THE TRANSMISSION CHALLENGE: WHAT DETERMINES FAMILY BUSINESS TRANSMISSION?

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1 - Taj is a member of the Deloitte Touche Tohmatsu Limited network of member firms in France.

More information: research@drd.edhec.edu
This study presents the author's views and conclusions, which are not necessarily those of EDHEC Business School

EXECUTIVE SUMMARY

Family businesses generate over three quarters of global GDP and, according to the Financial Times (2015b), 19% of the world's largest groups are family-controlled companies. Yet, one of the biggest challenges for family firms is keeping the company under family control for the next generation in the face of competition from publicly-traded firms with easier access to external funding from capital markets. This is why succession is one of the most analysed topics in the family business literature. Although this is a worldwide problem, family transmission rates differ significantly across countries, irrespective of the level of economic development of the nation: German and Italian family transmission rates are above 65%, while the French rate is below 20%. So, what explains these cross-country differences?

In this study, we put together the largest sample of family business transmissions rates across countries and study their determinants. Our data documents significant variation of family transmission rates across nations. To analyse the determinants of this variation, we conduct a cross-sectional econometric analysis to measure the impact of cross-country differences in regulation, taxes, demographics, access to capital, cultural and family values, and other economic factors. Part of our unique data comes from a survey we conducted in cooperation with tax professionals in selected Deloitte member firms (the "Data Questionnaire"). This data measures each country's tax environment and regulatory stance related to the transmission of a standardised family firm

Our results show that the tax environment is an important explanation for the difference in transmission rates across countries. We find that the "Tax Premium on Transmission" has a positive impact on family transmission rates: when capital gains taxes due in the case of the sale of the business to a third party are higher than the inheritance taxes due when such a business is transferred within the family (by donation or because of death), then transmission rates of family businesses tend to be higher. Furthermore, our results also show that other potential determinants of family business transmission do not diminish the impact of the Tax Premium on Transmission. These findings have implications for family firms as they set their overall business strategy and succession plans, and also point to a potential venue for policy makers to establish a friendlier family business environment.

ABOUT THE AUTHORS

Claire Dufour is a recent graduate of EDHEC Business School where she obtained a Master in Management (Financial Economics) and a MSc in Corporate Finance. She also holds a BSc in International Business from Northeastern University (Boston, USA) and a Bachelor from CESEM (Reims, France). Claire currently works in Corporate Banking for Citi, which she joined in 2015. She is part of the Financial Institutions Group where she covers Banks, Private Banks, Insurers and the Public Sector. Claire is based in Citi's Zurich office.
Prior to starting with Citi, Claire gained experience at State Street Global Markets in Boston.

Philip Franz from Germany is a recent graduate of EDHEC Business School, where he obtained an MSc in Corporate Finance and Banking. He also holds a BSc in Economics and Business Economics from Maastricht University (Netherlands). Currently he works in the M&A division of BHF-Bank, which just recently became a part of French private banking group Oddo & Cie. Here he works in particular on family business M&A transactions. In between his BSc and MSc Philip worked in the investment banking division of M.M.Warburg for three years.

Florencio López-de-Silanes is Professor of Finance and Law and Scientific Director of the Family Business Centre at EDHEC Business School. His research interests and main publications fall in the areas of International Corporate Finance and Financial Markets, Legal Reform and Privatisation. He has been an advisor on these topics to several governments, international institutions and corporations. Some of his research shows the relevance of law and institutions for financial markets and their development.
He has authored many publications in leading finance and economics journals and has published two books on Investor Protection and the Benefits of Privatisation. Among other distinctions, he received Harvard's Wells Prize for the Best Dissertation in Economics (1995), the Brattle Prize for distinguished paper in the *Journal of Finance* of the American Finance Association (1999), and the Jensen Prize for the best papers published in the *Journal of Financial Economics* in the Areas of Corporate Finance and Organizations (2000). He has been one of the five most cited researchers in the world in economics and business over the last 10 years. He has also served as a professor at the universities of Harvard, Yale, Amsterdam and the Ecole Normale Supérieure in Paris.

1. INTRODUCTION

1. INTRODUCTION

Family businesses generate 70 to 90% of global GDP (Gross Domestic Product). According to IMD's World Competitiveness report, 80% of firms can be considered as being family businesses. Indeed, family firms are present on the entire company-size spectrum, from small firms to very large companies. On top of that, more than 50% of listed companies with a market capitalisation of above $500 million are controlled by families (La Porta, López-de-Silanes and Shleifer, 1999). This shows the importance of family businesses to the global economy.

The biggest challenge for family businesses is keeping the firm under family control while competing with public companies that can get funds from the equity and debt capital markets more easily (Sharma, Chrisman and Chua, 2003). This is why succession features so widely in family business literature (Ward, 2004; Sharma, 2004). Beckhard and Dyer (1983) published a paper in 1983 about managing continuity in US family businesses. They found that US family firms went out of business too often, only three out of ten (33%) being transmitted to the second generation. In their study of French family firms, Grégoir and López-de-Silanes (2015) found that only a quarter of the firms in their sample were controlled by the second generation, while only one in six were controlled by the third or later generations. Ward (2004) argues that only about 20% of family business last beyond 60 years in the same family. However, the Transregio study (2005) proved that succession rates differ significantly across seven European countries, which leads us to believe that there could be meaningful differences between countries on a larger scale.

The challenge of family business transmission is also often stressed in the financial press and professional literature. For instance, the Financial Times (2015b) mentions that according to business experts, succession is the biggest threat to the existence of family businesses. In an interview in Le Nouvel Economiste (2015), Philippe d'Ornano, co-president of the Movement of middle-sized companies in France (Mouvement des Entreprises de Taille Intermédiaire), explains that transmission is a crucial moment for these firms since taxation is an obstacle for CEOs in France who seek to organise their succession, which thus led to a high number of sales in the 90s. In its yearly report about family businesses in Europe in 2015, KPMG (2015) reported that 9% of family firm CEOs plan to sell their business in the future, which is much higher than the previous year. However, this proportion is lower for big family firms and firms run by the second (and subsequent) generations. This picture is not restricted to Europe alone. The Wall Street Journal (2015b) reports an increase in the sale of family-controlled companies. The reasons listed in the article are numerous: some owners think they expanded the business all they could and have a fear of stagnation; some families prefer to diversify their assets rather than having their entire capital invested in one business; some fear an increase in the capital gains taxes and prefer to sell the business before; and others fear that with the advances in technology their business might become obsolete. Other obstacles for transmission are stressed in the press: fear of conflicts within the family (Les Echos Business.fr, 2015); potential increase in succession tax rates (Les Echos, 2015); the heroic aura of the predecessor (Financial Times, 2015a); or the fear

owners have of preparing their succession because it gives than the impression they are facing their own death (Wall Street Journal, 2015a).

According to the European Commission (2011), on average, about 450,000 business transfers take place every year within the European Union. Due to inefficient and unsuccessful business transfers, around 150,000 viable European small and medium enterprises (SMEs), including family businesses, are at risk of failing every year, and this could potentially affect 600,000 employees. This is why the European Commission recommended that Member States simplify business transfers. The recommendations included facilitating family business transfers by ensuring that transfer-related taxes do not threaten the continued existence of these very family businesses (European Commission, 2011).

There are two opposing views regarding succession taxes. The first view suggests that succession taxes should be lowered because they represent a high financial burden for family firms, leading to liquidity problems that can drive them out of the market or make them less competitive compared to non-family corporations (Tsoutsoura, 2015). The opposing view suggests that succession taxes should be raised as inherited family businesses tend to underperform (Perez-Gonzalez, 2006; Grossmann and Strulik, 2010) and to be less well managed (Bloom, 2006), and also because inheritance is socially unfair and leads to a higher wealth concentration (Aaron and Munell, 1992). A study by Tsoutsoura (2015) suggests that succession taxes have a significant impact on both the investment and performance of family businesses. She also shows that succession taxes affect the decision on whether to inherit the business or sell it to outsiders. However, other studies have also shown that there are further components that can act as obstacles to family business succession (De Massis, Chua and Chrisman, 2008). These authors developed a model and identified potential factors preventing intra-family succession. These factors pertain to the inability to find or train a successor, a lack of preparation for succession, conflicts (between family members or between incumbent/potential successor and non-family members), taxes, lack of financial resources, financial difficulties of the company, etc. In his book, Ward (2004) also proposed several explanations for the "short life" of family business within a family: failure in recognising changing market needs that leads to obsolescence, taxes, insufficiently prepared or motivated successors, conflicts among family members, the creation of problems by a generation that cannot be solved by the following one.

Regarding family business transmission rates, we discovered a vacuum in the literature. While numerous studies exist on family business transmission and its hurdles within single countries, we were not able to find a cross-country analysis. Our paper tries to fill up this void. Firstly, we built a cross-country sample of family transmission rates and show large differences in such rates between the countries analysed. We then designed a questionnaire that we requested tax professionals from a number of Deloitte member firms to complete (the "Data Questionnaire"). Finally, we perform a cross-sectional analysis of the factors that may impact the transmission of businesses within the family. We classify these factors into several categories, including regulation, taxes, demographics, access to capital, cultural and family values, and macro-economic conditions. Legal and fiscal systems can be used to influence family transmission (Arrondel and Lafèrre, 2001) therefore, empirically establishing their influence

in the variation in succession rates across countries could help governments adjust their family business policies and also help family firms achieve their objectives more easily.

The rest of the paper is organised as follows. Section 2 presents the literature review on family business transmissions. Section 3 details the construction of the database, provides descriptive statistics and presents the methodology. Sections 4 and 5 present the results of the analyses and Section 6 concludes.

2. LITERATURE REVIEW

2. LITERATURE REVIEW

While family business succession has attracted a lot of attention among family business researchers, our review of existing literature indicated that very little systematic attention has been given to cross-country transmission rates. Transregio (2005), a study that was carried out in seven different European countries, showed how different family transmission rates can be: in Italy the rate was 80%; in Lithuania it was 8%. However, such studies are not widespread and are only descriptive. On the other hand, most academic studies only focus on a single country when analysing obstacles to succession.

De Massis, Chua and Chrisman (2008) conducted a literature review to systematically model factors that prevent management succession within the family. These factors are divided into five non-mutually exclusive categories, namely individual (linked to the successor(s) or the incumbent), relational (conflicts, lack of trust or commitment of family members or non-family members), financial (taxes, lack of financial resources), environmental (linked to performance, customers or suppliers) and process (absence of good actions or presence of bad actions in the process) factors. Some of these factors were very transaction-specific and are therefore not testable.

Pyromalis et al. (2006) also present a literature review of factors that affect the succession process in family businesses (such as preparation of successor, incumbent's propensity to step aside, previous successful successions, communication, size of the firm, etc.).

Relying on the literature, we derived four categories of obstacles that may prevent a family business from being transmitted within the family.

2.1. TAXES

According to Aaron and Munell (1992), bequests and inheritances enlarge wealth concentration and are a significant factor for the growing gap between the rich and the poor. Wealth transfer taxes represent less than 1% of industrialised countries' income which are therefore not too dependent on this revenue stream.

According to Arrondel and Lafèrre (2001), changes in tax policies have a strong effect on family succession. They found that after a law was passed in France in 1992, which made inter vivos gifts partly tax-free, the conferring of gifts increased significantly. They identified tax reduction and a 10 year tax exemption as advantages of passing on a business before the incumbent's death. Tsoutsoura (2015) showed that after Greek legislation substantially reduced the tax on inter-family transfers of businesses in 2002, the succession rate radically increased from 45% to 74%.

Succession tax is perhaps not the only tax rate that could impact the transmission of a family firm. Djankov et al. (2010), in a paper discussing the effect of corporate taxes on investment and entrepreneurship, demonstrated that effective corporate tax rates had a negative impact on investment, foreign direct investment and entrepreneurship and hence, in our view, maybe also on succession.

2.2. LEGAL

Another factor frequently mentioned in the literature is the impact of laws and regulations on family business succession. Ellul, Pagano and Panunzi (2010) discuss the impact of inheritance law on investment in family firms and how in some countries forced heirship rules exist, meaning that entrepreneurs are legally obliged to transfer shares to non-controlling heirs. The paper demonstrates how stricter inheritance rules lower investment in family businesses post-succession. It, however, does not mention the legal impact on family firm transmissions but it is likely that these kinds of rules have an impact on the decision of whether to transmit a business to the next generation or to outsiders.

The legal tradition of the country might also have an impact on the transmission rates of family businesses. Instead of referring to a specific legal rule such as forced heirship, one can also distinguish between Civil and Common Law countries. This is the way adopted by La Porta et al. (2000), who studies agency problems and dividend policies in a cross-country analysis.

2.3. CULTURE AND FAMILY

There are additional factors, which are not linked to taxes or the legal environment, which could influence the transmission of family businesses. Several papers took a cultural and demographic approach to study transmission rates. For instance, Joseph (2014) focused her paper on one metropolis (Jos in Nigeria) and did a binomial logistic regression in order to prove that culture (such as inheritance traditions or education) had an impact on the success of family business transmissions.

On top of culture, family structures can have an impact on the strategy of family businesses (Ward, 1987). According to a study about family firm succession in Denmark (Bennedsen et al. 2007), family structure plays an important role in the management of succession in family businesses. It was found that succession increases with the number of children up to child number three and then declines when the number of children is equal to or exceeds four. The increase in succession is associated with a growing quality manager pool, while the decline is linked to higher conflict and rivalry potential as the family becomes too large. Additionally, a high ratio of female children, divorce and remarriage with additional children all negatively impact family succession.

Dascher and Jens (1999) also discuss the incumbent-successor dimension of the transmission of a family business. They believe that there are three obstacles to transmission, two of them are linked to the members of the family involved[2]: the current leader must desire to transfer the business, and the proposed successor must be inclined to accept the offer.

Other studies are focused on the gender-bias in family business transmission. Using a conceptual framework, Pyromalis et al. (2006) argue that regarding potential overall success of a succession, women and men are equal. So a potential bias against women is not founded. However, that does not seem to be the case in Greece and Denmark. Indeed, Tsoutsoura (2015) demonstrated that there was a relation between family succession and the gender of the first-born child. Before the succession tax reform, when the departing owner's first-born was male, there was a 17.7% higher probability of the firm staying in the family than

2 - The third one is the ability to transfer the business which can be linked to inheritance taxes

if the first-born was female. This figure dropped to 15.2% post-reform. In Denmark, the gender of the departing CEO's first-born child does have an impact on the decision to nominate a family CEO. It happens in 29% of the cases when the child is female and 39% of the cases when the CEO's first-born child is a male (Bennedsen et al., 2007).

On the same subject, García- Álvarez, López-Sintas and Gonzalvo (2002) showed that founders of family businesses prefer to create a team of successors comprised of their sons and their daughters rather than having to follow the primogeniture rule. The founders justified this as being a result of their children all inheriting the same number of shares and therefore it would be better for the firm if the children cooperated among themselves. Although, once prompted about leadership, founders did say that they would rather have their eldest son take up the leadership role. So, although founders intend to share ownership equally between their children regardless of their gender, a gender-bias is nonetheless involved when it comes to leadership.

Another obstacle to family business transmission is human capital. The preparation and training of potential successors is an important issue. The owner might be better off selling the firm to a third party rather than entrusting it into the hands of relatives who may not be properly equipped to lead the firm. For instance, Ward (2004) mentions the founders' successors' bad preparation or absence of motivation as one of the factors underlying the failures in family firm successions. Also, De Massis, Chua and Chrisman (2008) mention problems of trust between the current leader and its potential successors as a potential obstacle.

2.4. SUCCESSION PLANNING

It is also important to keep in mind that succession is a process and not a one-time event. Indeed, researchers have pointed out that succession takes place in stages and that it has an effect on the firm's stakeholders (Mazzola, Marchisio and Astrachan, 2006). The logical solution to a successful transmission would be to plan for it (Ward, 1987). However, some researchers have pointed out that planning does not always lead to successful transmission. According to Murray (2003), the practical aspects of succession planning (such as the development of a successor) are not always the key to a successful transmission. She believes that an exploration period for the people involved in the transmission of the business needs to take place in order for them to have enough time and space to help find a solution that fits their own needs, without which the succession could fall apart.

Joseph (2014) showed in her paper that culture had a significant impact on good succession planning. In her model, succession planning was the dependent variable and was used as a proxy for family transmission, while extended family, inheritance law, age and education were used as independent variables. Succession planning in this paper was the act of integrating the next generation in the firm and grooming a child for leadership.

Sharma, Chrisman and Chua (2003) analysed the determinants of satisfaction with the succession process which, according to them, is one of the factors that makes a family business transmission successful. The results showed that succession planning has a positive impact on the succession satisfaction for both incumbents and successors.

3. DATA

3. DATA

3.1. STANDARDISED CASE OF FAMILY TRANSMISSION; THE DATA QUESTIONNAIRE

To better understand the different hurdles of family business transmission, the Family Business Centre of EDHEC Business School developed a questionnaire to collect data from tax professionals at selected Deloitte member firms (the "Data Questionnaire"). The objective of this questionnaire was to benchmark regulations and tax burdens around family business transmission worldwide.

Tax professionals from 35 jurisdictions were given the same description of a standardised family business and a questionnaire requesting them to provide data from their countries' legal and fiscal system regarding family firms succession as well as other variables pertaining to family firms.[3]

In order to ensure comparability across countries, the standardised family business had the following characteristics:

- FAMILYCO operates in the most populous city in the country, produces ceramic flowerpots and sells them at retail shops in the domestic market. It has 300 employees, gross assets amounting to USD 65 million and a turnover of USD 130 million. It is neither a predominantly real estate company nor a pure finance company and has a fair market value of USD 130 million with a net equity of USD 40 million. FAMILYCO is subject to tax in its residence state and does not benefit from any specific / favourable tax regime;
- Mr. PARENT owns 100% of FAMILYCO. His wife did not own any share in FAMILYCO and passed away 10 years ago. Mr. PARENT is the President and CEO of FAMILYCO. He derives his professional income from his function as CEO solely. His taxable income amounts to USD 260,000. Mr. PARENT has three children aged 22, 25 and 27. The first child has a taxable income of USD 80,000, the second has a taxable income of USD 100,000, and the third one a taxable income of USD 130,000;
- Mr. PARENT founded the company 30 years ago and the tax basis in the share is not significant and will be deemed to be 0 USD for capital gains tax purposes. Mr. Parent is 60 and he can retire. He has access to good financial advice and his advisors have identified and recommended the most favourable treatment. Shares of FAMILYCO are freely transferable;
- The transaction took place in 2014 and the rates and rules relevant for that year applied with no retroactive change.

The respondents based their answers on the standardised case and the corresponding laws and regulations in their country. To facilitate like-for-like comparisons respondents were specifically instructed not to apply any special regimes that might be available in their jurisdiction. In addition, they were asked to provide comments and sources of information.

The standardised case was followed by a questionnaire. This questionnaire analysed the transmission of a family business in three potential ways: by way of sale to a third party, a gift or the inheritance within the family, or the transfer of the business as part of a wealth transfer to the family.

3 - The countries participating were: Australia, Austria, Belgium, Brazil, Canada, China, Czech Republic, Denmark, Finland, France, Germany, Greece, India, Ireland, Italy, Japan, Luxembourg, Malta, Mexico, Poland, Portugal, Singapore, Slovak Republic, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Taiwan, the Netherlands, the United Arab Emirates, Ukraine, the United Kingdom and the United States of America.

The questionnaire also included questions about potential obstacles to a transmission within the family.

From the answers provided in the Data Questionnaire, we derive the explanatory variables that pertain to various potential barriers to a family businesses transmission. There are three main domains of potential obstacles to a transmission within the family: (1) the legal regulatory environment; (2) the tax regulatory environment; and (3) other family-related obstacles.[4]

The first set of potential obstacles relates to the legal environment of the country. We asked five different questions in this area: (1) whether forced heirship is a regulatory restriction in place for transfer of businesses to family members;[5] (2) whether family transmission required previous government authorisations; (3) whether other regulatory restrictions to a family transmission existed; (4) if there were legal constraints to the transfer of shares; and (5) whether there were legal constraints to the transfer of functions (i.e. mandatory retirement) in the country. Aggregating these variables we created sub-indices of regulatory restrictions and legal constraints to a family business transmission and an overall index of these two concepts.

