Immigrant CEOs and Firm Performance

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Abstract

The globalization process witnesses top corporate organizations around the world having an increasing number of foreign directors to their companies, particularly in the United States, which is home to the largest immigrant population in the world. This paper investigates the impact of immigrant CEOs on financial performance for large US firms. Drawing on a sample of S&P 500 firms between 2000 and 2019, we examine whether CEOs' immigration status affects firm performance. The analysis is based on a series of regressions that control for various firm and CEO characteristics. Evidence shows that firms led by immigrant CEOs have significantly superior firm performance compared to those led by non-immigrant CEOs. Specifically, firms with immigrant CEOs tend to earn an approximate 1.3% higher return on assets. Tests on cultural backgrounds reveal that CEOs who emigrated from a society that highlights long-term orientation tend to contribute to better firm performance. These findings have significant implications for firms, policymakers, and society by highlighting the crucial role that immigrant CEOs play in gaining a competitive edge and driving economic growth in the US.

Key words: *immigrant CEOs, foreign CEOs, return on assets, Hofstede cultural dimension*.

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Table of Contents

List of Tables

Lists of Figures

Section 1 Introduction

The United States is a nation of people who have immigrated from different parts of the world, and immigration still has a significant impact on the U.S. economy. Figure 1, provided by the Center for Immigration Studies, shows that the level and percentage of immigrants coming to the United States have grown rapidly since 1970, rising from less than 5 percent in 1970 to 14.6 percent in 2022. It can be predicted that the level of immigration will continue to grow substantially over the next few decades (Camarota & Zeigler, 2022). Given the background of people from all over the world, the diversity in the American population has created a unique environment that fosters innovation and creativity, and immigrants have been able to take advantage of this environment to develop successful businesses. Today, foreign-born CEOs are currently leading some of the most representative brands – such as Microsoft, Google, and McDonald's. Research by Boardroom Insiders' 2017 reveals that 3 percent of Fortune 100 CEOs were born outside of the U.S., while across the Fortune 500, 11.6 percent of CEOs were born abroad (Gillenwater, 2017).

Upper echelons theory suggests that the personality, experience, and attributes of top executives exert a significant effect on an organization's strategic decisions and performance (Hambrick & Mason, 1984). This theory provides a theoretical framework for understanding the critical role that CEOs play in managing their business, and a great deal of research has examined CEOs' characteristics and the performance of the firm they manage. However, previous studies based on upper echelons theory have overlooked external factors of the individual's early-life environment that are beyond their control. As CEOs are often perceived as the main representative of a company, their individual foreignness can project onto the company they guide (Mata & Alves, 2018). Research in immigrant CEOs provides additional insights into the influence of diverse leadership and global perspectives in organizational decision-making and innovation. Therefore, another question arises: do CEOs with different country backgrounds lead to different firm performance? Imprinting theory provides a potential explanation in the field of organization management by suggesting that the time and context of an organization's founding leave a lasting imprint, significantly influencing its long-term behaviors, strategies, and performance (Stinchcombe, 2000). According to imprinting theory, some research has confirmed the significant impact of cultural

background on a company's operations (Bai, Tsang, & Xia, 2020; Joel, Benedict, & Nkwantabisa, 2023).

The hypothesis regarding the better performance of immigrant CEOs is built on psychological resilience theory, cultural intelligence theory, and human capital theory. Resilience refers to the capacity to modify the response to a state of growth under a negative circumstance and is recognized as a crucial trait in leadership (Peterson, Walumbwa, Byron, & Myrowitz, 2009). Immigrant groups constantly face obstacles and barriers that do not challenge most natives, such as language barriers, few promotional opportunities, and even discrimination (Shinnar, & Young, 2008). The challenges faced by immigrant CEOs might foster psychological resilience and develop some extraordinary personal traits, which are expected to manifest themselves in stronger work ethics, improved leadership, and ultimately better corporate financial performance. Gillenwater (2017) highlights some characteristics in her report, stating that while talking about their journeys, immigrant CEOs emphasize qualities such as perseverance, humility, and the ambition to succeed, along with valuing education and hard work. Due to the distinct bicultural background, immigrant CEOs are more likely to obtain stronger cultural intelligence, described as the ability to work effectively across varying cultures (Earley & Ang, 2003). Bajaba, Le, Bajaba, and Hoang (2022) propose that immigrant founder CEOs are more inclined to manage their companies with an innovative mindset, which is a trait often associated with bicultural perspectives, thus, in turn, boosting the company's innovation and overall performance. From individual perspective, human capital theory characterizes immigrant CEOs as a group who are willing to embrace uncertainty and ambiguity and have a powerful ambition to succeed (Constant & Zimmermann, 2006). From corporate's perspective, Gillenwater (2017) also points out that immigrant CEOs' experiences regarding overcoming prejudice foster an appreciation and prioritization of diversity. Thus, firms with immigrant CEOs would gain a global insight and then benefit from broader and diverse decision-making leaderships.

To test the above hypothesis, firm performance in this study is designed as an OLS regression of the origin of a firm's CEO (immigrant or non-immigrant), CEO characteristics, and firm characteristics with year- and firm-fixed effects. The data for this study extends from 2000 to 2019 for the S&P 500 companies. Considering the situation that it takes time for CEOs' decision-making

and management strategy to go into effect, firm performance is measured with the next period of return on assets (ROA_{t+1}). First, we examine how CEOs' immigrant status affects firms' performance and finds that there exists a significant relationship between immigrant CEOs and firm performance as proxied by ROA. To be more specific, holding all else constant, an immigrant CEO leads to an approximate 1.3% increase in average ROA compared to a native-born American CEO. Since some countries have similar cultures, such as Canada and America, this study additionally investigates whether there is any difference in performance among firms led by CEOs from five different region categories, including Africa and the Middle East, Asia, Australia, Central and South America, and Europe, compared to CEOs who were native-born Americans. The results show significant results at different levels for the relationship between immigrant CEOs from different areas and firm performance. For example, compared to their native counterparts, immigrant CEOs who came from Australia and Europe are expected to contribute 11% and 2.4% more respectively to the firm's average ROA of next year. Inspired by imprinting theory, we introduce 6 cultural dimensions and run the regressions to engage a deeper understanding of immigrant CEOs and their cultural backgrounds. Results show that firms led by immigrant CEOs whose cultural heritages attach more importance on long-term orientation and restraint than the U.S. will have superior firm performance.

As far as we know, the existing research on CEO effects has not largely investigated the impact of immigrant CEOs on firms' performance. Our study is the first to analyze the connection between CEOs' countries of origin, CEOs' characteristics, and firm characteristics in companies listed on the S&P 500. In addition to contributing to the academic literature, our research aims to provide policymakers with useful information for creating effective immigrant policies that can benefit the economy. By exploring the factors behind the success of firms led by immigrant CEOs, we hope to offer insights into the qualifications of CEOs and reasons for encouraging talented immigrants to lead business, not only in the USA but also in other countries that tend to attract immigrants, such as Canada. This could aid policymakers in designing immigrant legislation that fosters economic growth.

The remainder of the paper is structured as follows. Section 2 provides some cultural background about immigrant entrepreneurship in the U.S. and summarizes previous works of theory and

literature. Section 3 describes the objectives of our study and then develops the hypothesis. Section 4 discusses data collection and variables construction and introduces the regression model. Section 5 presents the regression results, findings, analysis, and output interpretation. Section 6 offers the conclusion, discussion, and some limitations.

Section 2 Relevant Theory and Prior Literature

A report ("Immigration Facts", 2022) concludes a few common misconceptions related to immigration, such as poor education and skills, heavy burden to public services, and financial burden on taxpayers. On the other hand, another report states that the U.S. has benefited a lot from the improved energy and creativity that immigrants bring. They insist that immigrant workers, who constitute a significant proportion of some industries, enhance economic stability through their high employment rates, geographic mobility, and support for social security systems, and their children offer potential future benefits to the U.S. economy through their upward mobility (Sherman, Trisi, Stone, Gonzales, & Parrott, 2019).

Some periodicals and journals also have public concerns about the immigrant entrepreneur issue. An article on Forbes states that a majority (nearly 43%) of Silicon Valley companies founded during a 7-year period from 2008 to 2015 had at least one immigrant founder (Ferenstein, 2015). According to the National Foundation for American Policy brief, immigrants have founded around 51 percent of American startup companies valued at one billion dollars or more. This brief also reports that at least one immigrant fills a key management or product development position in 71 percent of the startups, particularly the chief technology officer, chief executive officer, or vice president of engineering (Anderson, 2016). In addition to the intense interest in media, a large body of academic research confirms the positive economic impact of immigration on the native population and even on the overall economy. Kerr and Kerr (2020) examine immigrant entrepreneurship using the Census Bureau's Survey data from 2008 to 2012 and find that first- and second-generation immigrants create approximately 40 percent of Fortune 500 companies. They also find that first-generation immigrants created 25 percent of all new firms in the United States over the period examined. In addition, the findings of Azoulay, Benjamin, Kim, and Miranda (2022) suggest that immigrants act more as "job creators" than "job takers" and play significant roles in U.S. high-growth entrepreneurship. They build a model to measure the framework for addressing the dual roles of immigrants as founders and workers and find that immigrants exhibit an 80 percent higher entrance rate into entrepreneurship.

2.1 Upper Echelons Theory and Importance of CEO

What roles do CEOs play in firm performance? How may CEOs influence firm performance? These critical questions have long been capturing the attention of scholars in the corporate finance field. An essential theoretical perspective named upper echelons theory (UET) that is developed by Hambrick and Mason (1984) could answer these questions. Upper echelons theory is a popular theoretical framework in the field of strategic management; it suggests that the experience, characteristics, and value of top executives can significantly affect organizational outcomes. The theory illustrates the idea that the highest-ranking officers bring their own distinct backgrounds, experience, and perspectives to their leadership roles, which shape their strategic decision-making and ultimately influence future firm performance. In general, this theory spurs plenty of research on management theory, in particular on CEOs.

For a company, the key to success is determined by its management, and the CEO is the most powerful person in the company. Dewar, Hirt, and Keller (2019) demonstrate that CEO is the only peerless position and the most powerful and influential title in a firm. More specifically, their report indicates that 45 percent of a company's performance is influenced by CEO's control and decisions. The degree to which CEOs have an impact on a company's performance is crucial to the understanding of organizational function, and scholarly attention to CEOs continues to be robust. For example, Bandiera, Prat, Hansen, and Sadun (2020) apply a machine learning algorithm to estimate CEOs' behavioral dimensions and then summarize the CEO index into two types: "leaders," who are primarily involved in communication and coordination activities, and "managers," who are primarily involved with production-related activities. The results validate the notion that companies hiring "leaders" demonstrate superior performance. Bennedsen, Pérez-González, and Wolfenzon (2020) utilize an interesting and novel method to prove the critical roles that CEOs play. They use a unique dataset that contains individual hospitalization records of 12,753 firms from Denmark during the period 1996-2012 and then apply variations in firms' exposure to their CEOs resulting from hospitalization to estimate the effect of CEOs on firms' policies. Their findings indicate that CEOs are crucial in the functioning of organizations, and hospitalizations lead to a significant decrease in various firm performance measures. In contrast,

the same shocks to other senior managers have a less severe effect on firm outcomes, further confirming the irreplaceable position of the CEO in the company.

Identifying the factors that contribute to CEOs' success is crucial for strategic management and corporate governance. Upper echelons theory also posits that executive decision-making and organizational outcomes can be influenced by CEOs' demographic characteristics such as age, gender, and education level. This theory has been utilized to explain various organizational outcomes, including financial performance, risk-taking, innovation, and strategic decision-making. Wang, Holmes, Oh, and Zhu (2016) conduct a meta-analysis of previous studies on the relationships among CEO characteristics, firm strategic actions, and future firm performance and even offer information about the true size of these effects. Their analysis, which draws on 308 studies, mostly supports the predictions of upper echelon theory, with a few exceptions. Specifically, they find that CEO characteristics such as tenure, formal education, prior career experience, and positive self-concept are significantly associated with firm strategic actions, which are in turn significantly related to future firm performance. Furthermore, the research reveals that CEO tenure has a negative correlation with firm strategic actions, while CEO formal education, prior career experience (especially prior task experience), and positive self-concept have a positive correlation with firm strategic actions. Moreover, CEO age, tenure, formal education, and prior career experience are positively associated with future firm performance.

