending operations. First, the exposure to a certain ethnicity in U.S. can give an information channel to countries having the same ethnic presence. In this way, the matching ethnicity provides a competitive advantage in lending decisions against those banks that do not have experience in coping with borrowers of that same ethnic group. This competitive advantage can be expressed through lower loan spreads, lower cross-border loan insolvencies and an increase in bank performance. Second, different ethnicity in the banks' demographic neighbourhood leads to a diversification of the borrowers, which brings to lower bank risk. Nevertheless, we also think that the relationship between same ethnic exposure and loan costs in cross-border loans by U.S. banks is not so clear and needs empirical investigation; indeed, if a bank has a high exposure to information inside a bank with high cross-country ties, this might lead to higher loan spreads (this will be analysed in the second study).

For these reasons, we lead an analysis to understand whether sharing the same ethnic presence flows through cross-border lending decisions for U.S. banks, and then understand whether international loans issued by these U.S. banks having the same ethnicity of the borrowers have higher or lower spreads for international borrowers, so understanding the direction of the relation between information concentration and loan spreads. The typical problems that must be solved to give a clear-cut resolution are causality and endogeneity. Endogeneity problems might be given by omitted variables. Indeed, we find a clear correlation between ethnicity and volume of loans issued, however, we have to better identify the channel between the two, in order to diminish the risk of omitted variable.

Moreover, hypothesising the channel does not rule out the potential omitted variable problem, but there is a need of further analysis that will be conducted in the future development of the research. In the dissertation will be presented robustness tests to show the correlation between ethnic exposure and international lending decisions. For future development, to diminish causality and endogeneity, we have already planned to conduct sensitivity analyses on unexpected population migration and run quasi-experiments, with an exogenous effect on the change of the population, such as policies affecting migrants' flows or revolutions in other countries affecting then the migration flows in U.S.

Literature has focused on culture or the role of migrants in improving the channels that usually tend to influence and drive international financial flows. Indeed, migrant networks have the ability to give an informational advantage, which helps the investors to surpass barriers that tend to be related with transaction costs. Consequently, migrant networks manage to diminish entry barriers, such as language, institutional rules and regulatory difficulties that might obstacle foreign investors to acquire foreign equities or bonds. Migrants manage to transfer business opportunities by lowering information asymmetries and by decreasing transaction costs through formal or informal contacts in their home country. Considering co-ethnic networks, these formal and informal channels tend to increase investment opportunities for the entire home country and not for the investors, only ([Buch 2005](#)) [17].

Ethnic networks may enhance the information transmission and previous research has tried to understand the real role of these networks in international trading ([Portes and Rey 2005](#)) [3], equity investments ([Lane and Milesi-Ferretti 2008](#)) [18], Foreign Direct Investments ([Kugler et al. 2018](#)) [4] and other international transactions ([Buch 2005](#)) [17].

Previous works have tried to understand which are the channels through which co-ethnicity might influence international transactions; the key one is the informational channel. Indeed, migrants have the ability to enhance information transmission between foreign and domestic countries. The main channels where information flows that have been deployed in past research are: (i) telephone calls, indeed telephone hours of traffic from a certain area towards a foreign country ([Guerin 2006](#)) [19]; (ii) number of tourists, as the individual visiting a country might become a vehicle of information from the foreign to the domestic country; (iii) return migration, where migrants that return in the home countries can be considered as a flow of knowledge and skills. Otherwise, a further channel through which co-ethnicity manages to alleviate transaction costs by ameliorating information is the “familiarity effect” ([Leblang 2010](#))[20]: familiarity effects increase investments when investors in a domestic country become familiar with characteristics of the migrant origin country through their link and observation of migrant communities that are settled in their living areas. The familiarity effect exists when migrants give signals that prove the general commitment to labour and work ethic or business culture that distinguishes a certain country.

Most of the previous literature has investigated cross-country differences that could impact on several economic outcomes. However, since many countries tend to be highly ethnic heterogeneous, it is interesting to understand on the within-country ethnic differences that might influence economic behaviours and results. Consequently, we deploy U.S. as a setting for our research, in order to investigate the connection between ethnicity exposure and cross-border lending. The main aim of this piece of work is understanding whether co-ethnicity of a population where a bank's branch network is immersed in a U.S. neighbourhood might influence the cross-border lending decisions. In order to lead the investigation, we analyse whether bank exposure to a certain ethnicity leads to an increase in international bank lending decisions. So, the main research question is whether a bank's exposure to a certain ethnicity influences bank cross-border lending decision.

This is interesting for several reasons: (i) co-ethnicity might be a useful information channel, where banks immersed in an ethnic heterogeneous context have a competitive advantage compared to those that do not have the privilege of having direct relationships to different ethnicities; (ii) being in an ethnic heterogeneous context leads to diverse borrowers and higher diversification.

Our analysis will be focused on whether ethnicity exposure leads to cross-border loans for banks located in U.S.. In order to diminish endogeneity problems, we have planned to lead several experiments, and add controls to the main analysis.

2.2 LITERATURE REVIEW

The influence of culture in finance has been investigated in various contexts. However, most of the literature focused briefly on the role of culture and ethnicity, without considering sociological studies. A pioneering study which has provided the best crossing between the two types of literatures is the one conducted by [Constant and Zimmermann \(2008\)](#) [21], which considers a new measure of ethnic identity and its impact on economic outcomes. Indeed, they highlight an important feature of ethnic theory, which is the one stressed by our research: the self-identification process which leads to a better flow of information from and to those people that self-identify into the same group. [Darity et al. \(2006\)](#) [22] provide a game theory model where racial (or ethnic) identity leads to a “productivity of social

interactions”; meaning that the self-belonging to an ethnic group has a positive influence on economic outcomes, as it changes the behaviour of the economic actor.

[Constant et al. \(2006a\)](#) [23] follow a theory of ethnicity which is in line with the U.S. Census ethnicity selection. Indeed, [Constant et al. \(2006a\)](#) [23] highlight the concept of ethnic identity as how individuals conceive themselves, also compared to other individuals; this is the process used in the U.S. Census, where it is asked to the individuals to fill in the questionnaire according to how they categorize themselves.

[Constant and Zimmermann \(2008\)](#) [21] state that ethnic identity is the equilibrium between the sense of self-belonging to the “culture, norms and society” of origin and those of the host country.

Together with this ethnic theory, we also use the assumption developed by [Falk et al. \(2018\)](#) [24] where they highlight that individual heterogeneity in preferences (which are even more widespread when considered within country) leads to a preference bundle which influences economic outcomes ([Falk et al. 2018](#)) [24].

Moreover, our study is highly based on ethnic homophily. Ethnic homophily is defined as a phenomenon where individuals tie connections with people of the same ethnicity, instead of having connections with people from different ethnicities ([Wimmer and Lewis 2010](#), [Smith et al. 2014](#), [Leszczensky and Pink 2019](#)) [25] [26] [27]. Ethnic homophily is one of the elements that allow a social network to create, especially in U.S., where the creation of ties is built on the sense of belonging into one of the ethnic groups. Indeed, social networks in U.S. are homogeneous in terms of ethnicity, given by ethnic homophily. Moreover, in U.S. there is the tendency of befriending friends of friends that all are part of the same ethnicity, augmenting the ethnic homogeneity in the social network ([Wimmer and Lewis 2010](#)) [25].

A significant study by [Giannetti and Yafeh \(2012\)](#) [12] investigated whether cultural distance might affect contractual terms in the syndication market. They have found that when borrowers and lenders are more culturally distant, borrowers tend to offer smaller loans at higher rates. Nevertheless, their analysis focuses on the culture shared by a country. Our aim tends to be different. Indeed, our objective is to understand whether sharing a minority ethnic group between lenders and borrower might lead to an increase in

syndicated loans or might influence the characteristics of the syndication. Our research does not have a cross-country point of view, only; but, since our experiment is led in the United States where the demographic fabric of the single states is varied, our study has a within-country perspective. United States is the perfect field of study in our case because of the significant presence of different ethnicities and because, although there is high diversity, the social networks are highly homogeneous in terms of ethnicity, as stated previously.

2.2.1 DEFINITION OF SYNDICATED LOANS

A syndicated loan is a method of financing from a pool of banks towards a borrower. The lending syndication is composed by a lead bank (or even more) and participant banks, that share fractions of the loan, in order to share part of the risk attached to the loan itself. The role of the lead banks is to manage the loan, on behalf of the other lenders that take part in the syndication. Because of the lead bank's role, agency problems among the lenders might originate, beyond those already present between lenders and borrowers in traditional borrowing usually translated into higher costs of debt ([Diamond 1984](#), [Holmstrom and Tirole 1997](#), [Elyasiani and Zhang 2015](#)) [28] [29] [30].

2.2.2 DEFINITION OF ETHNICITY

We find important to give a precise definition of the concept of ethnicity that we want to deploy in our research.

Indeed, we use the concept developed in anthropology where ethnicity is considered a self-identification process ([Constant et al. 2006a](#)) [23]. We use this definition as we also think that is the best suited for the Census population identification in the United States, where the individual must indicate the ethnicity to which she self-identifies. Moreover, because literature concerning ethnic homophily provides evidence that stronger the sense of self-belonging into one ethnic group leads to increase ties between individuals that have a strong sense of self-identity, leading to homogeneous social networks in terms of ethnicity ([Leszczensky and Pink 2019](#)) [27].

In finance, most of the literature has not focused on the anthropological definition but has focused more on the definitions created by [Schwartz \(2009\)](#) [31], where the values considered in the definition are

Embeddedness/Autonomy, Hierarchy/Egalitarianism, Mastery/Harmony and [Hofstede \(1999\)](#) [32], whose values are Individualism/Collectivism, Power Distance, Uncertainty Avoidance, Masculinity/Femininity. In both cases, the cultural dimensions that are investigated are peculiar and quite different from the definition the specific anthropological one.

2.2.3 SYNDICATED LOAN AND ETHNICITY

Most of the literature in finance has focused on the role of culture in other areas, such as mergers and acquisitions, where results tend to be contradictory ([Weber and Schweiger 1992](#)) [33]; on the one hand, several studies have found that culture has a negative effect on M&As performances ([Weber and Schweiger 1992](#), [Datta and Puia 1995](#)) [34] [33]. On the other hand, research find that culture might have a positive impact, by creating added value and ameliorating the M&As performances ([Larsson and Risberg 1998](#)) [35]. Further research has focused on the role of culture and corporate governance. [Licht et al. \(2005\)](#) [36] find that corporate governance is highly related to culture.

The research mostly related to our paper is the one conducted by [Giannetti and Yafeh \(2012\)](#) [12]. They focus on the role of culture and its influence on the relationship between lenders (lead banks) and borrowers in syndicated loans. They only briefly focus on the role of culture among lenders and, in particular, in the level of risk shared between the lead bank and each participant. They find that risk sharing increases if the participant bank is located in a country with common religion; however, it decreases significantly if banks are located in geographically distant countries ([Giannetti and Yafeh 2012](#)) [12]. Indeed, they highlight how cultural differences have disadvantageous influences on syndication contract characteristics; nevertheless, they cannot find the channel through which culture, meaning a set of codes and norms, might influence economic outcomes ([Giannetti and Yafeh 2012](#)) [12].

Our research aims at extending this strand of literature by deploying sociological literature to understand how ethnicity characteristics influence syndicate characteristics, in particular the volume of international syndicated loans, the cost and syndicate concentration and syndicate size, as they tend to be a proxy for information asymmetries and moral hazard. Consequently, we try to understand whether the country demographic characteristics might influence the contractual terms of international syndicated loans;

furthermore, we understand whether it is a matter of information, in the sense that belonging to a certain ethnic group might ameliorate the transmission of information. In this way, we manage to find the channel through which ethnicity might influence syndication.

2.2.4 SYNDICATED LOANS AND INFORMATION ASYMMETRIES

Syndicated loans are a particular type of loans, where information asymmetries between borrowers and lenders are potentially severe. Indeed, information asymmetry influences the concentration and composition of syndicated loans [Sufi \(2007\)](#) [37]. [Sufi \(2007\)](#) [37] finds that participant lenders that are closer to the borrowers in terms of previous relationships and geographically, tend to ameliorate information asymmetry. It is quite important the influence of information asymmetry on syndicated loans' composition, as an informed lender usually owns a larger part of the syndicated loans, sustaining the majority of the risk attached to the loan. Considering the monitoring activity of the banks, recent literature conducted by [Gustafson et al. \(2021\)](#) [38] proposes lead share as a proxy for banks' monitoring activity. Indeed, lead banks invest larger shares as a method to increase the monitoring activity towards the borrower, especially when information tends to be lower, and the maturity has a longer term as signal of higher monitoring activity towards the borrowing entity. [Gustafson et al. \(2021\)](#) [38] find also that lead share is a more appropriate proxy for bank monitoring when risk level is higher, and information is lower.

Considering information, we suppose that can be one of the channels connecting ethnicity exposure and international syndicated loans lending decisions. Because of this, we propose the following study.

Our aim is to understand whether ethnic homophily provided by the demographic makeup in the neighbourhood of banks might affect the borrowing volume and costs towards those countries that share the same ethnic minorities.

So, the Proposition that we want to investigate is the following:

Proposition 1: *a financial institution exposed to a certain ethnicity will take part in a syndication pool for a loan to borrowers located in a country with a high presence of that same ethnic group.*

Our study focuses on international syndicated loans, a particular type of loans where a pool of lenders decides to provide a loan to a large borrower. This type of loan usually incorporates risks directly attached to the quality of the borrower. Since the loan is first decided by the lead arranger, the participant banks tend to trust the lead arranger; lead arranger establishes the major conditions and provides information to participant banks ([Sufi 2007](#), [Lin et al. 2012](#), [Lee and Mullineaux 2004](#), [Esty and Megginson 2003](#), [Ivashina 2009](#)) [37] [39] [40] [41] [42].

2.5 DATA

To assess the impact of local bank culture on international lending decisions, we need to assemble a database on local culture, and all overseas syndicated bank loans issued by all banks in the U.S. To identify a bank's exposure to different cultures in the U.S., we identify the ZCTA¹ demographic breakdown of ethnicity around the branches of all U.S. banks using Census tract data from the U.S. Census Bureau from 2000 through 2018. The Census provides a breakdown of ethnicity at the ZCTA level. Not only does the Census report the fraction of population who identify as White, Black, Hispanic and Asian, i.e. race variables, but it also narrows down race even further into ethnicity. The ethnic groups identified in the Census are Chinese, Korean (South), Japanese, Vietnamese, Filipino, and Mexican. This stratification makes it possible to narrow down the demographics of a bank clientele to a set of six ethnicities which have corresponding countries to identify a common culture effect on global loan allocation decisions.

Although the Census data is rich in ethnicity data, complete data is only available for years in which there is a full Census conducted. Moreover, the Census website only makes available the most recent Census data i.e. 2000 and 2018. We can take the 2000 Census demographics data to see if cultural exposure in 2000 impacts future cross-border loan allocation decisions by banks, rather than interpolate between the two data points. This also allows us to observe a lag between exposure and outcomes, if any. The collation of the Census data in 2000 yields information on the ethnicity (define) for the U.S. population in the year 2000 for every ZCTA in the United States. The State data extracted from the Census in 2000 will cover the entire FDIC, Branch, FED database of bank branches located in the U.S.

¹ ZIP Code Tabulation Areas (ZCTAs) are statistical entities developed by the United States Census Bureau for tabulating summary statistics.

To identify a bank's cultural exposure, we use the FDIC's Summary of Deposits file, National Information Center's Branches Attributes file (a repository by the Federal reserve System) and FED's Call of Reports. Since most bank holding companies, and arguably all top bank holding companies who are loan syndicate members (in the DealScan database) are FDIC insured banks, the Summary of Deposits file provides a comprehensive picture of each bank holding company's branch network. Note that the FDIC Summary of Deposits file also includes branches not regulated by the FDIC e.g. branches overseen by the Comptroller of the Currency. For each bank, the Summary of Deposits file includes the amount of deposits held at each branch, the bank holding company, and the zip code of each U.S. bank branch in the branch network. This Summary of Deposits file also indicates whether a bank branch is considered a main office or if it is in a metropolitan area. However, since in the matching many banks information disappeared, we have decided to collect data about branches from National Information Center and FED, so that we could have more information as possible concerning the branch network in terms of location.