We analyse the tax environment applicable to the different forms of transmission in each country collecting two different sets of variables. First, we look at the various tax rates that would be applied in the country surveyed. We collect three different tax rates: (1) capital gains tax, which is the anticipated tax rate used in the standardised case of family business if Mr. PARENT decides to sell the business to a third party; (2) inheritance tax, which corresponds to the anticipated marginal tax rate used in the standardised case of family business when the business is transmitted to heirs as inheritance or gift; and (3) wealth transfer tax, which represents the anticipated marginal tax rate used in the standardised case of family business when Mr. PARENT decides to transfer the business as part of the family wealth transmission. With these three rates, we calculate two variables that capture the differences in tax treatment of a sale to a third party and a family business transmission. Our fist variable is called "Capital Gain-Inheritance" and is calculated as the anticipated difference between the capital gains tax and the inheritance tax. This measure is what we also call in the paper the "**Tax Premium on Transmission**." Our second variable is called "Capital Gain-Wealth," which is the anticipated difference between the capital gains tax and the wealth tax applicable to the firm of our standardise case in the Data Questionnaire. We also refer to this measure as the "Tax Premium on Wealth Transfer."

In addition to actual tax rates applicable to the sale or transmission of the firm, we have collected three additional measures that try to capture other aspects of the tax environment around the transaction. These variables are: (1) Capital Gain Rebates – This variable indicates if it is possible to get any rebate on Capital Gain Tax depending on a minimum holding period of shares before selling them for profit; (2) Capital Gain Several Years – This variable indicates if Capital Gain Taxes can be paid over several years in the country surveyed; and (3) an opinion on how prohibitive is the tax burden associated with the transmission of family wealth in the country. Aggregating the first two

4 - All the variables within each of these categories are described in detail in Appendix 2.
5 - When forced heirship laws exist, a person cannot decide freely who will inherit its estate as there may be "protected heirs," usually blood relatives, to whom a part or the totality of the estate of the deceased person is to be transmitted.

objective measures we create a variable called "Index Rebates Several Years."

Finally, as an alternative measure to see if tax environment is more favourable to sell the business to a third party or to keep it within the family, we create the "Index Tax Environment" by aggregating the existence of rebates on capital gains taxes, the possibility that capital gains taxes are paid over several years, and a dummy variable equal to one if the there is no Tax Premium of Transmission (i.e., capital gains taxes minus inheritance tax is zero or negative). This index helps us illustrate to what extent the tax environment of the country surveyed is unfavourable to family transmissions. The higher this index, the less favourable it is to transmit the family business to members of the family.

The third and final set of obstacles to a family transmission looks at other obstacles within families and outside of the legal and tax environment. As mentioned in the literature review section, members of the family themselves can be obstacles to the transmission of the business. To cover this area we collected three opinion measures: (1) lack of interest, which captures to what extent the lack of interest of the potential heirs can be a primary obstacle to the transmission of Mr. PARENT's company; (2) lack of planning, showing to what extent the lack of planning by Mr. PARENT regarding its succession can be a primary obstacle to the transmission of its company to the heirs; and (3) lack of training, showing the extent to which the lack of training or experience of Mr. PARENT's potential successors can be a primary obstacle to the transmission of its company to the heirs.

Table 1 - Data Questionnaire Results
This table presents the results of the Data Questionnaire on family firm.

Regulatory and Legal Environment regarding Family Business Transmission					
	N	Yes	No		
Existence of forced Heirship Laws	34	19	15		
Need for Government Prior Authorisations	34	0	34		
Existence of Legal Constraints to transfer shares	34	9	25		
Existence of Legal Constraints to transfer functions	34	2	32		
Attractiveness of Legal Environment	N	very attractive	attractive	prohibitive	very prohibitive
	35	11	22	1	1
Tax Environment regarding Family Business Transmission					
	N				
Simplicity of Tax Environment		very simple	simple	complex	very complex
	35	6	21	7	1
Business Friendliness of Tax Environment		very friendly	friendly	unfriendly	very unfriendly
	35	13	12	8	2
Disadvantageous Tax Environment vs non-family transmission		no disadvantage.	few disadvantages	some disadvantages	a lot of disadvantages
	35	28	3	4	0
Taxation is a primary obstacle to a successful family business transmission?		no obstacle	some obstacle	moderate obstacle	big obstacle
	35	17	12	5	1

Tax Rates (MTR = Marginal Tax Rate)					
Gift/Inheritance	N	Mean	Median	Min	Max
MTR assuming no favourable regime applies	33	13.7%	8.0%	0%	50%
MTR if a relief/special regime applies	28	5.3%	0.1%	0%	30%
MTR in an ideal case	27	1.7%	0.0%	0%	25%
Capital Gains					
MTR in case of sale to a third party	35	21.5%	23.0%	0%	45%
MTR in case of sale to one or several children	35	20.1%	20.0%	0%	45%
	N	Yes	No		
Rebates after a minimum holding period	35	10	25		
Possibility to spread capital gains tax over several years	35	9	26		
Existence of easy strategies to monitor the tax burden	32	14	18		
Wealth Tax	N	Mean	Median	Min	Max
MTR of a family wealth transmission	35	16.6%	10%	0%	55%
Capital Gains MTR in case of sale to a third party – MTR in case of gift/inheritance assuming to favourable regime					
MTR 3rd party - MRT no fav.regime	33	8.0%	7.0%	-29%	39%
Other Obstacles					
	N	no obstacle	small obstacle	moder. obstacle	big obstacle
Lack of interest within the family	35	4	11	14	6
Lack of planning by Mr. PARENT	35	3	11	7	14
Lack of appropriate training or experience	35	5	11	14	5

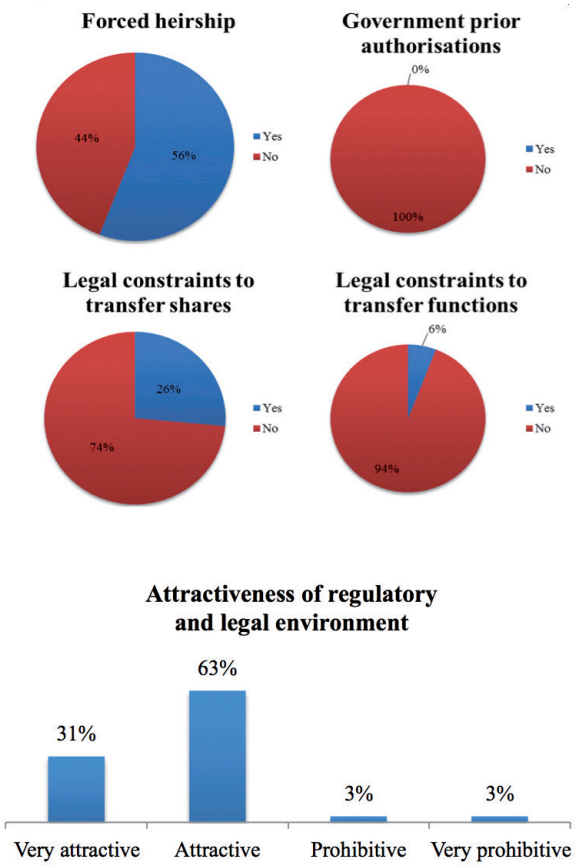
3.2. ANALYSIS OF THE ANSWERS TO THE DATA QUESTIONNAIRE

Descriptive statistics of the answers provided in the Data Questionnaire can be found in Table 1. Figures 1 to 10 present the answers from respondents in a graphical way. We derive some of our explanatory variables from the answers to this Data Questionnaire.

As Figure 1 shows, out of the 35 countries participating in the Data Questionnaire, 33 countries perceive their legal environment with respect to family business transmission as attractive against only two countries that perceive it as prohibitive. Regarding regulatory restrictions, in 56% of the countries forced heirship exists whereas in no country government prior authorisations are needed for a family business transmission. Accordingly, this last variable has not been kept for future analyses. Legal constraints to transfer shares and to transfer functions exist in 26% and 6% of the countries respectively.

The picture looks different for the tax environment. For about 20% and 30% of the countries respectively, the tax environment is

Figures 1 and 2: Selected Data Questionnaire Results – Regulatory and Legal Environment
These figures show the distribution of answers to the regulatory and legal environment section of the Data Questionnaire. Forced heirship represents the proportion of countries for which forced heirship is a regulatory restriction in place for transfers of companies to family members. Government prior authorisations indicates whether an authorisation from the government is necessary before transferring a company to a family member. Legal constraints to transfer shares is a variable that shows whether legal constraints exist in the country when one tries to transfer shares in a family business. Legal constraints to transfer functions is a variable that shows whether legal constraints exist in the country when one tries to transfer a function in a family business. Finally, Figure 2 presents the attractiveness of the regulatory and legal environment of the country for transmission of family businesses based on the Data Questionnaire responses.



perceived as complex and unfriendly; and for 51% of the countries, it is seen as an obstacle for the family transmission. The average marginal succession tax rate (gift and inheritance) assuming no favourable regime is 13.7% ranging from 0% in countries like Malta, Sweden or the Ukraine to 50% in Ireland. In the cases when measures are taken to manage such taxes, the average goes down to 5.3% for the general case and 1.7% for the ideal case. Our hypothesis is that the lower is the marginal tax rate in case of gift/inheritance, the higher the transmission rate should be.

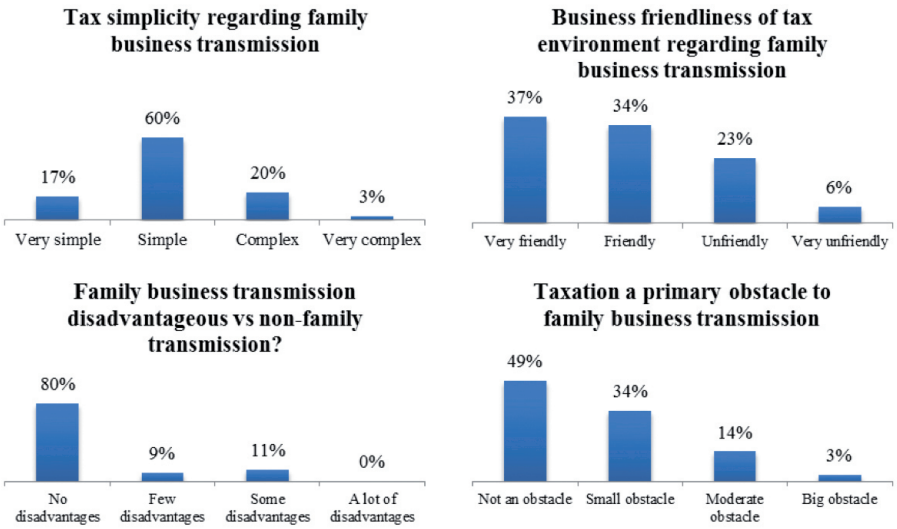
Regarding transfer of ownership through sale to a third party or to children, the picture is the following. Capital gain tax rates for the sale of the business to a third party are on average 21.5% compared to 20.1% for the sale to a child. As a consequence, it seems that there are only few advantages to succession. Rebates after a

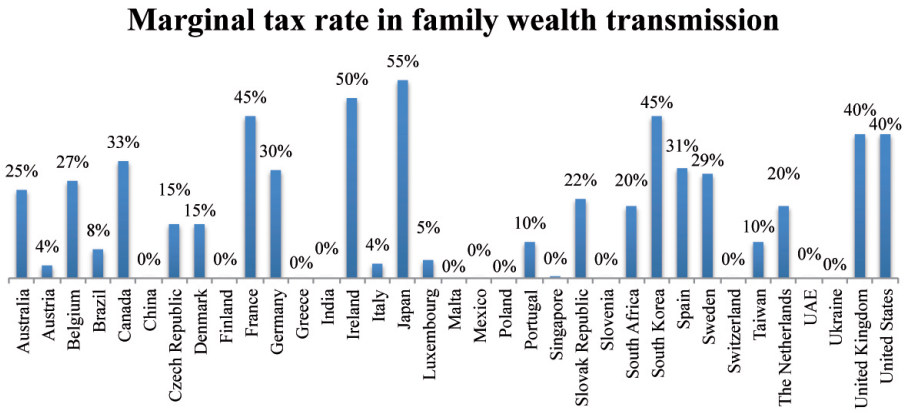
minimum holding period exist in 29% of the countries, the possibility to pay capital gains tax over several years in 26% and easy strategies to monitor the tax burden in 44%. These factors have in common that they reduce the cost of a sale to a third party and therefore should have a negative impact on succession and ownership concentration.

The average marginal tax rate of transferring family wealth (variable Wealth Tax in Table 1) is 16.6%, which is very similar to the marginal tax rate of inheritance/gift. It ranges from zero in countries like Malta to 55% in Japan.

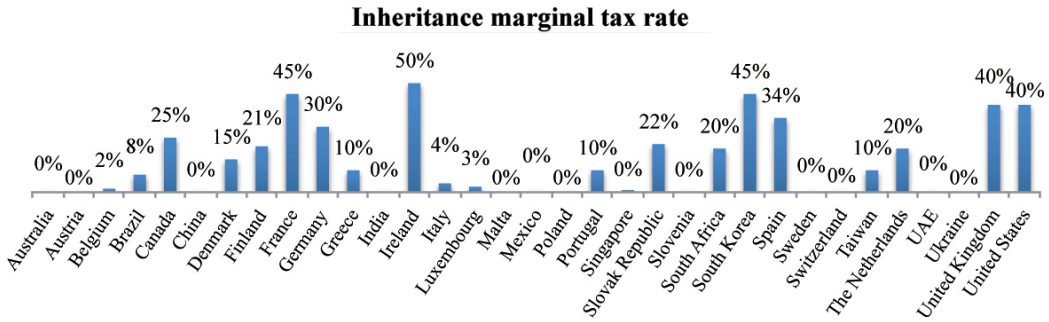
Figures 3 and 4: Selected Data Questionnaire Results – Tax Environment and Tax Rates

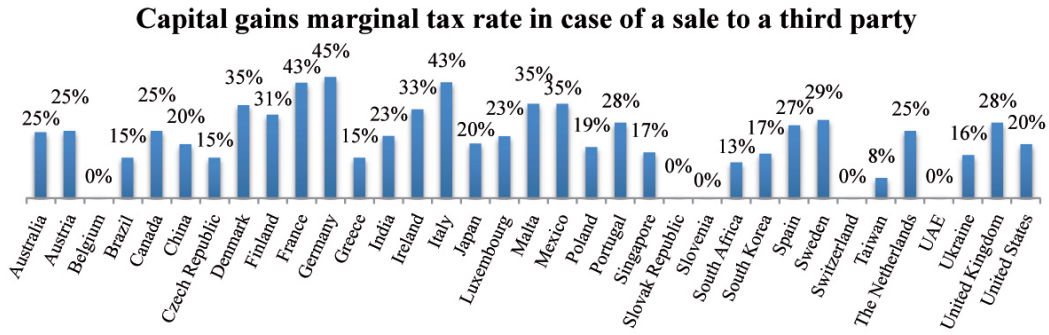
These figures present the distribution of answers to the tax environment and rates section of the Data Questionnaire. Figure 3 shows the results of the Data Questionnaire on the simplicity and attractiveness of the tax environment of the country regarding family business transmissions. Figure 4 presents the distribution of marginal tax rates in family wealth transmissions across countries according to the Data Questionnaire.

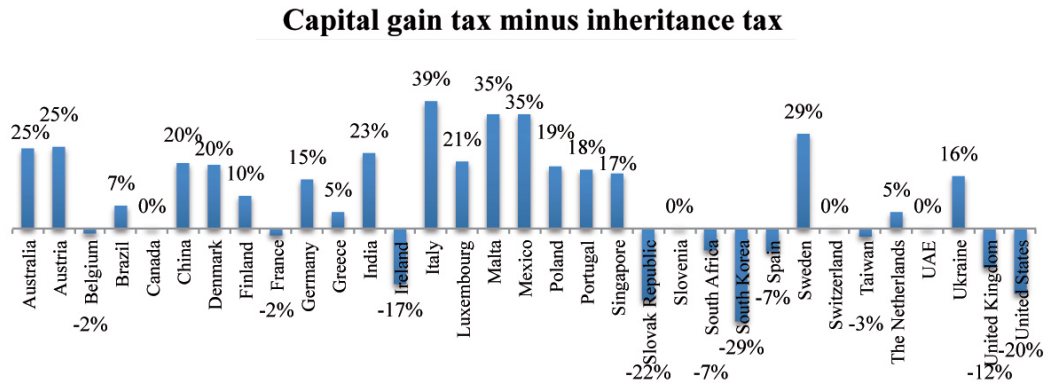




Figures 5, 6 and 7: Selected Data Questionnaire Results – Tax Rates
These figures present the answers of the Data Questionnaire pertaining to tax rates in the various countries included.





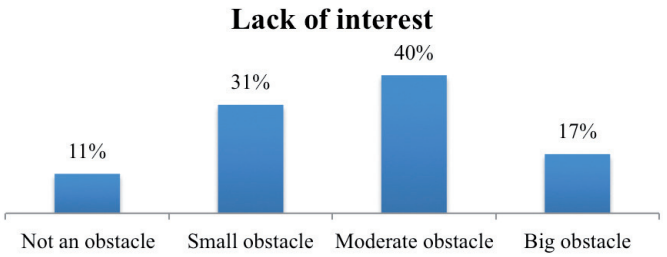


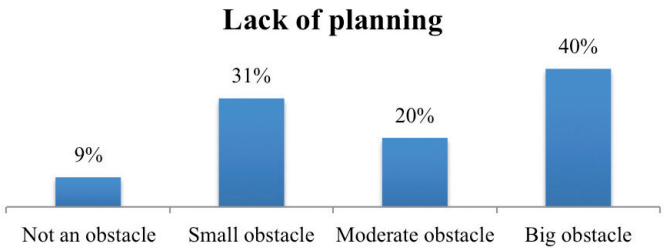
Taking into account the opportunity cost of succession we also have a look at the difference between selling the business to a third party - hence the capital gains tax - and keeping it within the family, hence inheritance tax. The higher the difference, the more unfavourable it would be to sell the family business to a third party since it means that capital gains tax would be much higher than inheritance tax. While the mean and median are respectively 8 and 7% (so relatively low) we

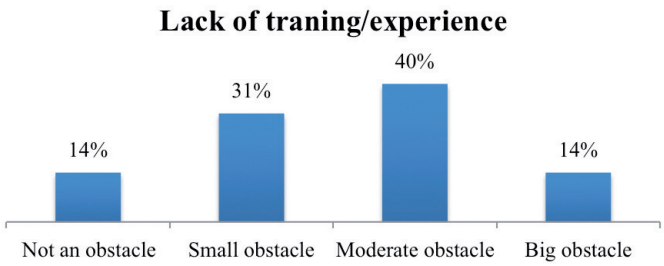
observe a noteworthy range from -29 to 39%. As expected, countries with low succession rates like Sweden or Italy tend to show high positive differences. On the other hand for countries with high succession rates like France, UK and the US the differences tend to be close zero or negative. As a consequence, we expect this variable to have a positive impact on transmission rates and proxies.

Other obstacles concerning family business succession are lack of interest within the family, lack of planning by Mr. PARENT and lack of appropriate training and experience. While all of them are on average seen as obstacles, lack of planning by Mr. PARENT is perceived as being the biggest obstacle. Answers to this question might be very subjective however they give us a first insight of what is seen as clear obstacles to transmission of family businesses to family members and are in line with previous literature and press articles identifying lack of interest, lack of planning and lack of appropriate training or experience as significant obstacles.

Figures 8, 9 and 10: Selected Data Questionnaire Results – Other Obstacles
These figures present the distribution of answers to the other potential obstacles to transmission section of the Data Questionnaire. These obstacles are a lack of interest of the potential successors for the family business (Figure 8), a lack of planning for its succession from the current owner (Figure 9) and a lack of training or experience of the potential successors to run a family business (Figure 10).