2.2 Imprinting Theory and Impact of Cultural Background

The imprinting theory provides a perspective on how an individual's early-life environment has a persistent impact on their values and preferences. Konrad Lorenz, an Australian zoologist, first described the concept of imprinting theory in the 1930s, which suggests that during a critical period, typically soon after birth, animals are biologically inclined to form an attachment to the first moving object they see, which is commonly the mother or a surrogate object that looks alike (Faye, 2011). This process is referred to as imprinting, and once it happens, it is challenging to undo. Stinchcombe (2000) introduces the concept of imprinting to organizational research by explaining how organizations adopt characteristics from their founding environment and retain them over time. The concept has since been used at various levels, such as organizational collectives, single

organizations, organizational building blocks, and individuals. Furthermore, Marquis and Tilcsik (2013) develop the imprinting theory, suggesting that certain experiences during an individual's early growth process will have a long-term and significant impact on their future work and life behaviors. Moreover, Marquis and Qiao (2020) argue that the theory of imprinting highlights the importance of sensitive periods, such as childhood, which are characterized by extreme susceptibility to environmental factors.

Some previous scholars have shown the broader implications of imprinting theory for entrepreneurship and organizational research. Drawing upon the upper echelon theory and imprinting theory, the study by Liu, He, and Wang (2023) proposes that a CEO's background in clan culture influences the firm's internationalization by reinforcing the value of long-term orientation through the imprinting mechanism. Their analysis of the distinct dataset of publicly listed Chinese firms confirms that a CEO's clan culture background is positively associated with the level of firm internationalization. Similarly, Bai et al. (2020) expand the upper echelons theory by incorporating the perspectives of imprinting theory as well and examine the decision-making process of choosing an IPO location between the home country and a foreign country. They analyze a sample of 1479 Chinese private issuers during 2005-2014 and find that the sources of imprinting, that is, prestigious domestic education and foreign education, influence the CEOs' inclination toward a particular IPO location. More specifically, CEOs with prestigious domestic degrees tend to choose China as the location for their firm's IPO, while CEOs with foreign degrees tend to choose a location outside of China. The research in this area supports our argument that the early experiences of entrepreneurs can greatly shape their current ventures.

Inspired by imprinting theory, exploring the impact of cultural background on CEOs' characteristics could offer another perspective. A considerable amount of research has been conducted on how cultural dimensions influence various aspects of business operations. Joel et al. (2023) examine the relationship between the CEO's cultural background and the firm's internal control quality, and the results show that CEOs with French cultural backgrounds have better internal control quality and fewer material weaknesses reported than CEOs with English cultural backgrounds. Naeem and Khurram (2020) conduct a study using 15,818 firm-year observations from 1996 to 2015, which reveals the impact of CEOs' cultural backgrounds on dividend policy.

Their research finds that CEOs who exhibit individualistic cultural tendencies are more inclined to overestimate their capacity to generate future earnings and are more likely to maintain high dividends for their shareholders. Nguyen, Hagendorff, and Eshraghi (2018) discover that the cultural background of CEOs has an impact on the performance of US banks. They examine US-born CEOs who were either children or grandchildren of immigrants and discover that banks led by these CEOs had a 6.2% higher return on assets than the average bank under competitive pressure. However, this effect is found to decrease over subsequent generations. Banks guided by CEOs whose cultural heritages highlight restraint, collective consciousness, and long-term orientation are more secure, cost-effective, and tend to engage in more conservative acquisitions. This, in turn, accounts for their superior performance. These previous studies provide evidence that the cultural background of CEOs has a significant impact on business practices.

2.3 Immigrant Entrepreneurs and Corporate Operations

Plenty of work has examined the relationship between CEOs' characteristics, including both demographic characteristics and cultural background on firm performance. However, the inclusion of the nationality of the CEO has been scarce in models when studying the CEO and performance due to the unavailability of data. Pandey and Rhee (2015) conduct a study on foreign CEOs in Japan, a country where it is relatively uncommon to hire outsiders, especially foreigners. The authors discover that (1) firms tend to avoid hiring complete outsiders, those who are both firm- and country-outsiders, in Japan; if they do, success is more likely if the firm has a global competitive scope; (2) foreign-born CEOs must have a clear vision for the firm's reform to be successful. They hint that foreign-born CEOs who are successful need to possess leadership qualities, a clear vision, and skills that are in line with the organization's requirements to ensure its effective operation. They also note that “it is not uncommon to see foreign CEOs at American and European companies” and further point out the reason is that “American and European societies have historically been more open to immigrants from across the world” (p. 204).

The studies presented next represent two approaches to studying immigrant entrepreneurship and firm performance in European countries. Drawing upon human and social capital theory and assimilation theory, Efendic, Andersson, and Wennberg (2016) investigate differences in firm

performance measured as revenue growth in a comparative study of native and immigrant CEOs among 50,002 small private firms over four years in Sweden. They find distinct patterns in both firm size and revenue growth between firms managed by immigrants and by natives. Firms with native CEOs generate, on average, 10-20% more revenue than firms of which the CEOs have an immigrant background. Kulchina and Hernandez (2016) publish another paper arguing that the co-national immigrant community has a significant positive effect on firms' profitability and provide evidence that both lower costs and higher revenues drive this effect. They test the ideas based on a sample of foreign firms operating in Russia and took advantage of the uniqueness of Russian vs. non-Russian names. They find that a foreign CEO leads to poor performance of foreign entrepreneurial firms under the condition that it is without an immigrant community. They also indicate that multinational corporation subsidiaries derive equal benefits from co-locating with immigrants regardless of their CEO's nationality. An immigrant community of the same nationality as the foreign firm presents potentially valuable factors to help overcome disadvantages as drivers of foreign firm performance by accessing resources, knowledge, and social networks.

One remarkable viewpoint was found by Efendic et al. (2016) in their study of firms ran by second-generation immigrants using assimilation theory. Assimilation theory in relation to immigration refers to the process by which immigrants and their descendants become integrated into the social, cultural, and institutional fabric of the host society (Farley & Alba, 2002). Especially starting from second-generation immigration, they can better acquire the culture and adapt to the environment of the host country than first-generation, and eventually become indistinguishable from the host society. This is also a reason for the shortage of studies on second-generation immigration entrepreneurs since researchers always regard them as natives (Bisin, Patacchini, Verdier, & Zenou, 2011). According to assimilation theory, the findings of Efendic et al. (2016) provide evidence supporting the premise that compared to the business run by first-generation immigrants, those run by second-generation immigrants indeed achieve higher revenue growth. But they also find that the results hold only for those second-generation immigrants who come from OECD countries. However, another paper presents contrary findings. Beckers and Blumberg (2013) conduct a similar study and find that firms led by second-generation immigrants show lower growth rate than those led by first-generation. They affirm the entrepreneurial success caused by high-level socio-

cultural integration, but it seems like the integration is not the guarantee for better business prospects.

In addition to the assimilation theory, human and social capital resources also provide a new perspective. Typically, immigrant entrepreneurs are regularly stereotyped as having fewer and different resources than native entrepreneurs. One reason for immigrant-run firms' poor performance is a lack of financial, social, and human capital. Some researchers define human capital as an investment to enhance individual productivity (Light & Rosenstein, 1995), others regard it as an improvement in capacities that lead individuals to behave in novel ways (Coleman, 1988). Social capital, in the context of immigration, refers to the networks, norms, and trust that immigrants develop both within their own communities and with the larger society (Lee, 2009). These relationships can facilitate coordination and cooperation for mutual benefit that contributes to economic and political benefits (Coleman, 2019). In many ways, social capital is essential for immigrants as it can provide social support, access to resources, and a sense of belonging in a new environment. Based on the human and social capital theory, Efendic et al. (2016) suggest that human capital proxied by CEOs' post-secondary education is not associated with the growth of firms led by immigrant groups. But social capital, derived from connections to company directors, would have a more significant impact on revenue growth in businesses run by second-generation immigrants, compared to those run by first-generation immigrants.

2.4 Hypothesis development

Literature has proved that immigrants are more entrepreneurial than natives (Fairlie & Lofstrom, 2015; Kerr & Kerr, 2020; Krol, 2021). Wadhwa, Saxenian, and Siciliano (2012) reveal that an immigrant entrepreneur in the United States is more successful at initiating startups compared to a native of the United States. Bianchi (2013) also indicates that immigrant entrepreneurs own higher shares of businesses compared to native or non-immigrant entrepreneurs in Australia, Canada, the United Kingdom, and the United States. Based on the psychological resilience, cultural intelligence theory, and human capital theory, immigrant CEOs are expected to develop remarkable characteristics and seize opportunities differently from native CEOs, resulting in their enhanced management capability.

Resilience theory is originally a psychological theoretical framework that focuses on the ability of individuals, communities, or systems to adapt and thrive in the face of adversity or significant sources of stress. In the context of individuals, psychological resilience is widely understood as the process of adapting well in the face of challenges and hardships, implying rebounding from difficult circumstances and being able to reach a state of growth and success. Adapting to a different country is difficult for immigrant groups, they are prone to face considerable challenges like language and cultural barriers, unfamiliar business practices, unequal job opportunities, and even discrimination. For instance, data from the Canadian Census in 2006 reveals that immigrants' unemployment rates compared to those of non-immigrants of similar age are approximately twice as high, and median wages of recent immigrant workers are also about 49 percent lower compared to native-born workers (Oreopoulos & Dechief, 2012). Oreopoulos's (2001) other research finds "substantial discrimination across a variety of occupations towards applicants with foreign experience or those with Indian, Pakistani, Chinese, and Greek names compared with English names" (p. 1). Thus, upward mobility in the corporate world is especially much more difficult for the immigrant group. Farzamian (2009) applies qualitative research approaches to explore the complexities and difficulties embedded in six executive-level immigrants, such as CEOs and managers. In this research, each participant conveys that the capacity to strive for accomplishing their goals acts as a powerful motivation. They own self-determination to beat the odds related to transitioning and establishing themselves in a foreign country. They acquire the skills to overcome obstacles and utilize different types of decision-making abilities and come to understand that they bear the final responsibility for the consequences of their choices. Finally, the enhancement of their leadership skills serves as a key bridge connecting the positive results of their efforts. Therefore, given the unique journeys they experience, immigrant CEOs might be more likely to develop and draw upon resilience in their roles. It could be inferred that those immigrant CEOs who have reached the peak of their careers irrefutably possess diligence and determination to succeed.

Cultural Intelligence, usually referred to CQ, is a theory within management and organizational psychology and recognizes an individual's capability to function and manage effectively in culturally diverse contexts (Earley & Ang, 2003). This theory is strongly related to immigrant CEOs due to their distinct journeys. Liu (2017) provides evidence that entrepreneurs with a

transnational background often demonstrate the traits of bicultural individuals with complex cognitive capacity, which allows them to navigate the institutional complexity, particularly crucial aspects of the global market, thereby promoting the growth of firms into this global setting. Thus, an executive who is bicultural has a distinct influence on firm outcomes, which may be different from a monocultural executive (Bajaba et al., 2022). Carlsson and Jacobsson (1997) provide a potential explanation that due to their special high cognitive flexibility and complexity, bicultural immigrant CEOs are more likely to integrate their firms' resources in ways that are different from what native CEOs do; thus, they may propose some innovative products, services, or even potential markets. For instance, immigrants account for a large share of patents in the United States. Evidence shows that immigrant inventors contributed to more than a quarter of U.S. global patent applications between 1990 and 2007 (Wadhwa, Saxenian, Freeman, & Gereffi, 2009). Also, taking one of the foreign CEOs as another example, when Swedish native Ingu Thulin won the CEO job at 3M company in 2012, he believed that his vast and international experience contributed a lot as the company derives a significant portion of its growth from emerging markets such as China, India, and Brazil (Gillenwater, 2017).

In addition, based on the conjecture of neoclassical human capital theory, Constant and Zimmermann (2006) define immigrants as a self-selected group of rational individuals who have prepared to take risks to optimize their earnings and living conditions. As Dalziel (2008) expresses in the study, a person who chooses to emigrate typically exhibits distinctive and potentially advantageous character attributes that may include a high tolerance of ambiguity, a natural inclination towards taking risks, and steadfast determination. Therefore, we could infer that immigrant CEOs generally exhibit a reduced level of risk aversion and are fueled with an inner ambition to succeed. From a firm's perspective, companies led by immigrant CEOs might inherently embody a more globally inclusive approach when it comes to their talent search and recruitment strategies. When previous studies mostly concentrate on the operational aspects of board directors, Estélyi and Nisar (2016) examine the overlooked area of appointing directors with foreign nationality, emphasizing that national origin is a vital element of board diversity. Their findings support the idea that diversity in nationality offers a wider range of viewpoints, concepts, and information, subsequently enhancing the company's ability to make well-informed and efficient decisions. Therefore, compared to companies led by non-immigrant CEOs, those firms

with immigrant CEOs may have more open and wide-reaching search processes that consider candidates from across the globe. This inclusive approach towards talent acquisition not only results in a diverse leadership but also potentially contributes to a multicultural and inclusive corporate culture that values and benefits from a range of insights and experiences.