As a first step in matching bank branches to the corresponding ethnic breakdown as identified by the Census data, we use zip code as the overlapping variable. We then go over the matching for each bank to see ensure they match with a State. This yields demographic data on each bank branch of major bank holding companies in the U.S.

We recognize that a bank's overall cultural exposure will be more influenced by larger more important banks than smaller local ones. Larger banks, as measured by the deposits held at the bank, are more likely to be in metropolitan areas; these are generally areas that are regional, if not national headquarters where most decisions regarding large, syndicated loans will be made. As a result, the probability of interpersonal connections creating informational flows is likely higher for metropolitan bank branches due to population density. To cater to this argument, we begin by creating a deposit weighted average cultural exposure variable for each bank holding company. Using the deposit weighted average of each ethnicity for a bank branch in each year, we construct the variables White, Black, Asian, and Hispanic. This variable captures a bank holding company's cultural exposure to each ethnicity/race in the year 2000. We then construct two derivative exposure measures from this variable using only Main

Office and metropolitan branches and only non-Main Office branches to address issues concerning an outsized role for larger banks.

Having matched bank branches to the Census data on ethnicity, we move on to collating loan data from Loan Pricing Corporation's Dealscan database. The Bank Inventory report in the Dealscan database lists an inventory of loans held by each bank and non-bank financial institutions around the world. The report provides information on each borrower, lender, the terms and details of the facility, the role of each lender, and the lender share. We only retain confirmed loans with spreads on the loan that are tied to LIBOR². In the next step, we attempt to match a bank's cultural exposure on loans extended to the country that matches on the ethnicity of population at the branch level.

As noted earlier, we focus our data collation of this data from 1987 to 2020. The main sample for analysis is based on lenders identified as a "US Bank", but we have to spend a few words on this.

In Dealscan database there is a variable named "Institution Type", where, among all categories, we find "US Bank" category. However, we have not made the selection by merely keeping those institutions that were in this category and now we show why. Among these banks there are US Banks which are not totally American, and they are called *ethnobanks*. Ethnobanks are institutions that are controlled by a certain ethnicity and serve mostly people that belong to that same ethnic group ([Dymski et al. 2001](#)) [43]. In particular, [Dymski and Li \(2004\)](#) [44] underline the behaviour of these institutions: "*can then obtain deposits, make loans, and establish branches, like any US-chartered bank. As a US bank, however, this subsidiary has to rely on its own capacity, not that of headquarters; for instance, legal lending limits are determined by the financial capacity of the US subsidiary. Further, this subsidiary is subject to the same regulations as all domestic banks, including the Community Reinvestment Act.*" (Financial globalization and cross-border comovements of money and population: foreign bank offices in Los Angeles [by Dymski and Li \(2004\)](#)). This is done through the exploitation of the Asian enclaves present in the area.

However, ethnobanks are categorised as U.S. Banks because they are insured by the Federal Deposit Institution Corporation; in this way, the banks are recognised as American, although their origin is in

² London Interbank Offered Rate, indicates borrowing costs between banks.

another country. These banks have origin in a foreign country and then they are located in U.S. areas with a high prevalence of that ethnicities that are usually from those same countries (e.g. enclaves or other ethnic homogeneous areas). In this way, they first obtain trust among those individuals that share that same ethnicity and manage to spread all over the country thanks to the information obtained and given by these individuals. The ability of these institutions is to collect information, but also to be able to integrate in the country. Since we want to understand whether American banks inserted in a certain ethnic context tend to be part of syndicated pools for loans towards foreign countries that share that same ethnicity, we drop ethnobanks and we leave only those banks that have origin in U.S.. To lead this inspection, we have checked manually every bank, in order to clearly understand which was American through their website. Moreover, we have tried to identify all the banks that had a different identification number that was identifying two or three identical names, but that had typos in the name written and consequently were seen as different institutions.

A further issue with the DealScan database is that lenders are identified using their ultimate parent company, which causes a problem when banks merge. For example, loans that Wachovia participated in are coded as Wells Fargo Loans even if the loan was originated before the merger of these banks. To match the loan to the actual lender, we go back through DealScan to pull information on the lender parent and the original lender. This allows us to note discrepancies in the lender name and then accurately assign a code to the correct lender on each loan. As a further check, we use the Zephyr database to cross-check all bank mergers over the sample period and reassign the appropriate lender on each loan. Zephyr provides information about M&A deals (announcement and rumour in the financial markets). Furthermore, it gives information about the target company, the acquirers, and the vendors, beyond giving all the time information (and whether the deal is expired or not). Zephyr does not give a single name for the company, but also how it can be named after or previous an M&A; this helped us to identify the institution companies and put them in a single identification number, when needed. In the case of Wachovia, we identify all loans for which Wachovia bank was the lender and reassign the lender parent from Wells Fargo to Wachovia bank.

To fully rule out matching error, we also manually scan the loan data for discrepancies between the categories lender parent and lender using text-based search. This process reveals no discrepancies and yields a complete match of lenders and loans in Dealscan, so we feel comfortable in pulling data on loan-specific characteristics on each loan including date of issue, days to maturity, facility size, tranche amount, spread, all-in-spread drawn on Libor, and loan covenants, if any. We assign any covenants on a loan, an indicator variable equal to one, in line with [\(Ge et al. 2012\)](#) [45]. We also take the natural logarithm of days to maturity, tranche amount and all-in-undrawn spread on Libor to reduce the impact of outliers. To control for the size of each loan relative to the portfolio of loans issued by a bank, we obtain the total amount of loans extended by each lender in each year from the League Deal Table. As a final step in this process, we merge this loan data on each bank on foreign syndicated loans by country of borrower with the State data matched at the branch level of each bank on ethnicity in the U.S.

To control for borrower characteristics, which can influence lending terms and need for financing, we utilize the Compustat-Dealscan link table provided by [Chava and Roberts \(2008\)](#) [46]. This link is helpful to gather data on borrower characteristics from Compustat North American and Compustat Global for a large fraction of banks with loans in DealScan. We follow Compustat to ascertain foreign firm size, profitability, leverage, and current ratio. Size is the natural log of total assets, profitability is the ratio of EBITDA scaled by sales, current is the ratio of current assets to current liabilities, and leverage is the ratio of long-term debt to total assets.

Considering countries where the borrowing entities are located, we use ethnicities information extracted by the Cline Center for Advanced Research, where there is information about specific ethnicities from 1945 to 2013. Missing data from 2013 to 2020 are hand-collected by single- countries Census data (when available). Since Cline Center for Advanced Research provides specific information concerning ethnicities, in order to harmonise data with those stemming from the U.S. Census we have regrouped the single ethnicities into the American ethnic groups; following this harmonisation, we are able to produce an identifier equal one when the zipcode where the lending entity is located and the country where the borrowing entity is situated are the same.

We have to spend a few words also on the computation of ethnicity for the American financial institutions. After we have downloaded data from the U.S. Census, to compute the ethnic exposure of banks, we have computed a weighted average of the single ethnicities' rates considering all the branches composing each year the banking group. Considering the FDIC Summary of Deposits, we have collated information concerning branches location and their deposits for each ZCTA using the linking table by [Jan Keil \(2018\)](#) [47] connecting rssid id (which is an identifier of FED and FDIC) and Dealscan identification number. For each branch we have assigned the ethnicity rate of the ZCTA in which is located and then we have computed the weighted average of the group considering all the branches involved in the Summary of Deposits file.

We have then created a panel where the identities involved are 169 financial institutions, 129 countries where the borrowers are located repeated for a time-span that ranges from 1987 to 2021. The number of loans involved is 1,129 and they are signalled by the variable "Participation to the Pool", which is a dummy equal to one whether bank i participates to a pool for a loan towards a company situated in a certain country j at time t (and it is also our dependent variable).

To give a brief picture of the distribution of our dataset, in [Table 1](#) we show major univariate statistics (number of observations, mean, median, first and last quartile) of the sample. In [Table 2](#) we provide the first ten banks according to the number of syndication pools they take part in. In [Table 3, 4](#) and [5](#) we show results for the first 10 banks according to their exposure to respectively Black, Asian and Hispanic ethnicity. The computation and definition of the variables can be found in [Appendix I](#).

2.6 METHODOLOGY AND RESULTS

We are aware that the research results endogenous because of an omitted variable potential problem, but we have planned to lead further analysis in order to diminish endogeneity, such as difference-in-differences exploiting exogeneous shocks on the migration flows. What we would expect it is exactly what emerges by the preliminary correlations: the correlation between issuing a loan toward a borrower located in a country and having the exposure of the same ethnicity for the lender and the borrower is positive.

We revisit the methodology used in several papers concerning cross-border financial flows decisions: the gravity model.

Gravity model is mainly used to predict the relation between geographical distance and financial investments or trade. Gravity model is very popular in international trade research. The name stems from its exploitation of the gravitational force concept as an analogy to explain the volume of bilateral trade flows. The main finding is that trade between two countries is positively related to economic size and it is negatively related to trade costs between them ([Anderson 2011](#)). Previous literature has found that if geographical distance increases, volume of financial investments or trade decrease and this result remains stable even if there is a technology advancement that should make distance a transparent limit ([Buch 2005](#), [Portes and Rey 2005](#), [Anderson 2011](#), [Head and Mayer 2014](#)) [17] [3] [48] [49]. Although it is mainly used in trade literature, it is a really dynamic and flexible model, so it can be applied in diverse contexts, as we will be doing in this research.

[Badarinza et al. \(2022\)](#) [50] find that distance is not crucial if preferences of the economic actors are considered. In particular, they investigate the real estate market to show that a nationality preference can be more significant when considering whether or not to conduct a real estate investment. We want to use this finding and their methodology in the syndicated loan market. We think that for a financial institution exposed to a certain ethnic group there is a higher probability to take part in a syndicated loan pool for a loan towards a borrower located in a country where there is a high presence of that same ethnicity. Indeed, the financial institution has a preferential matching towards the ethnic group they are used to have contacts or they self-identify with. We follow also the corollary³ by [Badarinza et al. \(2022\)](#) [50] and we infer the following one, considering the gravity effect in our research: The matching behaviour of lenders within a location influences their financial decisions in the different countries. Financial institutions that have a matching preference towards borrowers located in countries that they feel next to them, also in different countries they will conduct their decision according to that preference towards a certain ethnic group, in

³ Consider a typical buyer nationality i . If the density of desirable sellers $N_{j,k}^S$ available in a foreign country k is related to (the inverse of) physical distance $D_{i,k}$ between the buyer's country of origin i and the destination country k , the pattern of global investment flows of this buyer nationality will consequently also exhibit such gravity effects.

this way they also tend to increase the gravity effect. We can affirm that the corollary (changed to fit in our case) follows a path of ethnic homophily towards the gravity model effects.

We provide our main methodology, modified according to the construction of our dependent variable (a binary variable):

[1.a]

$$\begin{aligned} & (\textit{Participation to the pool})_{i,j,t} \\ &= \delta_1[\textit{Ethnicity Overlap}]_{i,j,t} + \delta_2[\log(DIST_{i,j})] + \delta_2[\textit{Common Language}]_{i,j} \\ &+ \delta_3[\textit{Colonial Ties}]_{i,j} + \delta_4[\textit{Common Law}]_{i,j} + \delta_5[\textit{Common Religion}]_{i,j} + \alpha_t + \alpha_{i,j} \\ &+ \varepsilon_{i,j,t} \end{aligned}$$

[1.b]

$$\begin{aligned} & (\textit{Participation to the pool})_{i,j,t} \\ &= \delta_1[\textit{Black Identity}]_{i,j,t} + \delta_2[\log(DIST_{i,j})] + \delta_2[\textit{Common Language}]_{i,j} \\ &+ \delta_3[\textit{Colonial Ties}]_{i,j} + \delta_4[\textit{Common Law}]_{i,j} + \delta_5[\textit{Common Religion}]_{i,j} + \alpha_t + \alpha_{i,j} \\ &+ \varepsilon_{i,j,t} \end{aligned}$$

[1.c]

$$\begin{aligned} & (\textit{Participation to the pool})_{i,j,t} \\ &= \delta_1[\textit{Asian Identity}]_{i,j,t} + \delta_2[\log(DIST_{i,j})] + \delta_2[\textit{Common Language}]_{i,j} \\ &+ \delta_3[\textit{Colonial Ties}]_{i,j} + \delta_4[\textit{Common Law}]_{i,j} + \delta_5[\textit{Common Religion}]_{i,j} + \alpha_t + \alpha_{i,j} \\ &+ \varepsilon_{i,j,t} \end{aligned}$$

[1.d]

$$\begin{aligned} & (\textit{Participation to the pool})_{i,j,t} \\ &= \delta_1[\textit{Hispanic Identity}]_{i,j,t} + \delta_2[\log(DIST_{i,j})] + \delta_2[\textit{Common Language}]_{i,j} \\ &+ \delta_3[\textit{Colonial Ties}]_{i,j} + \delta_4[\textit{Common Law}]_{i,j} + \delta_5[\textit{Common Religion}]_{i,j} + \alpha_t + \alpha_{i,j} \\ &+ \varepsilon_{i,j,t} \end{aligned}$$

For all four models, we have as dependent variable *Participation to the pool*, a dummy variable equal to one whether the lender i take part in a syndication pool towards a borrower located in a country j at time t . For Model 1.a the main independent variable is *Ethnicity Overlap*, a continuous variable that is computed as the sum of Black Identity, Asian Identity and Hispanic Identity ethnicities. The main independent variable for Model 1.b is *Black Identity*, the multiplication of the rates of Black individuals of lender i and borrower j for each time t . The main independent variable for Model 1.c is *Hispanic Identity*, the multiplication of the rates of Hispanic individuals of lender i and borrower j for each time t .

The main independent variable for Model 1.d is *Asian Identity*, the multiplication of the rates of Asian individuals of lender i and borrower j for each time t . In the following equations we will provide computation of the four main independent variables:

Black Identity

$$= \text{Lenders' exposure to Black Population (\%)}^4$$

$$* \text{Borrowers' exposure to Black Population (\%)}^5$$

Asian Identity

$$= \text{Lenders' exposure to Asian Population (\%)}^6$$

$$* \text{Borrowers' exposure to Asian Population (\%)}^7$$

Hispanic Identity

$$= \text{Lenders' exposure to Hispanic Population (\%)}^8$$

$$* \text{Borrowers' exposure to Hispanic Population (\%)}^9$$

$$\text{Ethnic Identity} = \text{Black Identity} * \text{Asian Identity} * \text{Hispanic Identity}$$

The controls inserted that are common in all the models are: (i) $\log(DIST_{i,j})$, i.e. the logarithm of the distance between the capital cities of the countries where borrowers and lenders are located. Distance is

⁴ Black lenders' exposure is computed as follows: we consider Black population rates in the ZipCodes where branches of a U.S. bank are located and we compute the weighted average of those rates according to the amount of deposit held by each branch.

⁵ Borrowers' exposure to Black population is calculated as the percentage presence of Black population in the country where the borrower is located.

⁶ Asian lenders' exposure is computed as follows: we consider Asian population rates in the ZipCodes where branches of a U.S. bank are located and we compute the weighted average of those rates according to the amount of deposit held by each branch.

⁷ Borrowers' exposure to Asian population is calculated as the percentage presence of Asian population in the country where the borrower is located.

⁸ Hispanic lenders' exposure is computed as follows: we consider Hispanic population rates in the ZipCodes where branches of a U.S. bank are located and we compute the weighted average of those rates according to the amount of deposit held by each branch.