3.3. OUTCOME VARIABLES: TRANSMISSION RATES AND OTHER PROXIES

3.3.1.Identification of family businesses

According to a literature review by López-de-Silanes and Waxin (2014), an important drawback in the current family business literature is that close to 90% of studies lack a clear definition of what a family business is, and therefore most study results are not strictly comparable. The most commonly used way to define a business as being a family firm is looking at ownership. Astrachan and Shanker (2003) gave three different definitions of what types of companies can be considered to be family businesses. The least restrictive definition says that the family needs to retain voting control over the firm. The second definition says that, on top of retaining voting control, the family needs to be involved in day-to-day operations. The most restrictive definition says that the firm is a family firm if the family has voting control and if multiple generations of the family are involved in the daily affairs of the company.

Since we are looking at ownership transmission we believe ownership to be the right variable for our family business definition. La Porta, López-de-Silanes and Shleifer (1999) found a high correlation between family control and management and set the level of ownership to a minimum of 20% for family's stake to be sufficiently important in order to qualify the firm as being a family enterprise. We therefore define family business as a business that is held by a family or individual with a stake higher than 20%

3.3.2. Transmission Rates

The cornerstone of our analysis was to compute transmission rates over different countries. We decided to concentrate our research on OECD countries while adding a few non-OECD countries. We define the Transmission Rate for a country as the ratio of transmissions within the family to the total amount of family firm transmissions (either to a family member or an outsider).

We used the Orbis database provided by Bureau van Dijk in order to obtain the data we needed for our analysis. The Orbis database covers public and private company data from multiple countries and allows users to focus their search on specific criteria. In order to get data that matched closely the characteristics of the family firm used in the standardised case of the Data Questionnaire, we used the following filters for our data extraction: (1) the company must have an operating revenue between USD 50 million and USD 500 million; (2) the number of employees in the company must be between 100 and 1000; and (3) the company must be located in one of the countries covered by our analyses.

The total number of firms in the sample consisted of 92,248 companies. Within this sample, we identified the family-owned companies. It is important to note that, as explained in Section 3.3.1, we classify family firms based on the ownership by the family, and not on the potential control by the family through other means different than ownership. These two variables are different, the former being defined by the family share ownership of the company whereas the latter could be defined by family-management of the company, for example (Casson, 2000).

For each country, we used the current and historical ownership structures of each company

to identify the family-owned ones. We relied on the family names of the shareholders in order to determine if a company was indeed a family-owned business and if it still was. If the stakes of multiple members of the same family added up to at least 20% then this company was identified as a family business. If a single person owned at least 20% of the company, this company was considered family-owned as well.

To compute transmission rates per country, we considered changes in ownership in family firms over the period 2002 – 2014. If at least a 5% stake in total was transferred from one family member to another or to other family members, we considered this change in the ownership structure of the company as a family transmission. For large family firms, we consider that an ownership transfer of 5% is a significant transfer and probably a first move toward a succession. We also relied on family names to identify these family transmissions. This methodology might have impacted our computation of the family transmissions in the case of married female members of the family who no longer use their birth name. If the owner decided to transfer his shares to a woman from the family who had a different family name, this transfer would not be considered as a family transmission. This might seem to be a serious drawback in our methodology however we believe that we did everything in order to get the cleanest possible data. Indeed, when a woman was the buyer, we checked all her available names since in relatively big family companies, women keep their birth name in general or at least keep it as a second name. So we think the proportion of transaction that could be misclassified is not significant.

Since the shareholders of a firm can be industrial or financial companies that are held by families (La Porta, López-de-Silanes and Shleifer, 1999), in Orbis we also looked into these holding companies as far as we could to see whether there was a family behind. In cases where shareholder structure seemed to lack transparency, we excluded them from our sample. In the Netherlands we encountered the problem that most companies were held by a holding company and we could not find the ultimate owners. This is why we excluded the Netherlands from our Orbis results.

Since we defined family firms as companies for which members of one unique family owned at least 20% of the shares, we classified the ownership changes reported in Orbis as sales if the family owned less than 20% of the shares after completion of the transaction.

Finally, for each country in our sample, we computed the Transmission Rate as the ratio of family transmissions over the sum of all the retained ownership changes (family transmissions + sales).

Although we wanted to get transmission rates for all OECD countries, this was not possible by using Orbis alone. Orbis allowed us to obtain sufficient data for Australia, Austria, France, Germany, Italy, Spain and the UK. We verified our results by comparing them to the Transregio (2005) study of succession rates. Transregio (2005) is a survey about company transmissions in Germany, Austria, France, Italy, Lithuania, Poland and Slovenia conducted during the first semester of 2005. The transmission rates presented here have been computed as the percentage of

Figure 11: Transmission Rates – Orbis Data versus Transregio Survey
This figure presents the transmission rates computed using the Orbis database over the period from 2002 to 2014. These rates are compared to those presented in the Transregio Survey for the countries with available data.

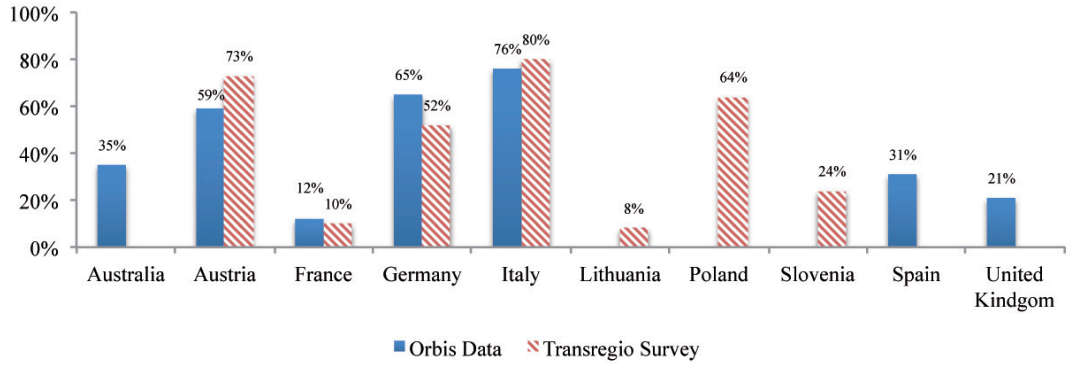
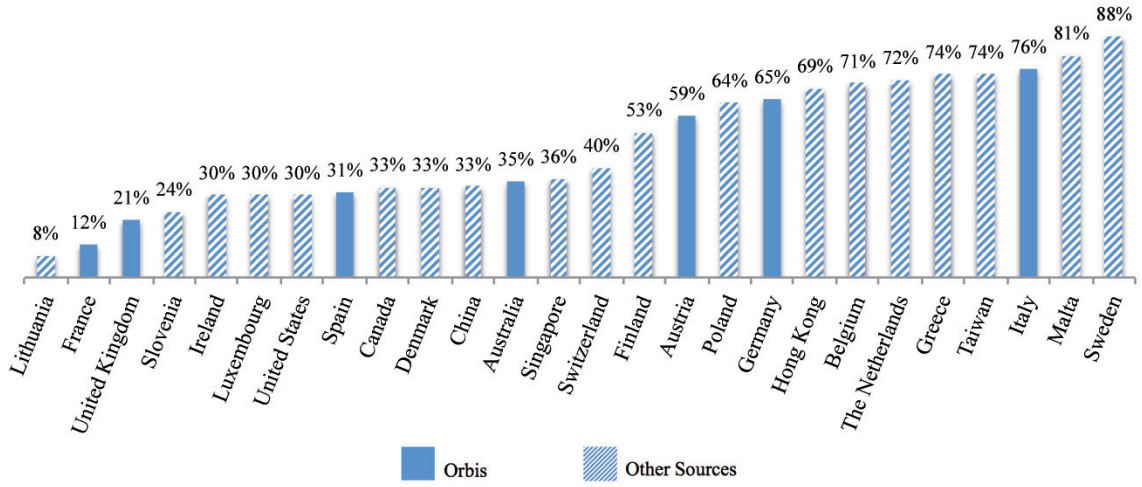


Figure 12: Transmission Rates – Orbis Data and other Sources
This figure presents the transmission rates of family businesses over 25 countries. The data come from diverse sources, notably the rates computed by ourselves using the Orbis database, the Transregio survey (2005), Tsoutsoura (2015) and Mellerio (2009). All the sources are listed in Appendix 1.



company owners who obtained or acquired the shares of their company to their parents or other members of their family. We found that our rates were very similar to Transregio (see Figure 11). We conclude that our Orbis methodology works and should give us good results for Australia, Spain and the UK. Furthermore we are also confident when using the Transregio succession rates for Lithuania, Poland and Slovenia.

In order to further extend our sample size, we decided to look for existing transmission rates from academic articles and surveys. By doing

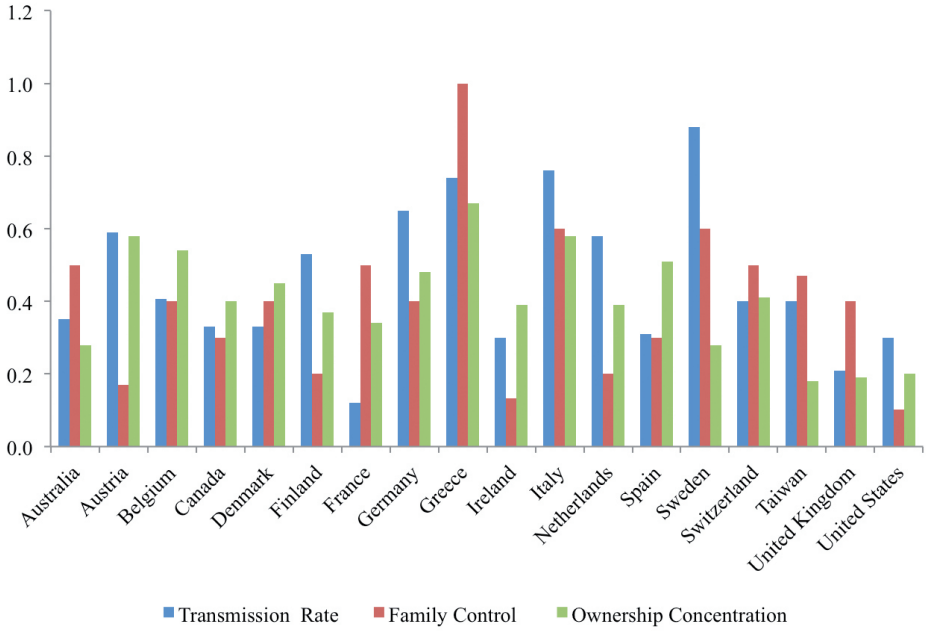
so, we were able to find transmission rates for Belgium, Canada, China, Denmark, Finland, Greece, Hong Kong, Ireland, Luxembourg, Malta, Singapore, Sweden, Switzerland, Taiwan, The Netherlands and the US (see Appendix 1 for rates and sources). This brought our sample from 7 to 26 countries.

Figure 12 shows our sample of succession rates across countries. The average rate is equal to 46.1%. Rates go from 8% in Lithuania to 88% in Sweden and seem to differ significantly across countries with standard deviation of 0.23. As for OECD countries, France (12%) and UK (21%) have the lowest rates whereas in countries with similar GDP per capita like Austria (59%), Germany (65%) and Italy (76%) the majority of family businesses are transferred to a family member.

3.3.3. Proxies for Transmission Rates – Family Control and Ownership Concentration

To measure the robustness of our findings and to expand the analysis to a larger sample, we use other potential outcome variables that seem logical proxies for family transmission rates. The first measure we use is "family control" and comes from La Porta, Lopez-De-Silanes and Shleifer (1999). This variable indicates the proportion of middle-sized publicly-traded companies that are controlled by a family with at least 20% of the votes. It seems reasonable to believe that a higher proportion of family controlled firms in the stock market is correlated to a higher family transmission rate. The second proxy we use is "ownership concentration," which is calculated as the percentage of the shares of the 10 largest privately-held companies trading in the stock market of each country that are owned by its top-three shareholders (La Porta et al., 1998). Again,

Figure 13: Comparison of Transmission Rates, Family Control and Ownership Concentration
This figure presents the transmission rates of family businesses across countries (collected using various sources listed in Appendix 1) as well as two proxies for transmission rates: Family Control and Ownership Concentration. Family Control is the proportion of companies that are controlled by one individual by at least 20%. Ownership Concentration is the average percentage of shares of the ten largest privately-held companies which are owned by their top-three shareholders.



a higher proportion of shares in the hands a few shareholders suggests that large shareholders/ families have been able to keep the control/ ownership of the firm. We expect both variables to be positively correlated to succession rates.

Figure 13 presents a comparison of transmission rates, family control rate and ownership concentration rate.

According to Figure 13 our proxy variables and transmission rates are very similar in some countries (Denmark and Canada) but seem to differ significantly in other countries. For instance, in the US transmission rates are much higher than family control whereas in France transmission rates are much lower than Family Control and Ownership Concentration.

Table 2 presents the correlations of the three outcome variables for the Data Questionnaire (Panel A, the sample of countries for which we received answers to the Data Questionnaire, see Section 3.1) and the expanded sample (Panel B, the sample in which we expanded the number of countries). It suggests that transmission rates move in the same direction with both proxy variables. Furthermore, ownership concentration and family control are significantly positively correlated at the 5 percent significance level in Panel A and at the 1 percent level in Panel B. In Panel A, Transmission Rates are not significantly correlated with the proxy variables at an acceptable level. In Panel B, Transmission Rates and Family Control are significantly correlated at the 10 percent level. One of the reasons for the low significance of the correlations between transmission rates and our proxy variables in Panel A and B could be the relatively small sample size.

Table 2: Correlation of Outcome Variables (Data Questionnaire)
This table shows the correlations of the three outcome variables for the Data Questionnaire (i.e. the sample of countries for which we received answers to the Data Questionnaire) in Panel A and for the Expanded sample in Panel B. The outcome variables are Transmission Rate (defined as the percentage of transfers of shares within a family across all transfers of shares in family firms), Family Control (defined as the proportion of firms in a given country which are owned by one individual by at least 20%) and Ownership Concentration (defined as the average percentage of shares of the 10 largest privately-held companies of a country owned by their top-three shareholders).

Panel A: Data Questionnaire Sample			
	Transmission Rate	Family Control	Ownership Concentration
Transmission Rate	1		
Family Control	0.3527	1	
Ownership Concentration	0.3002	0.5003**	1

Panel B: Expanded Sample			
	Transmission Rate	Family Control	Ownership Concentration
Transmission Rate	1		
Family Control	0.4080*	1	
Ownership Concentration	0.3301	0.5317***	1

*** Significant at 1% level
** Significant at 5% level
* Significant at 10% level

3.4. CONTROL VARIABLES

Since we are specifically interested in the impact of the legal, regulatory and tax environment we need to control for other factors that might have an effect on our outcome variables. The control variables are defined in Appendix 2.

First, the quality of institutions might have an effect on Family business transmission so we control for lagged GDP per capita (GDP per capita in 2013). According to La Porter, López-de-Silanes and Shleifer (1999), countries with high investor protection, usually countries with a high GDP, have lower ownership concentration. As a consequence, we think that GDP per capita might have a negative impact on transmission rates (as well as on the two other proxy variables).

Second, the opportunity cost of inheriting and the access to capital is controlled for by using Common Law, Anti-Director and Anti-Self-Dealing variables which represent the level of protection of minority shareholders. La Porta et al. (1997) showed that Common Law countries have more developed capital markets easing the access to capital. They also show that countries with poorer investor protections have smaller and narrower capital markets. Therefore in Common Law countries and in countries where investor protections exist, we expect Transmission Rate (and our two other proxy variables) to be lower since the ease of access to capital might help owners of family businesses to find investors to buy the company at a fair price.

Third, we control for family structure differences across countries by using the birth rates and divorce-to-marriage ratios. Since the number of children and family conflicts have an impact on the ease of transmitting a family business, we think that these demographic figures might have a significant impact on our outcome variables.

Fourth, differences in cultural and family values are controlled for using variables depicting countries with more Traditional Values, more Masculinity, with a Long-term Orientation and concerned by the well-being of children as well as two trust variables concerning trust within the family and toward strangers. All these cultural and family values might have an impact on the Transmission Rate of Family Businesses. For instance, in countries with more traditional values that emphasize parent-child ties, the desire of owners of family businesses to transmit it to their children should be stronger.

4. RESULTS

4. RESULTS

4.1. CORRELATIONS

In this part, we presents the results obtained by calculating the correlations between our three dependent variables (Transmission Rate, Family Control and Ownership Concentration) and the three sets of exploratory variables of the Data Questionnaire Sample: regulatory and legal restrictions in Table 3, Taxes and rebates in Table 4 and 5, and the other obstacles identified in Table 6. However, it is important to keep in mind that the data provided by Deloitte was based on the specific scenario presented and without the benefit of applying any special reliefs or regimes. In this part, we concentrate our attention on the Data Questionnaire Sample of 35 countries.[6]

Table 3 shows no significant relationship between our outcome variables and the regulatory and legal restriction variables.[7] This gives a first indication that the regulatory environment might not explain the differences in transmission rates across countries.

Table 4 suggests that transmission rates and the two proxies for family transmission correlate highly with tax rates and differences in tax rates. The Marginal Tax Rate of Inheritance correlates

Table 3 - Correlation of Outcome, Legal and Regulatory Variables
This table presents the correlation between the three outcome variables (Transmission Rate, Family Control and Ownership Concentration) and the legal and regulatory variables. All variables are defined in Appendix 2.

	Transmission Rate	Forced Heirship	Reg. Restrictions (RR)	Legal Constraints (LC)	Index RR and LC
Transmission Rate	1				
Forced Heirship	0.3636*	1			
Reg. Restrictions (RR)	0.3238	0.8052***	1		
Legal Constraints (LC)	0.0624	0.4938***	0.5892***	1	
Index RR and LC	0.2382	0.7604***	0.9183***	0.8609***	1
	Family Control	Forced Heirship	Reg. Restrictions (RR)	Legal Constraints (LC)	Index RR and LC
Family Control	1				
Forced Heirship	0.3011	1			
Reg. Restrictions (RR)	0.0487	0.8052***	1		
Legal Constraints (LC)	-0.1034	0.4938***	0.5892***	1	
Index RR and LC	-0.0231	0.7604***	0.9183***	0.8609***	1
	Own. Concentration	Forced Heirship	Reg. Restrictions (RR)	Legal Constraints (LC)	Index RR and LC
Own. Concentration	1				
Forced Heirship	0.1867	1			
Reg. Restrictions (RR)	0.0696	0.8052***	1		
Legal Constraints (LC)	0.3188	0.4938***	0.5892***	1	
Index RR and LC	0.2305	0.7604***	0.9183***	0.8609***	1

***Significant at 1% level
**Significant at 5% level
*Significant at 10% level

6 - The number of countries might vary across tables since no question in the survey was mandatory implying missing data for some variables.
7 - Except a positive correlation between Transmission Rate and the existence of Forced Heirship significant at the 10% level.

negatively with Transmission Rates at the 5% significance level and with Family Control and Ownership Concentration at the 10 and 5% level respectively as expected. The Marginal Capital Gain Tax of Selling to a Third Party is positively correlated with the succession rates though not significant. The difference between Capital Gain Tax and Inheritance Tax (the Tax Premium on Transmission) is positively and significantly correlated with Transmission Rates at the 5% level which is in line with our hypothesis. This correlation is also significant for our proxy variables. The Wealth Transfer Tax correlates significantly and negatively with the two proxy variables for transmission while the difference between Capital Gain Tax and Wealth Transfer Tax (the Tax Premium on Wealth Transfer) correlates significantly and positively with these variables as expected.

Table 4 - Correlation of Outcome Variables and Tax Rates

This table presents the correlation between the three outcome variables (Transmission Rate, Family Control and Ownership Concentration) and tax variables. All variables are defined in Appendix 2.