As illustrated before in the literature review, upper echelons theory recognizes that a particular executive's character may affect their management strategy and then the firm performance. Therefore, based on the above conjectures and theoretical framework, the hypothesis of this study is developed as:

> *Hypothesis 1: Immigrant CEOs will lead their firm to a better financial performance, compared to non-immigrant counterparts.*

Section 3 Research Design

3.1 Data Collection

To study the impact of immigrant CEOs on firm performance, we collect all the available CEOs' information by searching the entire database in Compustat/Executive Compensation datasets, which are accessible via WRDS (Wharton Research Data Services). Then, we sift through all the S&P500 companies based on the given S&P index. The study extends for a 20-year period from 2000 until 2019 to avoid the abnormal effect of the COVID-19 pandemic. In the original dataset, the firms' "fiscal year" is not matching with the "date became CEO" and "date left as CEO", so we manually filter out the mismatching according to the timeline data. Thus far, the number of sample firms has been reduced to 361, and the total number of CEOs over a 20-year period is 4,721.

There is no database available for CEOs' immigrant status, so we manually collect the information of immigrant CEOs in various ways, including NNDB (Notable Names Database), news, social media, corporate websites, and other published materials. A report named *2020 Fortune 500 American Immigrant CEOs* published by Boardroom Insiders (2020) offers some useful immigrant information because some of the companies in the Fortune 500 and S&P 500 are duplicates. Magazines like *Fortune* and *Irish American* also provide effective immigration information. For example, Liam Kelly, who was CEO of Teleflex company, is described as "born and raised in Galway. Liam and his wife Helen are both graduates of the University of Limerick and have been married for 22 years. They relocated to the Philadelphia area from Mayo in 2014 with their five children" in the *Irish American* magazine. Therefore, we can infer that this CEO was a native of Ireland. Additionally, some immigrant information is collected from interviews or company reports. Given another example of a company profile webpage, Paulino do Rego Barros, who was the CEO of Equinix Inc., is described as "a native of São Paulo, Brazil with more than 35 years of managerial experience within the telecommunications, food, automotive, glass, and chemical industries". Thus, we could recognize Brazil as the country of origin for this CEO.

After collecting CEOs' immigrant status, we gather the data of CEOs' birthplace and categorize them by country and region. Table 1 provides the data regarding the number of observations. Panel

A presents all the countries of origin in our existing dataset. We can see that there are 4,721 total observations, and the number of foreign-born CEOs is 783. That is, around 16.59 percent of CEOs were born outside the U.S., whereas approximately 83.41 percent of CEOs were US-born. The most common foreign origin is India, with the amount of 112, and then Canada, with 96 observations. However, considering that some of the countries appear fairly similar in social culture, such as Canada and America, we organize the countries into six regions including Asia, Africa and Middle East, Australia, Central and South Africa, Europe, and North America. Panel B illustrates the regionally categorized data regarding CEOs' birthplaces. Clearly, the region of North America accounts for the largest proportion with nearly 85.85 percent. The Europe region (282 observations) and the Asia region (180 observations) take the second and third place respectively.

[Insert Table 1: Birthplace by Countries and Regions]

While selecting the CEOs, we also gather CEOs' other characteristics as control variables through WRDS/Compustata/Execucomp, which is executive compensation data directly collected from each company's annual proxy. It includes company information, executive information (such as age, gender, tenure), and compensation data (total compensation). As for CEOs' education background and tenure, we manually collect from Bloomberg by searching for the full names of CEOs.

After identifying existing CEOs' country of origin and other characteristics, we then collect and gather all firm-level variables. Except firm age, the dependent variable and all the firm-level control variables are from WRDS/CRSP/fundamentals annual over the period 2000-2019. Firm ages are collected from two sources, one is the firms' website about their history, the other is Bloomberg. In the Bloomberg system, there is a function called "Equity Offering" providing companies' IPO and additional offering information.

3.2 Variables Description

3.2.1 Dependent variable

To measure the firm performance, this study applies return on assets (ROA) as the dependent variable. Firm performance refers to a firm's capacity to effectively use its material and human resources to reach its objectives (Le, 2005). It also demonstrates the relationship between the outcomes achieved and the resources utilized in the business operations of a company (Nguyen, Nguyen, Nguyen, & Do, 2021). Among numerous potential measurements, the most common indicator is the return on asset. Many researchers have applied it in their studies, such as Munawar (2019) and Altuwaijri and Kalyanaraman (2020). Return on assets is calculated by dividing the net income for the year by the total assets at the end of the year. Saidu (2019) explains the reason why ROA is a frequently used metric in research, saying that it considers both the company's operational performance during the year and its historical performance. Considering the situation that the decisions or strategies made by CEOs are more likely to have a lagged effect on firm performance, we use the ROA of the next time period as the dependent variable, and the ratio is in percentage.

3.2.2 Main Independent variable

We primarily examine the relationship between CEOs' country of origin and the dependent variable discussed above. According to the United Nations, a "migrant" is an individual who relocates to a country other than their usual place of residence for a minimum of 12 months (Castles & Miller, 2009). Since this study focuses on the S&P 500 firms in the United States, the main independent variable – immigrant CEO – refers to the CEOs whose birthplace was not the U.S. It is a dummy variable, taking the value 1 for CEOs born outside the U.S. and 0 for native-born American CEOs.

3.2.3 Control variables

Inspired by other prior studies, we obtain a few control variables including firm-level and CEO-level, which are all critical factors that influence firm performance or CEOs decision-making.

Seven variables are used in this study to control for the firm-level effect on the regression result, which are firm size, firm age, leverage, liquidity, asset turnover, asset growth, and sales growth. In general, larger companies tend to have greater diversification and operational efficiency and are less impacted by information asymmetry issues, leading to better financial performance than their smaller counterparts (Rajan & Zingales, 1995; Ramaswamy, 2001; Frank & Goyal, 2003; Adams & Ferreira, 2009; Nguyen & Nguyen, 2020). On the other hand, smaller companies might lack the influence that their larger counterparts wield, which could make it challenging for them to contend with these big businesses, especially in markets that are intensely competitive (Almajali, Alamro, & Al-Soub, 2012, p. 272). Several earlier studies (Lumpkin & Dess, 1999; Onaolapo & Kajola, 2010) have various arguments for the influence of firm age on its performance. Some insist that older firms benefit from more experience and reputation effect, leading to superior performance (Cucculelli, 2018; Pellegrino, 2018). However, others argue that along with age, older firms are prone to inertia and bureaucratic ossification (Loderer & Waelchli, 2010; Grazzi & Moschella, 2018). The potential explanation is that they may have developed routines and become inflexible, making them fail to appreciate changes in the business environment (Deitiana & Habibuw, 2015). Leverage leaves a significant positive impact on a firm financial performance due to the benefit of capital availability, tax shield, and potential return, which is backed by numerous previous studies (Kakani, Saha, & Reddy, 2001; Bashir, 2003). On the other hand, companies that are highly leveraged may be at risk of bankruptcy if they are unable to make payments on their debt; They might also fail to attract fresh investors or lenders in the future. Through allowing the company to fulfill its current obligations, deal with unexpected contingencies and ensure its smooth operation, liquidity may have a favorable impact on performance (Nguyen & Nguyen, 2020). However, excess liquidity has the potential to degrade performance by engaging in managerial expropriation behaviors and investing in initiatives with low net present value (Adams & Buckle, 2003). Most scholars and researchers use the ratio of current liability and current asset to proxy liquidity, but in this study, we use the cash ratio, which is the ratio of a company's total cash and cash equivalents to its current liabilities. Compared to the current ratio, the cash ratio is a more conservative financial measure of a company’s liquidity position. A few scholars (Onaolapo & Kajola, 2010; Pouraghajan, Malekian, Emamgholipour, Lotfollahpour, & Bagheri, 2012; Munawar, 2019; Efendi, Putri, & Dungga, 2019) discuss the significant positive effect of total asset turnover on firm performance. The increase in total asset turnover shows that the companies manage their

assets to produce sales in favorable conditions. Asset growth and sales growth are also two vital factors affecting the value of companies. In a study by Nguyen et al. (2021), the observed variable of growth of total assets of the growth factor positively effects on ROA and ROE. The more firms focus on expanding their investment for their business, the more efficient and developed they are. Eka (2018) states that as the rate of sales growth accelerates, institutional investors are likely to boost their share ownership as proof of their stake, with the intention of achieving greater profits in the subsequent period.

Following the CEO effect discussed in the literature review, we also add some CEOs' characteristics such as age, gender, tenure, MBA degree, and total compensation to control their influence on firms' decision-making and then further performance. While elder CEOs are expected to be more experienced and be able to access more extensive professional networks, younger CEOs tend to have more energy, motivation, and enthusiasm. Bhabra and Zhang (2016) examine the relation between CEO age and firm performance using a sample of 1,940 CEOs in 1,390 industrial firms. They find that CEO age is negatively associated with firm growth and market value, but the sensitivity of these two relations diminishes with CEO age. Gender stereotypes in top management teams (TMT) have been a hot issue in academic studies. Smith, Smith, and Verner (2006) focus on the estimated relationship between firm performance and the proportion of women among TMT, which refers to CEO positions and boards of directors. The results show that the proportion of women in top management jobs tends to have positive effects on firm performance, even after controlling for numerous characteristics of the firm and the direction of causality. However, Darmadi's (2013) finding gives an opposite opinion, indicating that the representation of female top executives is negatively related to both ROA and Tobin's q, suggesting that female representation is not associated with an improved level of performance. When it comes to CEOs' tenure, some scholars (Limbach, Schmid, & Scholz, 2016) provide evidence supporting that CEO tenure exhibits an inverted U-shaped relation with firm value. Simsek (2007) applies an intervening model to explain the positive correlation among CEO tenure, TMT risk-taking propensity, the firm's pursuit of entrepreneurial initiatives, and ultimately firm performance. While searching for CEOs' information, we find that many CEOs obtained a Master of Business Administration degree even after a sustained career. A lot of research has investigated the question of whether the business education background matters for CEOs and firms' performance. For

example, King, Srivastav, and Williams (2016) find that banks led by CEOs with better MBA education scores achieve a level of bank profitability that is statistically higher than banks headed by non-MBA CEOs. Moreover, CEOs with better MBA education who follow riskier and more innovative business models secure superior bank performance outcomes. However, another analysis of the relationship between share price and CEO educational qualification reveals that no relationship was found between CEO MBA, business, or other qualifications and a firm financial performance (Lindorff & Jonson, 2013). According to expectancy theory and agency theory, tying financial incentives to firm performance, such as stock options awards, is a powerful tool to increase the extrinsic motivation of employees to expend effort and improve performance (Al-Shammari, 2021). Leonard (2019) finds evidence that companies with long-term incentive plans enjoyed significantly greater increases in ROE than companies without such plans.

3.3 Empirical Model

To explore the relationship between the above variables, this study uses ordinary least square regression to test the hypothesis on the relationship between the immigrant CEOs and firm performance. Ordinary least square model is used by plenty of prior studies in testing the hypothesis on the relationship between CEO characteristics and firm outcomes. The dependent variable in the model is firm performance proxied with return on asset. The main independent variable is immigrant CEO, which is a dummy variable that indicates whether a CEO was born outside the United States. The analysis utilizes cross-sectional data spanning 20 years from 2000 to 2019 for S&P 500 companies. The models are expressed as follows:

$$ROA_{i,t+1} = \alpha + \beta_1 \text{Immigrant CEO}_{i,t} + \beta_j \text{CEO controls}_{j,i,t} + \beta_k \text{Firm controls}_{k,i,t} + \varepsilon_{i,t} \quad (1)$$

3.4 Model Diagnostics

This section assesses the validity of an ordinary least square regression as a reliable estimator by examining whether the classical assumptions of the model are met. First. We check the multicollinearity using the variance inflation factor (VIF). If two variables are linearly dependent,

it may result in a multicollinearity problem. The tolerance value is a measure of how much of the variability of a specific variable is not explained by other explanatory variables. A value between 0 and 1 is assigned, with higher values indicating better performance. The VIF is the reciprocal of the tolerance value, and the value above 10 suggests a multicollinearity issue (Saidu, 2019). For this study, the VIFs for all variables are found to be below 10, even below 5, and the tolerance values are within an acceptable range.

Furthermore, we do a Hausman test to ensure that the appropriate model is used to draw valid inferences. The Hausman test is an essential statistical tool used in econometrics to determine whether the random effects or fixed effects model is more appropriate for a given panel data analysis. The random effects model assumes that the unobserved individual-specific effects are uncorrelated with the independent variables, while the fixed effects model assumes these effects to be correlated. The test should be done by testing the null hypothesis that the difference in coefficients is not systematic. In our study, we reject the null hypothesis and conclude that the fixed effect model is preferred.

3.5 Summary Statistics

The study observes that there are a few outliers in certain observations of the original data set, such as the extreme maximum value of ROA that is around -122.64 percent, which is due to the abnormally high income. Therefore, we remove some outliers by eliminating the ROA that is greater than 100 percent and less than -100 percent to mitigate the effect of the outliers. A prior study used a similar technique by removing the top and bottom 1 percent of observations on OROA, which are above 106 percent and below -191 percent (Kulchina & Hernandez, 2016). In addition to the outliners, a few firms with missing data are excluded from the data set.