⁹ Borrowers' exposure to Hispanic population is calculated as the percentage presence of Hispanic population in the country where the borrower is located.

the basic variable of a gravity model, so it is the first control that we will introduce in our analysis; (ii) *Common Language*, i.e. dummy equal one if the countries where borrower and lender are located share the official or primary language spoken ([Head et al, 2010](#)). Language is the first element that can connect two people or create a barrier. Indeed, it is easier to trade (or having a connection) if individuals or economic actors share the language or they are able to connect a common language; (iii) *Colonial Ties*, i.e. dummy equal one if the countries where lenders and borrowers are located have had a colonial relationship after 1945 ([Head et al, 2010](#)) [51]. We use this variable as it suggests a certain historic tie between the countries that we think should be considered also when examining economic patterns; (iv) *Common Religion*, i.e. the religious proximity index by [Disdier and Mayer \(2007\)](#) [52], an index calculated by adding the products of the shares of Catholics, Protestants and Muslims in the origin and destination countries. It is bounded between 0 and 1 and is maximum if the country pair has a religion which (1) comprises a vast majority of the population, and (2) is the same in both countries. Source of religion shares: [LaPorta, Lopez-de-Silanes, Shleifer and Vishny \(1999\)](#) [53], completed with the CIA world factbook. This variable is considered as it is one of the main components of cultural heritage of a population; (v) *Common Law*, variable equal to one if countries share common legal origins [LaPorta, Lopez-de-Silanes, Shleifer and Vishny \(1999\)](#). Having the same law enforcement methodologies leads to higher interaction between countries, as the rules become more understandable.

To understand the first correlations, we lead simple OLS regressions, with the controls explained previously and Fixed Effects for years, lenders and countries. In [Table 6](#) results can be found. What we expect is to have a positive relation between the ethnic overlap variables and the participation to the pool. Indeed, our Proposition 1 claims that having the same ethnic exposure leads to create financial ties and, consequently, in our case, participating to a syndication pool for loans towards borrowers that share the same ethnic prevalence. The results confirm the proposition developed in this first Study of the dissertation, although in some cases with low significance, but we expect that as the effect should be marginal in this type of loans. In particular, we think that ethnicity will have an influence on the decision,

but that should be secondary compared to other elements, such as characteristics of the borrower (solvency, revenues, turnover and so on).

[Table 7](#) shows the results of the main analysis. We perform a binary logistic regression with all the controls, Fixed Effects for bank-country-year and clustered errors at bank-country level. The coefficients are positive and highly significant and robust. We have performed this analysis that recalls gravity modelling. Gravity models are the models mainly used in research when considering flows of trade with dyadic control variables, as the ones applied in our model ([Disdier and Mayer 2007](#), [Ramos 2016](#), [Baier and Standaert 2020](#))[52] [54] [55]. Gravity models usually give estimations of the international flows of trade, while we apply it to the syndicated loan market. The model derives from the spatial modelling theory, which is used in analyses that involve geographically meaningful phenomena, as in our case. The results follow the findings of previous research, although they are applied to a completely different financial sector, i.e. syndicated loans.

The introductory analysis and the main analysis provide positive and significant (on average) results. However, we acknowledge that there can be a problem of emitted variables. Consequently, the endogeneity component is obvious. In order to diminish endogeneity, we provide a first battery of robustness tests, but we have planned further analysis for future research.

In the next section, we provide robustness test to provide further analysis concerning the correlation between syndicated loans flows and sharing the same ethnicity.

2.7 ROBUSTNESS TESTS

The robustness tests that we will provide are four. The first one is to run the analysis by using a fixed effects panel logit regression, instead of a fixed effects pooled logit regression. The model deployed in the main methodology is the one mostly used in this type of analysis in literature, but since we have a panel data structure, we will run this further analysis as robustness test. Some of the controls will be omitted as they do not have a within change, since they do not change over time. In [Table 8](#) we provide the results of the analysis and apart from a slight diminish in the significance for Hispanic Identity variable, coefficients are positive and significant.

Considering the second robustness test, we will deploy a different computation of sharing of ethnicity. Since the computation of the first variable is our own idea, we have decided to lead further tests with a even simpler computation for the sharing of ethnicity for lenders and borrowers. First, we will provide the mathematical models and then we will introduce the new main explanatory variables.

[2.a]

$$\begin{aligned}
 (\textit{Participation to the pool})_{i,j,t} &= \delta_1[\textit{Black Identity2}]_{i,j,t} + \delta_2[\log(DIST_{i,j})] + \delta_2[\textit{Common Language}]_{i,j} \\
 &+ \delta_3[\textit{Colonial Ties}]_{i,j} + \delta_4[\textit{Common Law}]_{i,j} + \delta_5[\textit{Common Religion}]_{i,j} + \alpha_t + \alpha_{i,j} \\
 &+ \varepsilon_{i,j,t}
 \end{aligned}$$

[2.b]

$$\begin{aligned}
 (\textit{Participation to the pool})_{i,j,t} &= \delta_1[\textit{Asian Identity2}]_{i,j,t} + \delta_2[\log(DIST_{i,j})] + \delta_2[\textit{Common Language}]_{i,j} \\
 &+ \delta_3[\textit{Colonial Ties}]_{i,j} + \delta_4[\textit{Common Law}]_{i,j} + \delta_5[\textit{Common Religion}]_{i,j} + \alpha_t + \alpha_{i,j} \\
 &+ \varepsilon_{i,j,t}
 \end{aligned}$$

[2.c]

$$\begin{aligned}
 (\textit{Participation to the pool})_{i,j,t} &= \delta_1[\textit{Hispanic Identity2}]_{i,j,t} + \delta_2[\log(DIST_{i,j})] + \delta_2[\textit{Common Language}]_{i,j} \\
 &+ \delta_3[\textit{Colonial Ties}]_{i,j} + \delta_4[\textit{Common Law}]_{i,j} + \delta_5[\textit{Common Religion}]_{i,j} + \alpha_t + \alpha_{i,j} \\
 &+ \varepsilon_{i,j,t}
 \end{aligned}$$

The main dependent variable that we will deploy is the same as previously, i.e. participation to the pool.

The main explanatory variable for Model 2.a is *Black Identity2*, i.e. a dummy equal one if the exposure

to Black ethnicity for lender i and for country j , where the borrower is located, are both above the 90th percentile ¹⁰at time t . For Model 2.b the main independent variable is *Asian Identity2*, i.e. a dummy equal one if the exposure to Asian ethnicity for lender i and for country j , where the borrower is located, are both above the 90th percentile at time t . In Model 2.c we have *Hispanic Identity2*, i.e. a dummy equal one if the exposure to Hispanic ethnicity for lender i and for country j , where the borrower is located, are both above the 90th percentile at time t .

We find in [Table 9](#) that results to this robustness test are positive, although they are not always significant, as in the case of Asian and Hispanic Identity. We perform again the analysis, considering the panel data structure; results are in [Table 10](#) and also here are positive, although less significant.

We expected a marginal result as the influence of ethnicity should be minimal to this cross-border loan. As stated in the previous paragraphs syndicated loan are a type of loan where the white paper with the description of the loan and its purpose should be crucial for the participants to decide whether to take part in the loan and also trust towards the arranger is important, as it is the financial institutions that usually bears the major risk through the detention of the largest share. Consequently, the characteristics of the loan and the solvency ability of the borrower should be the major (if not unique) element to decide whether to be part of the syndication pool, especially because of the high information asymmetry between participants and arrangers with borrowers ([Sufi 2007](#)) [37].

Other robustness tests provided are run on a smaller sample. Indeed, we have chosen to repeat the analysis on a sample that has a time range between 2000 and 2020 (in [Table 15](#) we provide some univariate statistics of the reduced sample made of 898 loans issued by 169 banks towards borrowers located in 129 countries). Our aim through this robustness test is to diminish endogeneity that can be driven by the use of 2000 ethnic variables and loans ranging from 1987. In this way, we show how the possible omitted variable risk is diminished, providing a test that begins in 2000.

¹⁰ We have chosen the 90th percentile as it signals a high exposure to a certain ethnicity.

In the further regressions we have “Participation” as main dependent variable and as independent variables we have the previous ethnicity variables: in [Table 11](#) and [12](#) we have results for the main ethnicity variables, while in [Table 13](#) and [14](#) we have results having as independent variables ethnicity variables deployed in the first robustness tests.

Results show that the positive relationship between having the same ethnic exposure and participating to a syndicated loan is significant. Results are all positive and for the main regressions they are significant, confirming the correlation presented throughout the paper.

We recognize also that there is a high level of endogeneity that cannot be probably all captured by using these methodologies, but we should also introduce further tests such as difference-in-differences or instrumental variables, in order to identify causality clearly.

We have planned to conduct further analysis in the further development of the research, in order to identify the relation between ethnicity and cross-border syndicated lending decision and give further hints about the channel that ethnicity follows to influence the financial decisions.

2.8 CONCLUSION

In this research we provide first analysis for the syndicated loan markets to understand drivers of cross-border lending decisions. We have used U.S. financial institutions as the setting is unique considering ethnic groups and allows us to investigate whether a within country variation in demographics influence international lending decisions. Since in previous research gravity model has been widely and correctly used to understand destination origin financial flows, in order to conduct the analysis, we have run modified gravity model regressions. Indeed, our binary dependent variable allowed us to run binary logistic gravity model and helped us predict that financial institutions have a preferential matching towards the ethnicity they are exposed to.

Although results need more analysis to avoid endogeneity problems, we have found that black ethnicity has a higher tendency to take part in syndication pools towards those countries that have a high presence of Black people. This leads to a finding that is related to sociological literature.

In recent years in sociological literature has been investigated the effect of ethnic homophily in the composition of social networks. Indeed, people that have a strong sense of self-belonging into an ethnic group have a preferential matching towards individuals that are part of that same ethnic group. This leads to a chain effect of befriending friends and friends of friends who are all part of the same minority, increasing the connections of a social network, through a sense of self-identity and self-belonging.

This is what it has been found in previous research considering cross-border financial flows and also in this research considering syndicated loans: financial institutions also have a higher probability to finance companies that are in countries with a certain ethnicity that they recognize ([Wimmer and Lewis 2010](#), [Smith et al. 2014](#), [Leszczensky and Pink 2019](#), [Badarinza et al. 2022](#)) [25] [26] [27] [50].

We have exploited sociological literature to find that this phenomenon applies also to within country variation of demographics, where ethnic homophily is widely spread and it is a crucial part of social networks structure ([Wimmer and Lewis 2010](#)) [25].

To conduct the research we have deployed syndicated loan market. Syndicated loans have only used to understand whether cultural distance could influence contractual terms ([Giannetti and Yafeh 2012](#))[12]. However, we extend previous literature by showing that although in syndicated loan market there are frictions given by information asymmetries and monitoring costs ([Lin et al. 2012](#), [Sufi 2007](#))[39][58], these are exacerbated partly by the preferential matching towards the same ethnic group the financial institutions are exposed to.

Nevertheless, we also believe that there is a need for a further development of the research, in order to provide stronger statistically significant results, as endogeneity is a problem and provide also the channel through which ethnicity influences financial decisions (beyond the mere ethnic homophily or familiarity effect). Moreover, also the gravity model literature will be extended, as we use the model in a completely different context and will be enforced with further elements, in order to give it higher predictive power.

2.9 TABLES

Table 1- Univariate Statistics: No. of Observations, Mean, Standard Deviation and Percentiles.

	Num. Obs.	Mean	St. Dev	Percentile 25 th	Median	Percentile 75 th
Participation to the pool	763035	.001	.038	0	0	0
Loan Amount (\$)	1129	1.475e+09	3.538e+09	1.850e+08	4.800e+08	1.500e+09
Year (Start of the loan)	763035	2004	10.1	1995	2004	2013
Ethnicity Overlap	763035	0	.001	0	0	0
Black Identity	763035	0	.001	0	0	0
Asian Identity	763035	0	0	0	0	0
Hispanic Identity	763035	0	0	0	0	0
Black % in U.S.	763035	11.797	17.32	1.739	4.79	11.919
Hispanic % in U.S.	763035	6.99	10.055	1.095	3.019	8.286
Asian % in U.S.	763035	5.242	8.04	1.134	2.209	5.758
Black % in borrowers' countries	763035	24.8	39.2	0	0	.5
Hispanic % in borrowers' countries	763035	8.3	23.1	0	0	0
Asian % in borrowers' countries	763035	15.9	33.0	0	0	.051
Logarithm of Distance	743938	8.983	.47	8.778	9.027	9.317
Common Official Language	743938	.236	.424	0	0	0
Colonial Ties	743938	.008	.089	0	0	0
Common Law	743938	.278	.448	0	0	1
Common Religion	733798	.137	.128	.009	.116	.272

Table 2 – List of first 10 banks according to the Number of Loans.

Lenders' Names	Number of Loans
Wells Fargo Bank NA	80
CoBank	80
Mellon Bank	77
US Bank NA	70
Republic National Bank of New York	58
Union Bank of California	55
Union Bank NA	43
Apple Bank for Savings	40
United Bank	28
Sovereign Bank	25

Table 3 - List of first 10 banks according to their exposure to Black Ethnicity.

Lenders' Names	Exposure to Black ethnicity (%)
SouthTrust Bank NA	78.7
Tristate Capital Bank	64.2
SRF Trading Inc	58.3
Tama Central Credit Bank	58.3
Cypresstree Investment Management Co Inc	58.3
Salomon Smith Barney Inc	58.3
MONY Life Insurance Co of America	58.3
Fernwood Associates LP	58.3
Grand Commercial Bank	58.3
Scudder Floating Rate Fund	58.3

Table 4 - List of first 10 banks according to their exposure to Hispanic Ethnicity.

Lenders' Names	Exposure to Hispanic ethnicity (%)
Mercantil Commercebank NA	49.7
BAC Florida Bank	49.7
Sanwa Business Credit Corp	47.7
International Bank of Commerce	40.8
Citibank Japan Ltd	39.1
General Bank	32.1
Hamilton Bank	27.0
Bank of Utah	26.2
Merrill Lynch International Bank Ltd	22.5
Pacific National Bank	22.5

Table 5 - List of first 10 banks according to their exposure to Asian Ethnicity.

Lenders' Names	Exposure to Asian ethnicity (%)
Union Bank of California	41.5
First Hawaiian Bank	38.5
Preferred Bank	29.8
Union Bank of California NA	28.4
Sanwa Bank California	24.3
Brown Brothers Harriman & Co	22.9
Far East National Bank	22.8
Merrill Lynch Bank USA	19.8
Harris BankCorp	18.3
California First Bank	18.2

Table 6 - Simple OLS regression having as dependent variable “Participation to the Pool”, dummy equal one if the financial institution takes part in the syndication pool. In Model 1 the main explanatory variable is Ethnicity Overlap, for each ethnicity, we have developed a measure to connect lender and borrower. We have considered the rate divided by 100 of the single ethnicity presence of the demographics of the location of the lender and multiplied with the rate divided by 100 of the single ethnicity presence of the demographics of the location of the borrower. These three multiplications have been summed to create an overlap measure, Ethnicity Overlap, indeed. In Model 2 the main explanatory variable is Black Identity (the rate divided by 100 of the Black presence of the location of the lender and multiplied with the rate divided by 100 of the Black presence of the location of the borrower). In Model 3 the main explanatory variable is Asian Identity (the rate divided by 100 of the Asian presence of the location of the lender and multiplied with the rate divided by 100 of the Asian presence of the location of the borrower). In Model 4 the main explanatory variable is Hispanic Identity (the rate divided by 100 of the Hispanic presence of the location of the lender and multiplied with the rate divided by 100 of the Hispanic presence of the location of the borrower). (Clustered error at bank-country level, *t* statistics in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.010$)

	(Model 1) Participation	(Model 2) Participation	(Model 3) Participation	(Model 4) Participation
Ethnicity Overlap	0.00244*** (2.65)			
Black Identity		0.00133*** (2.79)		
Asian Identity			0.00300 (0.54)	
Hispanic Identity				0.0123** (2.30)
_cons	0.400 (1.34)	0.399 (1.34)	0.399 (1.33)	0.398 (1.33)
Controls	Yes	Yes	Yes	Yes
Bank FE	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
<i>N</i>	733798	733798	733798	733798
adj. <i>R</i> ²	0.020	0.020	0.020	0.020

Table 7 – Binary Logistic regression having as dependent variable “Participation to the Pool”, dummy equal one if the financial institution takes part in the syndication pool. In Model 1.a the main explanatory variable is Ethnicity Overlap, for each ethnicity, we have developed a measure to connect lender and borrower. We have considered the rate divided by 100 of the single ethnicity presence of the demographics of the location of the lender and multiplied with the rate divided by 100 of the single ethnicity presence of the demographics of the location of the borrower. These three multiplications have been summed to create an overlap measure, Ethnicity Overlap, indeed. In Model 1.b the main explanatory variable is Black Identity (the rate divided by 100 of the Black presence of the location of the lender and multiplied with the rate divided by 100 of the Black presence of the location of the borrower). In Model 1.c the main explanatory variable is Asian Identity (the rate divided by 100 of the Asian presence of the location of the lender and multiplied with the rate divided by 100 of the Asian presence of the location of the borrower). In Model 1.d the main explanatory variable is Hispanic Identity (the rate divided by 100 of the Hispanic presence of the location of the lender and multiplied with the rate divided by 100 of the Hispanic presence of the location of the borrower). For all four models we have as controls: (i) Logarithm of distance; (ii) Common Language; (iii) Colonial Ties; (iv) Common Law; (v) Common Religion (Clustered error at bank-country level, *t* statistics in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.010$).