	Transmission Rate	Inheritance Tax	Capital Gain Tax	Wealth Transfer Tax	Capital Gain - Inheritance	Capital Gain - Wealth	Wealth Tax Prohibitive
Transmission Rate	1						
Inheritance Tax	-0.4536**	1					
Capital Gain Tax	0.0093	0.3139*	1				
Wealth Transfer Tax	-0.3421	0.8484***	0.2278	1			
Capital Gain - Inheritance	0.4893**	-0.7143***	0.4403**	-0.6148***	1		
Capital Gain - Wealth	0.3430	-0.5525***	0.4478***	-0.7686***	0.8703***	1	
Wealth Tax Prohibitive	-0.2006	0.4744***	0.1102	0.5029***	-0.3605**	-0.3818**	1
	Family Control	**Inheritance Tax**	**Capital Gain Tax**	**Wealth Transfer Tax**	**Capital Gain - Inheritance**	**Capital Gain - Wealth**	**Wealth Tax Prohibitive**
Family Control	1						
Inheritance Tax	-0.4174*	1					
Capital Gain Tax	0.0360	0.3139*	1				
Wealth Transfer Tax	-0.4563**	0.8484***	0.2278	1			
Capital Gain - Inheritance	0.4123*	-0.7143***	0.4403**	-0.6148***	1		
Capital Gain - Wealth	0.4254**	-0.5525***	0.4478***	-0.7686***	0.8703***	1	
Wealth Tax Prohibitive	-0.3780*	0.4744***	0.1102	0.5029***	-0.3605**	-0.3818**	1
	Own. Concentration	**Inheritance Tax**	**Capital Gain Tax**	**Wealth Transfer Tax**	**Capital Gain - Inheritance**	**Capital Gain - Wealth**	**Wealth Tax Prohibitive**
Own. Concentration	1						
Inheritance Tax	-0.4369**	1					
Capital Gain Tax	0.0782	0.3139*	1				
Wealth Transfer Tax	-0.6049***	0.8484***	0.2278	1			
Capital Gain - Inheritance	0,4675**	-0.7143***	0.4403**	-0.6148***	1		
Capital Gain - Wealth	0.5965***	-0.5525***	0.4478***	-0.7686***	0.8703***	1	
Wealth Tax Prohibitive	-0.4911**	0.4744***	0.1102	0.5029***	-0.3605**	-0.3818**	1

***Significant at 1% level
**Significant at 5% level
*Significant at 10% level

Correlations between succession variables and tax environment variables are presented in table 5. The existence of capital gain rebates and the possibility to pay capital gains tax over several years reduce the opportunity cost of selling the business and then should lower the attractiveness of inheritance or gifts. As expected these correlations are negative and the correlation between the variables Transmission Rate and Capital Gain Rebates is significant at the 1% level. When looking at the correlation between Transmission Rate and the variable Index Tax Environment (illustrating how unfavourable the tax environment is to inheritance), the coefficient is negative and significant at the 1% level. The less favourable is the tax environment the lower is the transmission rate. Index Tax Environment correlates also negatively but significantly at the 10% level only with the two proxies for family business transmission.

In Table 6 we can observe that the other obstacles lack of interest, lack of planning and lack of training are not significantly correlated with our outcome variables. This may be due to the nature of the data collected and/or by the small size of the studied sample.

Table 5 - Correlation of Outcome and Tax Environment Variables
This table presents the correlation between the three outcome variables (Transmission Rate, Family Control and Ownership Concentration) and tax environment variables. All variables are defined in Appendix 2.

	Transmission Rate	Capital Gain Rebates	Capital Gain Several Years	Index Rebates Several Years	Index Tax Environment
Transmission Rate	1				
Capital Gain Rebates	-0.5901***	1			
Capital Gain Several Years	-0.3298	0.0620	1		
Index Rebates Several Years	-0.5995***	0.7393***	0.7180***	1	
Index Tax Environment	-0.6484***	0.6326***	0.6528***	0.8547***	1
	Family Control	Capital Gain Rebates	Capital Gain Several Years	Index Rebates Several Years	Index Tax Environment
Family Control	1				
Capital Gain Rebates	-0.1341	1			
Capital Gain Several Years	-0.4056*	0.0620	1		
Index Rebates Several Years	-0.3546	0.7393***	0.7180***	1	
Index Tax Environment	-0.3947*	0.6326***	0.6528***	0.8547***	1
	Own. Concentration	Capital Gain Rebates	Capital Gain Several Years	Index Rebates Several Years	Index Tax Environment
Own. Concentration	1				
Capital Gain Rebates	-0.2199	1			
Capital Gain Several Years	-0.0951	0.0620	1		
Index Rebates Several Years	-0.2231	0.7393***	0.7180***	1	
Index Tax Environment	-0.3890*	0.6326***	0.6528***	0.8547***	1

***Significant at 1% level
**Significant at 5% level
*Significant at 10% level

Table 6 - Correlation of Outcome and Other Obstacle Variables
This table presents the correlation between the three outcome variables (Transmission Rate, Family Control and Ownership Concentration) and other obstacle variables. All variables are defined in Appendix 2.

	Transmission Rate	Lack of Interest	Lack of Planning	Lack of Training	Index Other Obstacles
Transmission Rate	1				
Lack of Interest	0.2056	1			
Lack of Planning	0.0781	0.0469	1		
Lack of Training	-0.2329	0.3538**	0.3120*	1	
Index Other Obstacles	0.0200	0.6388***	0.6831***	0.7792***	1
	Family Control	Lack of Interest	Lack of Planning	Lack of Training	Index Other Obstacles
Family Control	1				
Lack of Interest	0.0957	1			
Lack of Planning	0.0517	0.0469	1		
Lack of Training	-0.2660	0.3538**	0.3120*	1	
Index Other Obstacles	-0.0632	0.6388***	0.6831***	0.7792***	1
	Own. Concentration	Lack of Interest	Lack of Planning	Lack of Training	Index Other Obstacles
Own. Concentration	1				
Lack of Interest	0.3544*	1			
Lack of Planning	-0.0568	0.0469	1		
Lack of Training	-0.0498	0.3538**	0.3120*	1	
Index Other Obstacles	0.1017	0.6388***	0.6831***	0.7792***	1

***Significant at 1% level
**Significant at 5% level
*Significant at 10% level

4.2. MULTIVARIATE ANALYSIS – DATA QUESTIONNAIRE SAMPLE

In a first step, we carry out our analyses on the sample of countries for which we received answers to our survey from Deloitte experts. We run OLS regressions controlling for GDP to determine the significance of the potential impact of our explanatory variables on transmission of family businesses. Results of the regression of our primary outcome variable Transmission Rate on the different explanatory variables presented in Section 3.1 are shown in Table 7.

They suggest that transmission rates are not significantly affected by the legal and regulatory environment. Looking at tax rates, we find that marginal tax rates of inheritance have a significant negative impact on family business transmission rates at the 5% level as expected. The higher is the marginal tax rate of inheritance, the less family firms owners are inclined to transmit their company by way of inheritance or gift. Capital gains and wealth tax rates have the expected sign but do not show any significant impact. Looking at the Tax Premium on Transmission, we find a significant positive relationship between Transmission Rates and the variable Capital Gain – Inheritance at the 5% level. In the same way, the variable Capital Gain – Wealth (the Tax Premium on Wealth Transfer) has a positive, though not significant, impact on transmission rate of family businesses. The intuition behind this

is that the higher the capital gains tax relative to the succession tax, the more expensive it is for the owner to sell the company to a third party as opposed to keeping it within the family, hence the higher the transmission rate.

Countries in which the tax environment concerning a family wealth transmission is considered to some extent prohibitive show lower though not significant transmission rates. When we look at other variables depicting the tax environment of the country, we find that the coefficients of the regressions are negative and significant as expected, indicating that when a country has a tax environment favourable to the sale of companies, the Transmission Rate of Family Businesses is negatively impacted.

The variables depicting other obstacles to family transmission (lack of interest of the successors, lack of planning by the incumbent and lack of training and experience of the successors) do not show any significant explanatory power.

The models that do the best in explaining the variation are those involving the Inheritance Tax Rate (Inheritance Tax, Capital Gain – Inheritance and Index Tax Environment) and the one involving the variable Capital Gain Rebates (Capital Gain Rebates, Index Rebates Several Years and Index Tax Environment). The R-squared for these regressions vary from 0.21 to 0.44 and the coefficients of the variables of interest are highly significant. As expected, the higher the Tax Premium on Transmission, the higher the Transmission Rate, and the more unfavourable the Tax Environment, the lower the Transmission Rate.

Since the Index Tax Environment is computed using the Tax Premium on Transmission, among others, and since the following tables will show that the effect of the Tax Environment variables is less marked on the other two dependent variables, we think that the Tax Premium on Transmission is the main factor impacting the transmission rate of family businesses.

In terms of marginal effect of the Tax Premium on Transmission on the Transmission Rate, when the Tax Premium on Transmission increases by one standard deviation[8], the Transmission rate would increase by 10.8 percentage points. With the mean Transmission Rate across the countries of our sample being 48.52%, this means that, evaluated at the mean, the Transmission Rate would increase by almost 25%.

Tables 8 and 9 present the same regressions as in Table 7 but taking as dependent variable the two proxies we computed for Transmission Rate: Family Control (Table 8) and Ownership Concentration (Table 9).

As for transmission rates, Table 8 suggests that legal and regulatory environment as well as other obstacles have no impact on family control. The marginal tax rates of both inheritance and family wealth transfer significantly lower Family Control at the 5% level. The opportunity to pay capital gain tax over several years also significantly lowers Family Control at the 5% level as expected.

The model taking into account the Tax Premium on Transmission again is of one of the models with the highest R-squared (R-squared is 0.50 in this regression) and the variable as a positive and significant impact on Family Control at the

8 - The standard deviation of the Tax Premium on Transmission is 0.1600 (not reported in the tables).

Table 7: Regressions – Data Questionnaire Transmission Rates Controlled for GDP per Capita

This Table presents the results of the regressions of Transmission Rate over the explanatory variables collected via the Data Questionnaire controlling for GDP per Capita. Variables definition can be found in Appendix 2. Standard errors are presented in brackets below the regression coefficients. a indicates significance at a 1% level, b indicates significance at a 5% level and c indicates significance at a 10% level.

VARIABLES	Transmission rate																	
Panel A. Regulatory and Legal Environment																		
Forced Heirship	0.1615																	
	[0.096]																	
Reg. Restrictions (RR)		0.0998																
		[0.067]																
Legal Constraints (LC)			0.0190															
			[0.089]															
Index RR and LC				0.0455														
				[0.043]														
Panel B. Tax Rates																		
Inheritance Tax					-0.5883b													
					[0.258]													
Capital Gain Tax						0.0266												
						[0.380]												
Wealth Transfer Tax							-0.4459											
							[0.282]											
Capital Gain - Inheritance								0.6752b										
								[0.267]										
Capital Gain - Wealth									0.4345									
									[0.273]									
Panel C. Tax Environment																		
Wealth Tax Prohibitive										-0.0426								
										[0.048]								
Capital Gain Rebates											-0.2717a							
											[0.082]							
Capital Gain Several Years												-0.2089c						
												[0.107]						
Index Rebates Several Years													-0.1968a					
													[0.053]					
Index Tax Environment														-0.1433a				
														[0.036]				
Panel D. Other Obstacles																		
Lack of Interest															0.1797			
															[0.213]			
Lack of Planning																0.0279		
																[0.241]		
Lack of Training																	-0.2023	
																	[0.197]	
Index Other Obstacles																		-0.0196
																		[0.303]
Control																		
Log GDP pc 2013	0.0003	0.0173	-0.0896	0.0042	-0.0377	-0.0966	-0.0062	-0.0469	-0.0200	-0.0325	-0.0552	-0.2162	-0.1798	-0.1214	-0.0439	-0.0829	-0.0628	-0.0997
	[0.186]	[0.189]	[0.191]	[0.195]	[0.171]	[0.189]	[0.187]	[0.166]	[0.184]	[0.190]	[0.153]	[0.184]	[0.148]	[0.142]	[0.195]	[0.219]	[0.187]	[0.198]
Constant	0.4004	0.3227	0.8925	0.4110	0.7443	0.9242	0.5895	0.6392	0.5478	0.7075	0.8303	1.5341c	1.4288c	1.1884c	0.5641	0.8472	0.9053	0.9584
	[0.872]	[0.888]	[0.885]	[0.913]	[0.783]	[0.871]	[0.850]	[0.771]	[0.856]	[0.876]	[0.705]	[0.859]	[0.691]	[0.658]	[0.958]	[1.112]	[0.849]	[0.995]
Observations	23	22	24	22	24	24	24	24	24	23	24	24	24	24	24	24	24	24
R-squared	0.13	0.11	0.01	0.06	0.21	0.01	0.12	0.24	0.12	0.04	0.35	0.16	0.40	0.44	0.04	0.01	0.06	0.01

Table 8: Regressions – Data Questionnaire Family Control Controlled for GDP per Capita

This Table presents the results of the regressions of the variable Family Control over the explanatory variables collected via the Data Questionnaire controlling for GDP per Capita. Variables definition can be found in Appendix 2. Standard errors are presented in brackets below the regression coefficients. a indicates significance at a 1% level, b indicates significance at a 5% level and c indicates significance at a 10% level.

VARIABLES	Family Control																	
Panel A. Regulatory and Legal Environment																		
Forced Heirship	0.1042																	
	[0.088]																	
Reg. Restrictions (RR)		0.0167																
		[0.072]																
Legal Constraints (LC)			-0.0759															
			[0.085]															
Index RR and LC				-0.0116														
				[0.041]														
Panel B. Tax Rates																		
Inheritance Tax					-0.5769b													
					[0.206]													
Capital Gain Tax						-0.1757												
						[0.394]												
Wealth Transfer Tax							-0.5048b											
							[0.220]											
Capital Gain - Inheritance								0.4535c										
								[0.218]										
Capital Gain - Wealth									0.3564									
									[0.210]									
Panel C. Tax Environment																		
Wealth Tax Prohibitive										-0.0622c								
										[0.036]								
Capital Gain Rebates											-0.0087							
											[0.098]							
Capital Gain Several Years												-0.2173b						
												[0.094]						
Index Rebates Several Years													-0.0957					
													[0.065]					
Index Tax Environment														-0.0694				
														[0.043]				
Panel D. Other Obstacles																		
Lack of Interest															-0.0913			
															[0.224]			
Lack of Planning																-0.2741		
																[0.208]		
Lack of Training																	-0.2749	
																	[0.179]	
Index Other Obstacles																		-0.4346
																		[0.275]
Control																		
Log GDP pc 2013	-0.6338a	-0.5269b	-0.7240a	-0.5313b	-0.7296a	-0.7242a	-0.6385a	-0.6724a	-0.6156b	-0.5199b	-0.6993a	-0.6844a	-0.6491a	-0.6514a	-0.7314a	-0.8475a	-0.7059a	-0.8252a
	[0.219]	[0.214]	[0.223]	[0.214]	[0.180]	[0.230]	[0.203]	[0.194]	[0.217]	[0.202]	[0.231]	[0.200]	[0.218]	[0.205]	[0.236]	[0.243]	[0.214]	[0.226]
Constant	3.3077a	2.8336b	3.7809a	2.8730b	3.9114a	3.8083a	3.4821a	3.5066a	3.2510a	2.9321a	3.6509a	3.6285a	3.4684a	3.5088a	3.8566a	4.5351a	3.8567a	4.5257a
	[1.019]	[0.992]	[1.033]	[0.996]	[0.832]	[1.088]	[0.930]	[0.900]	[1.006]	[0.933]	[1.063]	[0.925]	[1.002]	[0.943]	[1.141]	[1.200]	[0.995]	[1.125]
Observations	21	20	22	20	21	22	22	21	22	21	22	22	22	21	22	22	22	22
R-squared	0.38	0.26	0.36	0.27	0.57	0.34	0.48	0.50	0.42	0.37	0.34	0.48	0.40	0.46	0.34	0.39	0.41	0.41

Table 9: Regressions – Data Questionnaire Ownership Concentration Controlled for GDP per Capita

This Table presents the results of the regressions of the variable Ownership Concentration over the explanatory variables collected via the Data Questionnaire controlling for GDP per Capita. Variables definition can be found in Appendix 2. Standard errors are presented in brackets below the regression coefficients. a indicates significance at a 1% level, b indicates significance at a 5% level and c indicates significance at a 10% level.

VARIABLES	Ownership Concentration																	
Panel A. Regulatory and Legal Environment																		
Forced Heirship	0.0611																	
	[0.056]																	
Reg. Restrictions (RR)		0.0198																
		[0.045]																
Legal Constraints (LC)			0.1023c															
			[0.055]															
Index RR and LC				0.0350														
				[0.028]														
Panel B. Tax Rates																		
Inheritance Tax					-0.3318b													
					[0.156]													
Capital Gain Tax						0.1133												
						[0.249]												
Wealth Transfer Tax							-0.4652a											
							[0.141]											
Capital Gain - Inheritance								0.3540b										
								[0.149]										
Capital Gain - Wealth									0.4164a									
									[0.126]									
Panel C. Tax Environment																		
Wealth Tax Prohibitive										-0.0580b								
										[0.025]								
Capital Gain Rebates											-0.0726							
											[0.060]							
Capital Gain Several Years												-0.0289						
												[0.068]						
Index Rebates Several Years													-0.0511					
													[0.044]					
Index Tax Environment														-0.0584c				
														[0.030]				
Panel D. Other Obstacles																		
Lack of Interest															0.2213			
															[0.133]			
Lack of Planning																-0.0276		
																[0.119]		
Lack of Training																	-0.0092	
																	[0.130]	
Index Other Obstacles																		0.0949
																		[0.181]
Control																		
Log GDP pc 2013	-0.1129	-0.0961	-0.1267c	-0.1018	-0.0875	-0.1179	-0.0533	-0.0906	-0.0651	-0.0598	-0.1201	-0.1153	-0.1170	-0.1002	-0.0974	-0.1158	-0.1158	-0.1167
	[0.075]	[0.073]	[0.072]	[0.071]	[0.069]	[0.077]	[0.066]	[0.067]	[0.066]	[0.069]	[0.075]	[0.077]	[0.075]	[0.069]	[0.074]	[0.077]	[0.078]	[0.077]
Constant	0.9025b	0.8340b	0.9650a	0.8419b	0.8760a	0.9196b	0.7519b	0.8082b	0.6950b	0.7958b	0.9794a	0.9418b	0.9703a	0.9323a	0.7055c	0.9575b	0.9434b	0.8772b
	[0.337]	[0.332]	[0.327]	[0.321]	[0.309]	[0.351]	[0.294]	[0.305]	[0.298]	[0.304]	[0.341]	[0.349]	[0.341]	[0.312]	[0.360]	[0.357]	[0.352]	[0.368]
Observations	25	24	26	24	25	26	26	25	26	25	26	26	26	25	26	26	26	26
R-squared	0.13	0.08	0.21	0.14	0.25	0.10	0.38	0.28	0.38	0.27	0.14	0.10	0.14	0.23	0.19	0.09	0.09	0.10

10% level; reinforcing our conclusions of Table 7. The model with the highest R-squared is the one considering the variable Inheritance Tax.

In addition, GDP per Capita is highly significant in almost all regressions at the 1% level negatively influencing Family Control. This is in line with the theory that in countries with a more sophisticated institutional set up, higher income and good financial markets family business owners are more willing to sell their companies and reduce control. Hence, results do not defer greatly to the regressions presented in Table 7.

Similar to Transmission Rates and Family Control, Ownership Concentration is not affected by legal and regulatory environment as well as other obstacles. The Marginal Tax Rate of Wealth Transfer and the Tax Premium on Wealth Transfer (variable Capital Gain – Wealth) seem to be the best explanatory variables with an R-squared of 0.38 for each regression but the Tax Premium on Transmission keeps a high level of significance and one of the highest R-squared (0.28). Similar to the regression with Family Control, GDP per Capita has a negative effect on Ownership Concentration though not significant in almost all regressions.

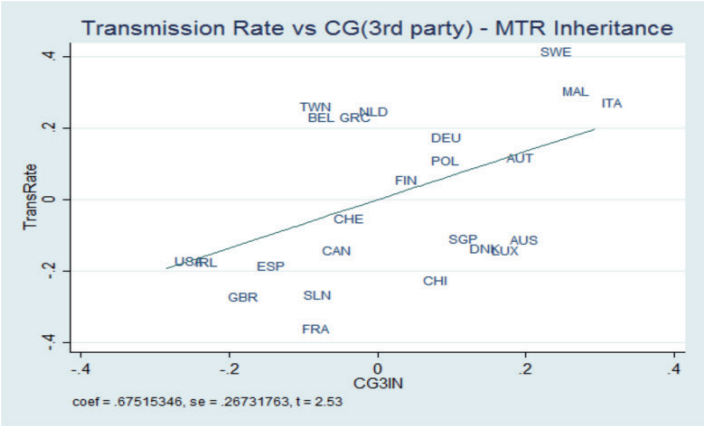
In conclusion from the Data Questionnaire, we find that taxes unfavourable to family transmissions or more favourable to sale of family businesses are significant in explaining the variation in transmission rates and in our proxy variables and particularly the Tax Premium on Transmission (which has a significant impact on each explanatory variable). It indicates that governments which want to keep or increase the number of family businesses in the country should study carefully the tax rates of inheritance and of wealth transfer within members of a same family to make sure they are not prohibitive.