The result of the summary statistics describing some basic statistics for all studied variables could be referred to in Table 2. The table highlights the observations, mean, maximum, and minimum values for each of the variables. Panel A shows the key statistics for the full sample, and Panel B presents the mean difference of other variables between immigrant CEOs and non-immigrant CEOs as well as its significance.

[Insert Table 2: Summary Statistics]

After removing the outliners and some missing data, we can see the observations for all variables are about four thousand, with the exception of liquidity. This is because approximately 700 firms did not disclose the information about cash and cash equivalent or current liabilities. The first row in Panel A illustrates the descriptive statistics for the dependent variable, we can see that the mean values of ROA_{t+1} across all the firms is 6.198 percent and the standard deviation is 7.92 percent. The maximum value of return on assets for the next period is 90.173 percent for the study period while the minimum number is -76.992 percent. The standard deviation of return on assets is greater than the mean value, suggesting significant variation in ROA value across all the firms in the dataset. This could be due to the differences in industries, company sizes, and risk levels. Looking at the main independent variable, the average value for Immigrant CEO is 0.159, suggesting that around 16 percent of CEOs in the dataset are foreign-born and the remaining (around 84 percent) are native-born Americans.

For the CEO-level control variables, the mean value for variable MBA is 0.411 with a standard deviation of 0.492. We can infer that 41 percent of CEOs in this study have obtained the Master of Business Administration degree, indicating that less than half of the CEOs have an educational background in business management. The average value for female CEO is 0.039 with a standard deviation of 0.194. In other words, only approximately 4 percent of CEOs are female, suggesting the dominant role of male CEOs. The mean value of CEOs' tenure is 5.24 years with a standard deviation of 3.632 years. The minimum tenure among studied CEOs is 1 year and the maximum tenure is 20 years. The average age of CEOs in our sample is around 55 years with a standard deviation of 6.1 years. We notice that the minimum number of CEO age is 27 and confirm that it is Mark Zuckerberg, who was born in 1984 and is the co-founder, chairman, and CEO of Meta Platforms (formerly, Facebook). In 2007, at age 23, he became the world's youngest self-made billionaire. As for the total compensation, since the values are relatively large, we use the natural log value. It shows the number of 9.027 in mean value and 1.12 in standard deviation.

Moving to the firm-level control variables, we use the natural log value of the total assets to proxy firm size, as most literature did. The table present that the mean value of firm size is 9.833 with a standard deviation of 1.633. The average firm age is around 32 years with a standard deviation of

23.33 years. The largest value for firm age is 123 in our sample. After searching, we figure out that it is General Electric, which is one of the original 12 companies listed on the Dow Jones Industrial Average. The mean value of leverage is 0.26 with a standard deviation of 0.252. The minimum value of leverage is 0 because some firms report 0 for total debt. The average firm liquidity is 0.445 with a standard deviation of 0.542. Different from the situation of leverage, the table shows that the minimum value of liquidity is 0, which is because of the extremely small value of cash and cash equivalent (around 0.25 million) but a large number of current liabilities (over 3,000 million). The mean values for asset turnover, asset growth, and sales growth are 84.3 percent, 11.3 percent, and 9.6 percent, respectively.

To distinguish the difference between the cases of immigrant CEOs and non-immigrant CEOs, we create another table to test the mean difference with the dependent variables and all other control variables. According to the CEO-level variables, we can tell that 655 of the CEOs in the sample are foreign-born while 3,456 of them are native-born. The average ROA of firms led by immigrant CEOs is 7.358%, which is greater than the average ROA (5.978%) of firms led by non-immigrant CEOs. The mean difference is 1.38 percent, which is significant at 1% level. Also, the differences in average MBA degree, tenure, and age are all significant at 1% level. The number of foreign CEOs who have earned an MBA degree is less than that of native CEOs, but the approximate average proportions for female CEOs are 4% in both situations. The result of the mean difference regarding MBA degree contradicts with a previous study by Mahroum and Ansari (2017), indicating that executives of other ethnic backgrounds tended to hold a PhD, an MBA, or a master's degree more frequently than the average U.S. executive. One possible explanation for this contradiction is that immigrant CEOs in our dataset may have master's or PhD degrees in other majors, such as engineering, law, science, or medicine. The tenure and age of CEOs who are immigrants tend to be less than those of native CEOs. For the firm level control variables, we can observe that only the mean differences for firm size, liquidity, and asset growth are significant at 1% level.

3.6 Correlation Matrix

Table 3 highlighted the pairwise correlations among all the variables. Column (1) shows how return on assets correlates to immigrant CEO and other CEO and firm controls. Focused on the dependent variable and the main independent variable, we can see that there is a positive correlation between immigrant CEOs and firm performance proxied by ROA_{t+1}. Moreover, the relationship is strongly significant, with a p-value < 0.01 for ROA_{t+1}. Among all the CEO-level controls, only CEO's tenure has a strong positive relationship with ROA_{t+1}. CEO's MBA degree, female CEO, and CEO's total compensation exhibit a positive but weak correlation with ROA_{t+1}. On the contrary, we can observe a negative and insignificant relationship between CEO's age and ROA_{t+1}. In terms of the firm-level control variables, firm size and sales growth have a negative correlation with ROA_{t+1} at 1% significance level. Firm liquidity and asset turnover are positively correlated to ROA_{t+1} with 1% significance level.

[Insert Table 3: Pairwise Correlation Matrix]

Column (2) represents the correlation between immigrant CEO and all other controls. It can be observed that half of our independent variable and control variables are not strongly correlated, either positive or negative. We can see that immigrant CEO is negatively correlated to MBA degree, tenure, and age, implying that immigrant CEOs are younger, short-tenured, and less likely to earn an MBA degree. For firm characteristics, immigrant CEO is negatively related to both firm size and firm age, suggesting that CEOs who emigrated to the U.S. generally lead emerging companies and companies with small sizes. Firms' liquidity and asset growth are both positively correlated to immigrant CEO, implying their management styles, that is, preference for strong cash flows and growth in the value of assets.

Section 4 Regression Results and Discussion

4.1 Regression Results

4.1.1 Main Regression Analysis of ROA

We first estimate OLS regressions of ROA against the presence of immigrant CEOs while controlling for a wide array of firm and CEO characteristics that may be related to firm performance, as mentioned in the previous variable description. From Table 4, we can see the coefficient estimates for the main regression.

[Insert Table 4: Effects of Immigrant CEOs on ROA_{t+1}]

Endogeneity issue is a common concern while running OLS regression in firm performance. In our context, the endogeneity problem arises when immigrant CEOs are not randomly distributed among enterprises, and their presence within the enterprise may be determined by factors related to the demand for immigrant CEOs or the willingness of immigrant candidates to join that firm. If some of those factors are related to corporate performance but are not adequately controlled, then the measurement of immigrant CEOs can be related to the error term in a regression, thus making the OLS coefficient estimation biased. To address the endogeneity problem, firm fixed-effects regression is one of the great econometric approaches controlling for any time-invariant and firm-specific factors that relate to both firm performance and the presence of immigrant CEOs, mitigating concerns about omitted variables (Masulis, Wang, & Xie, 2012). Also, the results of the Hausman test indicate that a fixed effect model is more appropriate for this study to control heterogeneity. Therefore, we incorporate year- and firm-fixed effects for models (1) to (4). In column (1), when only controlling CEO characteristics, we find that immigrant CEOs have a positive and strong effect on ROA_{t+1} with a coefficient estimate of 1.367. We then add the firm-level controls in the regression. As shown in column (2), it is obvious that the influence of immigrant CEOs on ROA_{t+1} remains positive, and the significance level switches to 5%. The coefficient magnitude decreases to 0.830. In economic terms, it can be interpreted that holding all CEO and firm characteristics constant, the average ROA_{t+1} of the firms led by immigrant CEOs is

about 0.83 percent higher than that of firms headed by non-immigrant CEOs. The result is consistent with an earlier paper by Badru and Raji (2016), which finds that "the impact of CEO nationality on company performance is statistically and positively related to ROA and ROE at the 5% and 10% levels, respectively" (p. 610).

In models (3) and (4), we further consider two more interaction terms of immigrant CEOs combined with gender and tenure. The results in column (3) show that the firm performance is still strongly and positively related to immigrant CEOs with a coefficient estimate of 0.965. We add one more interaction variable combined with immigrant identification and tenure, and the regression result is presented in column (4). The positive effect of the main independent variable remains significant at the 5% level, and the coefficient estimate becomes a little greater, that is 1.274. In economic interpretation, controlling for all other variables, the firm led by an immigrant CEO is estimated to earn a 1.274% higher average return on assets than the firm led by a non-immigrant CEO. The positive and significant impact of immigrant CEOs on ROA shown in models (1) to (4) all support our hypothesis. Also, the positive impact of immigrant CEOs on ROA_{t+1} aligns with Sanda, Mikailu, and Garba (2010) who assert that foreign CEOs are positively significant in influencing company performance compared to the domestic CEOs. This finding reinforces the significance of recruiting CEOs with a foreign background in US companies, as firms' operations could greatly benefit from their diverse managerial skills, expertise, and perspectives. According to agency theory, the existence of diverse experts from various backgrounds can reduce the costs associated with managerial entrenchment and agency. In terms of the interaction variable, the relationship between female immigrant CEOs and the firm outcome is significant at a 10% level, which can be interpreted that, when holding all else constant, firms led by female immigrant CEOs will experience around a 3% loss in return on assets. Fairlie and Robb (2009) note that male-owned businesses tend to be more successful compared to female-controlled businesses because males have access to more start-up investment, greater business human capital acquired through prior work experience in a related field, and more years of previous work experience.

With respect to CEO-level controls, it can be observed that CEO's MBA degree has a strong and positive impact on ROA_{t+1} in models (2), (3), and (4). These results are in line with the findings

from King et al. (2016), who implied that banks led by CEOs with higher MBA scores are more likely to achieve better levels of bank profitability compared to banks headed by CEOs without an MBA degree. Specifically, in a risk context, CEOs who hold an MBA degree tend to make more innovative decisions that lead to better performance. Columns (1) to (4) show a positive and significant relationship between CEO tenure and firm performance. This finding is consistent with Bhagat, Bolton, and Subramanian (2010) who assert that long-tenured CEOs may have a deeper understanding of the company's strengths, weaknesses, and internal processes, helping them to identify and exploit opportunities to improve efficiency, reduce costs, and increase productivity. We also observe that the relationship between total compensation and ROA_{t+1} is also strong and positive from columns (2) to (4). Holding all the given CEO- and firm-level controls constant, the coefficient estimates of 0.272 in column (2) indicate that a one percent difference in CEO's total compensation is associated with a 0.0027% difference in average ROA. Gottesman and Morey (2006) arrive at the same result. Consistent with agency theory, a CEO who is compensated well may be more motivated to work hard and create value for the company. When it comes to the firm-level control variables, as shown in columns (2), (3), and (4), firm age, leverage, liquidity, asset turnover, and sales growth all have a significant impact on ROA. Among those, firm age, leverage, liquidity, and asset turnover are significantly and positively related to firm performance, whereas firm size is strong and negatively related to return on asset.

To further mitigate the omitted variable or unobservable CEO-specific heterogeneity that may have implications for firms' operating performance, we follow Hegde and Mishra (2019) who utilize the instrumental variable strategy. First, we regress ROA_{t+1} on all CEO's and firm's control variables except for the Immigrant CEO dummy variable within the year-, industry- and CEO-fixed effect, and then predict residuals from this regression, which is named $Resid\_ROA_{t+1}$. The result is shown in Table 4 column (5). The female CEO variable is omitted due to the collinearity. Second, we regress $Resid\_ROA_{t+1}$ on the immigrant CEO dummy, CEO-level controls, and firm-level controls, and column (6) presents the results. We can see that the coefficient estimates of immigrant CEO on $Resid\_ROA_{t+1}$ is 3.2, which is positive and significant at 1% level. Overall, regressions with firm-fixed effect and instrumental variable strategy within CEO-fixed effect, to some extent, help alleviate the potential bias due to omitted variables.