	(Model 1.a) Participation	(Model 1.b) Participation	(Model 1.c) Participation	(Model 1.d) Participation
Ethnicity Overlap	2.410*** (3.17)			
Black Identity		2.533* (1.87)		
Asian Identity			0.906 (0.74)	
Hispanic Identity				6.698*** (4.89)
Log (Distance)	2.054*** (2.70)	1.942** (2.53)	1.914** (2.50)	2.272*** (3.02)
Common Language	3.710*** (5.09)	3.694*** (5.06)	3.674*** (5.03)	3.871*** (5.33)
Colonial Ties	-6.427*** (-4.96)	-6.209*** (-4.78)	-6.231*** (-4.80)	-6.516*** (-5.05)
Common Law	1.163 (1.20)	0.942 (0.98)	0.994 (1.03)	1.029 (1.07)
Common Religion	10.12*** (2.75)	9.026** (2.48)	9.270** (2.53)	9.582*** (2.64)
_cons	-27.09*** (-3.67)	-25.79*** (-3.47)	-25.61*** (-3.45)	-28.95*** (-3.97)
Bank FE	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
<i>N</i>	377208	377208	377208	377208
Pseudo. <i>R</i> ²	0.3336	0.3325	0.3324	0.3348

Table 8 – Panel Logistic regression having as dependent variable “Participation to the Pool”, dummy equal one if the financial institution takes part in the syndication pool. In Panel 1 the main explanatory variable is Ethnicity Overlap, for each ethnicity, we have developed a measure to connect lender and borrower. We have considered the rate divided by 100 of the single ethnicity presence of the demographics of the location of the lender and multiplied with the rate divided by 100 of the single ethnicity presence of the demographics of the location of the borrower. These three multiplications have been summed to create an overlap measure, Ethnicity Overlap, indeed. In Panel 2 the main explanatory variable is Black Identity (the rate divided by 100 of the Black presence of the location of the lender and multiplied with the rate divided by 100 of the Black presence of the location of the borrower). In Panel 3 the main explanatory variable is Asian Identity (the rate divided by 100 of the Asian presence of the location of the lender and multiplied with the rate divided by 100 of the Asian presence of the location of the borrower). In Panel 4 the main explanatory variable is Hispanic Identity (the rate divided by 100 of the Hispanic presence of the location of the lender and multiplied with the rate divided by 100 of the Hispanic presence of the location of the borrower). For all four models we have as controls: (i) Logarithm of distance; (ii) Common Language; (iii) Colonial Ties; (iv) Common Law; (v) Common Religion (Clustered error at bank-country level, *t* statistics in parentheses * p<0.10, ** p<0.05, *** p<0.010).

	(Panel 1) Participation	(Panel 2) Participation	(Panel 3) Participation	(Panel 4) Participation
Ethnicity Overlap	3.129*** (2.66)			
Black Identity		6.209** (2.01)		
Asian Identity			2.490* (1.75)	
Hispanic Identity				2.744 (1.18)
Controls	Yes	Yes	Yes	Yes
Bank FE	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
<i>N</i>	17825	17825	17825	17825
Pseudo <i>R</i> ²	0.0046	0.0307	0.0441	0.1377

Table 9 – Simple Logistic regression having as dependent variable “Participation to the Pool”, dummy equal one if the financial institution takes part in the syndication pool. The main explanatory variables are: in Model 2.a, Black Identity2 (that is a dummy equal one if the rate of Black people in the neighbourhood of both lenders and borrowers is higher or equal than 90th percentile value for each year); in Model 2.b, Asian Identity2 (that is a dummy equal one if the rate of Asian people in the neighbourhood of both lenders and borrowers is higher or equal than 90th percentile value for each year); in Model 2.c, Hispanic Identity2 (that is a dummy equal one if the rate of Hispanic people in the neighbourhood of both lenders and borrowers is higher or equal than 90th percentile value for each year. For all four models we have as controls: (i) Logarithm of distance; (ii) Common Language; (iii) Colonial Ties; (iv) Common Law; (v) Common Religion (Clustered error at bank-country level, *t* statistics in parentheses * p<0.10, ** p<0.05, *** p<0.010).

	(Model 2.a) Participation	(Model 2.b) Participation	(Model 3.c) Participation
Black Identity2	0.00116*** (5.51)		
Asian Identity2		0.143 (0.31)	
Hispanic Identity2			0.143 (0.31)
Log (Distance)	1.913** (2.50)	1.913** (2.50)	1.913** (2.50)
Common Language	3.685*** (5.05)	3.676*** (5.04)	3.676*** (5.04)
Colonial Ties	-6.187*** (-4.77)	-6.177*** (-4.77)	-6.177*** (-4.77)
Common Law	0.934 (0.97)	0.957 (1.00)	0.957 (1.00)
Common Religion	8.972** (2.47)	9.058** (2.51)	9.058** (2.51)
_cons	-25.52*** (-3.44)	-25.55*** (-3.44)	-25.55*** (-3.44)
Bank FE	Yes	Yes	Yes
Country FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
<i>N</i>	376103	377208	377208
Pseudo <i>R</i> ²	0.3323	0.3323	0.3323

Table 10 – Panel Logistic regression having as dependent variable “Participation to the Pool”, dummy equal one if the financial institution takes part in the syndication pool. The main explanatory variables are: in Panel 2.a, Black Identity2 (that is a dummy equal one if the rate of Black people in the neighbourhood of both lenders and borrowers is higher or equal to the 90th percentile value for each year); in Panel 2.b, Asian Identity2 (that is a dummy equal one if the rate of Asian people in the neighbourhood of both lenders and borrowers is higher or equal to the 90th percentile value for each year); in Panel 2.c, Hispanic Identity2 (that is a dummy equal one if the rate of Hispanic people in the neighbourhood of both lenders and borrowers is higher or equal to the 90th percentile value for each year. For all four models we have as controls: (i) Logarithm of distance; (ii) Common Language; (iii) Colonial Ties; (iv) Common Law; (v) Common Religion (Clustered error at bank-country level, *t* statistics in parentheses * p<0.10, ** p<0.05, *** p<0.010).

	(Panel 2.a) Participation	(Panel 2.b) Participation	(Panel 2.c) Participation
Black Identity2	0.971 (1.04)		
Asian Identity2		0.155 (0.35)	
Hispanic Identity2			0.155 (0.35)
Controls	Yes	Yes	Yes
Bank FE	Yes	Yes	Yes
Country FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
<i>N</i>	17825	17825	17825
Pseudo. <i>R</i> ²	0.1671	0.2549	0.2549

Table 11 - Pooled OLS regression for the sample with time range from 2000 to 2020 having as dependent variable “Participation to the Pool”, dummy equal one if the financial institution takes part in the syndication pool. In Model 3.a the main explanatory variable is Ethnicity Overlap, for each ethnicity, we have developed a measure to connect lender and borrower. We have considered the rate divided by 100 of the single ethnicity presence of the demographics of the location of the lender and multiplied with the rate divided by 100 of the single ethnicity presence of the demographics of the location of the borrower. These three multiplications have been summed to create an overlap measure, Ethnicity Overlap, indeed. In Model 3.b the main explanatory variable is Black Identity (the rate divided by 100 of the Black presence of the location of the lender and multiplied with the rate divided by 100 of the Black presence of the location of the borrower). In Model 3.c the main explanatory variable is Asian Identity (the rate divided by 100 of the Asian presence of the location of the lender and multiplied with the rate divided by 100 of the Asian presence of the location of the borrower). In Model 3.d the main explanatory variable is Hispanic Identity (the rate divided by 100 of the Hispanic presence of the location of the lender and multiplied with the rate divided by 100 of the Hispanic presence of the location of the borrower). (Clustered error at bank-country level, *t* statistics in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.010$)

	(3.a) Participation	(3.b) Participation	(3.c) Participation	(3.d) Participation
Ethnicity Overlap	0.00279** (2.02)			
Black Identity		0.00131* (1.87)		
Asian Identity			0.00177 (0.24)	
Hispanic Identity				0.0190** (2.18)
Log (Distance)	-0.0585*** (-3.04)	-0.0586*** (-3.04)	-0.0587*** (-3.05)	-0.0588*** (-3.05)
Common Language	0.00862** (2.33)	0.00875** (2.37)	0.00894** (2.42)	0.00893** (2.42)
Colonial Ties	0.0416*** (3.20)	0.0416*** (3.20)	0.0414*** (3.19)	0.0415*** (3.20)
Common Law	0.0326*** (3.18)	0.0327*** (3.18)	0.0327*** (3.19)	0.0328*** (3.19)
Common Religion	-0.0234** (-2.46)	-0.0234** (-2.46)	-0.0234** (-2.46)	-0.0234** (-2.46)
_cons	0.525*** (3.11)	0.526*** (3.11)	0.527*** (3.12)	0.528*** (3.12)
Bank FE	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
<i>N</i>	471848	471848	471848	471848
adj. <i>R</i> ²	0.026	0.026	0.026	0.026

Table 12 - Logistic regression for the sample with time range from 2000 to 2020 having as dependent variable “Participation to the Pool”, dummy equal one if the financial institution takes part in the syndication pool. In Model 4.a the main explanatory variable is Ethnicity Overlap, for each ethnicity, we have developed a measure to connect lender and borrower. We have considered the rate divided by 100 of the single ethnicity presence of the demographics of the location of the lender and multiplied with the rate divided by 100 of the single ethnicity presence of the demographics of the location of the borrower. These three multiplications have been summed to create an overlap measure, Ethnicity Overlap, indeed. In Model 4.b the main explanatory variable is Black Identity (the rate divided by 100 of the Black presence of the location of the lender and multiplied with the rate divided by 100 of the Black presence of the location of the borrower). In Model 4.c the main explanatory variable is Asian Identity (the rate divided by 100 of the Asian presence of the location of the lender and multiplied with the rate divided by 100 of the Asian presence of the location of the borrower). In Model 4.d the main explanatory variable is Hispanic Identity (the rate divided by 100 of the Hispanic presence of the location of the lender and multiplied with the rate divided by 100 of the Hispanic presence of the location of the borrower). (Clustered error at bank-country level, *t* statistics in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.010$)

	(Model 4.a) Participation	(Model 4.b) Participation	(Model 4.c) Participation	(Model 4.d) Participation
Ethnic Identity	2.159*** (2.70)			
Black Identity		1.847 (1.18)		
Asian Identity			0.678 (0.57)	
Hispanic Identity				7.113*** (4.76)
Log (Dist)	2.037** (2.24)	1.930** (2.10)	1.908** (2.08)	2.295** (2.57)
Common Language	3.519*** (4.59)	3.505*** (4.57)	3.490*** (4.55)	3.699*** (4.86)
Colonial Ties	-6.228*** (-4.02)	-6.018*** (-3.88)	-6.037*** (-3.89)	-6.359*** (-4.14)
Common Law	1.149 (1.16)	0.935 (0.96)	0.977 (1.00)	1.033 (1.06)
Common Religion	8.482** (2.15)	7.421* (1.91)	7.621* (1.94)	8.045** (2.08)
_cons	-24.20*** (-2.75)	-22.96*** (-2.59)	-22.82*** (-2.58)	-26.46*** (-3.07)
Bank FE	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
<i>N</i>	184600	184600	184600	184600
adj. <i>R</i> ²	0.3297	0.3285	0.3285	0.3318

Table 13 - Pooled OLS regression for the sample with time range from 2000 to 2020 having as dependent variable “Participation to the Pool”, dummy equal one if the financial institution takes part in the syndication pool. The main explanatory variables are: in Model 5.a, Black Identity2 (that is a dummy equal one if the rate of Black people in the neighbourhood of both lenders and borrowers is higher or equal than 90th percentile value for each year); in Model 5.b, Asian Identity2 (that is a dummy equal one if the rate of Asian people in the neighbourhood of both lenders and borrowers is higher or equal than 90th percentile value for each year); in Model 5.c, Hispanic Identity2 (that is a dummy equal one if the rate of Hispanic people in the neighbourhood of both lenders and borrowers is higher or equal than 90th percentile value for each year. For all three models we have as controls: (i) Logarithm of distance; (ii) Common Language; (iii) Colonial Ties; (iv) Common Law; (v) Common Religion (Clustered error at bank-country level, *t* statistics in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.010$).

	(Model 5.a) Participation	(Model 5.b) Participation	(Model 5.c) Participation
Black Identity2	0.00133*** (4.20)		
Asian Identity2		0.0000252 (0.02)	
Hispanic Identity2			0.0000252 (0.02)
Log (Dist)	-0.0587*** (-3.05)	-0.0587*** (-3.05)	-0.0587*** (-3.05)
Common Language	0.00877** (2.38)	0.00891** (2.41)	0.00891** (2.41)
Colonial Ties	0.0416*** (3.21)	0.0415*** (3.20)	0.0415*** (3.20)
Common Law	0.0327*** (3.19)	0.0327*** (3.19)	0.0327*** (3.19)
Common Religion	-0.0234** (-2.46)	-0.0234** (-2.46)	-0.0234** (-2.46)
_cons	0.527*** (3.11)	0.527*** (3.11)	0.527*** (3.11)
Bank FE	Yes	Yes	Yes
Country FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
<i>N</i>	471848	471848	471848
adj. <i>R</i> ²	0.026	0.026	0.026

Table 14 - Logistic regression for the sample with time range from 2000 to 2020 having as dependent variable “Participation to the Pool”, dummy equal one if the financial institution takes part in the syndication pool. The main explanatory variables are: in Model 6.a, Black Identity2 (that is a dummy equal one if the rate of Black people in the neighbourhood of both lenders and borrowers is higher or equal than 90th percentile value for each year); in Model 6.b, Asian Identity2 (that is a dummy equal one if the rate of Asian people in the neighbourhood of both lenders and borrowers is higher or equal than 90th percentile value for each year); in Model 6.c, Hispanic Identity2 (that is a dummy equal one if the rate of Hispanic people in the neighbourhood of both lenders and borrowers is higher or equal than 90th percentile value for each year. For all three models we have as controls: (i) Logarithm of distance; (ii) Common Language; (iii) Colonial Ties; (iv) Common Law; (v) Common Religion (Clustered error at bank-country level, *t* statistics in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.010$).

	(Model 6.a) Participation	(Model 6.b) Participation	(Model 6.c) Participation
Black Identity2	0.807 (1.02)		
Asian Identity2		0.0946 (0.20)	
Hispanic Identity2			0.0946 (0.20)
Log (Dist)	1.908** (2.08)	1.908** (2.08)	1.908** (2.08)
Common Language	3.499*** (4.56)	3.492*** (4.56)	3.492*** (4.56)
Colonial Ties	-6.002*** (-3.87)	-5.994*** (-3.87)	-5.994*** (-3.87)
Common Law	0.930 (0.96)	0.947 (0.98)	0.947 (0.98)
Common Religion	7.380* (1.90)	7.444* (1.92)	7.444* (1.92)
_cons	-22.76** (-2.57)	-22.77** (-2.57)	-22.77** (-2.57)
Bank FE	Yes	Yes	Yes
Country FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
<i>N</i>	184600	184600	184600
Pseudo <i>R</i> ²	0.3285	0.3285	0.3318

Table 15 - Univariate Statistics for the reduced sample ranging from 2000 to 2020. The second sample is made of 898 loans issued by 169 financial institutions towards borrowers spread in 129 countries.