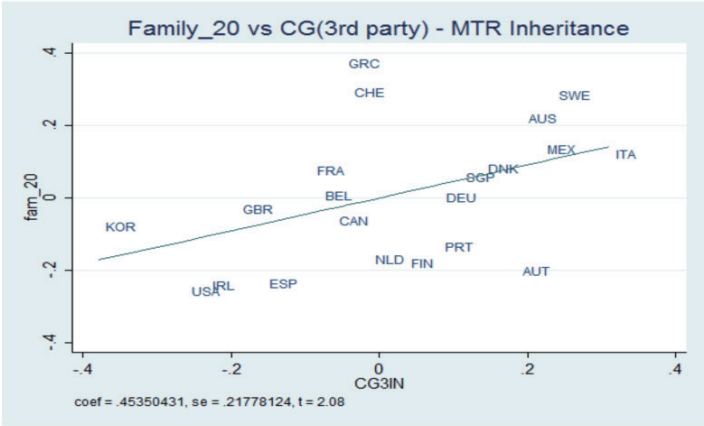
Figures 14 to 16 present the AV Plots of the regressions of our three outcome variables over the variable that seems to have the most significant impact: the Tax Premium on Transmission.

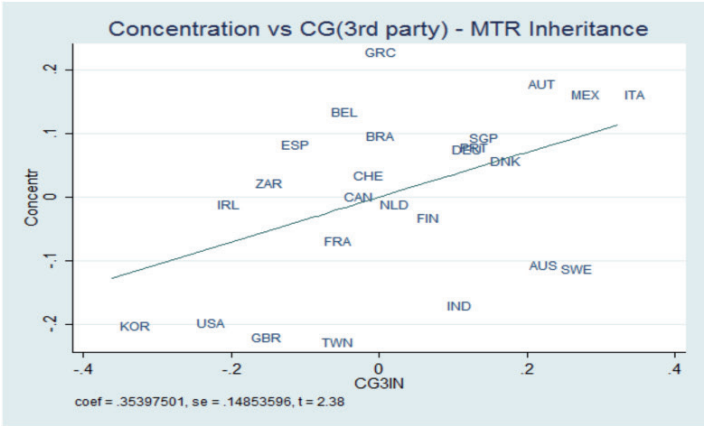
Appendixes 3 to 6 present the AV Plots of the regressions of our three outcome variables over the variables of Forced Heirship and Index RR and LC which do not show any significant impact on one hand and over the variables Wealth Tax Prohibitive and Index Tax Environment which showed a significant negative impact on the other hand to illustrate the repartition of countries around the plot.

In the following part of the paper, we will analyse an expanded sample keeping only the Tax Premium on Transmission among the variables used in Section 4. This variable seem to us the best variable in explaining the variations in transmission rates across countries and the one that has the most stable effect across regressions since its coefficient is significant in the regressions of Table 7, 8 and 9 and the R-squared of the regressions was one of the highest in all three tables. Other variables with a high explanatory power were Index Tax Environment in Table 7, Inheritance Tax in Table 8 and Wealth Transfer Tax and Capital Gain – Wealth (the Tax Premium on Wealth Transfer) in Table 9 however these variables were less significant or had less explanatory power in the other tables than the Tax Premium on Transmission.

Figures 14, 15 and 16: Partial Regression Plots
Outcome Variables vs. Capital Gain minus Inheritance Tax
These figures show the partial regression plots of the regression of each of the three outcome variables, Transmission Rate (here transrate), Family Control (here fam_20) and Ownership Concentration (here concentr), over the variable Capital Gain – Inheritance (here cg3in) for the countries in the Data Questionnaire sample. The regressions are shown in Tables 7 to 9.







5. EXPANDED SAMPLE AND OTHER DETERMINANTS OF TRANSMISSION RATES

5. EXPANDED SAMPLE AND OTHER DETERMINANTS OF TRANSMISSION RATES

To analyse the extent of our tax results on a larger sample of countries and to test for alternative theories explaining differences in transmission rates, we expanded the sample of countries by collecting additional tax rates for other countries that were not part of the Data Questionnaire but for which we had collected transmission rates or any of the other two proxies. The new data tax rates were obtained from tax publication sources and other consulting firms that publish such data.[9]

As a result of this exercise, we were able to increase the sample size for the regressions concerning the Tax Premium on Transmission in previous tables, and to test for alternative theories with data from more countries. Analysing the impact on transmission rates of measures that proxy for alternative theories has two objectives. First, we want to test if these additional control variables, described in Section 3.4, actually have a significant impact on transmission rates and the other two proxies. And second, to test whether the relationship between the Tax Premium on Transmission and transmission rates is robust to the inclusion of these alternative determinants keeping its sign and significance when adding these controls.[10]

5.1. DIFFERENCE IN TAX RATES IN THE EXPANDED SAMPLE

In Table 10 we present the regression results of the Tax Premium on Transmission controlling for Gross Domestic Product in the Expanded Sample. The table shows that the Tax Premium on Transmission still significantly impacts the three outcome variables (i.e. Transmission Rate, Family Control and Ownership Concentration). As before, the higher the difference in tax rates is, the relatively more onerous it will be for the owner of a family firm to sell it to a third party as opposed to keeping it within the family and, consequently, the higher the transmission rate will be. To get an idea of the economic magnitude of the effect, if we look at the marginal effect of increasing the Tax Premium on Transmission by one standard deviation in the regression with Transmission Rate as dependent variable,[11] the Transmission Rate would increase by 10.3 percentage points. This means that, evaluated at the mean,[12] family transmission rates would increase by more than 20%.

Figures 17 to 19 present the partial regression plots (AV Plots of our three outcome variables: Transmission Rate, Family Control and Ownership Concentration) and the Tax Premium on Transmission controlling for GDP per capita.

5.2. ACCESS TO CAPITAL

The first set of control variables we analyse pertains to access to capital. If the access to outside capital is difficult, family business owners will find it more difficult to sell their firm to third parties for a good price. Therefore, they will rather transfer their shares to relatives. As a consequence, difficulty in access to capital may

9 - A potential concern may be that the data collected from these sources do not pertain to the specific standardise case that we used in the Data Questionnaire. For this reason, we restricted our data collection to the simple tax rates that apply to capital gains and inheritance and did not collect any other variable. We also verified that these rates were the same for the sample of countries that did participate in the Data Questionnaire.
10 - The correlations of the control variables are presented in Appendix 7.
11 - The standard deviation of the Tax Premium on Transmission is 0.1551 in the sample of countries used for the regressions taking the Transmission Rate as dependent variable (not reported in the tables).
12 - The mean of Transmission Rate in the sample of countries of Table 10 is 47.75%.

Table 10: Difference in Tax rates controlling for GDP per capita (Expanded Sample)

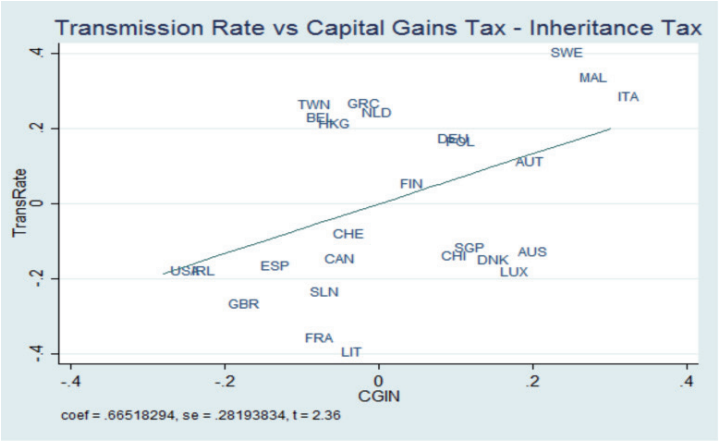
This table presents the results of the regressions of the three outcome variables (Transmission Rate, Family Control and Ownership Concentration) on the logarithm of the GDP of the country in 2013 and the difference in marginal tax rates between selling a family business to a third party and keeping it within the family. For each outcome variable, the first regression only includes the logarithm of the GDP of the country in 2013 and the second regression includes the two explanatory variables. Below each coefficient, standard errors are presented in brackets. a indicates significance at a 1% level, b indicates significance at a 5% level and c indicates significance at a 10% level.

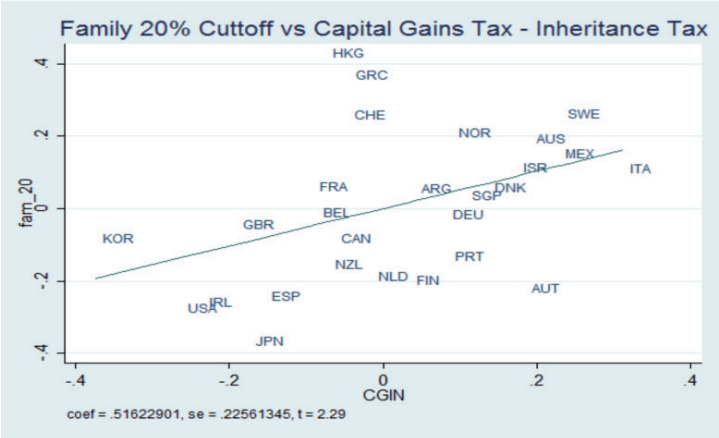
VARIABLES	Transmission Rate		Family Control		Ownership Concentration	
Capital Gain - Inheritance		0.6652b		0.5162b		0.3371a
		[0.282]		[0.226]		[0.124]
Log GDP pc 2013	0.0085	0.0442	-0.6645a	-0.6220a	-0.1089a	-0.1029a
	[0.183]	[0.168]	[0.192]	[0.179]	[0.033]	[0.031]
Constant	0.4387	0.2168	3.5165a	3.2832a	0.9317a	0.8846a
	[0.840]	[0.776]	[0.888]	[0.827]	[0.141]	[0.134]
Observations	26	26	27	27	49	49
R-squared	0.00	0.19	0.32	0.44	0.19	0.30

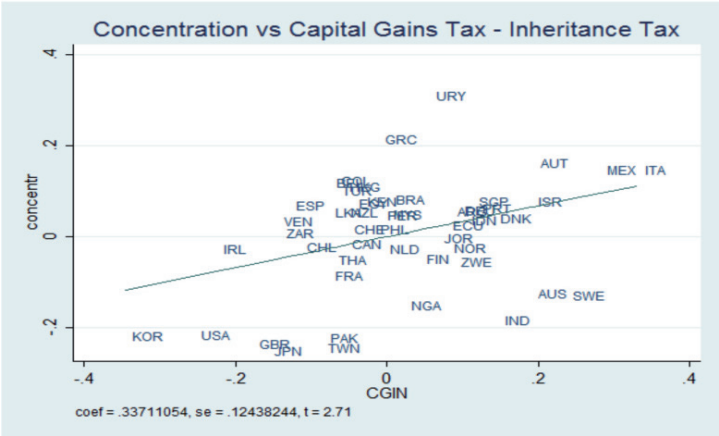
Figures 17, 18 and 19: Partial Regression Plots

Outcome Variables vs. Capital Gain minus Inheritance Tax

These figures show the partial regression plots of the regression of each of the three outcome variables, Transmission Rate (here transrate), Family Control (here fam_20) and Ownership Concentration (here concentr), over the variable Capital Gain – Inheritance (here cg3in) for the countries in the Expanded sample. The regressions are shown in Table 10.







lead to an increase in Transmission Rate, Family Control and Ownership Concentration. In order to control for this, we analysed the impact of legal origin, Anti-Self-Dealing and Anti-Director on our outcome variables (the descriptions of the variables Common Law, Anti Self-Dealing and Anti Director are given in Appendix 2). Since these variables depict countries in which the access to capital is easier, we expect them to have a negative impact on our three outcome variables. Table 11 presents the results of these regressions.

We can notice that both the Common Law, Anti-Self-Dealing and Anti-Director variables have a negative impact on our main dependent variable Transmission Rate controlling for GDP when taken alone in the regression (significant for Anti-Director only).

When adding the Tax Premium on Transmission to the regressions, our main explanatory variable keeps its significance at the 5% level in most of them and becomes insignificant in only two regressions (Transmission Rate controlling for Anti-Director and GDP; and Transmission Rate controlling for Anti Self-Dealing and GDP). No access to capital variable has a significant impact on Transmission Rate. The sign of their coefficient is almost always negative though in line with our hypothesis that when access to capital is easier, it might be easier for owners of family businesses to sell their company to a third party for a fair price lowering their incentive to transmit the company to their heirs. The variable Anti-Director has a negative and significant impact on the variable Ownership Concentration at the 1% level suggesting the same explanation. But the Tax Premium on Transmission still seems to be the main factor impacting our outcome variables suggesting it is really the main obstacle to family transmission of family businesses.

5.3. DEMOGRAPHICS

As the number of children within a family and family conflicts may have an impact on family business transmission we decided to use both Country Birth Rates 1980 and Divorce-to-Marriage ratios as control variables. This last one is the ratio of the number of divorces and the number of marriages in a given country and a given year. Although the crude marriage rate and the crude divorce rate are not very comparable as they use two different populations: those who can marry (even young children) and those who can divorce (does not take into account the young children). We did not want to use this variable as a proof of how stable relationships were in a given country. We used this variable to show the progression/

Table 11: Log of GDP per capita and access to capital control variables without difference in tax rates and with difference in tax rates
This table presents the results of the regressions of the three outcome variables over the difference between capital gain taxes and inheritance taxes and access to capital control variables controlling for GDP per Capita. Variables definition can be found in Appendix 2. Standard errors are presented in brackets below the regression coefficients. a indicates significance at a 1% level, b indicates significance at a 5% level and c indicates significance at a 10% level.

VARIABLES	Transmission Rate		Family Control		Own. Concentration		Transmission Rate		Family Control		Own. Concentration		Transmission Rate		Family Control		Own. Concentration	
Capital Gain - Inheritance		0.4564		0.5170b		0.2377c		0.4622		0.5436b		0.3029b		0.5643c		0.5339b		0.3041b
		[0.311]		[0.248]		[0.122]		[0.321]		[0.238]		[0.127]		[0.307]		[0.235]		[0.123]
Controls																		
Anti Director	-0.0785b	-0.0561	-0.0231	0.0003	-0.0425a	-0.0350a												
	[0.030]	[0.033]	[0.030]	[0.031]	[0.013]	[0.013]												
Anti Self-Dealing							-0.2630	-0.1819	-0.0257	0.0727	-0.1271c	-0.0900						
							[0.187]	[0.191]	[0.173]	[0.165]	[0.074]	[0.072]						
Common Law													-0.1697	-0.0935	-0.0100	0.0305	-0.0751b	-0.0614c
													[0.105]	[0.109]	[0.090]	[0.085]	[0.037]	[0.036]
Log GDP pc 2013	-0.3534	-0.4432	-0.6367a	-0.6223a	-0.1086a	-0.1044a	0.0133	0.0304	-0.6582a	-0.6377a	-0.0985a	-0.0961a	0.0856	0.0813	-0.6597a	-0.6353a	-0.1234a	-0.1154a
	[0.353]	[0.347]	[0.197]	[0.185]	[0.030]	[0.029]	[0.181]	[0.177]	[0.201]	[0.185]	[0.033]	[0.032]	[0.183]	[0.174]	[0.201]	[0.186]	[0.033]	[0.031]
Constant	2.3879	2.7121	3.4581a	3.2835a	1.0577a	1.0023a	0.5455	0.3887	3.5007a	3.3154a	0.9501a	0.9024a	0.1300	0.0803	3.4977a	3.3329a	1.0206a	0.9619a
	[1.648]	[1.610]	[0.899]	[0.846]	[0.133]	[0.132]	[0.847]	[0.833]	[0.912]	[0.845]	[0.139]	[0.134]	[0.836]	[0.796]	[0.922]	[0.854]	[0.144]	[0.138]
Observations	20	20	27	27	49	49	24	24	27	27	49	49	26	26	27	27	49	49
R-squared	0.32	0.40	0.34	0.44	0.35	0.40	0.09	0.17	0.32	0.45	0.24	0.32	0.10	0.22	0.32	0.45	0.25	0.34

regression of marriage, which we deemed to be important as it shows if there is an increase in the number of spouses (who can be concerned in family transmissions).

Results are presented in Table 12. They show that none of the demographic control variables presents a significant impact on the outcome variables. In all the regressions, the Tax Premium on Transmission keeps its sign and significance.

5.4. CULTURAL VARIABLES

Culture might also have an impact on the transmission of family businesses. For instance, we use the variable Traditional Values indicating how traditional is the society in which operates the company. According to R. Inglehart and C. Welzel,[13] one of the major dimensions of cross cultural variation is Traditional values vs. secular-rational values: "Traditional values emphasize the importance of religion, parent-child ties, deference to authority and traditional family values. People who embrace these values also reject divorce, abortion, euthanasia and suicide. These societies have high levels of national pride and a nationalistic outlook. Secular-rational values have the opposite preferences to the traditional values." So we think that the more traditional is the environment of a family firm, the more the owner will be prone to keep it in the family. Other cultural variables we use are the masculinity of the society and the trust people have in others in general in the country. These variables are defined in Appendix 2.

Table 13 present the results of these regressions. It appears that cultural variables do not have a significant impact on our outcome variables in general (except for the variable Ownership Concentration which has a lower value in an environment with traditional values and when people's trust is high). In all the regressions, the Tax Premium on Transmission keeps its significance.[14]

5.5. FAMILY VALUES VARIABLES

Finally, we think that the family values might have an impact on the Transmission Rate of Family Businesses. For instance, the variable *Children* expresses how much in the country parents try to do the best for their children. This variable may have a positive impact on our three outcome variables. The other two variables used are described in Appendix 2.

Table 14 shows that none of the family values variables have an impact on our outcome variables (except Long-Term Orientation on Ownership Concentration at the 10% level). The impact of our main explanatory variable remains positive and significant in all regressions.[15]

5.6. MULTIVARIATE ANALYSIS WITH ALL CONTROL VARIABLES

We conducted one last regression analysis with our main explanatory variable Tax Premium on Transmission and all possible control variables. To proxy access to capital, we kept the Anti Self-Dealing variable because it is the most complex index taking into account corporate governance as well as company and securities law and civil proceedings. To represent demographics, we kept the birth rate in 1980 since the information was available for a greater number of countries. For cultural and family values variables, it was not possible to select one unique variable for a valid reason so we run one regression per variable.

13 - The creators of the Inglehart–Welzel cultural map of the world based on the World Values Surveys.
Source: http://www.worldvaluessurvey.org/WVSContents.jsp?CMSID=Findings
14 - As a matter of illustration, the AV Plots of the regressions of the three outcome variables over the Tax Premium on Transmission controlling for cultural values are presented in Appendix 8 to 10.
15 - As a matter of illustration, the AV Plots of the regressions of the three outcome variables over the Tax Premium on Transmission controlling for family values are presented in Appendix 8 to 10.

Table 12: Log of GDP per capita and demographic control variables without difference in tax rates and with difference in tax rates
This table presents the results of the regressions of the three outcome variables over the difference between capital gain taxes and inheritance taxes and demographic control variables controlling for GDP per Capita. Variables definition can be found in Appendix 2. Standard errors are presented in brackets below the regression coefficients. a indicates significance at a 1% level, b indicates significance at a 5% level and c indicates significance at a 10% level.