4.1.2 Additional Regression Analysis Among Different Regions

Lazear (2021) states that the attainment of immigrants in the United States varies highly by country of origin. More specifically, the higher underrepresented a source country, the higher the attainment of immigrants from that country. An empirical study by Kato and Rockel (1992) highlights notable differences between American corporate managers and Japanese corporate managers. The results show that compared with American managers, Japanese managers are more focused on the company's long-term success, thus Japanese companies are more likely to choose long-term strategies than American companies. Additionally, Fairlie & Robb (2008) compare the success of entrepreneurs from various cultures in the United States and find that Asian and Caucasian immigrants have more successful startups than those from other cultures. This also leads the researchers to assume that culture may influence the success of a startup. The findings of the analysis reveal that businesses owned by African Americans tend to exhibit lower sales, smaller payrolls, fewer employees, lower profits, and higher rates of closure. In contrast, Asian American-owned businesses tend to be more successful. Furthermore, the authors present more comprehensive estimates of minority business ownership and performance, and explore the role of human capital, financial capital, and family business background in successful entrepreneurship. Their findings show that for Asian-owned businesses, having a strong level of startup capital is the most critical factor contributing to their success, while the relative lack of startup funds for Black-owned businesses is a significant factor that contributes to their lower success rate.

The above result points out that immigrant CEOs from different countries of origin lead to varying firm outcomes. Therefore, to test the regional difference among immigrant CEOs, we regress several independent variables, which are regionally categorized data based on foreign origins, on ROA_{t+1}. Table 5 presents the results with 5 models within the year- and firm-fixed effects. The independent variables are still dummy variables indicating whether the CEO was born in the categorized region. For example, in column (1), the main independent variable equals 1 if the CEO's country of origin belongs to Africa and the Middle East region, and 0 if the CEO is a native-born American. While researching various regions, we consider an additional control variable – corruption – because the relationship between corporate corruption risk and CEO performance is significantly moderated by the corruption risk at the country level (La Rosa, Bernini, & Terzani,

2022). In this study, the corruption refers to the indicators used to assess corruption level in the country of origin of all the CEOs. The indicator is typically presented as a score, ranging from approximately -2.5 to 2.5, where higher values indicate better control of corruption and lower values suggest a higher perceived level of corruption in a country. The score can be compared across countries and over time to assess changes in governance and corruption control.

[Insert Table 5: Effects of Immigrant CEOs from Five Regions on ROA_{t+1}]

Columns (2) and (4) tell us that there is a positive but insignificant relationship between immigrant CEOs who came from Asia as well as Central and South America and ROA_{t+1}. The coefficient estimate for Asia is 0.711, and for Central and South America is 0.814. Compared to the average ROA that is around 6.2%, these coefficients are too small. The data in that study by Jalbert et al. is derived from the Forbes 800 CEO compensation data, and it extends from 1991-1997, while our study focuses on S&P 500 firms over a two-decade period from 2000 to 2019. From columns (3) and (5), however, we can see that the coefficient estimates for the corresponding categorized areas are all relatively larger and significant. To be more specific, models (3) suggest that CEOs who emigrated from Australia are more likely to lead a superior firm performance reflected in higher ROA_{t+1}. In economic terms, holding all the given controls equal, compared to the native-born American CEOs, CEOs from Australia are expected to contribute approximately 11% more in ROA of the next period, and CEOs from Europe would lead to around 2.4% higher ROA_{t+1}. The results of CEOs from Central and South America and Australia is in line with the findings from Jalbert, Chan, Jalbert, and Landry (2007), whose evidence suggests that both Central and South American-born CEOs and Australian-born CEOs earn a higher ROA than other CEOs. The positive influence of CEOs migrating from Europe and Asutralia on firm performance may be attributed to the advantages of similar economic environments. Europe, Asutralia, and the United States are all well-developed regions with mature business operation modes. The lower ROA of firms led by CEOs who emigrated from Central and South America may be due to a variety of factors, including differences in business practice, regulatory environment, and economic conditions. Efendic et al. (2016) provide evidence supporting that firms led by second-generation immigrants from wealthier (OECD) economies experience higher growth rates than those led by native-born individuals, and the opposite is true for second-generation immigrants from

developing (non-OECD) countries. We try to add one more column to capture all regions in one regression, but the results show collinearity problems. One possible explanation could be small sample size. In cases with a small sample size, multicollinearity can be more likely to occur as the limited data may not provide enough information to accurately estimate the effects of all the independent variables. Another potential cause may be similar categories represented by dummy variables. In other words, the categorical variables regarding regions have a high degree of similarity in their characteristics or meanings. When categories are very similar, it can lead to multicollinearity in regression analysis, which make it difficult to isolate the unique effects of each category on the return on assets, and it can lead to unstable coefficient estimates.

As for controls, among all CEO-level variables, only CEO's tenure appears to have a significantly positive impact with the exception of column (2), which is partially consistent with the results from the main regression. Among all the firm-level control, only liquidity and asset turnover are significantly and positively related to ROA for all five models. The favorable impact of liquidity on firm performance is in line with Nguyen and Nguyen (2020). Companies with a higher cash ratio may have greater financial flexibility to invest in growth opportunities, pay off debts, or distribute dividends, further benefitting the long-term financial position. The advantageous relationship between asset turnover and ROA is also consistent with previous scholars, such as Onaolapo and Kajola (2010) and Munawar (2019), who argue that higher asset turnover suggests that the company utilizes assets more efficiently to generate revenue. In contrast, firm size and asset growth are strongly and negatively related to firm performance, which may be due to the sharp competition and increased capital expenditures. For the corruption level, we only observe one significant result among these five regions. This significant and negative estimate suggests that better control of corruption may lead to poor firm financial performance, which is contrary to Athanasouli, Goujard, and Sklias's (2012) findings saying that corruption is overall negatively associated with firm growth. However, Sahakyan and Stiegert (2012) find evidence supporting that corruption is perceived as more favorable among firms that are relatively larger. Furthermore, Sharma and Mitra (2015) offer a potential explanation that bribing shows a positive effect on the firms' export and product innovation.

4.2.3 Additional Regression Results Regarding Cultural Dimensions

Individuals' perceptions of the same information may differ based on the cultural context in which they live because the early socialization process gradually instills culture into people's thinking, which influences their actions and choices to align with social values; culture shapes individuals' subjective psychological structures and impacts how they process information (Joel et al, 2023). Inspired by imprinting theory and the influence of cultural background, we introduce Hofstede cultural dimensions to run some additional regressions for a deeper understanding of the role of immigrant CEOs. The Hofstede model, also known as the 6-D Model of National Culture, is developed by Professor Geert Hofstede and used to demonstrate how a society's culture impacts the values of its members as well as how these values are linked to their behavior. Initially, the model was designed to aid organizations in enhancing communication and collaboration between individuals from varying cultures. Over time, the model has come to provide insight into the way that cultural diversity influences business operations. A few papers have applied this model to assess the linkage between national culture and CEO study, such as CEOs' compensation (Tosi & Greckhamer, 2004), compensation and salary gaps (Grenness, 2011), and CEO power (Pour & Murinde, 2018).

According to the Hofstede Insights webpage and Hofstede (2001), the Hofstede model consists of six dimensions including power distance index (PDI), individualism (IDV), masculinity (MAS), uncertainty avoidance index (UAI), long-term orientation (LTO), and indulgence (IVR). The power distance dimension expresses the degree to which less powerful members of a society accept and expect the unequal distribution of power. This dimension relates to the concept of inequality. The dimension of individualism reflects that there is a lack of strong ties between individuals. On the other hand, collectivism is the opposite of individualism, where people are integrated into tight-knit and cohesive groups from birth. The masculinity dimension reflects a societal preference for characteristics such as achievement, assertiveness, heroism, and material rewards for success, resulting in a more competitive society. In contrast, femininity, reflects a preference for qualities such as modesty, cooperation, caring for the weak, and an emphasis on quality of life, leading to a more consensus-oriented society. The uncertainty avoidance dimension expresses the degree to which the members of a society feel uncomfortable with uncertainty and ambiguity. The long-term

orientation dimension refers to the degree to which a society values long-term or short-term goals. Societies that score low on this dimension tend to place importance on maintaining traditional norms and are skeptical of societal change, while those that score high take a more practical approach and prioritize efforts in modern education and thrift to prepare for the future. As for the last dimension, IVR stands for indulgence versus restraint. Indulgence applies to a society that permits individuals to indulge in basic and natural human drives associated with enjoying life and having fun. On the other hand, restraint refers to a society that restricts the satisfaction of needs and regulates them with strict social norms.

In our attempt to better understand immigrant CEOs and the influences of their cultural backgrounds, we employ additional regression analysis. Specifically, we first manually collect the six dimensions scores for different countries and regions in Hofstede Insights and calculate the differences between the CEO original country's and the US's cultural dimension scores. Then we examine the relationship between the differences on firm performance proxied with the subsequent period's return on assets. Also, we control year- and firm-fixed effects. The results are shown in Table 6.

From columns (1), (2), and (3), we can see that the influence of the power distance dimension, individualism dimension, and masculinity dimension on ROA_{t+1} is slight and weak. Models (4), (5), and (6), however, witness a significant effect of 1% level but in different directions. Model (4) indicates that one point difference in the uncertainty avoidance index is associated with a 0.0461% reduction in the average return on assets for the next period, everything else being equal. The indulgence versus restraint dimension is also adversely related to ROA_{t+1}, as shown in model (6). In economic terms it can be interpreted that, holding all else constant, one point difference in IVR score is associated with a 0.0678% decrease in average ROA_{t+1}. On the contrary, model (5) suggests a strong positive relationship between the long-term orientation dimension and firm performance. Keeping all the CEO- and firm-level controls equal, one point increase in LTO score is more like to lead to a 0.0484% increase in return on assets in the next period.

Overall, we could conclude that immigrant CEOs who come from a society with higher avoidance towards uncertainty and tolerance for indulgence than the U.S. will lead to poor financial performance, while those from a society that even more emphasizes long-term orientation than the

U.S. will contribute to higher return on asset. The finding regarding UAI is in line with Bhidé (2000) who concludes that a propensity for risk-taking and a tolerance of ambiguity are the personality traits that allowed entrepreneurs to create firms that would later become very successful. In terms of the indulgence versus restraint dimension, Alipour and Yaprak (2022) offer a potential explanation indicating that a national culture with a strong indulgence dimension tends to encourage firms to take more risks because it has fewer strict rules and structures, a short-term focus, a greater willingness to spend frivolously, and less self-control. As a result, losses associated with risk-taking may occur more frequently. As for long-term orientation, Ahsan, Qureshi, Gull, and Muhammad (2022) find that when facing policy-induced uncertainty, European cultures with superior LTO scores – such as German, Dutch, French, and Italian societies – are more likely to moderate the negative impact of policy uncertainty on corporate financial performance due to their future-oriented strategy. Nevertheless, given that the average return on assets across all the firms in the dataset is around 6.2%, the impacts of immigrant CEOs of different cultural contexts are considered too small.

[Insert Table 6: Effects of Immigrant CEOs with six Cultural Dimensions on Tobin's Q_{t+1}]

In terms of the controls, we find that CEO's MBA degree, tenure, total compensation, firm's age, liquidity, and asset turnover are all significant and positively related to ROA_{t+1}, while the firm size is significantly but negatively related to ROA_{t+1}. These results are consistent with the outputs of the main regression.

4.2 Robustness Test

To check the robustness of the above findings, we re-estimate the regressions on Tobin's Q, which is another commonly used measurement for firm performance. Tobin's Q, also known as the Q ratio, is a financial performance metric to measure a corporation's growth opportunities. The original function for the Q ratio proposed by James Tobin is complex as it is hard to find information on the replacement cost of a firm's total asset. Thus, this study applies the simple approximation of Tobin's Q presented in Chung and Pruitt's (1994) paper. This approximation method uses easily available financial data which is readily shown in the firm's financial statement.

In this paper, the approximate Q ratio is defined as (MVE + PS + DEBT) / TA, where MVE represents the market value of equity, PS means the liquidating value of firm's outstanding preferred stock, DEBT is the book value of firm's total debt, and TA is the book value of firm's total asset. Then, we test the regressions with the following model:

$$\text{Tobin's } Q_{i,t+1} = \alpha + \beta_1 \text{Immigrant CEO}_{i,t} + \beta_j \text{CEO controls}_{j,i,t} + \beta_k \text{Firm controls}_{k,i,t} + \varepsilon_{i,t} \qquad (2)$$

The results shown in Table 7 are consistent with the main model, supporting our prediction of the positive impact of immigrant CEOs on firm performance. Similar to the main regression test, we control the year- and firm-fixed effect for all models and find that the relationships between Immigrant CEO and Tobin's Q are all positive and significant at 1% level. To be more specific, we control the CEO characteristics in model (1) and then add firm characteristics in model (2). The coefficient estimates show the value of 0.577 and 0.369, respectively. For models (3) and (4), while considering some interaction terms combined CEOs' immigration status with their gender and tenure, the coefficients change to 0.351 and 0.408, respectively. In general, these four positive coefficients mean that all else being equal, firms with immigrant CEOs are associated with higher market valuations relative to the book value of their assets. This might suggest that the market perceives firms with immigrant CEOs as having greater growth opportunities, higher performance potential, or more effective management practices. Moreover, we then use the instrumental variable strategy within the CEO fixed effect framework, and models (5) and (6) present the results. The coefficient estimate (0.555) on Immigrant CEO reported in model (6) is positive and significant at 1%, which is consistent with the previous main regression on ROA_{t+1}.