	Num. Obs.	Mean	St. Dev	Percentile 25 th	Median	Percentile 75 th
Participation to the pool	479622	.002	.043	0	0	0
Loan Amount (\$)	898	1.587e+09	3.829e+09	1.930e+08	5.000e+08	1.602e+09
Year (Start of the loan)	479622	2010.5	6.344	2005	2010.5	2016
Ethnicity Overlap	479622	0	.001	0	0	0
Black Identity	479622	0	.001	0	0	0
Asian Identity	479622	0	0	0	0	0
Hispanic Identity	479622	0	0	0	0	0
Black % in U.S.	479622	12.064	17.231	2.116	5.557	12.428
Hispanic % in U.S.	479622	6.9	9.806	1.108	3.101	7.742
Asian % in U.S.	479622	5.32	8.658	1.134	2.209	5.694
Black % in borrowers' countries	479622	.25	.394	0	0	.5
Hispanic % in borrowers' countries	479622	.084	.232	0	0	0
Asian % in borrowers' countries	479622	.161	.331	0	0	.057
Logarithm of Distance	479284	8.985	.467	8.793	9.027	9.317
Common Official Language	479284	.233	.423	0	0	0
Colonial Ties	479284	.008	.088	0	0	0
Common Law	479284	.272	.445	0	0	1
Common Religion	471848	.135	.128	.009	.11	.272

2.10 APPENDIX I

TITLE	VARIABLES	DESCRIPTION	SOURCE
Dependent Variable			
Participation	Participation to the Pool	Dummy equal one if the financial institution takes part in the syndication pool	Own Computation.
Independent Variables			
Ethnic Overlap	Density of Ethnic presence	We have considered the rate divided by 100 of the single ethnicity presence of the demographics of the location of the lender and multiplied with the rate divided by 100 of the single ethnicity presence of the demographics of the location of the borrower. These three multiplications have been summed to create an overlap measure.	Own Computation.
Black Identity	Density of Black exposure for U.S. Bank and for the borrowing company.	Rate divided by 100 of the Black presence of the location of the lender and multiplied with the rate divided by 100 of the Black presence of the location of the borrower.	Own Computation.
Asian Identity	Density of Asian presence.	Rate divided by 100 of the Asian presence of the location of the lender and multiplied with the rate divided by 100 of the Asian presence of the location of the borrower.	Own Computation.
Hispanic Identity	Density of Hispanic presence.	Rate divided by 100 of the Hispanic presence of the location of the lender and multiplied with the rate divided by 100 of the Hispanic presence of the location of the borrower.	Own Computation.
Black Identity ²	Signal of Black ethnicity exposure for both U.S. banks and foreign borrowing companies.	Dummy equal one if the rate of Black people in the neighbourhood of both lenders and borrowers is higher than 90 th percentile value for each year.	Own Computation.

Asian Identity ²	Signal of Asian ethnicity exposure for both U.S. banks and foreign borrowing companies.	Dummy equal one if the rate of Asian people in the neighbourhood of both lenders and borrowers is higher than 90 th percentile value for each year.	Own Computation.
Hispanic Identity ²	Signal of Hispanic ethnicity exposure for both U.S. banks and foreign borrowing companies.	Dummy equal one if the rate of Hispanic people in the neighbourhood of both lenders and borrowers is higher than 90 th percentile value for each year.	Own Computation.
Log (Distance)	Logarithm of Distance	Logarithm of the distance between the capital cities where banks and borrowers are located.	Mayer, T. & Zignago, S. (2011) Notes on CEPII's distances measures : the GeoDist Database CEPII Working Paper 2011-25
Common Language	Common official or primary language.	Dummy equal one if the primary or official languages of the locations of both banks and companies are the same.	Mayer, T. & Zignago, S. (2011) Notes on CEPII's distances measures : the GeoDist Database CEPII Working Paper 2011-25
Colonial Ties		Dummy equal one if the locations of banks and borrowers have had a colonial relation after 1945.	
Common Law		Dummy equal one if the location of banks and borrowers have the same legal system.	LaPorta et al. (1999) and LaPorta et al. (2008).
Common Religion	Religious Proximity Index.	Index bounded between 0 and 1 where maximum if the country pair has a religion which (1) comprises a vast majority of the population, and (2) is the same in both countries.	Disdier and Mayer (2007)
White % presence in U.S.	White rate exposure of the financial institution.	Weighted average of White rates (ZCTA level) of all the branches belonging to the financial institution.	Own Computation of U.S. Census and FDIC/FED Data.
Black % presence in U.S.	Black rate exposure of the financial institution.	Weighted average of Black rates (ZCTA level) of all the branches belonging to the financial institution.	Own Computation of U.S. Census and FDIC/FED Data.

Asian % presence in U.S.	Asian rate exposure of the financial institution.	Weighted average of Asian rates (ZCTA level) of all the branches belonging to the financial institution.	Own Computation of U.S. Census and FDIC/FED Data.
Hispanic % presence in U.S.	Hispanic rate exposure of the financial institution.	Weighted average of Hispanic rates (ZCTA level) of all the branches belonging to the financial institution.	Own Computation of U.S. Census and FDIC/FED Data.
White % presence in foreign countries	White rate exposure of the country where the borrower is located.	White rate of the individuals in the country where the borrower is located.	Cline Data Center and single counties' Census.
Black % presence in foreign countries	Black rate exposure of the country where the borrower is located.	Black rate of the individuals in the country where the borrower is located.	Cline Data Center and single counties' Census.
Asian % presence in foreign countries	Asian rate exposure of the country where the borrower is located.	Asian rate of the individuals in the country where the borrower is located.	Cline Data Center and single counties' Census.
Hispanic % presence in foreign countries	Hispanic rate exposure of the country where the borrower is located.	Hispanic rate of the individuals in the country where the borrower is located.	Cline Data Center and single counties' Census.

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STUDY 2
PEOPLE HAVE THE POWER
(TO LOWER SYNDICATED LOANS SPREADS).
A U.S. EMPIRICAL STUDY.

3.1 INTRODUCTION

In the second study we will investigate the relation between ethnicity and syndicated loan costs. In particular, we will investigate whether having the same ethnic exposure for lenders and borrowers participating in a syndication pool leads to lower costs (having loan spreads as proxy).

We claim that sharing the same ethnicity enhances communication conditions, leading to lower information asymmetry. This is confirmed in the study by [Rogers and Bhowmik \(1970\)](#) [1], where they assess that communication improves when individuals self-identify in the same cultural group.

[Giannetti and Yafeh \(2012\)](#) [2] find that culturally distant individuals influence syndicated loans' contracting terms: higher is the cultural distance, worse are the contractual terms. In particular, observing the syndicated loan costs they find that for cultural distant individuals, interest rates are higher ([Giannetti and Yafeh, 2012](#)) [2]. [Giannetti and Yafeh \(2012\)](#) [2] claim also that worse contracting terms are not given because of the solvency ability of the borrowers but are indeed given by the fact that individuals tend to not share norms or values. Nevertheless, [Giannetti and Yafeh \(2012\)](#) [2] focus on a definition of "culture" following the literature developed by [Hofstede \(1999\)](#) [3].

Our aim differentiates by their research for three main reasons: first, we deploy ethnicity definition following the sociological literature; second, we want to show that the difference is not led by cross-country differences. We think that within-country ethnic differences do matter; third, we consider the exposure of an American bank to ethnicity considering demographic makeup of the neighbourhood of the lender, while in the other studies have considered also foreign branches in U.S. Considering foreign branches in U.S. finds obviously a significant result because most of them are the so-called "ethnobanks". Ethnobanks are financial institutions that start their journey in a new country by locating the branches in enclaves (i.e. areas in the country where the foreign branch will find location, with a high concentration of the ethnicity of the country where the headquarter of that foreign branch is located) and obtain an FDIC insurance and identification number, that categorizes the institution as American ([Dymsky et al., 2001](#)) [4]. However, ethnobanks have employers of the same ethnicity of the country where the headquarter of the financial institution is located and the clientele also belongs to that same ethnicity.

In our research we want to focus on American banks. We have manually selected all the financial institutions that are American, in order to understand whether their exposure, given by the weighted average of the branches' ethnic exposure (according to their size, proxied by deposit amount), leads to lower costs of syndicated loans towards those borrowers that are located in foreign countries with same ethnic exposure.

Our novelties are not only the within-country difference in ethnicity or the use of sociological literature to lead the analysis, but we also consider a methodology that is usually considered in sociological and economic literature, but not in syndicated loans literature: gravity model. Gravity model is a spatial model where geography is the key element. We find that this methodology can be quite helpful in the prediction, as we consider elements such geographical distance, language, colonial ties, law enforcement, that are typical of this model, but have never been considered in the study of syndicated loans. Moreover, this model is usually applied to cross-country analysis, while we insert a within-country component (although the dyads studied are cross-country).

In the last ten years literature has concerned mostly on the role of culture in finance. Indeed, researchers have conducted analysis to understand the role of culture on different financial outcomes, such as corporate governance ([Licht et al. 2015](#)) [5], risk-taking ([Li et al. 2013](#)) [6], mergers and acquisitions ([Ahern et al. 2015](#)) [7], capital structure ([Chui et al. 2002](#) [8], [Li et al. 2011](#) [9]) and lending decisions ([Giannetti and Yafeh 2012](#) [2], [Fisman et al. 2017](#) [10]).

However, studies have focused on culture defined as “*the ensemble of norms, beliefs and values shared by individuals*” ([Guiso, Sapienza and Zingales 2006](#)) This is the definition that managed to start the research pipeline concerning the role of culture on different financial outcomes. Before reaching an agreement on the definition of culture, there was no research about this topic. Indeed, previously, economic researchers focused on the development of mathematical model, as everything was explainable by objective analysis. However, there was the need to understand the reason behind different financial outcomes according to the origins of the individuals involved in the analysis. Researchers had understood that there was a shift between the potential financial outcome of an individuals that has the characteristic

of the “*homo economicus*” and the actual behaviour. For these reasons, after finding an appropriate agreed definition, research concerning culture started to flourish.

Nevertheless, many topics have not been explored adequately and need more investigations. Moreover, we think that since we are defining a behavioural aspect, it is quite compulsory to understand and use sociological and anthropological culture to give a clear picture of the effect of ethnicity on potential financial outcomes, in this case on the contracting of loans spreads.

We have chosen United States as our laboratory for different reasons. First, United States are the perfect field for this kind of analysis, as citizens social networks are mostly supported by connections based on self-recognition into an ethnic group. This feeling of self-belonging into an ethnic group leads to befriending people from the same ethnic group, and this is especially true in U.S. ([Wimmer and Lewis 2010](#) [11], [Leszczensky and Pink 2018](#) [12]). Moreover, United States are a melting pot of different ethnicities and New York is the city where there is the highest number of spoken languages ([New York City Department of City Planning Population Division, 2005](#) [13]).

Second, we also think that the topic needs to be supported for the recent social developments. Indeed, in 2020 in U.S. new movement has originated, i.e. “Black Lives Matter” political movement. This group was born because of racist acts towards Afro-American individuals. The event that unleashed the protests was the death of George Floyd in 2020, that managed to impinge above the conscience of individuals around the globe. The movement raised the importance about ethnicities and their respect and managed to relaunch the ethnicity topic across media and academics.

Research confirms that the sense of self-identity into one ethnic group is the driver of tie creation among individuals. This self-identity process leads to an enhancement in the flow of information between individuals, that it is also the driver of cross-border financial flows ([Leszczensky and Pink, 2019](#) [12]) Indeed, research concerning migrants and cross-border financial flows has underlined that the two elements are united through the information channel. Indeed, more information lowers monitoring costs and informational asymmetries ([Gustafson et al., 2021](#) [14]).

We want to show how information channel is a key element also in our research. Syndicated loans are a type of loans that is based on the information provided by the arranger of the loan to all participants and the information given by borrowers to the arranger. We think that exposure to people with a higher sense of self-belonging and the receiving of information by them leads to lower monitoring costs, lower information asymmetry and, consequently, lower syndicated loans' costs.

For these reasons, we develop Proposition 2 that is the following one and that we will repeat in the Literature Review Section:

Proposition 2: Exposure to a certain ethnic group for a lender leads to lower costs of the syndicated loan towards those borrowers located in a foreign country that has the same ethnic prevalence.

In Section 2 we develop the literature review. In Section 3, we describe our data collection. In Section 4 we provide methodology and results. In Section 5, we provide robustness tests. Section 6 concludes.

3.2 LITERATURE REVIEW

In the following paragraphs we do not consider only literature review but we provide definitions for syndicated loans and ethnicity.

3.2.1 ETHNICITY

The definition of ethnicity that we apply in the research is the one shared by [Fearon \(2003\)](#) [15] and [Encyclopaedia Britannica](#) [16]; they define ethnicity as a self-identification process that helps individuals to create ties. This definition is mainly used in sociological and anthropological literature, and it fits perfectly also for our case study.

The sources for data concerning ethnicity are those provided by Census for all areas where lenders and borrowers are located. In Census, citizens fill in a questionnaire where they have to indicate in which ethnic group they belong to. Consequently, instead of using the usual cultural dimensions that are deployed by financial literature, we think that it is more appropriate to follow the ethnic fractionalization developed by Census, in order to capture the sociological literature.

Previously research has mostly focused on cultural dimensions developed by [Hofstede \(1999\)](#) [3] and [Schwartz \(2009\)](#) [17]. [Schwartz \(2009\)](#) [17] focused on Embeddedness/Autonomy, Hierarchy/Egalitarianism, Mastery/Harmony. [Hofstede \(1999\)](#) [3] introduced Individualism/Collectivism, Power Distance, Uncertainty Avoidance, Masculinity/Femininity.

Self-identity into an ethnic group helps amplifying social networks, by befriending people that feel to be part of that ethnic group or befriending friends of individuals belonging to that ethnic group ([Wimmer and Lewis 2010](#) [11] , [Leszczensky and Pink 2019](#) [12]). This increases the connections in diaspora networks, leading to an increase in cross-border investments and consolidating familiarity effect ([Leblang 2010](#) [18]).

Ethnic identity is considered as personality, and it is a metre of comparison with other people. Ethnic identity is also considered as an individual characteristic that can change and influence economic outcomes ([Constant and Zimmermann, 2008](#) [19]).

3.2.2 ETHNICITY AND CROSS-BORDER LOANS

Cross-border financial investments are a key element in the explanation of financial globalization, and it is important to understand their driver or the brakes of such phenomenon. In an economy without market frictions, every investor should detain the same portfolio. However, [Constant and Zimmermann \(2008\)](#) [19] find that nationality, together with information, explain the structure of portfolios and they both become potential drivers of cross-border foreign direct investments.

Migrants are often object of study, as they easily transport information between host and domestic country. Indeed, diaspora networks (i.e. ties among migrants located in investing countries and in their home country) have been studied by [Leblang \(2010\)](#) [18] and it resulted in the ability of migrants to reduce transaction and information cost, because of the information flow between individuals, and increase cross-border investments. [Leblang \(2010\)](#) [18] argues that diaspora networks (created through the befriending of migrants or familial ties from the same country) are crucial for the global allocation of capital. Indeed, diaspora networks are a driver of portfolio and foreign direct investments ([Leblang, 2010](#)) [18].

Migrants provide connections between domestic and host countries, making easier cross-border investments. Migrants provide a familiarity effect between domestic and host country, increasing the connections between the countries. Moreover, migrants might prefer investments in their home country, because of the familiarity they feel towards their home country. Then, migrants have connections and can obtain information, lowering information asymmetries ([Leblang, 2010](#)) [18].

Information asymmetries decrease because of two main channels: (i) migrants provide information concerning their home country, like the taste of consumers in their country of origin; (ii) migrants might have information about investment opportunities in their homeland, or they have a more profound knowledge of laws and procedures, together with the knowledge of language that can reduce costs for cross-border investments ([Leblang, 2010](#)) [18].

Further channels that allow migrants to increase cross-border investments is familiarity. Familiarity effect helps investors to get familiar with migrants' home countries, thanks to their ties. This familiarity effect helps increasing investments. Moreover, migrants manage to decrease information asymmetries through formal and informal ties in their homeland. Consequently, migrants provide a competitive advantage to investors, communicating information that otherwise they would not be able to obtain ([Leblang, 2010](#)) [18].