VARIABLES	Transmission Rate		Family Control		Own. Concentration		Transmission Rate		Family Control		Own. Concentration	
Capital Gain - Inheritance		0.7474b		0.5165b		0.3174b		0.6680b		0.5355b		0.3745a
		[0.302]		[0.229]		[0.123]		[0.302]		[0.211]		[0.110]
Controls												
Birth Rate 1980	-0.0145	0.0023	0.0049	0.0050	-0.0000	0.0007						
	[0.019]	[0.019]	[0.011]	[0.010]	[0.004]	[0.004]						
Divorce-Marriage Ratio							-0.3481	-0.1613	-0.3096	-0.1824	-0.0604	-0.0268
							[0.387]	[0.364]	[0.296]	[0.270]	[0.152]	[0.132]
Log GDP pc 2013	-0.0813	0.0513	-0.5827b	-0.5394b	-0.1022	-0.0825	0.1306	0.0998	-0.5566b	-0.5460a	-0.1692b	-0.1882a
	[0.214]	[0.200]	[0.271]	[0.251]	[0.081]	[0.077]	[0.198]	[0.182]	[0.208]	[0.186]	[0.065]	[0.057]
Constant	1.0521	0.1300	3.0611b	2.8231b	0.9094b	0.7865c	-0.0075	-0.0031	3.1297a	2.9874a	1.2236a	1.2745a
	[1.152]	[1.102]	[1.381]	[1.282]	[0.429]	[0.407]	[0.857]	[0.784]	[0.936]	[0.840]	[0.257]	[0.223]
Observations	25	25	27	27	48	48	23	23	25	25	35	35
R-squared	0.02	0.25	0.33	0.45	0.18	0.28	0.04	0.24	0.33	0.49	0.30	0.49

Table 13: Log of GDP per capita and cultural control variables without difference in tax rates and with difference in tax rates
This table presents the results of the regressions of the three outcome variables over the difference between capital gain taxes and inheritance taxes and cultural control variables controlling for GDP per Capita. Variables definition can be found in Appendix 2. Standard errors are presented in brackets below the regression coefficients. a indicates significance at a 1% level, b indicates significance at a 5% level and c indicates significance at a 10% level.

VARIABLES	Transmission Rate		Family Control		Own. Concentration		Transmission Rate		Family Control		Own. Concentration		Transmission Rate		Family Control		Own. Concentration	
Capital Gain - Inheritance		0.6539b		0.5079b		0.3914a		0.6681b		0.4914b		0.3867a		0.6395b		0.5070b		0.4075a
		[0.287]		[0.221]		[0.121]		[0.288]		[0.232]		[0.134]		[0.291]		[0.232]		[0.120]
Controls																		
Traditional Values	0.0393	0.0299	0.0742	0.0713	-0.0510c	-0.0614b												
	[0.061]	[0.056]	[0.054]	[0.050]	[0.026]	[0.024]												
Masculinity							0.0001	0.0004	-0.0018	-0.0011	0.0003	0.0006						
							[0.002]	[0.002]	[0.002]	[0.002]	[0.001]	[0.001]						
Trust Mix													0.2922	0.1692	0.1976	0.1033	-0.2929b	-0.3634a
													[0.349]	[0.328]	[0.357]	[0.334]	[0.136]	[0.123]
Log GDP pc 2013	-0.0021	0.0356	-0.8051a	-0.7577a	-0.0267	-0.0032	0.0087	0.0453	-0.7079a	-0.6506a	-0.1094b	-0.0992b	-0.0224	0.0249	-0.7520a	-0.6686a	-0.0536	-0.0338
	[0.186]	[0.172]	[0.215]	[0.199]	[0.051]	[0.047]	[0.187]	[0.172]	[0.198]	[0.187]	[0.045]	[0.041]	[0.187]	[0.175]	[0.251]	[0.236]	[0.041]	[0.037]
Constant	0.4726	0.2463	4.1403a	3.8856a	0.5668b	0.4392b	0.4310	0.1917	3.8065a	3.4720a	0.9212a	0.8328a	0.4782	0.2482	3.8478a	3.4606a	0.7814a	0.6916a
	[0.852]	[0.790]	[0.982]	[0.911]	[0.221]	[0.204]	[0.870]	[0.804]	[0.944]	[0.896]	[0.210]	[0.195]	[0.847]	[0.791]	[1.081]	[1.020]	[0.159]	[0.145]
Observations	26	26	27	27	46	46	26	26	27	27	42	42	26	26	27	27	46	46
R-squared	0.02	0.21	0.37	0.49	0.21	0.37	0.00	0.20	0.35	0.45	0.14	0.29	0.03	0.20	0.33	0.45	0.22	0.39

Table 14: Log of GDP per capita and family values control variables without difference in tax rates and with difference in tax rates
This table presents the results of the regressions of the three outcome variables over the difference between capital gain taxes and inheritance taxes and family values control variables controlling for GDP per Capita. Variables definition can be found in Appendix 2. Standard errors are presented in brackets below the regression coefficients. a indicates significance at a 1% level, b indicates significance at a 5% level and c indicates significance at a 10% level.

VARIABLES	Transmission Rate		Family Control		Own. Concentration		Transmission Rate		Family Control		Own. Concentration		Transmission Rate		Family Control		Own. Concentration	
Capital Gain - Inheritance		0.6488b		0.5389b		0.3196b		0.7255b		0.5667b		0.3537b		1.0468a		0.5539b		0.4216a
		[0.286]		[0.238]		[0.127]		[0.286]		[0.216]		[0.136]		[0.251]		[0.191]		[0.130]
Controls																		
Long-Term Orientation	0.0019	0.0015	-0.0004	0.0007	-0.0017c	-0.0014												
	[0.002]	[0.002]	[0.002]	[0.002]	[0.001]	[0.001]												
Children							0.1236	0.2353	0.0170	-0.1039	0.1646	0.1659						
							[0.445]	[0.401]	[0.368]	[0.330]	[0.217]	[0.202]						
Trust Family													0.3729	0.2610	0.0697	0.0104	0.1115	0.1485
													[0.368]	[0.259]	[0.339]	[0.283]	[0.211]	[0.177]
Log GDP pc 2013	0.0358	0.0647	-0.6576a	-0.6309a	-0.0678c	-0.0660c	0.0026	0.0355	-0.6461a	-0.6066a	-0.0811	-0.0706	0.2059	0.3538c	-0.6916a	-0.6184a	-0.0784	-0.0524
	[0.187]	[0.173]	[0.198]	[0.184]	[0.039]	[0.037]	[0.189]	[0.170]	[0.186]	[0.165]	[0.049]	[0.046]	[0.233]	[0.168]	[0.188]	[0.159]	[0.062]	[0.052]
Constant	0.2043	0.0387	3.5060a	3.2892a	0.8252a	0.7839a	0.3695	0.0743	3.3980a	3.2622a	0.6793b	0.6113c	-0.8784	-1.5561c	3.4932a	3.1951a	0.6280	0.4411
	[0.895]	[0.827]	[0.906]	[0.843]	[0.157]	[0.149]	[0.882]	[0.799]	[0.910]	[0.810]	[0.335]	[0.314]	[1.208]	[0.864]	[0.960]	[0.807]	[0.392]	[0.333]
Observations	26	26	27	27	46	46	25	25	25	25	42	42	19	19	20	20	25	25
R-squared	0.03	0.21	0.32	0.45	0.20	0.31	0.00	0.24	0.36	0.52	0.16	0.29	0.08	0.58	0.44	0.64	0.08	0.39

The results of these multivariate regressions are presented in Table 15. The Tax Premium on Transmission keeps its positive and significant impact on almost all regressions. The loss of significance in some regressions might be due to the very small sample size or to noise in the expanded sample of transmission rates. The results of this table confirm our previous results that the Tax Premium on Transmission is the main obstacle to family transmission of family businesses. Regarding marginal effects, if the Tax Premium on Transmission increased by one standard deviation,[16] the Transmission Rate would increase by 18.1 percentage points.[17] It means that, evaluated at the mean,[18] the Transmission Rate would increase by more than a third.

The other control variables do not show great significance. Interestingly, Anti-Self-Dealing presents a negative coefficient in almost all regressions explaining transmission rates (though significant in only two regressions). It is coherent with the idea that when Anti-Self-Dealing measures are in place, minority shareholders are more protected, it is a proxy for better functioning financial markets (La Porta et al., 1997). In this case, the option to sell the family business to a third party for a reasonable price may be more plausible, negatively impacting the transmission rates.

16 - The standard deviation of the Tax Premium on Transmission is 0.1668 in the sample of countries used for the regressions taking the Transmission Rate as dependent variable (not reported in the tables).
17 - We took the regression involving Trust in Family to make this computation.
18 - The mean of Transmission Rate in the sample of countries of Table 15 is 45.79%.

Table 15: Multivariate Regressions controlled for GDP per Capita, Access To Capital, Demographics and Cultural and Family Values
This table presents the results of the regressions of the three outcome variables over the difference between capital gain taxes and inheritance taxes controlling for GDP per Capita, Anti-Self-Dealing, 1980's Birth Rate and several Cultural and Family value variables. Variables definition can be found in Appendix 2. Standard errors are presented in brackets below the regression coefficients. a indicates significance at a 1% level, b indicates significance at a 5% level and c indicates significance at a 10% level.

VARIABLES	Transmission Rate						Family Control						Ownership Concentration					
Capital Gain - Inheritance	0.5736	0.5758	0.5973c	0.5476	1.0866b	0.5235	0.5147c	0.5936b	0.5383b	0.5569b	0.7070b	0.5304b	0.3442b	0.2707b	0.2504c	0.3299a	0.3809b	0.3571a
	[0.355]	[0.355]	[0.317]	[0.346]	[0.412]	[0.354]	[0.249]	[0.262]	[0.244]	[0.228]	[0.248]	[0.249]	[0.134]	[0.132]	[0.137]	[0.121]	[0.174]	[0.120]
Controls																		
Masculinity	0.0005						-0.0012						0.0005					
	[0.002]						[0.002]						[0.001]					
Long-Term Orientation		0.0004						0.0014						-0.0011				
		[0.003]						[0.002]						[0.001]				
Children			0.6356						-0.1011						0.3332			
			[0.525]						[0.406]						[0.221]			
Traditional Values				0.0886						0.1163c						-0.0737b		
				[0.086]						[0.057]						[0.028]		
Trust Family					0.3210						0.1967						0.1115	
					[0.365]						[0.327]						[0.188]	
Trust Mix						0.2912						0.1259						-0.3710a
						[0.354]						[0.357]						[0.123]
Anti Self-Dealing	-0.2192	-0.2174	-0.4631c	-0.2264	-0.0257	-0.2440	0.0703	0.0788	-0.1014	0.1426	0.1993	0.0672	-0.0903	-0.0917	-0.1905b	-0.0994	-0.0952	-0.0666
	[0.223]	[0.222]	[0.229]	[0.215]	[0.334]	[0.220]	[0.183]	[0.185]	[0.195]	[0.172]	[0.265]	[0.187]	[0.077]	[0.075]	[0.090]	[0.070]	[0.157]	[0.068]
Birth Rate 1980	0.0066	0.0090	-0.0001	0.0231	0.0174	0.0100	0.0038	0.0064	0.0071	0.0127	0.0115	0.0034	0.0035	-0.0008	-0.0020	-0.0050	0.0039	-0.0011
	[0.024]	[0.027]	[0.022]	[0.028]	[0.022]	[0.024]	[0.011]	[0.012]	[0.012]	[0.011]	[0.010]	[0.012]	[0.005]	[0.004]	[0.005]	[0.005]	[0.005]	[0.004]
Log GDP pc 2013	0.0640	0.0813	-0.0412	0.1451	0.4902c	0.0580	-0.6069b	-0.5505c	-0.4663c	-0.6619b	-0.4107	-0.6366c	-0.0242	-0.0770	-0.0714	-0.0734	0.0198	-0.0450
	[0.219]	[0.247]	[0.215]	[0.227]	[0.249]	[0.215]	[0.285]	[0.281]	[0.264]	[0.262]	[0.262]	[0.340]	[0.091]	[0.087]	[0.092]	[0.079]	[0.125]	[0.077]
Constant	0.1109	-0.0047	0.3734	-0.5068	-2.5026	0.0225	3.1796b	2.7352c	2.5549c	3.1492b	1.7292	3.2144c	0.4934	0.8934c	0.6340	0.9100b	0.1393	0.8105c
	[1.217]	[1.482]	[1.102]	[1.330]	[1.572]	[1.200]	[1.439]	[1.431]	[1.315]	[1.291]	[1.475]	[1.593]	[0.487]	[0.484]	[0.487]	[0.429]	[0.713]	[0.413]
Observations	23	23	22	23	17	23	27	27	25	27	20	27	41	45	41	45	25	45
R-squared	0.23	0.22	0.39	0.27	0.57	0.25	0.46	0.46	0.53	0.54	0.68	0.46	0.32	0.30	0.36	0.38	0.42	0.41

6. CONCLUSION

6. CONCLUSION

Family businesses play a fundamental role in the worldwide economy. One of the biggest challenges they face is the time for transmission when the family needs to decide whether to sell the business or transmit it to heirs. This issue attracted the attention of researchers and many articles pertain to the transmission of family businesses. However, the literature lacks empirical evidence as to which factors have an impact on family business transmission. In this paper, we attempt to fill in this void by analysing several categories of factors: legal and regulatory, tax rates, lack of interest or lack of training of the heirs, lack of planning by the incumbent, etc. In addition, most of the papers in the literature about family business transmission focus their attention on one single country. Our study is a cross-country analysis, we collect transmission rates for more than 20 countries and put in place a Data Questionnaire that enables us to evaluate the legal, regulatory and tax environment of the countries.

First, our data highlight the fact that transmission rates significantly vary from one country to another. In our first sample of seven countries, transmission rates are computed using the Orbis database of Bureau van Dijk. These transmission rates vary from 12% in France to 76% in Italy. Furthermore, we use various sources to expand our sample to 26 countries, with transmission rates varying from 8% for Lithuania to 88% for Sweden.

Secondly, we use data from the Data Questionnaire to analyse legal and regulatory obstacles, tax rates and the other aforementioned potential obstacles to family business transmission over a sample of 20 to 26 countries (with the exact number of countries depending on the number of answers received and of the outcome variable analysed). The results show that legal and regulatory obstacles as well as a lack of training, planning and interest do not have any significant impact on the transmission rates of family businesses (nor on the two proxies used, namely Family Control and Ownership Concentration). On the other hand, the tax environment seems to have a huge impact on transmission rates (and the two proxies), particularly when it comes to the level of inheritance taxes and when the tax environment is favourable to sales to a third party (when capital gains taxes are lower than inheritance or wealth transfer taxes and when capital gains tax rebates exist). The variable that seems to have the most significant impact is the Tax Premium on Transmission (i.e. the difference between capital gains tax and inheritance tax). This variable has a positive impact on transmission rates which means that, coherent with our expectations, the higher the capital gains tax is in relation to the inheritance tax rate, the higher the transmission rate of businesses within the family. This variable is the one we keep for our last set of analyses where we test the impact of other potential determinants of family business transmission.

In our final set of analysis, we examine a set of control variables which, according to the literature, might also impact the transmission rates of family businesses on an expanded sample of countries. These variables are first tested alone and then

in conjunction with our main variable of interest: the Tax Premium on Transmission, expressing the difference in tax rates between selling the business to a third party and keeping it within the family. These variables pertain to GDP, access to capital, demographics, cultural values and family values. It appears that only some variables expressing access to capital have a significant negative impact on transmission rates and the two proxies. We explain this finding through the fact that in countries with better functioning markets, it might be easier for a business owner to find a third party proposing a fair price for the company, consequently lowering the transmission rate of businesses within families.

The most striking fact is that Tax Premium on Transmission almost always keeps its positive sign and significance even when adding all the control variables. Moreover, the marginal effect of this variable on the Transmission Rate of Family Businesses within families is significant.

For governments that want to maintain or increase the number of family businesses in their country, a solution might be to carefully study the taxes levied on family businesses when making a decision as to whether they should sell the company to a third party or keep it within the family in order to ensure more favourable taxes for family transmission. On the family business owner side, this study suggests that they should prepare their succession or sale early on. The taxes they will be subject to are certainly one of the main factors impacting their decision. Equally, it is clear that there are reliefs and special regimes available that can reduce the tax burden of transmission (from an average marginal tax rate of 13.7% in the case of gifts/inheritance to 5.3% if applied). The tax rates faced in the different scenario should also be carefully studied before taking the decision.
As a conclusion, this paper demonstrates the major importance of the level of taxes when business owners have to decide whether they will transmit their company to heirs or not. This finding will be of interest for governments who want to avoid the sale of too many family businesses and for business owners who are faced with the succession decision.

APPENDIX

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Appendix1: Family Transmission Rates

Country	Transmission Rate	Source
AUSTRALIA	35%	Orbis
AUSTRIA	59%	Orbis
BELGIUM	70.7%	Colot, 2011[19]
CANADA	33%	Family Business Institute[20]
CHINA	33%	Xiangqian, 2010[21]
DENMARK	33%	European Commission
FINLAND	53%	Varamäki, Tall & Viljamaa[22]
FRANCE	12%	Orbis
GERMANY	65%	Orbis
GREECE	74%	Tsoutsoura; 2015
HONG KONG	69%	Bennedsen et al. 2015[23]
IRELAND	30%	BDO[24]
ITALY	76%	Orbis
LITHUANIA	8%	Mellerio, 2009[25]
LUXEMBOURG	30%	European Commission
MALTA	81%	PWC, 2012[26]
POLAND	64%	Mellerio, 2009
SINGAPORE	36%	Bennedsen et al. 2015
SLOVENIA	24%	Mellerio, 2009
SPAIN	31%	Orbis
SWEDEN	88%	Sund and Bjuggren; 2013[27]
SWITZERLAND	40%	Credit Suisse; St. Gallen[28]
TAIWAN	74%	Bennedsen et al. 2015
THE NETHERLANDS	72%	Mellerio, 2009
UNITED KINGDOM	21%	Orbis
UNITED STATES	30%	Beckhard and Dyer, 1983[29]

19 - Colot, O. (2011). La Transmission des PME Familiales Belges : Une Etude Statistique. Université de Mons, Documents d'économie et de gestion, Working paper : 2011/2, Centre de Recherche Warocqué.
20 - http://www.abbynews.com/business/191089831.html
21 - Xiangqian, Y. (2010). Analysis of the Challenges and Countermeasures in Family Business of Succession during Economic Transition Period: An Empirical Study in Zhejiang Province of China. 7th International Conference on Innovation & Management
22 - http://www.transeo-association.eu/uploads/Academic%20Awards/2013-2014/Varamaki.pdf
23 - Bennedsen, M., Fan, J., Jian, M., & Yeh, Y.-H. (2015). The Family Business Map: Framework, Selective Survey, and Evidence from Chinese Family Firm Successions. Journal of Corporate Finance 33, 212 – 226.
24 - http://www.bdo.ie/files/pdf/pubs/fbs/bdo-family-business-v3-web.pdf
25 - Mellerio, O. (2009). Transmission de l'Entreprise Familiale. Rapport à Hervé Novelli, Secrétaire d'Etat chargé du Commerce, de l'Artisanat, des Petites et Moyennes Entreprises, du Tourisme, des Services et de la Consommation
26 - https://www.pwc.com/mt/en/publications/assets/family_business_survey_2012_malta.pdf
27 - Sund, L.-G. & Bjuggren, P.-O. (2013). No Gift and Inheritance Tax: No Problems Left for Succession of Family-Owned businesses? European Business Law Review 24, 149 – 159.
28 - https://www.credit-suisse.com/media/production/pb/docs/unternehmen/kmugrossunternehmen/kmu-erfolgsfaktoren-2013-en.pdf
29 - Beckhard, R., & Dyer, W. G. (1983). Managing Continuity in the Family-Owned Business. Organizational Dynamics, 5-12.