[Insert Table 7: Effects of Immigrant CEOs on Tobin's Q_{t+1}]

When it comes to the test for immigrant CEOs from different regions, the results are greatly in line with the main regression. First, the results in columns (3) and (5) confirm our findings regarding the positive and significant relationship between firm performance and CEOs who migrate from Australia and Europe. The coefficient estimates in column (3) and (5), that is, 3.053 and 0.666 respectively, implies that firms headed by immigrant CEOs from Europe and Asutralia are

expected to have greater investment opportunities and enhanced future growth. Moreover, we notice that the relationship between immigrant CEOs from Africa and the Middle East and Tobin's Q appears to be positive and significant at 1% level. While using return on assets to proxy firm performance, firms with a CEO who emigrates from Africa and the Middle East tend to earn a higher ROA_{t+1}, but the correlation shows insignificant. Tobin's Q and ROA are two distinct measures of firm performance with different emphases. Tobin's Q is a market-based measure that reflects the market's expectations about a firm's future investment opportunities and growth potential. On the other hand, ROA is an accounting-based measure that reflects a firm's past efficiency in using its assets to generate profits. The significant relationship with Tobin's Q may suggest that these CEOs bring broader insights, such as attaching importance to emerging markets, that help improve the market's expectation about the firm's future performance. The weak relationship with ROA is perhaps due to the reason that these CEOs focus more on long-term strategic initiatives rather than short-term efficiency, so the changes they implement need to take an even longer time to reflect in the ROA.

[Insert Table 8: Effects of Immigrant CEOs from Five Regions on Tobin's Q_{t+1}]

The last robustness test is to run the regressions of difference in cultural dimension scores between CEOs' original country and the U.S. on Tobin's Q. The findings confirm that immigrant CEOs who come from a society that emphasizes individualistic and indulgence consciousness will have a strong and negative influence on firms' future growth opportunities, while those whose social culture highlights power distance and long-term orientation lead to a significantly higher growth prospect. Compared to the same regression on ROA_{t+1}, the adverse impact of immigrant CEOs with a cultural heritage of high risk-averse on Tobin's Q appears to be insignificant. Therefore, the outputs from Table 9 partially support the main regression results.

[Insert Table 9: Effects of Immigrant CEOs with six cultural dimensions on Tobin's Q_{t+1}]

Section 5 Conclusion

The globalization process has witnessed an increasing number of foreign executives taking up directorships in publicly listed companies across various global markets. Aleman (2012) indicates that social and economic pressures compelled American corporations to recognize the necessity of globally diverse executives. This paper investigates the ways in which CEOs' country of origin is interrelated with the firm value in the United States. Specifically, we examine whether the potential differences between immigrant CEOs and their native-born counterparts impact the performance of the firms they lead. Based on the literature review, we incorporate a few variables including firm-level controls (age, size, leverage, liquidity, asset turnover, asset growth, and sales growth) and CEO-level controls (business education background, gender, tenure, age, and total compensation). Previous research in this area has been limited, with insufficient attention paid to the specific nationalities of CEOs. Thus, this study looks at this field from a novel and even more comprehensive perspective.

In general, the evidence presented in this study supports that immigrant CEOs from different countries with various cultural backgrounds may be expected to operate their firms differently, which leads to varying firm performance. While using the return on assets of the next period as a proxy, the findings indicate a positive and significant relationship with immigrant CEO, corroborating the hypothesis of this paper. Furthermore, we extend our analysis by categorizing CEOs' country of origin into six regions and then regressing the effect of CEOs from each region against native American CEOs on firm performance. Evidence shows that immigrant CEOs from Central and South America lead to poor firm performance proxied with lower ROA, while foreign CEOs migrated from Asia and Europe contribute to higher ROA. To obtain a deeper understanding of cultural differences, the study applies the 6-dimension Hofstede model to complete the further test. It can be concluded that CEOs who emigrated from a society that highlights long-term orientation are more likely to contribute to better firm performance. In contrast, results reveal immigrant CEOs whose cultural heritages prefer high indulgence consciousness are more likely to be related to poor firm financial performance.

This study is subject to several limitations. First, it is limited by the sample size. The existing research is only based on the companies listed on the S&P 500. Additional data observations about CEOs' birthplaces may provide additional insights. As for further research, the sample size would be expanded to S&P 1500 listed firms, which could provide broader coverage of the U.S. stock market. A second limitation is that the CEO's country of origin only provides the location of an individual at a specific time point. The study does not consider the duration for which a CEO lived in their country of birth. It can be reasonably presumed that a person who left their birth country within the first few months of life would be less influenced by the culture of their country of birth, compared to someone who lived there for a longer duration. The study is unable to explore this aspect since data on the birthplace was the only information available. Third, the firm-fixed effect may not be strong enough to address the endogeneity problem. Some omitted variables that are generally unobserved but specific to CEOs, such as CEO's ability and competency, may have implications for firms' operation. To solve the potential problem that the immigrant CEO dummy variable might represent other CEO characteristics resulting in varying operating performance, it is necessary to control the impact of unobservable differences or heterogeneity among CEOs. However, it is hard to access those unobserved data.

Although the study has some limitations, it still provides positive contributions and perspectives in several aspects. First, the study contributes to the theoretical understanding of how CEOs with different cultural backgrounds manage their firms, enlarging the literature about the role of CEO characteristics in shaping organizational outcomes. Second, it provides practical insights for organizations on the potential benefits of hiring immigrant CEOs from varying regions and countries. For example, immigrant CEOs may bring a unique perspective and approach, shaped by their cultural background and experiences, to leadership and management. This can inform hiring decisions and strategies for maximizing performance outcomes. Third, this study may also inform public policy regarding immigration and employment. Changes in immigration policy can have a significant impact on the business world. For example, changes to visa regulations can affect the firm's ability to attract and retain top talent from overseas. By studying immigrant CEOs and their impact on firm performance, researchers are able to better understand the implications of immigration policy for businesses.

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Appendices

Variables Description

In definitions, the variable information from firms' financial statement is in the unit of million, including net income, total assets, total debt, total shareholders' equity, total cash and cash equivalents, current liabilities, total net sales, total sales, market value and book value of equity. The unit for CEOs' total compensation is thousand. The unit regarding time, such as firm age, CEOs' age, and tenure, is year.

Variables	**Definition**
Dependent variable	
ROA	Net income / total asset (in percentage)
Independent variable	
Immigrant CEO	Dummy variable for CEO birthplace, taking 1 for foreign-born CEOs and 0 otherwise.
Firm-level controls	
Firm Size	Natural log value of total assets
Firm Age	Time since the firm first become public
Leverage	Total debt / total assets (in decimals)
Liquidity	Total cash and cash equivalents / current liabilities (in decimals)
Asset Turnover	Total net sales / total assets (in decimals)
Asset Growth	Ratio of assets in the last period and current period minus 1 (in decimals)
Sales Growth	Ratio of sales in the last period and current period minus 1 (in decimals)
CEO-level controls	
Tenure	Time since they become CEO
Female CEO	Dummy variable, taking 1 for female CEO and 0 for male CEO
CEO Age	CEO's age
MBA	Dummy variable taking1 for CEO who has obtained MBA degree and 0 otherwise
Total Compensation	Natural log value of CEO's total compensation (unit: thousand) comprised of the following: Salary, Bonus, Other Annual, Total Value of Restricted Stock Granted, Total Value of Stock Options Granted (using Black-Scholes), Long-Term Incentive Payouts, and All Other Total.

Table 1 CEOs' Birthplaces Categorized in Countries and Regions

This table presents summary data regarding birthplace background of all CEOs in the dataset. Panel A provides data regarding the number of observations by CEOs from each country. The majority of CEOs were U.S. born. The most common foreign origins are India, Canada, and Britain. Panel B presents the resulting number of observations by regions.

Birthplace	**Observations**	**Birthplace by Country**	**Observations**
Panel A: by countries			
Argentina	7	Italy	29
Australia	56	Japan	15
Belarus	10	Lebanon	5
Belgium	2	Malaysia	28
Bermuda	8	Mexico	7
Brazil	10	Morocco	3
Britain	67	Norway	8
Canada	97	Pakistan	2
China	23	Poland	3
Colombia	6	Portugal	7
Cuba	33	Puerto Rico	3
Egypt	11	South Africa	19
Ethiopia	4	Spain	9
France	35	Sweden	24
Germany	23	Switzerland	12
Greece	10	The Netherlands	17
India	112	Togo	3
Iran	26	Turkey	9
Ireland	26	US	3938
Israel	6	Venezuela	8
		Total Foreign Born	**783**
		Total Observations	**4721**
Panel B: by regions			
Asia	180	Central and South America	64
Africa & Middle East	86	Europe	282
Australia	56	North America	4053
		Total Observations	**4721**

Table 2 Summary Statistics

This table reports the summary statistics for all studied variables spanning year 2000-2019. The panel A highlighted the observations, mean, maximum, and minimum values for each of the variables for the full sample. Panel B presents observations and mean value for immigrant CEO and non-immigrant CEO, as well as mean difference and its significance level (*** stands for p<0.01, ** stands for p<0.05, * stands for p<0.1).

Panel A

Variable	Obs.	Mean	Std. Dev.	Min	Max
ROA_{t+1}	4111	6.198	7.920	-76.992	90.173
Immigrant CEO	4111	.159	.366	0	1
MBA	4111	.411	.492	0	1
Female CEO	4111	.039	.194	0	1
Tenure	4111	5.243	3.632	1	19
Age	4111	55.491	6.100	27	84
Ln(total compensation)	4102	9.027	1.120	-6.908	13.305
Firm size	4056	9.833	1.633	4.759	14.78
Firm age	3983	31.864	23.333	1	123
Leverage	3658	.260	.252	0	3.892
Liquidity	3364	.445	.542	0	5.202
Asset turnover	4056	.843	.765	.009	6.333
Asset growth	4016	.113	.388	-.861	10.048
Sales growth	4016	.096	.422	-.927	17.335

Panel B

Variables	Obs. For Immigrant	Mean for Immigrant	Obs. For Non-immigrant	Mean for Non-immigrant	Differences
ROA_{t+1}	655	7.358	3,456	5.978	1.380***
MBA	655	0.345	3,456	0.423	-0.078***
Female CEO	655	0.038	3,456	0.039	-0.001
Tenure	655	4.905	3,456	5.306	-0.401***
Age	655	54.095	3,456	55.756	-1.661***
Ln (total compensation)	654	9.060	3,449	9.020	0.040
Firm Size	642	9.628	3,412	9.871	-0.243***
Firm Age	630	31.059	3,354	32.016	-0.957
Leverage	629	0.245	3,115	0.263	0.018
Liquidity	593	0.541	2,771	0.424	0.117***
Asset Turnover	642	0.859	3,412	0.840	0.019
Asset Growth	631	0.151	3,383	0.105	0.046***
Sales Growth	631	0.106	3,383	0.094	0.012

Table 3 Correlation Matrix

The correlation matrix table shows the correlation coefficients among all studied variables. The matrix was constructed using Pairwise correlation coefficient, which measures the strength and direction of the linear relationship between pairs of variables, as well as the statistical significance of that relationship. The correlation coefficients range from -1 to 1, with higher absolute values indicating stronger correlations. The stars placed next to the correlation coefficient indicate the level of statistical significance of the correlation. *, **, *** suggest statistical significance at the 0.1, 0.05, and 0.01 significance levels, respectively.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) ROA_{t+1}	1.000													
(2) Immigrant CEO	0.064***	1.000												
	(0.000)													
(3) MBA	0.010	-0.058***	1.000											
	(0.519)	(0.000)												
(4) Female CEO	0.005	-0.002	-0.018	1.000										
	(0.755)	(0.886)	(0.245)											
(5) Tenure	0.060***	-0.040***	0.039**	-0.066***	1.000									
	(0.000)	(0.010)	(0.012)	(0.000)										
(6) Age	-0.012	-0.100***	-0.008	0.007	0.295***	1.000								
	(0.461)	(0.000)	(0.605)	(0.654)	(0.000)									
(7) Ln(total comp.)	0.021	0.013	0.022	0.039**	0.038**	0.146***	1.000							
	(0.181)	(0.393)	(0.163)	(0.013)	(0.016)	(0.000)								
(8) Firm size	-0.216***	-0.054***	0.017	0.055***	-0.026*	0.216***	0.321***	1.000						
	(0.000)	(0.001)	(0.274)	(0.000)	(0.097)	(0.000)	(0.000)							
(9) Firm age	0.019	-0.015	0.016	-0.012	0.011	0.133***	0.111***	0.200***	1.000					
	(0.237)	(0.345)	(0.311)	(0.464)	(0.506)	(0.000)	(0.000)	(0.000)						
(10) Leverage	0.024	-0.026	0.032*	0.002	-0.021	-0.007	0.019	0.004	0.007	1.000				
	(0.153)	(0.114)	(0.051)	(0.917)	(0.196)	(0.659)	(0.260)	(0.822)	(0.674)					
(11) Liquidity	0.068***	0.082***	-0.025	-0.050***	0.101***	-0.062***	-0.081***	-0.268***	-0.161***	0.030*	1.000			
	(0.000)	(0.000)	(0.146)	(0.004)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.102)				
(12) Asset turnover	0.255***	0.009	-0.018	0.016	-0.056***	-0.024	-0.047***	-0.317***	-0.043***	-0.060***	-0.133***	1.000		
	(0.000)	(0.557)	(0.257)	(0.323)	(0.000)	(0.127)	(0.003)	(0.000)	(0.007)	(0.000)	(0.000)			
(13) Asset growth	-0.020	0.043***	0.005	-0.021	-0.002	-0.055***	-0.054***	-0.054***	-0.108***	-0.014	0.076***	-0.056***	1.000	
	(0.198)	(0.006)	(0.763)	(0.188)	(0.915)	(0.000)	(0.001)	(0.001)	(0.000)	(0.397)	(0.000)	(0.000)		
(14) Sales growth	-0.080***	0.010	-0.021	-0.023	0.004	-0.010	-0.059***	-0.076***	-0.086***	-0.001	0.133***	0.001	0.229***	1.000
	(0.000)	(0.532)	(0.177)	(0.145)	(0.778)	(0.517)	(0.000)	(0.000)	(0.000)	(0.930)	(0.000)	(0.971)	(0.000)	