[Kugler et al. \(2018\)](#) [20] investigate cross-border loans at individual level. They provide evidence that migration has a higher influence on financial flows when market frictions related to information spread are more acute. They find that skilled migrants have the ability to decrease information frictions between host country and homeland. Moreover, the journey back and forth from host country to homeland drive bilateral financial flows ([Kugler et al. 2018](#)) [20]. The reason behind this ability to stimulate financial flows, is due to the fact that “*migration from country j to country i has the potential to reveal information on country j which is valuable for investors in country i (e.g., information on the characteristics of the home country's financial and political institutions)*” ([Kugler et al. 2018](#)) [20]. Past literature concerning financial flows has focused on the connection between migration and trade ([Gould 1994](#) [21], [Head and Ries 1998](#) [22], [Rauch and Trindade 2002](#) [23], [Rauch and Casella 2003](#) [24], [Combes et al. 2005](#) [25],

[Iranzo and Peri 2009](#) [26], [Parsons and Vezina 2014](#) [27]), but those investigations led to one main result: migrants are one of the drivers of trade, reducing information and transaction costs.

We claim that the mechanism of familiarity effect reducing indirectly loans' spread, through the lower information and monitoring costs, will be replicated also in syndicated loan markets. Indeed, for a bank exposed to a certain ethnicity it will be easier to collect information concerning investment opportunities in countries where that same ethnic group resides. Moreover, we also think that ethnic homophily plays a decisive role in the construction of networks to which lenders are exposed.

Ethnic homophily is the tendency to befriend individuals that belong to the same ethnic group. This is especially true when individuals have a strong sense of self-identity that brings them to befriend people belonging to the same ethnic group and it intensifies if all individuals have a high sense of self-identity ([Wimmer and Lewis 2010](#) [11], [Leszczensky and Pink 2019](#) [12]).

Social networks are important in order to create connections and in United States are strongly tied because of ethnic homophily. Indeed, in U.S., individuals belonging to ethnic minorities have a strong sense of self-identity that leads them to befriend individuals or friends of friends that belong to the same ethnic category. This leads to build strong connections between people and to strengthen the concentrations of people belonging to the same ethnic group ([Leszczensky and Pink, 2019](#) [12]).

This is why we think that ethnicity is a key element in building economic connections: ethnic homophily facilitates connections and also the spread of information, facilitating economic interactions. For this reason, investigating whether lenders' exposition to a certain ethnic group leads to lower spreads in cross-border syndicated loans towards borrowers that are located in areas where there is a high presence of that same ethnic group might be more effective by looking at the within country ethnic differences that in U.S. are so high.

We claim that the ensemble of ethnic homophily, together with a familiarity effect leads to build stronger connections. This leads to an easier spread of information among individuals that are part of the social network and also that are exposed to these social networks, especially institutions that are located in areas

where the exposition to these connections is high. This flow of information leads to lower information costs and monitoring costs and, consequently, lower spreads.

We also follow the empirical strategy used in past researches concerning cross-border financial flows, which is a novelty in the field of syndicated loans.

The methodology that it has been used to understand the connection between migration and trade has been the gravity model. We will explain briefly this methodology in the following paragraph (as we have given further information in Study 1), to provide some hints also here. The gravity model is a methodology stemming from the major area of spatial analysis modelling. Gravity model predicts the (positive) connection between trade between two countries and their income level and the (negative) relation between distance and goods' flow. However, it has been used also to predict other types of financial flows, such as equity ([Portes and Rey, 2005](#)) [28], banking loans ([Kugler et al. 2018](#)) [20], real estate investments ([Badarinza et al. 2022](#)) [29], foreign direct investments ([de Mello-Sampayo 2009](#)) [30], [Kahouli and Maktouf 2015](#) [31]). In most cases it has been seen whether market frictions, such as information asymmetries, geographical distance, monitoring costs and transaction costs could be diminished by other channels such as migration ([Kugler et al. 2018](#)) [20], nationality ([Badarinza et al. 2022](#)) [29], common law ([LaPorta, R., Lopez-de-Silanes, F., and A. Shleifer. 2008](#)) [32], colonial ties, common language ([Mack et al. 2014](#)) [33]) and common religion ([Lewer and Van den Berg 2007](#)) [34], [Mayer et al. 2011](#) [35])

Agency problems is one of the main causes of the increase of costs. Indeed, ethnicity can be a significant element to diminish information asymmetries and, consequently, agency problems. Past research about the connection between costs of the loans and agency problems has found that the relation between the two is positive. Indeed, having a relation between lenders and borrowers lowers loans' costs ([Diamond 1984](#), [Holmstrom and Tirole 1997](#), [Elyasiani and Zhang 2015](#)).

A recent paper has deployed gravity model in order to explain a totally different type of investment, i.e. real estate field ([Badarinza et al. 2022](#)) [29] and they claim how nationality helped in decreasing market frictions in such a sector. Indeed, it helped the flow of information and a sort of familiarity effect stepped

in, where self-identity into a nationality led to a higher probability of investing in those country where they had origins.

We would like to extend the use of gravity model in syndicated loans predictions. In study we have applied in the prediction of participation in a syndication pool, while in Study 2 we aim at predicting loans' spreads.

For this reason, we state Proposition 2:

Proposition 2: Exposure to a certain ethnic group for a lender leads to lower costs of the syndicated loan towards those borrowers located in a foreign country that has the same ethnic prevalence.

3.2.3 SYNDICATED LOANS

Syndicated loans are a method of financing created to provide substantial amounts of money to finance different types of projects. Syndicated loans are composed of a syndication pool that involves arrangers and participants that provide a loan usually to a company or an organization. The arranger is a financial institution that has the role to certify the solvency of the company/organization that is asking for credit. Once they have enough guarantees that the company will be able to give back the loan, they find participants, in order to share the risk attached to the project, since the amount of money sizeable. Participants should base their decision to take part in the syndication pool considering the financial situation of the borrower, together with the description of the loan. However, information asymmetry can still be persistent and partially the decision to take part in the syndication is based on the trust towards the borrower and the arranger ([Gustafson et al. 2021](#)) [14].

Nevertheless, we claim that for institutions being exposed to a certain ethnicity there is a higher probability of lending cross-border loans towards foreign countries that have that same ethnic presence and at lower costs. This because of ethnic homophily reasons, a familiarity effect mechanism ([Leblang 2010](#)) [18] and especially because these two mechanisms transfer through information channels. Indeed, having contacts with people belonging to a certain ethnicity helps receiving information about individuals belonging to that same ethnicity in another country.

3.2.4 SYNDICATED LOANS AND ETHNICITY

As stated previously, most of the research developed in finance has focused on the role of culture on different economic outcomes ([Licht et al. 2005](#) [5], [Griffin et al. 2013](#) [6]) such as corporate governance ([Licht et al. 2005](#) [5]), risk-taking ([Griffin et al. 2013](#) [6]), mergers and acquisitions ([Ahern et al. 2015](#) [7]), capital structure ([Chui et al. 2002](#) [8], [Li et al. 2011](#) [9]) and lending decisions ([Giannetti and Yafeh 2012](#) [2], [Fisman et al. 2013](#) [10]).

However, some research has focused on geographical distance ([Sufi, 2007](#) [36]), culture ([Giannetti and Yafeh, 2012](#) [2]) and syndicated loans.

[Giannetti and Yafeh \(2012\)](#) [2] have investigated the relation between cultural distance and syndicated loans. This paper is the one most in line with our research. They provide a cross-country study concerning cultural distance and syndicated loans.

They focus on the role of culture and its influence on the relationship between lenders (lead banks) and borrowers in syndicated loans. They find that risk sharing increases if the participant bank is located in a country with common religion; however, it decreases significantly if banks are located in geographically distant countries ([Giannetti and Yafeh 2012](#) [2]). Indeed, they highlight how cultural differences have negative influence on syndication contract characteristics; nevertheless, they cannot find the channel through which culture, meaning a set of codes and norms, might influence economic outcomes ([Giannetti and Yafeh, 2012](#) [2]).

Moreover, our research is linked to the one about costs of debt. Indeed, past research has focused on the ability of migrants to lower loans' spread ([Portes and Rey 2005](#) [28]). Furthermore, not spreading information efficiently and having higher agency problems leads to higher costs of debt ([Diamond 1984](#), [Holmstrom and Tirole 1997](#), [Elyasiani and Zhang 2015](#)).

Our aim is similar but differs in the methodology of investigation. First, we look at the within country differences in ethnicity by having United States as location where the syndicated loans are issued. Second, we deploy sociological literature to define ethnicity as a self-identification process, using also research

considering ethnic homophily. Indeed, ethnic homophily is at the base of social networks' creations ([Wimmer and Lewis, 2010](#) [11]).

3.3 DATA

The collection of data is the same one as Study 1, we only insert a new variable, which is also our main dependent variable, i.e. allindrawn, that is the interest spread over LIBOR measured as the All-in-Drawn-Spread measure reported in DealScan. All-in-Drawn-Spread is the amount the borrower pays in basis points over LIBOR for each dollar drawn down.

Nevertheless, we will explain thoroughly data collection.

To compute bank's exposure to different ethnicities in U.S., we have identified ZCTA¹¹ demographic breakdown of ethnicity around the branches of all U.S. banks focusing on Black, Asian, Hispanic ethnicities. We have decided to consider only the major groups, as already we will find a marginal effect, so we consider the major groups, to capture better that marginal effect.

Census data gives full information about the year of the major Census for the zipcode fractionalization, so we considered the 2000 Census to capture data concerning ethnicities.

However, we find that considering data only for the single branch or only the headquarter would not be enough to identify the ethnic exposure of the entire financial institution.

Consequently, we have collected data about all the branches composing a financial institution and the amount of each branch's deposits. Data about banks is provided by different sources FDIC's Summary of Deposits file, National Information Center's Branches Attributes file (a repository by the Federal reserve System) and FED's Call of Reports. Summary of Deposits file provides a comprehensive picture of each bank holding company's branch network. Note that the FDIC Summary of Deposits file also includes branches not regulated by the FDIC, e.g. branches overseen by the Comptroller of the Currency. For each bank, the Summary of Deposits file includes the amount of deposits held at each branch, the bank holding company, and the zip code of each U.S. bank branch in the branch network. This Summary of Deposits

¹¹ ZIP Code Tabulation Areas (ZCTAs) are statistical entities developed by the United States Census Bureau for tabulating summary statistics.

file also indicates whether a bank branch is considered a main office or if it is in a metropolitan area. However, since in the matching many banks information disappeared, we have decided to collect data about branches from National Information Center and FED, so that we could have more information as possible concerning the branch network in terms of location.

To collate data concerning ethnicity and branches, we have used ZCTA as key. After providing to each bank's branch the relative ethnicities' rates, we compute a weighted average for each ethnicity based on the deposits each branch holds. This it has been made for each financial institution for each year (as the branches might close/open across years).

In the computation, we have considered only American banks, but we have to be more specific about this and we have to talk more about the collation of this first partial dataset with Loan Pricing Corporation's Dealscan database. The Bank Inventory report in the Dealscan database lists an inventory of loans held by each bank and non-bank financial institutions around the world. The report provides information on each borrower, lender, the terms and details of the facility, the role of each lender, and the lender share. We only retain confirmed loans with spreads on the loan that are tied to LIBOR.

We focus our data collation of this data from 1987 to 2020, in order to have a full range of Dealscan loans. To collate data concerning branches and Dealscan data about syndicated loans, we have used the linking table provided by [Jan Keil \(2017 \[37\]\)](#). As matching key, we have rssid id, i.e. an identification number assigned by FED, in order to identify companies.

As we have stated, we consider only American banks, in order to identify them, we look at each bank's website manually. We have to proceed manually, as in Dealscan database there is a variable that identifies the "Institution Type"; in this variable we found "US Bank" as categorization. However, this category includes not only U.S. banks, but also foreign branches in U.S. or ethnobanks. Our aim is to understand whether purely American banks located in ethnic fractionalized demographic makeup lead different decisions on cross-border syndicated loans issuance.

A further issue with the DealScan database is that lenders are identified using their ultimate parent company, which causes a problem when banks merge. For example, loans that Wachovia participated in

are coded as Wells Fargo Loans even if the loan was originated before the merger of these banks. To match the loan to the actual lender, we go back through DealScan to pull information on the lender parent and the original lender. This allows us to note discrepancies in the lender name and then accurately assign a code to the correct lender on each loan. As a further check, we use the Zephyr database to cross-check all bank mergers over the sample period and reassign the appropriate lender on each loan. Zephyr provides information about M&A deals (announcement and rumour in the financial markets). Furthermore, it gives information about the target company, the acquirers, and the vendors, beyond giving all the time information (and whether the deal is expired or not). Zephyr does not give a single name for the company, but also how it can be named after or previous an M&A; this helped us to identify the institution companies and put them in a single identification number, when needed. In the case of Wachovia, we identify all loans for which Wachovia bank was the lender and reassign the lender parent from Wells Fargo to Wachovia bank.

To fully rule out matching error, we also manually scan the loan data for discrepancies between the categories lender parent and lender using text-based search. This process reveals no discrepancies and yields a complete match of lenders and loans in Dealscan, so we feel comfortable in pulling data on loan-specific characteristics on each loan including date of issue, days to maturity, facility size, tranche amount, spread, all-in-spread drawn on Libor.

Information about ethnicity for foreign countries where the borrowers are located, we have collected data from Cline Center for Advanced Research. Dataset from Cline Center gives full information about different ethnicities, and we regroup the different ethnicities into the three main ethnic categories, in order to make the group homogeneous. Then, for years that information was not available, we have hand-collectedly data by the single Census.

It resulted into a dataset made of 169 financial institutions, 129 countries where the borrowers are located repeated for a time-span that ranges from 1987 to 2021. The number of loans involved is 1,129 and they are signalled by the variable “participation to the pool”, which is a dummy equal to one whether bank i participates to a pool for a loan towards a company situated in a certain country j at time t (and it

is also our dependent variable). The loan spread variable is signalled by AllinDrawn variable, i.e. the interest spread over LIBOR measured as the All-in-Drawn-Spread measure reported in DealScan. All-in-Drawn-Spread is the amount the borrower pays in basis points over LIBOR for each dollar drawn down.

Information concerning the dataset are found in [Table 1](#), where we show univariate statistics (number of observations, mean, median, first and last quartile) of the sample. In [Table 2](#) we provide the first ten banks according to the number of syndication pools they take part in. In [Table 3](#), [4](#) and [5](#) we show results for the first 10 banks according to their exposure to respectively Black, Asian and Hispanic ethnicity. The computation and definition of the variables can be found in [Appendix I](#).

3.4 METHODOLOGY AND RESULTS

To assess the investigation, as anticipated in the previous paragraphs we will deploy a gravity model.

A gravity model is a methodology belonging to spatial analysis, where geography is a crucial element. Indeed, it was originated to predict cross-country trade flows and it was found that flows are proportional to the countries' income and negatively associated with the distance between the countries. However, several research has deployed gravity model to predict other financial flows, such as equity, foreign direct investment, bank loans and real estate investment. It has been found that nationality or migration manage to diminish market frictions, through the information channel, leading to higher cross-border financial flows.

In this research we want to extend the use of gravity model in syndicated loans market, in order to understand whether through the usage of this model there is a negative relation between having the same ethnic exposure for lenders and borrowers and loans' spreads.

We provide the methodology deployed in our research for each ethnic variable that we will insert as main explanatory variables.