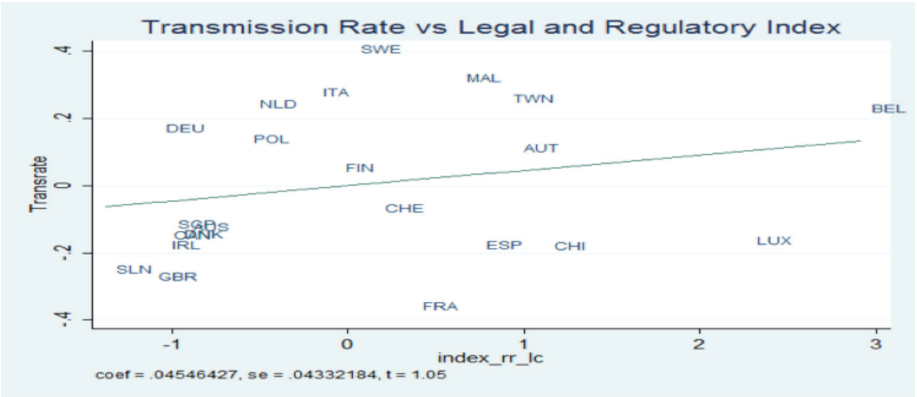
Appendix 2: Variable Definitions

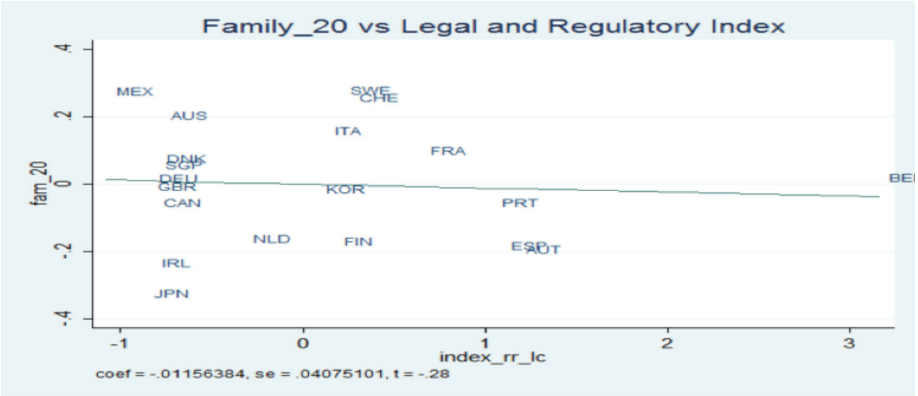
Variable Name	Source	Definition
Explanatory variables – Legal Environment		
Forced Heirship	Data Questionnaire	This variable is a dummy variable indicating if forced heirship is a regulatory restriction in place in the country surveyed for transfer of businesses to family members
Reg. Restrictions (RR)	Data Questionnaire	This variable indicates if regulatory restrictions affect the transfer of family firms including prior government authorization or other restrictions (it ranges from 0 to 2)
Legal Constraints (LC)	Data Questionnaire	This variable indicates if legal constraints to the transfer of shares or of functions affect the transfer of family firms (it ranges from 0 to 2)
Index RR and LC	Data Questionnaire	This variable aggregates the variables RR and LC, indicating the presence of more Regulatory Restrictions and/or Legal Constrains (it ranges from 0 to 4)
Explanatory variables - Tax Rates		
Inheritance Tax	Data Questionnaire and other sources	This variable is the marginal tax rate in place in the country when a family transmission takes place for free, as a gift, when there is no favorable regime that applies. This variable is expressed in percentage
Capital Gain Tax	Data Questionnaire and other sources	This variable is the marginal tax rate incurred on capital gains when Mr. PARENT sells his company to a third party for a profit. This variable is expressed in percentage
Wealth Transfer Tax	Data Questionnaire and other sources	This variable is the marginal tax rate applied in case of a family wealth transmission, assuming no favorable regime. This variable is expressed in percentage
Capital Gain - Inheritance	Data Questionnaire; and other sources	This variable is the difference between the variables Capital Gain Tax and Inheritance Tax. The variable is also called the Tax Premium on Transmission.
Capital Gain - Wealth	Data Questionnaire and other sources	This variable is the difference between the variables Capital Gain Tax and Wealth Transfer Tax. This variable is also called the Tax Premium on Wealth Transfer.
Explanatory variables - Tax Environment		
Wealth Tax Prohibitive	Data Questionnaire	This variable depicts answers from the Data Questionnaire to the question: Is the tax concerning a family wealth transmission prohibitive? Rescaled to range from 0 (not prohibitive) to 1 (very prohibitive).
Capital Gain Rebates	Data Questionnaire	This variable shows if there are any rebates depending on a minimum holding period when shares are sold for a profit. It is a dummy variable taking the value 0 (no rebates) or 1 (rebates)
Capital Gain Several Years	Data Questionnaire	This variable shows if there is the possibility to pay for capital gain taxes over several years when shares are sold for a profit. It is a dummy variable taking the value 0 (not possible to pay capital gain taxes due over several years) or 1 (possible to pay capital gain taxes due over several years).
Index Rebates Several Years	Data Questionnaire	This variable indicates if the tax environment is attractive (i.e. if capital gain tax rebates exist and if capital gain taxes can be paid over several years. It is the combination of the dummy variables Capital Gain Rebates and Capital Gain Several Years and ranges from 0 to 2.
Index Tax Environment	Data Questionnaire	This variable illustrates to what extent the tax environment is unfavorable to family transmissions. It is a scale variable taking the value of 0 (favorable) to 3 (unfavorable). It is the sum of three dummy variables: Capital Gain Rebates, Capital Gain Several Years and a variable taking the value of 1 if Capital Gain – Inheritance is zero or negative.
Explanatory variables - Other Obstacles		
Lack of Interest	Data Questionnaire	This variable is a variable indicating whether the lack of interest of the descendant is a primary obstacle for a family business transmission. It takes values from 0 (not an obstacle) to 1 (a major obstacle).
Lack of Planning	Data Questionnaire	This variable is a variable indicating whether the lack of planning by Mr. Parent is a primary obstacle for a family business transmission. It takes values from 0 (not an obstacle) to 1 (a major obstacle).
Lack of Training	Data Questionnaire	This variable is a variable indicating whether a lack of training of the descendant is a primary obstacle for a family business transmission. It takes values from 0 (not an obstacle) to 1 (a major obstacle).
Index Other Obstacles	Data Questionnaire	This variable is the sum of the three above variables rescaled from 0 to 1.

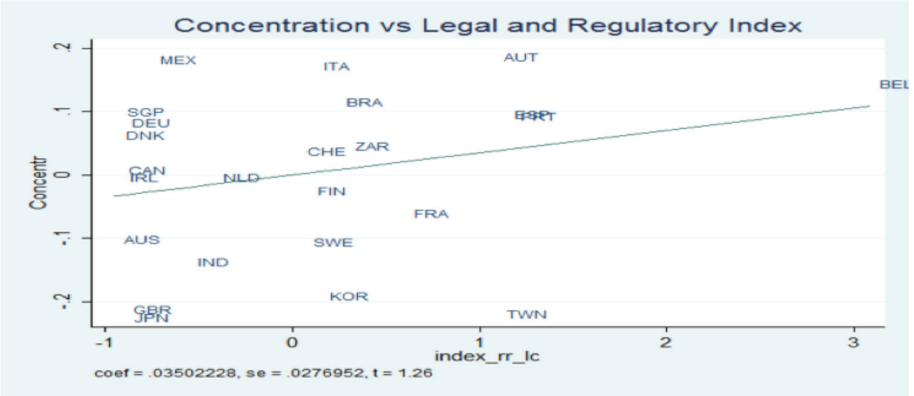
Variable Name	Source	Definition
Outcome Variables		
Transmission Rate	Orbis and other Surveys/Articles	This variable represents the proportion of family businesses which stay in the hand of the family after an ownership transfer among all ownership transfers within family firms. This variable is expressed in percentage.
Family Control	La Porta, Lopez-De-Silanes and Shleifer (1999)	This variable indicates the proportion of companies for which an individual owns at least 20% of the shares. This variable is expressed in percentage.
Ownership Concentration	La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998)	This variable shows what average percerntage of shares of the 10 largest privately-held companies that are owned by their top-three shareholders and therefore gives us an approximation of ownership concentration
Control Variables		
Log GDP pc 2013	World Bank	Log of Gross Domestic Product per Capita in 2013.
Masculinity	Hofstede Centre	This variable indicates the degree of masculinity of a country where masculinity is defined as "driven by competition and success" and feminity is defined as "caring for others and quality of life". This variable ranges from 0 (feminine) to 100 (masculine)
Long-Term Orientation	Hofstede Centre	This variable indicates the extent to which each society maintains links to its past when dealing with present and future issues. This variable ranges from 0 (normative society: prefers to maintain traditions and views change suspiciously) to 100 (pragmatic society: encourages thrift and efforts in education to prepare for the future)
Civil Law	La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998)	This variable indicates if a country's commercial law is based on the English common law. This variable is a dummy variable taking the value 0 (civil law: French, German or Scandinavian) or 1 (common law).
Anti-Self-Dealing	Djankov, La Porta, Lopez-de-Silanes and Shleifer (2008)	This variable is dummy variable indicating whether systems are in place in the surveyed country to avoid controlling shareholders from expropriating the rights of minority shareholders. It takes the value 0 (no process in place to stop self-dealing from the controlling shareholder) or 1 (process(es) in place to stop self-dealing from the controlling shareholder).
Anti-Director	Djankov, La Porta, Lopez-de-Silanes and Shleifer (2008)	This variable is a scale variable indicating to what extent minority shareholders in the surveyed country are protected in the corporate decision making process. It takes into account if: i) vote can be mailed ii) there are obstacles to voting iii) minority shareholders can be represented in the board of directors by cumulating their votes iv) a mechanism is in place to restore minority shareholders when they have been expropriated v) preemptive rights for new share issuances by the firm exist vi) there is a possibility to ask for a special shareholder meeting. This variable ranges from 0 (minority shareholders are not protected) to 6 (minority shareholders are well protected)
Birth Rate 1980	World Bank	This variable indicates the number of births per 1,000 people in 1980.
Divorce-Marriage Ratio	United Nations Statistical Division and Eurostat	This variable compares the number of divorces to the number of marriages in a given year.
Children	La Porta, Lopez-de-Silanes and Shleifer (2008)	This variable is expressed in percentage and shows if parents must do the best for their children
Traditional Values	World Value Survey	This variable is a scale variable indicating to what extent the values of a society are traditional. "Traditional values emphasize the importance of religion, parent-child ties, deference to authority and traditional family values. Secular-rational values have the opposite preferences to the traditional values. These societies place less emphasis on religion, traditional family values and authority Values range from -2 (secular-rational values) to +2 (traditional values).
Trust Family	World Value Survey	This variable is a scale variable indicating to what extent people from a given country trust their families. It ranges from 0 (no trust) to 4 (trust).
Trust Mix	World Value Survey	This variable indicates the extent to which people from a given country trust people in general (family, strangers, neighbors, etc.) . This variable is expressed in percentage, a low percentage representing low trust and high percentage representing a high level of trust.

Appendix 3: Data Questionnaire – Legal and Regulatory Environment

These figures show the partial regression plots of the regression of each of the three outcome variables, Transmission Rate (here transrate), Family Control (here fam_20) and Ownership Concentration (here concentr), over the variable Index RR and LC (here index_rr_lc) for the countries in the Data Questionnaire sample. The regressions are shown in Tables 7 to 9..

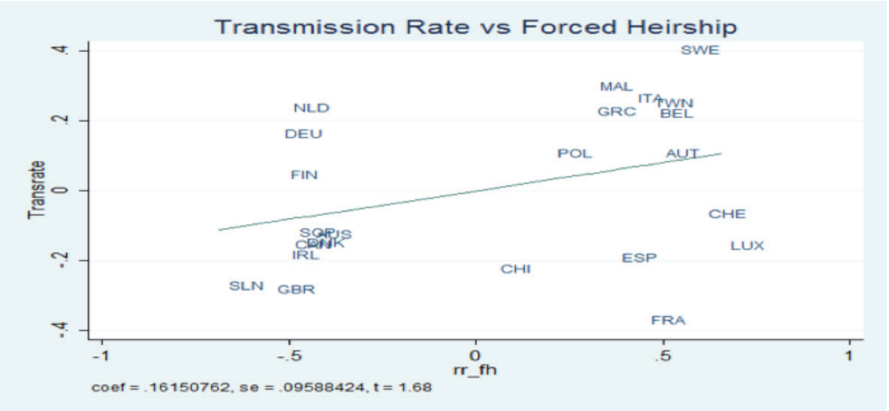


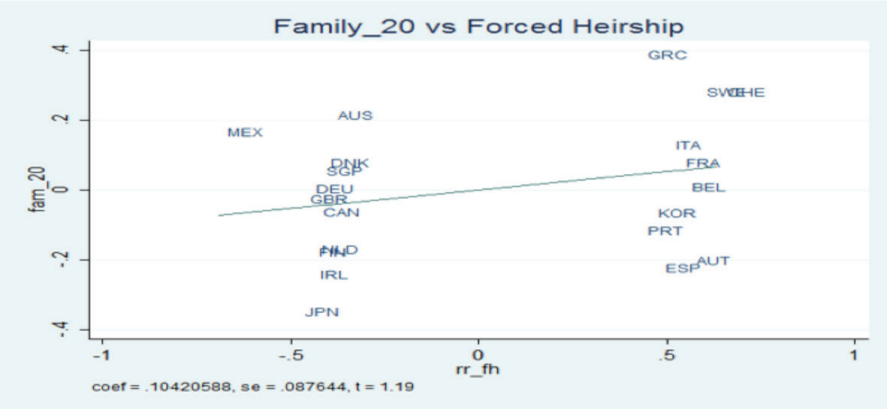


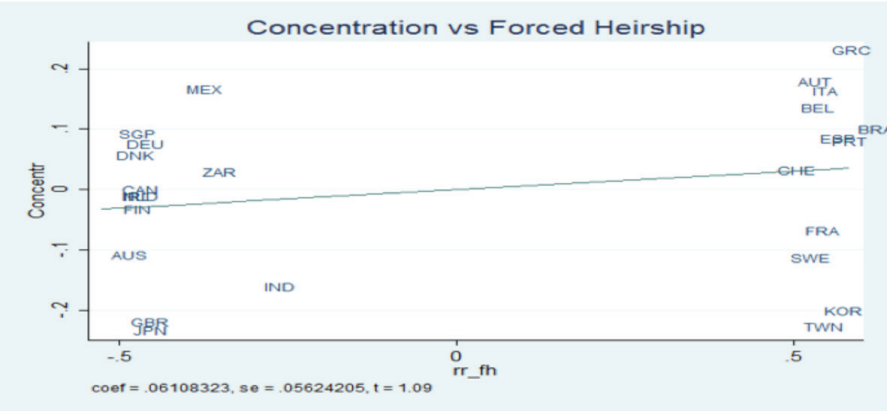


Appendix 4: Data Questionnaire – Forced Heirship

These figures show the partial regression plots of the the regression of each of the three outcome variables, Transmission Rate (here transrate), Family Control (here fam_20) and Ownership Concentration (here concentr), over the variable Forced Heirship (here rr_fh) for the countries in the Data Questionnaire sample. The regressions are shown in Tables 7 to 9.

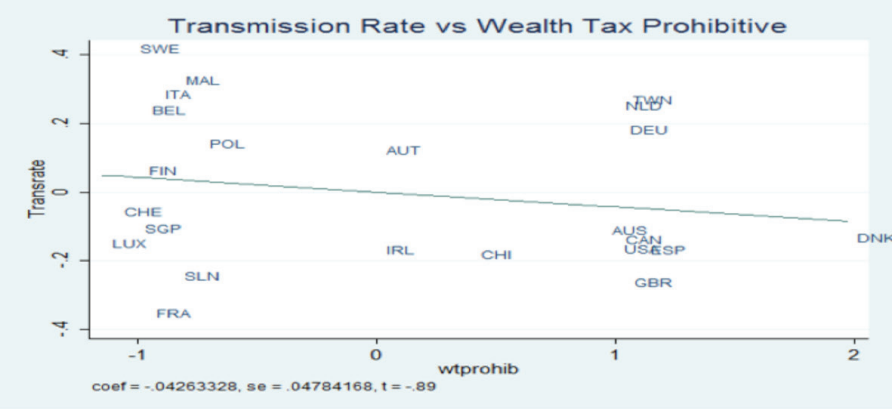


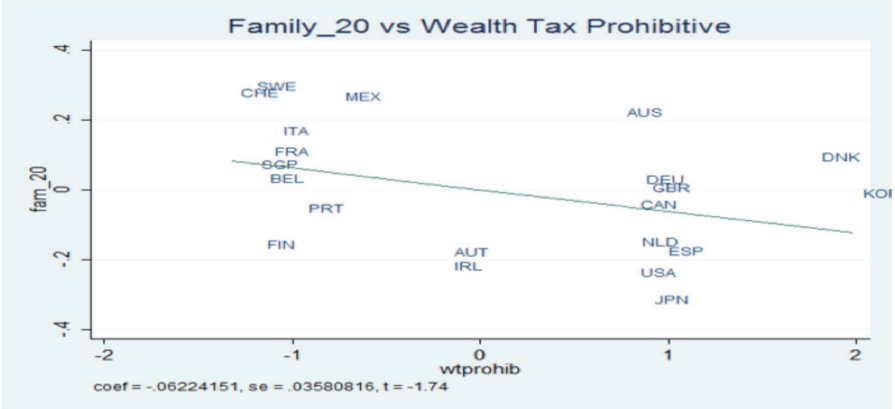


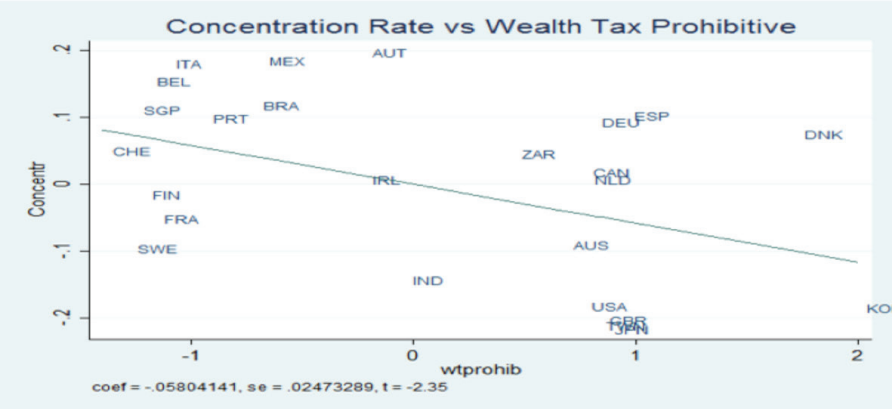


Appendix 5: Data Questionnaire – Wealth Tax Prohibitive

These figures show the partial regression plots of the regression of each of the three outcome variables, Transmission Rate (here transrate), Family Control (here fam_20) and Ownership Concentration (here concentr), over the variable Wealth Tax Prohibitive (here wtprohib) for the countries in the Data Questionnaire sample. The regressions are shown in Tables 7 to 9.