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 4 Effects of Immigrant CEOs on ROA_{t+1}

This table presents the results for OLS regressions of immigrant CEOs on firm performance, controlling CEO and firm characteristics. The dependent variable is return on assets of the next year, and main independent variable is a dummy variable indicating whether a CEO is foreign-born or native-born. Model (1) only control the CEO characteristics, and Model (2) add the firm-level controls. Models (3) and (4) consider the effect of interaction terms combined CEO's immigrant identification and other characteristics including gender and tenure. Models (1) to (4) control year- and firm- fixed effects. In models (5) and (6), we introduce the instrumental variable strategy with CEO-fixed effect to mitigate endogeneity issue. ROA_{t+1} is in the unit of percentage.

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	ROA_{t+1}	ROA_{t+1}	ROA_{t+1}	ROA_{t+1}	ROA_{t+1}	Resid_ROA_{t+1}
Immigrant CEO	1.367***	0.830**	0.965**	1.274**		3.200***
	(0.344)	(0.367)	(0.375)	(0.621)		(0.499)
MBA	0.161	0.511*	0.548*	0.554*	1.584	1.438***
	(0.252)	(0.282)	(0.283)	(0.283)	(5.853)	(0.388)
Female CEO	0.422	0.642	1.242	1.263		2.695***
	(0.646)	(0.710)	(0.790)	(0.791)		(0.970)
Tenure	0.158***	0.089**	0.093**	0.105**	0.156	-0.136**
	(0.038)	(0.043)	(0.044)	(0.048)	(0.205)	(0.056)
Age	-0.044**	0.031	0.032	0.031	0.227	-0.178***
	(0.022)	(0.024)	(0.024)	(0.024)	(0.592)	(0.034)
Total compensation	0.157	0.272**	0.271**	0.268**	-0.115	0.543***
	(0.113)	(0.126)	(0.126)	(0.126)	(0.136)	(0.171)
Firm size		-0.434***	-0.434***	-0.436***	-1.664***	0.538***
		(0.119)	(0.119)	(0.119)	(0.454)	(0.163)
Firm age		0.012*	0.012*	0.011*	-0.025	0.094***
		(0.006)	(0.006)	(0.006)	(0.039)	(0.009)
Leverage		0.962*	0.931*	0.938*	-1.486**	4.032***
		(0.538)	(0.538)	(0.538)	(0.743)	(0.741)
Liquidity		2.311***	2.328***	2.326***	0.631*	3.573***
		(0.275)	(0.275)	(0.275)	(0.374)	(0.375)
Asset turnover		2.467***	2.463***	2.468***	4.336***	-2.404***
		(0.201)	(0.201)	(0.201)	(0.699)	(0.276)
Asset growth		-0.539	-0.542	-0.548	-0.839***	0.237
		(0.349)	(0.348)	(0.349)	(0.295)	(0.478)
Sales growth		-0.621	-0.615	-0.609	0.908*	-1.590**
		(0.547)	(0.547)	(0.547)	(0.481)	(0.732)
Immigrant_female			-3.072*	-3.053*		
			(1.782)	(1.782)		
Immigrant_tenure				-0.062		
				(0.099)		
Constant	6.126***	2.455	2.399	2.431	10.36	-3.999*
	(1.474)	(1.760)	(1.759)	(1.760)	(27.58)	(2.356)
Observations	4,074	2,866	2,866	2,866	2,866	2,866
R-squared	0.008	0.094	0.095	0.095	0.094	0.163
Year fixed effect	YES	YES	YES	YES	YES	NO
Firm fixed effect	YES	YES	YES	YES	NO	NO
Industry fixed effect	NO	NO	NO	NO	YES	NO
CEO fixed effect	NO	NO	NO	NO	YES	NO

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 5 Effects of Immigrant CEOs from Five Regions on ROA_{t+1}

This table presents results regarding 5 OLS regressions of immigrant CEOs from five different regions compared to native-born American CEO on firm performance, controlling CEO and firm characteristics. The dependent variable is return on assets of the next year, and main independent variable is a dummy variable indicating whether CEOs comes from the categorized region. Each model represents different regions, including Africa and Middle East, Asia, Australia, Central and South America, and Europe. All the five models use year and firm fixed effect. The unit of ROA_{t+1} is percentage.

VARIABLES	(1) ROA_{t+1}	(2) ROA_{t+1}	(3) ROA_{t+1}	(4) ROA_{t+1}	(5) ROA_{t+1}
Africa & the Middle East	-6.861				
	(5.022)				
Asia		0.711			
		(1.832)			
Australia			11.10**		
			(4.529)		
Central & South America				0.814	
				(3.089)	
Europe					2.405***
					(0.537)
MBA	-0.019	0.172	-0.054	0.001	0.024
	(0.303)	(0.291)	(0.298)	(0.299)	(0.286)
Female CEO	1.154	0.493	1.258*	1.015	1.277*
	(0.769)	(0.693)	(0.754)	(0.755)	(0.747)
Tenure	0.077	0.073	0.103**	0.112**	0.131***
	(0.047)	(0.045)	(0.046)	(0.046)	(0.044)
Age	0.022	-0.001	-0.009	-0.002	-0.002
	(0.026)	(0.025)	(0.026)	(0.026)	(0.025)
Total compensation	0.207	0.051	0.044	0.041	0.061
	(0.127)	(0.127)	(0.128)	(0.129)	(0.126)
Firm size	-0.502***	-0.442***	-0.509***	-0.540***	-0.474***
	(0.125)	(0.121)	(0.123)	(0.124)	(0.119)
Firm age	0.009	0.002	0.007	0.005	0.009
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Leverage	0.556	0.432	0.522	0.542	0.798
	(0.549)	(0.536)	(0.539)	(0.535)	(0.527)
Liquidity	2.526***	2.602***	2.535***	2.512***	2.199***
	(0.300)	(0.284)	(0.295)	(0.297)	(0.280)
Asset turnover	2.322***	2.288***	2.297***	2.340***	2.296***
	(0.207)	(0.203)	(0.203)	(0.203)	(0.198)
Asset growth	-0.916**	-0.791*	-0.868**	-0.633*	-0.936**
	(0.417)	(0.408)	(0.412)	(0.376)	(0.377)
Sales growth	-0.489	0.081	-0.043	-0.099	-0.209
	(0.564)	(0.571)	(0.574)	(0.574)	(0.555)
Corruption	-3.792	-1.153	-33.78***	2.333	0.348
	(2.650)	(1.124)	(11.84)	(1.849)	(0.687)
Constant	10.06**	8.649***	55.40***	4.591	6.431***
	(4.178)	(2.423)	(16.77)	(3.277)	(2.122)
Observations	2,367	2,439	2,327	2,370	2,503
R-squared	0.100	0.109	0.107	0.112	0.107
Year Fixed Effect	YES	YES	YES	YES	YES
Firm Fixed Effect	YES	YES	YES	YES	YES

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 6 Effects of Immigrant CEOs with Six Cultural Dimensions on ROA_{t+1}

This table presents the result for 6 OLS regressions of difference in cultural dimension scores between the CEO country and the US on firm performance, controlling CEO and firm characteristics. The dependent variable is return on assets of the next year, and main independent variable is immigrant CEO and those combined cultural dimensions. Each model represents different cultural dimensions, including Power Distance Index (PDI), Individualism (IDV), Masculinity (MAS), Uncertainty Avoidance Index (UAI), Long Term Orientation (LTO), and Indulgence versus Restraint (IVR). All the five models use year and firm fixed effect. ROA_{t+1} is in percent.

VARIABLES	(1) ROA_{t+1}	(2) ROA_{t+1}	(3) ROA_{t+1}	(4) ROA_{t+1}	(5) ROA_{t+1}	(6) ROA_{t+1}
PDI	0.013					
	(0.014)					
IDV		-0.005				
		(0.001)				
MAS			0.016			
			(0.018)			
UAI				-0.046***		
				(0.016)		
LTO					0.049***	
					(0.013)	
IVR						-0.068***
						(0.013)
MBA	0.523*	0.530*	0.535*	0.449	0.544*	0.550*
	(0.286)	(0.286)	(0.286)	(0.286)	(0.285)	(0.284)
Female CEO	0.861	0.896	0.894	0.743	0.802	0.629
	(0.721)	(0.720)	(0.719)	(0.720)	(0.718)	(0.717)
Tenure	0.080*	0.081*	0.079*	0.076*	0.081*	0.080*
	(0.044)	(0.044)	(0.044)	(0.044)	(0.044)	(0.043)
Age	0.030	0.029	0.026	0.027	0.034	0.044*
	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)	(0.025)
Total compensation	0.275**	0.276**	0.279**	0.284**	0.260**	0.244*
	(0.127)	(0.127)	(0.127)	(0.126)	(0.126)	(0.126)
Firm size	-0.430***	-0.429***	-0.432***	-0.437***	-0.384***	-0.425***
	(0.120)	(0.120)	(0.120)	(0.120)	(0.121)	(0.120)
Firm age	0.013**	0.013**	0.013**	0.013**	0.012*	0.013**
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Leverage	0.917*	0.914*	0.889	0.903*	0.924*	0.930*
	(0.541)	(0.541)	(0.541)	(0.540)	(0.539)	(0.538)
Liquidity	2.324***	2.344***	2.372***	2.391***	2.318***	2.215***
	(0.279)	(0.278)	(0.277)	(0.277)	(0.276)	(0.277)
Asset turnover	2.431***	2.428***	2.418***	2.425***	2.444***	2.430***
	(0.204)	(0.204)	(0.204)	(0.204)	(0.203)	(0.203)
Asset growth	-0.521	-0.520	-0.507	-0.488	-0.572	-0.528
	(0.350)	(0.350)	(0.351)	(0.350)	(0.350)	(0.349)
Sales growth	-0.615	-0.613	-0.606	-0.657	-0.630	-0.645
	(0.550)	(0.550)	(0.550)	(0.549)	(0.549)	(0.547)
Constant	2.615	2.628	2.862	2.880	1.977	1.945
	(1.778)	(1.787)	(1.778)	(1.771)	(1.780)	(1.770)
Observations	2,827	2,827	2,827	2,827	2,827	2,827
R-squared	0.090	0.090	0.090	0.092	0.094	0.099
Year Fixed Effect	YES	YES	YES	YES	YES	YES
Firm Fixed Effect	YES	YES	YES	YES	YES	YES

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 7 Effect of Immigrant CEOs on Tobin's Q

This table presents the robustness test results about 3 OLS regressions of immigrant CEOs on firm performance measured by Tobin's Q, controlling CEO and firm characteristics. The dependent variable is Tobin's Q of the next year, and main independent variable is a dummy variable indicating whether a CEO is foreign-born or native-born. Model (1) controls both CEO and firm characteristics. Models (2) and (3) consider the effect of interaction terms combined CEO's immigrant identification and other characteristics including gender, tenure, and MBA degree. Models (1) uses year and industry fixed effect. Model (2) and (3) replace the industry fixed effect with firm fixed effect to deal with endogeneity problem. Tobin's Q is in decimals.