[1.a]

$$\begin{aligned} (AllinDrawn)_{i,j,t} &= \delta_1 [Ethnicity\ Overlap]_{i,j,t} + \delta_2 [\log (DIST_{i,j})] + \delta_2 [Common\ Language]_{i,j} \\ &+ \delta_3 [Colonial\ Ties]_{i,j} + \delta_4 [Common\ Law]_{i,j} + \delta_5 [Common\ Religion]_{i,j} + \alpha_t + \alpha_{i,j} \\ &+ \varepsilon_{i,j,t} \end{aligned}$$

[1.b]

$$\begin{aligned} (AllinDrawn)_{i,j,t} &= \delta_1 [Black\ Identity]_{i,j,t} + \delta_2 [\log (DIST_{i,j})] + \delta_2 [Common\ Language]_{i,j} \\ &+ \delta_3 [Colonial\ Ties]_{i,j} + \delta_4 [Common\ Law]_{i,j} + \delta_5 [Common\ Religion]_{i,j} + \alpha_t + \alpha_{i,j} \\ &+ \varepsilon_{i,j,t} \end{aligned}$$

[1.c]

$$\begin{aligned} (AllinDrawn)_{i,j,t} &= \delta_1 [Asian\ Identity]_{i,j,t} + \delta_2 [\log (DIST_{i,j})] + \delta_2 [Common\ Language]_{i,j} \\ &+ \delta_3 [Colonial\ Ties]_{i,j} + \delta_4 [Common\ Law]_{i,j} + \delta_5 [Common\ Religion]_{i,j} + \alpha_t + \alpha_{i,j} \\ &+ \varepsilon_{i,j,t} \end{aligned}$$

[1.d]

$$\begin{aligned} (AllinDrawn)_{i,j,t} &= \delta_1 [Hispanic\ Identity]_{i,j,t} + \delta_2 [\log (DIST_{i,j})] + \delta_2 [Common\ Language]_{i,j} \\ &+ \delta_3 [Colonial\ Ties]_{i,j} + \delta_4 [Common\ Law]_{i,j} + \delta_5 [Common\ Religion]_{i,j} + \alpha_t + \alpha_{i,j} \\ &+ \varepsilon_{i,j,t} \end{aligned}$$

For all four models we lead the investigation, using a Pooled OLS with AllinDrawn variable as dependent variable, bank, country and year fixed effects and with bank-country clustered errors. As stated previously AllinDrawn provides information concerning the loans' spread. For Model 1.a the main independent variable is *Ethnicity Overlap*, a continuous variable that is computed as the sum of Black Identity, Asian Identity and Hispanic Identity ethnicities. The main independent variable for Model 1.b is *Black Identity*, the multiplication of the rates of Black individuals of lender *i* and borrower *j* for each time *t*. The main independent variable for Model 1.c is *Hispanic Identity*, the multiplication of the rates of Hispanic individuals of lender *i* and borrower *j* for each time *t*. The main independent variable for Model 1.d is *Asian Identity*, the multiplication of the rates of Asian individuals of lender *i* and borrower *j* for each time *t*. In the following equations we will provide computation of the four main independent variables:

Black Identity

= *Lenders' exposure to Black Population (%)*¹²

* *Borrowers' exposure to Black Population (%)*¹³

Asian Identity

= *Lenders' exposure to Asian Population (%)*¹⁴

* *Borrowers' exposure to Asian Population (%)*¹⁵

Hispanic Identity

= *Lenders' exposure to Hispanic Population (%)*¹⁶

* *Borrowers' exposure to Hispanic Population (%)*¹⁷

*Ethnic Identity = Black Identity * Asian Identity * Hispanic Identity*

The controls inserted that are common in all the models are: (i) $\log(DIST_{i,j})$, i.e. the logarithm of the distance between the capital cities of the countries where borrowers and lenders are located. Distance is the basic variable of a gravity model, so it is the first control that we will introduce in our analysis; (ii) *Common Language*, i.e. dummy equal one if the countries where borrower and lender are located share the official or primary language spoken (Head et al, 2010 [38]). Language is the first element that can connect two people or create a barrier. Indeed, it is easier to trade (or having a connection) if individuals or economic actors share the language or they are able to connect a common language; (iii) *Colonial Ties*,

¹² Black lenders' exposure is computed as follows: we consider Black population rates in the ZipCodes where branches of a U.S. bank are located and we compute the weighted average of those rates according to the amount of deposit held by each branch.

¹³ Borrowers' exposure to Black population is calculated as the percentage presence of Black population in the country where the borrower is located.

¹⁴ Asian lenders' exposure is computed as follows: we consider Asian population rates in the ZipCodes where branches of a U.S. bank are located and we compute the weighted average of those rates according to the amount of deposit held by each branch.

¹⁵ Borrowers' exposure to Asian population is calculated as the percentage presence of Asian population in the country where the borrower is located.

¹⁶ Hispanic lenders' exposure is computed as follows: we consider Hispanic population rates in the ZipCodes where branches of a U.S. bank are located and we compute the weighted average of those rates according to the amount of deposit held by each branch.

¹⁷ Borrowers' exposure to Hispanic population is calculated as the percentage presence of Hispanic population in the country where the borrower is located.

i.e. dummy equal one if the countries where lenders and borrowers are located have had a colonial relationship after 1945 ([Head et al. 2010](#) [38]). We use this variable as it suggests a certain historic tie between the countries that we think should be considered also when examining economic patterns; (iv) *Common Religion*, i.e. the religious proximity index by [Disdier and Mayer \(2007\)](#) [39], an index calculated by adding the products of the shares of Catholics, Protestants and Muslims in the exporting and importing countries. It is bounded between 0 and 1 and is maximum if the country pair has a religion which (1) comprises a vast majority of the population, and (2) is the same in both countries. Source of religion shares: [LaPorta, Lopez-de-Silanes, Shleifer and Vishny \(1999\)](#) [32], completed with the CIA world factbook. This variable is considered as it is one of the main components of cultural heritage of a population; (v) *Common Law*, variable equal to one if countries share common legal origins [LaPorta, Lopez-de-Silanes, Shleifer and Vishny \(1999\)](#). Having the same law enforcement methodologies leads to higher interaction between countries, as the rules become more understandable.

The results found meet the expectations and we provide them in [Table 6](#). Indeed, we find that for *Ethnic Overlap*, for *Asian Identity* and *Hispanic Identity* coefficients are negative and significant, only for Black Identity results are non-significant.

We expected different results according to the ethnicity involved in the computation, as different ethnicities have a different level of self-belonging. Moreover, we would have expected a slightly lower coefficient, as the effect of ethnicities should have been marginal in the decision. Obviously, we understand that these results include endogeneity, as there can be a problem of omitted variable that should be treated: for this reason we have planned further sensitivity tests and further robustness test, beyond the one provided in the following Section, in order to get rid of endogeneity. This will be part of the future developments of the dissertation.

3.5 ROBUSTNESS TEST

In this Section we provide a further test, to understand whether changing the type of ethnic measurement results still hold. Moreover, we provide analysis in order to diminish omitted-variable driven endogeneity. The methodology deployed is a gravity model with Pooled OLS, with bank, country and year fixed effects and standard errors clustered at bank-country level. The equations of the models are the following ones:

[2.a]

$$\begin{aligned} (AllinDrawn)_{i,j,t} &= \delta_1[Black\ Identity2]_{i,j,t} + \delta_2[\log(DIST_{i,j})] + \delta_2[Common\ Language]_{i,j} \\ &+ \delta_3[Colonial\ Ties]_{i,j} + \delta_4[Common\ Law]_{i,j} + \delta_5[Common\ Religion]_{i,j} + \alpha_t + \alpha_{i,j} \\ &+ \varepsilon_{i,j,t} \end{aligned}$$

[2.b]

$$\begin{aligned} (AllinDrawn)_{i,j,t} &= \delta_1[Asian\ Identity2]_{i,j,t} + \delta_2[\log(DIST_{i,j})] + \delta_2[Common\ Language]_{i,j} \\ &+ \delta_3[Colonial\ Ties]_{i,j} + \delta_4[Common\ Law]_{i,j} + \delta_5[Common\ Religion]_{i,j} + \alpha_t + \alpha_{i,j} \\ &+ \varepsilon_{i,j,t} \end{aligned}$$

[2.c]

$$\begin{aligned} (AllinDrawn)_{i,j,t} &= \delta_1[Hispanic\ Identity2]_{i,j,t} + \delta_2[\log(DIST_{i,j})] + \delta_2[Common\ Language]_{i,j} \\ &+ \delta_3[Colonial\ Ties]_{i,j} + \delta_4[Common\ Law]_{i,j} + \delta_5[Common\ Religion]_{i,j} + \alpha_t + \alpha_{i,j} \\ &+ \varepsilon_{i,j,t} \end{aligned}$$

The main dependent variable that we will deploy is the same as previously, i.e. participation to the pool. The main explanatory variable for Model 2.a is *Black Identity2*, i.e. a dummy equal one if the exposure to Black ethnicity for lender i and for country j , where the borrower is located, are both above the 90th percentile¹⁸ at time t . For Model 2.b the main independent variable is *Asian Identity2*, i.e. a dummy equal one if the exposure to Asian ethnicity for lender i and for country j , where the borrower is located, are both above the 90th percentile at time t . In Model 2.c we have *Hispanic Identity2*, i.e. a dummy equal one

¹⁸ We have chosen the 90th percentile as it signals a high exposure to a certain ethnicity.

if the exposure to Hispanic ethnicity for lender i and for country j , where the borrower is located, are both above the 90th percentile at time t .

Results shown in [Table 7](#) have for Black Identity2 coefficients are negative and significant. For Hispanic Identity2 and Asian Identity2 coefficients are negative, but they lose significance.

We expected for sure that results would have been marginal, as we think that ethnicity should not be a key point in the decision of issuing a syndicated loan. However, we find that, despite the endogeneity component that will be treated in the future development of the research, being exposed to the same ethnicity for lenders and borrowers, leads to lower spreads (at least at correlation level).

As further robustness test, we rerun regressions having our sample starting from 2000 to 2020 (in [Table 10](#) we provide some univariate statistics of the reduced sample made of 898 loans issued by 169 banks towards borrowers located in 129 countries). In this way, we reduce possible component of endogeneity provided by the fact that ethnic variables start in 2000. Results for this regressions with reduced sample are presented in [Table 8](#) and [Table 9](#). Results are confirmed also in this analysis and they actually gain even more significancy. In [Table 8](#) we provide results for the Pooled OLS regression having as main dependent variable AllInDrawn variable cost, and as independent variables concerning ethnicity our first Ethnic Identity proxies, explained in the section Methodology and Results. The regressions having Black, Asian and Hispanic Identity (i.e. variables indicating ethnic prevalence for those couples of lender-country that are exposed to the same ethnicity) are negative and highly significant, reinforcing Proposition 2. Indeed, if the lender and the borrower are located in areas exposed to the same ethnic prevalence, lenders will issue loans at lower costs.

In [Table 9](#), results derive from regressions having AllInDrawn as dependent variable, and as independent variables Ethnic Variables presented previously in the Robustness Test Section. Also in this case results coefficients for ethnic variable are negative and highly significant, confirming once again Proposition 2.

Consequently, expected results are met in the analysis, but we still have to better develop the methodology, in order to have a clear-cut causality relation.

3.6 CONCLUSION

In this Study we have tried to investigate whether being exposed to the same ethnicity for lenders and borrowers in different countries, leads to lower loans' spreads.

First results confirm that actually ethnicity has an influence on the loans' spreads, having a negative correlation with main dependent variable "AllInDrawn". In order to lead the investigation, we have deployed a Pooled OLS gravity model.

We have confirmed and extended previous research concerning the role of ethnicity/culture/migration/nationality in driving cross-border financial flows and diminishing costs ([Portes and Rey 2005](#) [28], [de Mello-Sampayo 2011](#) [30], [Kahouli et al. 2015](#) [31], [Kugler et al. 2018](#) [20], [Badarinza et al. 2022](#) [29]). We have managed to deploy a gravity model in a novel context, together with a different measurement of ethnicity given by sociological literature.

As stated previously, there is still a need to lead further analysis in order to decrease endogeneity concerns provided by the variables involved. We leave additional analysis for future developments of the research.

3.7 TABLES

Table 1- Univariate Statistics: No. of Observations, Mean, Standard Deviation and Percentiles.

	Num. Obs.	Mean	St. Dev	Percentile 25 th	Median	Percentile 75 th
Participation to the pool	763035	.001	.038	0	0	0
Loan Amount (\$)	1129	1.475e+09	3.538e+09	1.850e+08	4.800e+08	1.500e+09
Year (Start of the loan)	763035	2004	10.1	1995	2004	2013
Ethnicity Overlap	763035	0	.001	0	0	0
Black Identity	763035	0	.001	0	0	0
Asian Identity	763035	0	0	0	0	0
Hispanic Identity	763035	0	0	0	0	0
Black % in U.S.	763035	11.797	17.32	1.739	4.79	11.919
Hispanic % in U.S.	763035	6.99	10.055	1.095	3.019	8.286
Asian % in U.S.	763035	5.242	8.04	1.134	2.209	5.758
Black % in borrowers' countries	763035	24.8	39.2	0	0	.5
Hispanic % in borrowers' countries	763035	8.3	23.1	0	0	0
Asian % in borrowers' countries	763035	15.9	33.0	0	0	.051
Logarithm of Distance	743938	8.983	.47	8.778	9.027	9.317
Common Official Language	743938	.236	.424	0	0	0
Colonial Ties	743938	.008	.089	0	0	0
Common Law	743938	.278	.448	0	0	1
Common Religion	733798	.137	.128	.009	.116	.272

Table 2 – List of first 10 banks according to the Number of Loans.

Lenders' Names	Number of Loans
Wells Fargo Bank NA	80
CoBank	80
Mellon Bank	77
US Bank NA	70
Republic National Bank of New York	58
Union Bank of California	55
Union Bank NA	43
Apple Bank for Savings	40
United Bank	28
Sovereign Bank	25

Table 3 - List of first 10 banks according to their exposure to Black Ethnicity.

Lenders' Names	Exposure to Black ethnicity (%)
SouthTrust Bank NA	78.7
Tristate Capital Bank	64.2
SRF Trading Inc	58.3
Tama Central Credit Bank	58.3
Cypresstree Investment Management Co Inc	58.3
Salomon Smith Barney Inc	58.3
MONY Life Insurance Co of America	58.3
Fernwood Associates LP	58.3
Grand Commercial Bank	58.3
Scudder Floating Rate Fund	58.3

Table 4 - List of first 10 banks according to their exposure to Hispanic Ethnicity.

Lenders' Names	Exposure to Hispanic ethnicity (%)
Mercantil Commercebank NA	49.7
BAC Florida Bank	49.7
Sanwa Business Credit Corp	47.7
International Bank of Commerce	40.8
Citibank Japan Ltd	39.1
General Bank	32.1
Hamilton Bank	27.0
Bank of Utah	26.2
Merrill Lynch International Bank Ltd	22.5
Pacific National Bank	22.5

Table 5 - List of first 10 banks according to their exposure to Asian Ethnicity.

Lenders' Names	Exposure to Asian ethnicity (%)
Union Bank of California	41.5
First Hawaiian Bank	38.5
Preferred Bank	29.8
Union Bank of California NA	28.4
Sanwa Bank California	24.3
Brown Brothers Harriman & Co	22.9
Far East National Bank	22.8
Merrill Lynch Bank USA	19.8
Harris BankCorp	18.3
California First Bank	18.2

Table 6 - Pooled OLS regression having as dependent variable “AllinDrawn”, indicating syndicated loans’ spreads. In Model 1 the main explanatory variable is Ethnicity Overlap, for each ethnicity, we have developed a measure to connect lender and borrower. We have considered the rate divided by 100 of the single ethnicity presence of the demographics of the location of the lender and multiplied with the rate divided by 100 of the single ethnicity presence of the demographics of the location of the borrower. These three multiplications have been summed to create an overlap measure, Ethnicity Overlap, indeed. In Model 2 the main explanatory variable is Black Identity (the rate divided by 100 of the Black presence of the location of the lender and multiplied with the rate divided by 100 of the Black presence of the location of the borrower). In Model 3 the main explanatory variable is Asian Identity (the rate divided by 100 of the Asian presence of the location of the lender and multiplied with the rate divided by 100 of the Asian presence of the location of the borrower). In Model 4 the main explanatory variable is Hispanic Identity (the rate divided by 100 of the Hispanic presence of the location of the lender and multiplied with the rate divided by 100 of the Hispanic presence of the location of the borrower). (Clustered error at bank-country level, *t* statistics in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.010$)

	(Model 1.a) AllInDrawn	(Model 1.b) AllInDrawn	(Model 1.c) AllInDrawn	(Model 1.d) AllInDrawn
Ethnicity Overlap	-123.3** (-2.21)			
Black Identity		184.5 (0.83)		
Asian Identity			-137.4** (-2.34)	
Hispanic Identity				-210.6* (-1.67)
Log(Distance)	621.7 (0.52)	1139.6 (0.94)	852.0 (0.73)	802.0 (0.70)
Common Language	-314.1 (-0.70)	-526.8 (-1.15)	-406.8 (-0.93)	-390.4 (-0.90)
Colonial Ties	-48.27 (-0.44)	-73.81 (-0.69)	-57.21 (-0.53)	-59.55 (-0.56)
Common Law	13.68 (0.04)	156.4 (0.47)	74.52 (0.23)	66.28 (0.21)
Common Religion	856.6 (0.38)	1862.9 (0.81)	1290.5 (0.58)	1222.9 (0.55)
_cons	-5579.2 (-0.49)	-10552.0 (-0.91)	-7787.8 (-0.69)	-7312.8 (-0.66)
Bank FE	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
<i>N</i>	1362	1362	1362	1362
adj. <i>R</i> ²	0.503	0.502	0.503	0.503

Table 7 – Pooled OLS regression having as dependent variable “AllInDrawn”, indicating syndicated loans’ spreads. The main explanatory variables are: in Model 2.a, Black Identity2 (that is a dummy equal one if the rate of Black people in the neighbourhood of both lenders and borrowers is higher or equal than 90th percentile value for each year); in Model 2.b, Asian Identity2 (that is a dummy equal one if the rate of Asian people in the neighbourhood of both lenders and borrowers is higher or equal than 90th percentile value for each year); in Model 2.c, Hispanic Identity2 (that is a dummy equal one if the rate of Hispanic people in the neighbourhood of both lenders and borrowers is higher or equal than 90th percentile value for each year. For all three models we have as controls: (i) Logarithm of distance; (ii) Common Language; (iii) Colonial Ties; (iv) Common Law; (v) Common Religion (Clustered error at bank-country level, *t* statistics in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.010$).