VARIABLES	(1) Tobin's Q_{t+1}	(2) Tobin's Q_{t+1}	(3) Tobin's Q_{t+1}	(4) Tobin's Q_{t+1}	(5) Tobin's Q_{t+1}	(6) Resid_Tobin's Q_{t+1}
Immigrant CEO	0.557***	0.369***	0.351***	0.408***		0.555***
	(0.071)	(0.076)	(0.077)	(0.130)		(0.103)
MBA	-0.207***	-0.169***	-0.174***	-0.173***	0.398	-0.056
	(0.051)	(0.057)	(0.057)	(0.057)	(0.913)	(0.079)
Female CEO	-0.020	0.232	0.154	0.158		0.262
	(0.134)	(0.147)	(0.162)	(0.163)		(0.201)
Tenure	0.058***	0.029***	0.028***	0.030***	0.061*	-0.115***
	(0.008)	(0.009)	(0.009)	(0.010)	(0.034)	(0.012)
Age	-0.028***	-0.005	-0.005	-0.005	-0.150	0.145***
	(0.004)	(0.005)	(0.005)	(0.005)	(0.093)	(0.007)
Total compensation	-0.116***	0.076***	0.076***	0.076***	-0.002	0.042
	(0.022)	(0.025)	(0.025)	(0.025)	(0.021)	(0.034)
Firm size		-0.430***	-0.430***	-0.431***	-0.666***	0.051
		(0.024)	(0.024)	(0.024)	(0.076)	(0.033)
Firm age		0.002	0.002	0.002	-0.009	0.022***
		(0.001)	(0.001)	(0.001)	(0.006)	(0.002)
Leverage		0.297***	0.300***	0.303***	-0.192	0.781***
		(0.113)	(0.113)	(0.114)	(0.122)	(0.157)
Liquidity		0.610***	0.607***	0.607***	0.110*	0.701***
		(0.055)	(0.055)	(0.055)	(0.063)	(0.076)
Asset turnover		0.278***	0.279***	0.280***	0.033	0.230***
		(0.040)	(0.040)	(0.040)	(0.115)	(0.056)
Asset growth		0.066	0.067	0.066	-0.038	0.100
		(0.068)	(0.068)	(0.068)	(0.048)	(0.094)
Sales growth		0.282***	0.281***	0.282***	0.059	0.352**
		(0.107)	(0.107)	(0.107)	(0.076)	(0.143)
Immigrant_female			0.424	0.427		
			(0.377)	(0.377)		
Immigrant_tenure				-0.012		
				(0.022)		
Constant	4.419***	5.161***	5.170***	5.178***	16.64***	-9.846***
	(0.293)	(0.351)	(0.351)	(0.351)	(4.379)	(0.472)
Observations	3,719	2,615	2,615	2,615	2,615	2,615
R-squared	0.051	0.247	0.247	0.247	0.135	0.255
Year fixed effect	YES	YES	YES	YES	YES	NO
Firm fixed effect	YES	YES	YES	YES	NO	NO
Industry fixed effect	NO	NO	NO	NO	YES	NO
CEO fixed effect	NO	NO	NO	NO	YES	NO

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 8 Effect of Immigrant CEOs from Five Regions on Tobin's Q

This table presents robustness test results regarding 5 OLS regressions of immigrant CEOs from five different regions compared to native-born American CEO on firm performance measured by Tobin's Q, controlling CEO and firm characteristics. The dependent variable is Tobin's Q of the next year, and main independent variable is a dummy variable indicating whether CEOs comes from the categorized region. Each model represents different regions, including Africa and Middle East, Asia, Australia, Central and South America, and Europe. All the five models use year and firm fixed effect. Tobin's Q is measured in decimals.

VARIABLES	(1) Tobin's Q_{t+1}	(2) Tobin's Q_{t+1}	(3) Tobin's Q_{t+1}	(4) Tobin's Q_{t+1}	(5) Tobin's Q_{t+1}
Africa & the Middle East	3.545***				
	(1.013)				
Asia		-0.094			
		(0.379)			
Australia			3.053***		
			(0.893)		
Central & South America				0.093	
				(0.653)	
Europe					0.666***
					(0.117)
MBA	-0.203***	-0.179***	-0.203***	-0.197***	-0.204***
	(0.061)	(0.059)	(0.060)	(0.060)	(0.061)
Female CEO	0.153	0.184	0.157	0.153	0.159
	(0.157)	(0.145)	(0.157)	(0.155)	(0.162)
Tenure	0.026***	0.031***	0.029***	0.031***	0.029***
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
Age	-0.006	-0.009*	-0.008	-0.009*	-0.006
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Total compensation	0.058**	0.040	0.044*	0.043*	0.061**
	(0.024)	(0.025)	(0.025)	(0.025)	(0.025)
Firm size	-0.441***	-0.432***	-0.440***	-0.438***	-0.445***
	(0.024)	(0.024)	(0.025)	(0.024)	(0.025)
Firm age	-0.001	-0.001	-0.001	-0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Leverage	0.220*	0.179	0.206*	0.204*	0.283**
	(0.114)	(0.113)	(0.114)	(0.113)	(0.116)
Liquidity	0.615***	0.597***	0.618***	0.620***	0.631***
	(0.059)	(0.057)	(0.059)	(0.059)	(0.059)
Asset turnover	0.304***	0.297***	0.303***	0.300***	0.287***
	(0.041)	(0.041)	(0.041)	(0.040)	(0.041)
Asset growth	0.111	0.118	0.117	0.103	0.058
	(0.081)	(0.081)	(0.081)	(0.072)	(0.077)
Sales growth	0.162	0.172	0.151	0.165	0.202*
	(0.109)	(0.113)	(0.113)	(0.111)	(0.114)
Corruption	1.618***	-0.394*	-9.200***	0.304	-0.231
	(0.538)	(0.230)	(2.519)	(0.389)	(0.149)
Constant	3.334***	6.436***	18.80***	5.435***	5.913***
	(0.842)	(0.494)	(3.580)	(0.678)	(0.450)
Observations	2,178	2,236	2,140	2,177	2,295
R-squared	0.266	0.272	0.268	0.272	0.266
Year Fixed Effect	YES	YES	YES	YES	YES
Firm Fixed Effect	YES	YES	YES	YES	YES

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

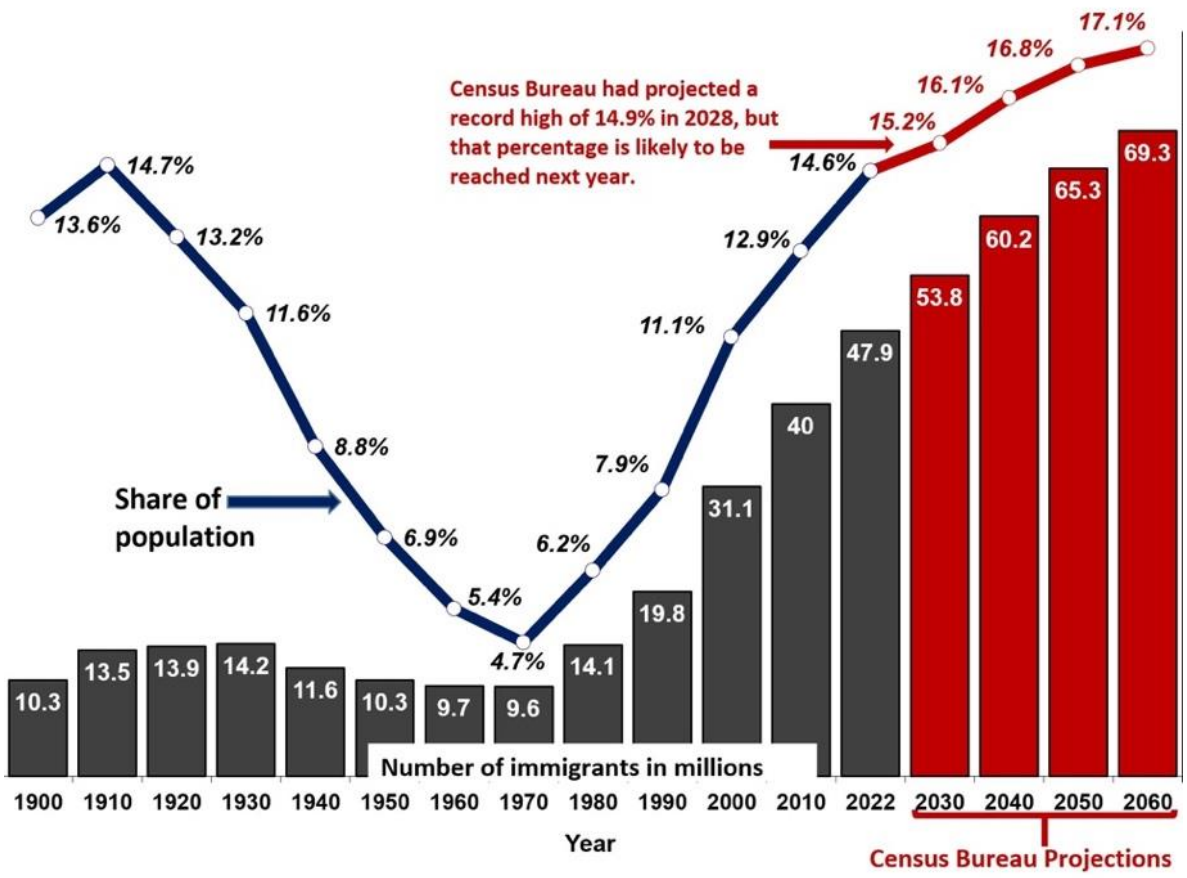
Table 9 Effect of Immigrant CEOs with Six Cultural Dimensions on Tobin's Q

This table presents the robustness test results for 6 OLS regressions of difference in cultural dimension scores between the CEO country and the US on firm performance proxied with Tobin's Q, controlling CEO and firm characteristics. The dependent variable is Tobin's Q of the next year, and main independent variable is immigrant CEO with specific cultural dimensions. Each model represents different cultural dimensions, including Power Distance Index (PDI), Individualism (IDV), Masculinity (MAS), Uncertainty Avoidance Index (UAI), Long Term Orientation (LTO), and Indulgence versus Restraint (IVR). All the six models use year and firm fixed effect. Tobin's Q_{t+1} is in decimals.

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Tobin's Q_{t+1}	Tobin's Q_{t+1}	Tobin's Q_{t+1}	Tobin's Q_{t+1}	Tobin's Q_{t+1}	Tobin's Q_{t+1}
PDI	0.010***					
	(0.003)					
IDV		-0.005**				
		(0.002)				
MAS			0.005			
			(0.004)			
UAI				0.002		
				(0.003)		
LTO					0.016***	
					(0.003)	
IVR						-0.014***
						(0.003)
MBA	-0.179***	-0.171***	-0.174***	-0.174***	-0.172***	-0.173***
	(0.058)	(0.058)	(0.058)	(0.058)	(0.058)	(0.058)
Female CEO	0.200	0.223	0.232	0.243	0.203	0.176
	(0.149)	(0.149)	(0.149)	(0.149)	(0.148)	(0.149)
Tenure	0.026***	0.026***	0.025***	0.026***	0.026***	0.025***
	(0.010)	(0.010)	(0.010)	(0.009)	(0.009)	(0.009)
Age	-0.005	-0.005	-0.007	-0.007	-0.005	-0.003
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Total compensation	0.078***	0.078***	0.078***	0.078***	0.074***	0.072***
	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)
Firm size	-0.437***	-0.436***	-0.438***	-0.436***	-0.421***	-0.435***
	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)
Firm age	0.002*	0.002*	0.002	0.002	0.002	0.002
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Leverage	0.285**	0.287**	0.272**	0.280**	0.279**	0.291**
	(0.114)	(0.114)	(0.115)	(0.114)	(0.114)	(0.114)
Liquidity	0.596***	0.606***	0.622***	0.617***	0.609***	0.593***
	(0.056)	(0.056)	(0.056)	(0.056)	(0.056)	(0.056)
Asset turnover	0.279***	0.279***	0.271***	0.271***	0.280***	0.274***
	(0.041)	(0.041)	(0.041)	(0.041)	(0.041)	(0.041)
Asset growth	0.072	0.073	0.078	0.073	0.060	0.075
	(0.069)	(0.069)	(0.069)	(0.069)	(0.069)	(0.069)
Sales growth	0.290***	0.290***	0.293***	0.295***	0.286***	0.285***
	(0.108)	(0.108)	(0.108)	(0.108)	(0.107)	(0.107)
Constant	5.293***	5.267***	5.428***	5.379***	5.136***	5.220***
	(0.355)	(0.357)	(0.356)	(0.355)	(0.355)	(0.354)
Observations	2,582	2,582	2,582	2,582	2,582	2,582
R-squared	0.240	0.239	0.238	0.237	0.247	0.246
Year Fixed Effect	YES	YES	YES	YES	YES	YES
Firm Fixed Effect	YES	YES	YES	YES	YES	YES

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Figure 1 Number and percentage of immigrations in the U.S. from 1900 to 2022 and Census Bureau Projections from 2030 to 2060



Source: Center for Immigration Studies