	(Model 2.a) AllInDrawn	(Model 2.b) AllInDrawn	(Model 2.c) AllInDrawn
Black Identity2	-235.0*** (-4.73)		
Asian Identity2		-34.88 (-1.35)	
Hispanic Identity2			-34.88 (-1.35)
Log(Distance)	785.9 (0.68)	836.9 (0.72)	836.9 (0.72)
Common Language	-384.2 (-0.88)	-399.6 (-0.91)	-399.6 (-0.91)
Colonial Ties	-59.40 (-0.55)	-65.11 (-0.60)	-65.11 (-0.60)
Common Law	62.22 (0.19)	68.73 (0.21)	68.73 (0.21)
Common Religion	1189.7 (0.53)	1262.2 (0.57)	1262.2 (0.57)
_cons	-7160.6 (-0.64)	-7641.9 (-0.68)	-7641.9 (-0.68)
Bank FE	Yes	Yes	Yes
Country FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
<i>N</i>	1362	1362	1362
adj. <i>R</i> ²	0.503	0.502	0.502

Table 8 - Pooled OLS regression for the sample with time range from 2000 to 2020 having as dependent variable “AllInDrawn”, indicating syndicated loans’ spreads. In Model 3.a the main explanatory variable is Ethnicity Overlap, for each ethnicity, we have developed a measure to connect lender and borrower. We have considered the rate divided by 100 of the single ethnicity presence of the demographics of the location of the lender and multiplied with the rate divided by 100 of the single ethnicity presence of the demographics of the location of the borrower. These three multiplications have been summed to create an overlap measure, Ethnicity Overlap, indeed. In Model 3.b the main explanatory variable is Black Identity (the rate divided by 100 of the Black presence of the location of the lender and multiplied with the rate divided by 100 of the Black presence of the location of the borrower). In Model 3.c the main explanatory variable is Asian Identity (the rate divided by 100 of the Asian presence of the location of the lender and multiplied with the rate divided by 100 of the Asian presence of the location of the borrower). In Model 3.d the main explanatory variable is Hispanic Identity (the rate divided by 100 of the Hispanic presence of the location of the lender and multiplied with the rate divided by 100 of the Hispanic presence of the location of the borrower). (Clustered error at bank-country level, *t* statistics in parentheses * p<0.10, ** p<0.05, *** p<0.010)

	(3.a) AllInDrawn	(3.b) AllInDrawn	(3.c) AllInDrawn	(3.d) AllInDrawn
Ethnic Identity	-9191.1 (-1.42)			
Black Identity		-48546.9** (2.52)		
Asian Identity			-12710.6* (-1.67)	
Hispanic Identity				-22145.2** (-1.98)
	(-0.94)	(-0.95)	(-0.94)	(-0.94)
Common Language	-570.2 (-0.89)	-581.9 (-0.92)	-572.1 (-0.89)	-568.6 (-0.89)
Colonial Ties	977.7 (0.81)	982.9 (0.82)	982.0 (0.81)	966.6 (0.80)
Common Language	-503.7 (-1.40)	-506.6 (-1.42)	-504.7 (-1.41)	-501.3 (-1.40)
Common Religion	-2749.2 (-1.10)	-2763.1 (-1.11)	-2756.6 (-1.10)	-2728.6 (-1.09)
_cons	12092.7 (0.97)	12240.1 (0.99)	12122.3 (0.98)	12037.3 (0.97)
Bank FE	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
<i>N</i>	886	886	886	886
adj. <i>R</i> ²	0.515	0.516	0.515	0.515

Table 9 – Pooled OLS regression for the sample with time range from 2000 to 2020 having as dependent variable “AllinDrawn”, indicating syndicated loans’ spreads. The main explanatory variables are: in Model 2.a, Black Identity2 (that is a dummy equal one if the rate of Black people in the neighbourhood of both lenders and borrowers is higher or equal than 90th percentile value for each year); in Model 2.b, Asian Identity2 (that is a dummy equal one if the rate of Asian people in the neighbourhood of both lenders and borrowers is higher or equal than 90th percentile value for each year); in Model 2.c, Hispanic Identity2 (that is a dummy equal one if the rate of Hispanic people in the neighbourhood of both lenders and borrowers is higher or equal than 90th percentile value for each year. For all three models we have as controls: (i) Logarithm of distance; (ii) Common Language; (iii) Colonial Ties; (iv) Common Law; (v) Common Religion (Clustered error at bank-country level, *t* statistics in parentheses * p<0.10, ** p<0.05, *** p<0.010).

	(1)	(2)	(3)
	AllInDrawn	AllInDrawn	AllInDrawn
Black Identity2	-61.31** (-2.14)		
Asian Identity2		-32.92 (-1.43)	
Hispanic Identity2			-15.82 (0.46)
Log (Dist)	-1278.7 (-0.99)	-1261.1 (-0.98)	-1271.7 (-0.98)
Common Language	-603.4 (-0.94)	-594.5 (-0.93)	-599.5 (-0.94)
Colonial Ties	1031.9 (0.85)	1025.5 (0.85)	1025.3 (0.85)
Common Law	-521.4 (-1.45)	-516.7 (-1.44)	-519.4 (-1.45)
Common Religion	-2874.5 (-1.15)	-2842.2 (-1.13)	-2861.6 (-1.14)
_cons	12731.9 (1.03)	12562.4 (1.01)	12664.2 (1.02)
Bank FE	Yes	Yes	Yes
Country FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
<i>N</i>	886	886	886
adj. <i>R</i> ²	0.514	0.514	0.514

Table 10 – Univariate Statistics for the reduced sample ranging from 2000 to 2020. The second sample is made of 898 loans issued by 169 financial institutions towards borrowers spread in 129 countries.

	Num. Obs.	Mean	St. Dev	Percentile 25 th	Median	Percentile 75 th
Participation to the pool	479622	.002	.043	0	0	0
Loan Amount (\$)	898	1.587e+09	3.829e+09	1.930e+08	5.000e+08	1.602e+09
Year (Start of the loan)	479622	2010.5	6.344	2005	2010.5	2016
Ethnicity Overlap	479622	0	.001	0	0	0
Black Identity	479622	0	.001	0	0	0
Asian Identity	479622	0	0	0	0	0
Hispanic Identity	479622	0	0	0	0	0
Black % in U.S.	479622	12.064	17.231	2.116	5.557	12.428
Hispanic % in U.S.	479622	6.9	9.806	1.108	3.101	7.742
Asian % in U.S.	479622	5.32	8.658	1.134	2.209	5.694
Black % in borrowers' countries	479622	.25	.394	0	0	.5
Hispanic % in borrowers' countries	479622	.084	.232	0	0	0
Asian % in borrowers' countries	479622	.161	.331	0	0	.057
Logarithm of Distance	479284	8.985	.467	8.793	9.027	9.317
Common Official Language	479284	.233	.423	0	0	0
Colonial Ties	479284	.008	.088	0	0	0
Common Law	479284	.272	.445	0	0	1
Common Religion	471848	.135	.128	.009	.11	.272

3.8 APPENDIX I

TITLE	VARIABLES	DESCRIPTION	SOURCE
Dependent Variable			
AllInDrawn	Syndicated Loan Cost	Interest spread over LIBOR measured as the All-in-Drawn-Spread measure. All-in-Drawn-Spread is the amount the borrower pays in basis points over LIBOR for each dollar drawn down.	Dealscan.
Independent Variables			
Ethnic Overlap	Density of Ethnic presence	We have considered the rate divided by 100 of the single ethnicity presence of the demographics of the location of the lender and multiplied with the rate divided by 100 of the single ethnicity presence of the demographics of the location of the borrower. These three multiplications have been summed to create an overlap measure.	Own Computation.
Black Identity	Density of Black exposure for U.S. Bank and for the borrowing company.	Rate divided by 100 of the Black presence of the location of the lender and multiplied with the rate divided by 100 of the Black presence of the location of the borrower.	Own Computation.
Asian Identity	Density of Asian presence.	Rate divided by 100 of the Asian presence of the location of the lender and multiplied with the rate divided by 100 of the Asian presence of the location of the borrower.	Own Computation.
Hispanic Identity	Density of Hispanic presence.	Rate divided by 100 of the Hispanic presence of the location of the lender and multiplied with the rate divided by 100 of the Hispanic presence of the location of the borrower.	Own Computation.

Black Identity ²	Signal of Black ethnicity exposure for both U.S. banks and foreign borrowing companies.	Dummy equal one if the rate of Black people in the neighbourhood of both lenders and borrowers is higher than 90 th percentile value for each year.	Own Computation.
Asian Identity ²	Signal of Asian ethnicity exposure for both U.S. banks and foreign borrowing companies.	Dummy equal one if the rate of Asian people in the neighbourhood of both lenders and borrowers is higher than 90 th percentile value for each year.	Own Computation.
Hispanic Identity ²	Signal of Hispanic ethnicity exposure for both U.S. banks and foreign borrowing companies.	Dummy equal one if the rate of Hispanic people in the neighbourhood of both lenders and borrowers is higher than 90 th percentile value for each year.	Own Computation.
Log (Distance)	Logarithm of Distance	Logarithm of the distance between the capital cities where banks and borrowers are located.	Mayer, T. & Zignago, S. (2011) Notes on CEPII's distances measures : the GeoDist Database CEPII Working Paper 2011-25
Common Language	Common official or primary language.	Dummy equal one if the primary or official languages of the locations of both banks and companies are the same.	Mayer, T. & Zignago, S. (2011) Notes on CEPII's distances measures : the GeoDist Database CEPII Working Paper 2011-25
Colonial Ties		Dummy equal one if the locations of banks and borrowers have had a colonial relation after 1945.	
Common Law		Dummy equal one if the location of banks and borrowers have the same legal system.	LaPorta et al. (1999) and LaPorta et al. (2008).
Common Religion	Religious Proximity Index.	Index bounded between 0 and 1 where maximum if the country pair has a religion which (1) comprises a vast majority of the population, and (2) is the same in both countries.	Disdier and Mayer (2007)
White % presence in U.S.	White rate exposure of the financial institution.	Weighted average of White rates (ZCTA level) of all the branches	Own Computation of U.S. Census and FDIC/FED Data.

		belonging to the financial institution.	
Black % presence in U.S.	Black rate exposure of the financial institution.	Weighted average of Black rates (ZCTA level) of all the branches belonging to the financial institution.	Own Computation of U.S. Census and FDIC/FED Data.
Asian % presence in U.S.	Asian rate exposure of the financial institution.	Weighted average of Asian rates (ZCTA level) of all the branches belonging to the financial institution.	Own Computation of U.S. Census and FDIC/FED Data.
Hispanic % presence in U.S.	Hispanic rate exposure of the financial institution.	Weighted average of Hispanic rates (ZCTA level) of all the branches belonging to the financial institution.	Own Computation of U.S. Census and FDIC/FED Data.
White % presence in foreign countries	White rate exposure of the country where the borrower is located.	White rate of the individuals in the country where the borrower is located.	Cline Data Center and single counties' Census.
Black % presence in foreign countries	Black rate exposure of the country where the borrower is located.	Black rate of the individuals in the country where the borrower is located.	Cline Data Center and single counties' Census.
Asian % presence in foreign countries	Asian rate exposure of the country where the borrower is located.	Asian rate of the individuals in the country where the borrower is located.	Cline Data Center and single counties' Census.
Hispanic % presence in foreign countries	Hispanic rate exposure of the country where the borrower is located.	Hispanic rate of the individuals in the country where the borrower is located.	Cline Data Center and single counties' Census.

3.9 REFERENCES

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4. CONCLUSION

The aim of the dissertation is to understand the drivers of international financing decisions and, in particular, the influence of within-country ethnic heterogeneity on syndicated loans, extending previous literature about culture/ethnicity and cross-border loans ([Papaioannou 2009](#) [136], [Aleksynska and Peri 2014](#) [137]).

Cultural affinities have been a central topic in the last 10-15 years of academic research, because of the vagueness in the definition of the concept of “culture”. The lack of a shared definition discouraged researchers to start investigating the topic and its effects ([Zingales, 2015](#) [1]).

However, already in 1952 the anthropologists Kroeber and Kluckhohn have made a list of all definitions of culture developed through the years. This list involved 164 definitions. Moreover, in the 1990s the sociologist Apte had been working, in order to find a unique definition of culture and he claimed that it was not possible to achieve such a goal. As a consequence, sociologists and anthropologists have tried hard in order to give a unique and not trivial definition of culture.

The major identified problem was not having a narrowed and exact definition, given by the blurred borders of the phenomenon (the main doubts were whether or not to involve shared values, religion, race or the ensemble of these components and further other ones). This led to being unable of identifying the true influences and relations, conducting to scientifically useless research ([Zingales, 2015](#) [1]).

However, about 10 years ago, as stressed in the previous sections, researchers agreed to a shared definition that led to a “cultural revolution” in academic research in finance. This strand of literature has investigated both positive and negative effects of cultural affinities and differences on several economic outcomes.

Instead of focusing on the mainly used definition of culture deployed by most finance literature, we have introduced a novelty in the research by borrowing from anthropological and sociological literature a unique definition of ethnic identity. We have decided to borrow from a different literature, in order to understand the effect of self-identification in an ethnic group on international lending decisions.

In particular, in the first Study we have decided to understand the role of ethnicity on the decision to take part in a syndication pool, while in the second Study we have investigated the influence on the costs of the syndicated loans.

Despite the underlined omitted variable problems, we have found a clear positive correlation, guided by the use of gravity model, between being exposed to a certain ethnicity and taking part in syndication pools for loans directed towards international countries exposed to that same ethnic group. Moreover, we have found also a negative correlation between being exposed to a certain ethnicity and the costs of the syndicated loans.

We have also found that these correlations have not the same magnitude and significance for all ethnic groups, but they differ among each other.

In this dissertation we have extended literature concerning culture, syndicated loans and gravity model. First, we have explored different strands of literature in order to give a completely different definition of ethnicity. Second, we have looked at within-country ethnic differences' effects on syndicated loans, a type of cross-border loans that has not previously examined in this way. Third, we have applied gravity models on a completely different topic, extending his usage in academic literature.

Of course, as we have stressed in the previous sections, further analysis is needed in order to find a clear causality effect. Indeed, we have planned further analysis and different methodologies to diminish endogeneity problems, such as quasi-experiments with different exogenous shocks and further samples. Our main aim is to clearly identify the main channels through which ethnicity influences international lending decisions (information, skills, networks, familiarity, homophily, a mix of them, etc.)

Nevertheless, we will be able to contribute more to the existing literature concerning international bank lending and ethnicity. In particular, we will understand the main drivers of international syndicated loans' decisions.

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