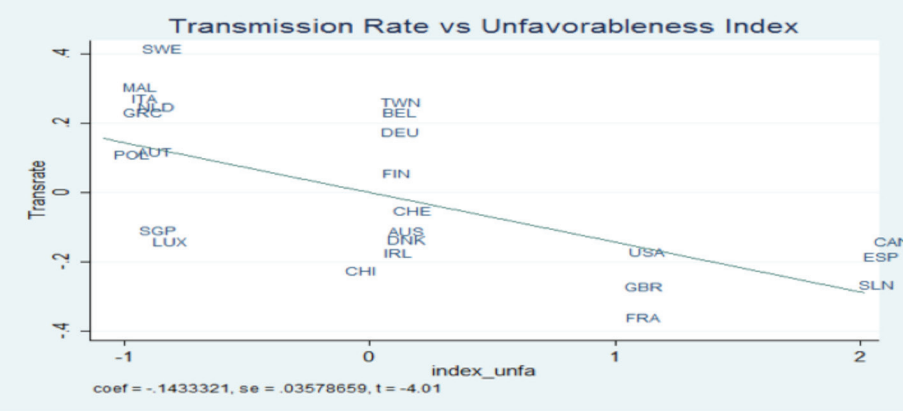


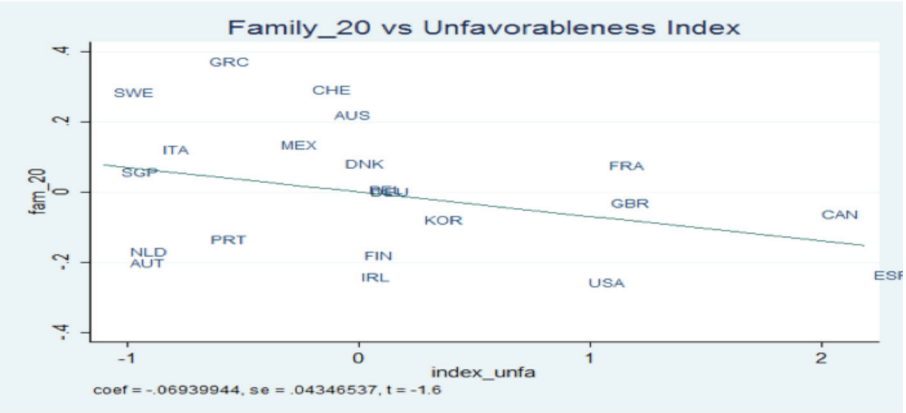


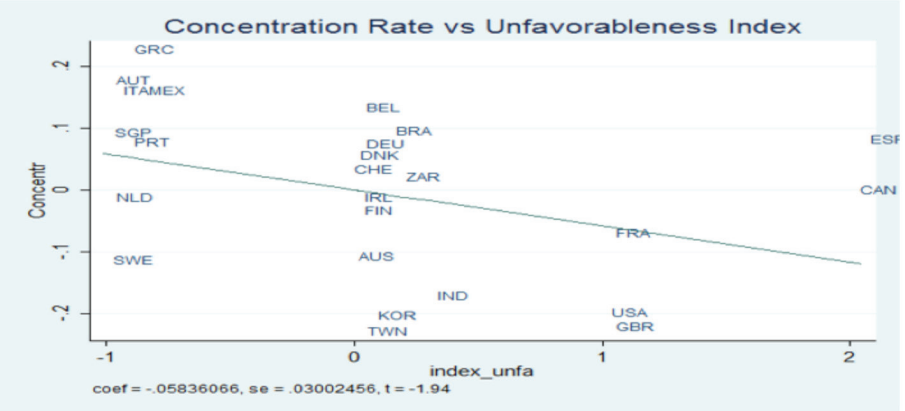


Appendix 6: Data Questionnaire – Unfavorable Tax Environment

These regressions show the partial regression plots of the regression of each of the three outcome variables, Transmission Rate (here transrate), Family Control (here fam_20) and Ownership Concentration (here concentr), over the variable Index Tax Environment (here index_unfa) for the countries in the Data Questionnaire sample. The regressions are shown in Tables 7 to 9.







Appendix 7: Correlation of Control Variables

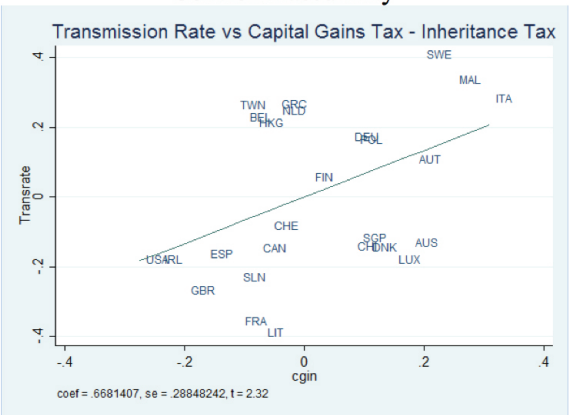
This table presents the correlations between the control variables analyzed in Section 4.2. The definitions of these variables can be found in Appendix 2.

	Capital Gain - Inheritance	Log GDP pc 2013	Masculinity	Long-Term Orientation	Common Law	Anti Self-Dealing	Anti Director	Birth Rate 1980	Divorce-Marriage Ratio	Children	Traditional Values	Trust Family	Trust Mix
Capital Gain - Inheritance	1												
Log GDP pc 2013	-0.0436	1											
Masculinity	-0.0574	-0.1205	1										
Long-Term Orientation	-0.1008	0.3633***	0.0398	1									
Common Law	-0.1794	-0.2209	0.1652	-0.2405*	1								
Anti Self-Dealing	-0.2212	0.1297	0.0186	0.0269	0.6356***	1							
Anti Director	-0.2982**	0.033	-0.0394	-0.1306	0.5890***	0.5856***	1						
Birth Rate 1980	-0.0259	-0.8932***	0.1695	-0.5327***	0.2657*	-0.1331	-0.0137	1					
Divorce-Marriage Ratio	-0.0121	0.6455***	-0.2185	0.3785**	-0.0597	-0.0838	-0.0068	-0.7051***	1				
Children	0.0776	-0.5001***	0.0618	-0.6660***	0.3140**	0.1260	0.1957	0.6416***	-0.3056*	1			
Traditional Values	-0.0112	0.6520***	-0.2459*	0.6895***	-0.2130	0.0195	-0.0173	-0.7771***	0.5307***	-0.8008***	1		
Trust Family	-0.0458	-0.0809	-0.0151	0.1249	-0.2155	-0.2635	-0.3054	0.0957	-0.0786	-0.1275	0.0016	1	
Trust Mix	0.0937	0.4266***	-0.2357	0.2222	0.0091	0.1469	0.0371	-0.4883***	0.2625	-0.3868***	0.6265***	-0.2242	1

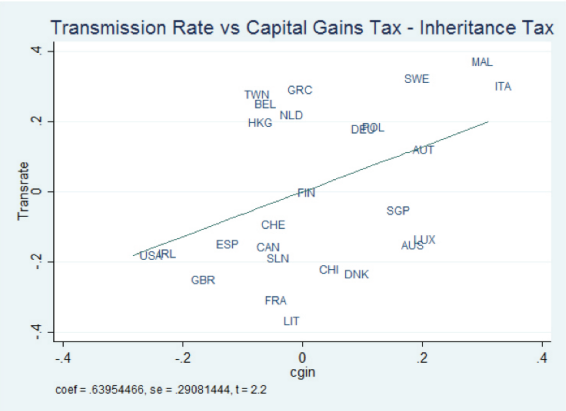
Appendix 8: Expanded Sample – Transmission Rate

Partial regression plots of multivariate regressions shown in Tables 13 and 14. Transmission Rate is the dependent variable

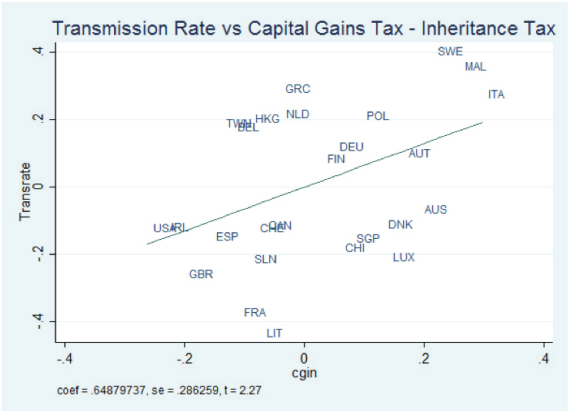
Control Masculinity



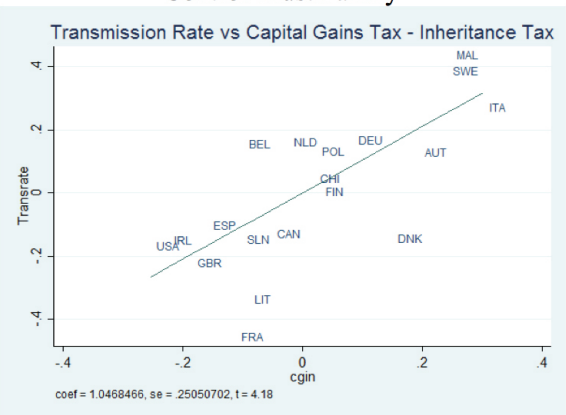
Control Trust Mix



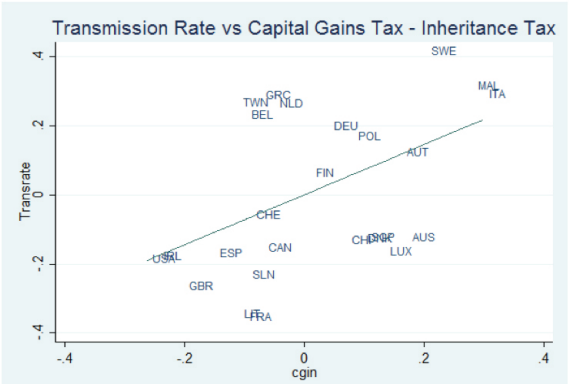
Control LT Orientation



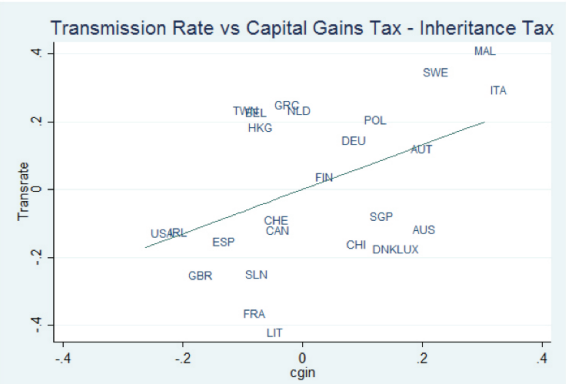
Control Trust Family



Control Children



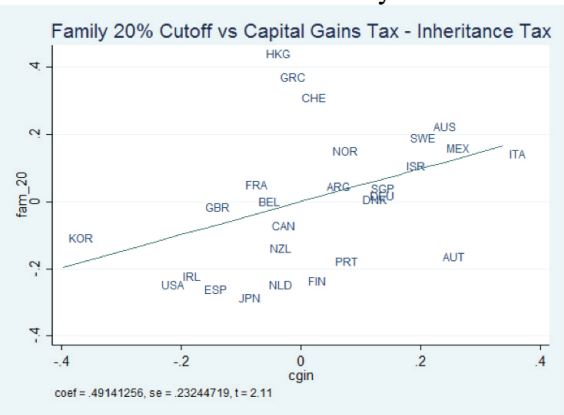
Control Traditional Values



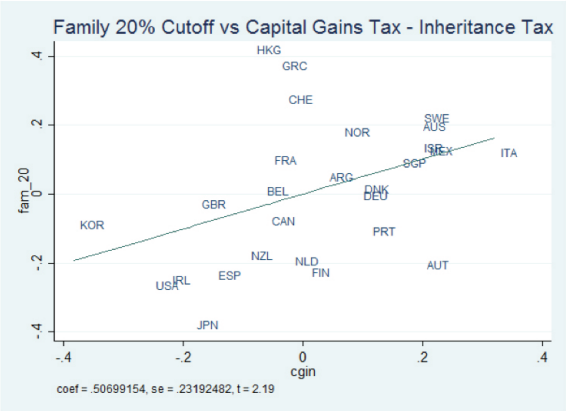
Appendix 9: Expanded Sample – Family Control

Partial regression plots of multivariate regressions shown in Tables 13 and 14. Family Control is the dependent variable.

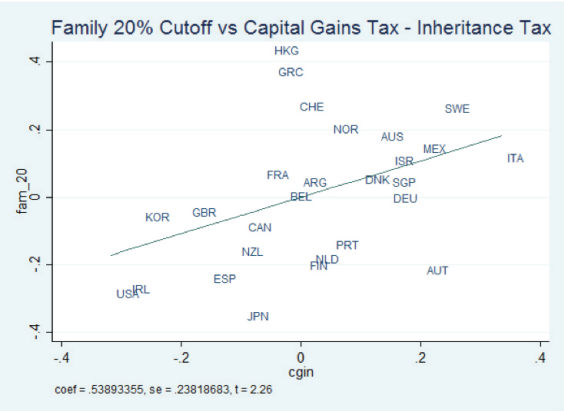
Control Masculinity



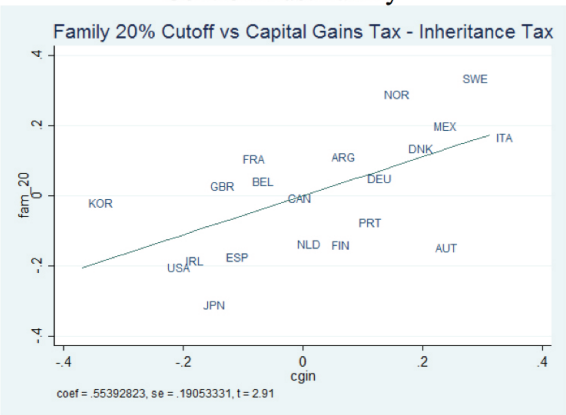
Control Trust Mix



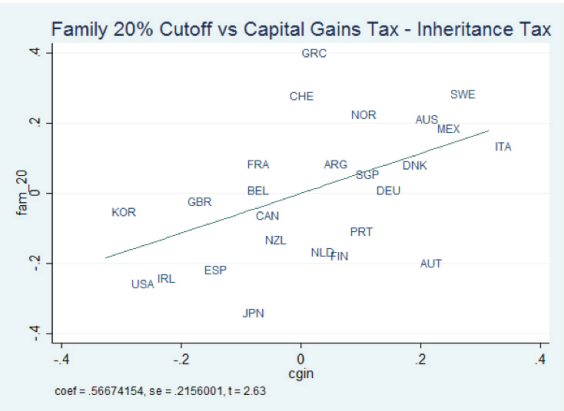
Control LT Orientation



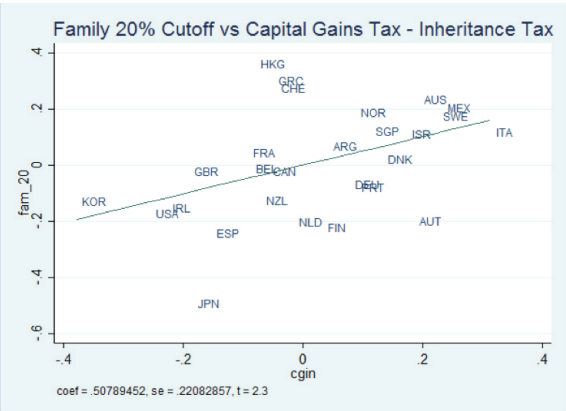
Control Trust Family



Control Children



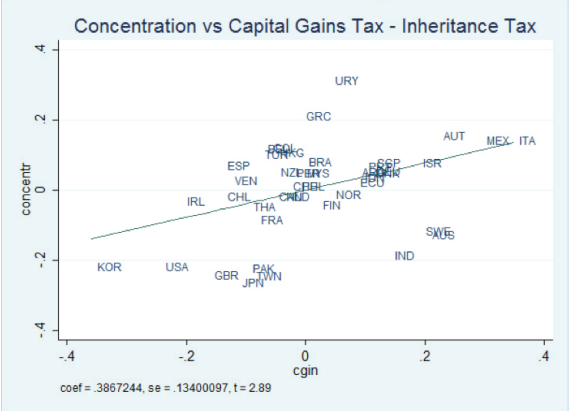
Control Traditional Values



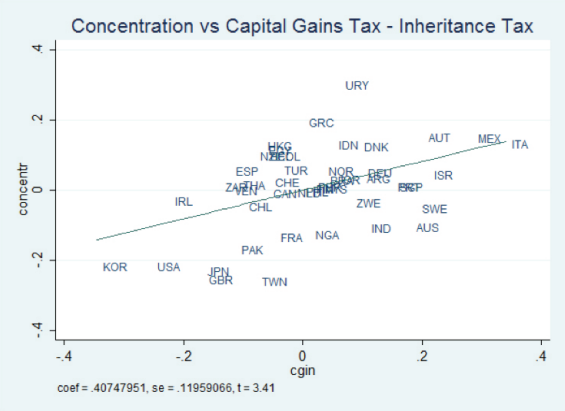
Appendix 10: Expanded Sample – Ownership Concentration

Partial regression plots of multivariate regressions shown in Tables 13 and 14. Ownership Concentration is the dependent variable.

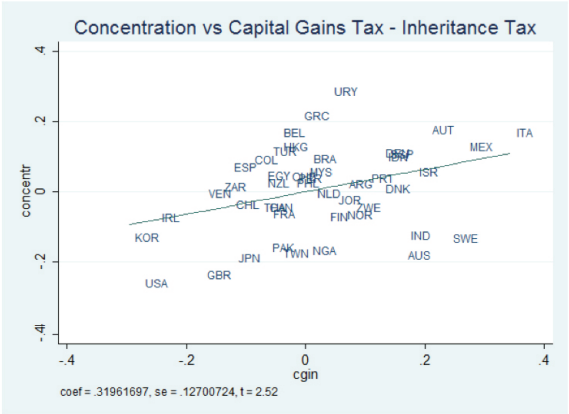
Control Masculinity



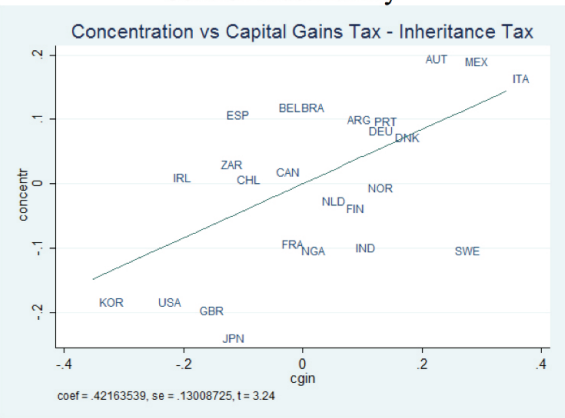
Control Trust Mix



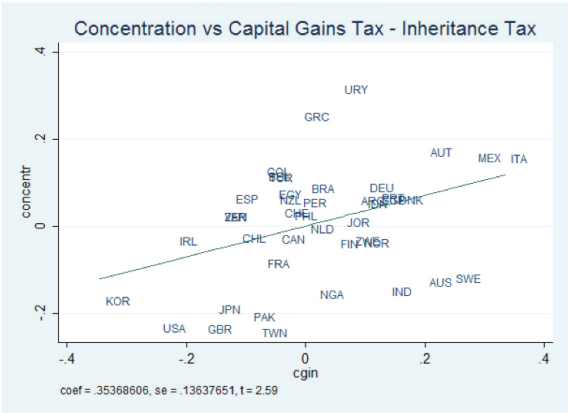
Control LT Orientation



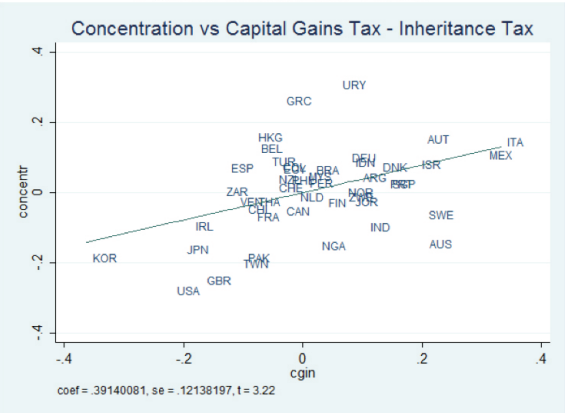
Control Trust Family



Control Children



Control Traditional Values



REFERENCES

REFERENCES

- Aaron, H. J. and Munell, A. H. (1992). Reassessing the role for wealth transfer prices. *National Tax Journal* 45(2), 119-143.
- Arrondel, L. and Lafèrre, A. (2001). Taxation and wealth transmission in France. *Journal of Public Economics* 79, 3-33.
- Astrachan, J.H. and Shanker, M. C. (2003). Family Businesses' Contribution to the U.S. Economy: A Closer Look. *Family Business Review* 16(3), 211-219.
- Beckhard, R. and Dyer, W. G. Jr (1983). Managing Continuity in the Family-Owned Business. Organizational Dynamics 12(1), 5-12.
- Bennedsen, M., Nielsen, K. M., Perez-Gonzalez, F. and Woldenzon, D. (2007). Inside the Family Firm: The Role of Families in Succession Decisions and Performance. *The Quarterly Journal of Economics* 122(2), 647-691.
- Bloom, N. (2006). Inherited Family Firms and Management Practices: The Case for Modernizing the UK's Inheritance Tax. Centre for Economic Performance, Mimeo
- Casson, M. (2000). Entreprises and Leadership. Studies on Firms, Markets and Networks. Cheltenham, UK and Northampton, MA, USA: Edward Elgar.
- Dascher, P. and Jens, W.G. Jr (1999). Family Business Succession Planning. *Business Horizons* 42(5), 2-4.
- De Massis, A., Chua, J. H. and Chrisman, J. J. (2008). Factors Preventing Intra-Family Succession. Family *Business Review* 21(2), 183-199.
- Djankov, S., Ganser, T., McLiesh, C., Ramalho, R. and Shleifer, A. (2010). The effect of Corporate Taxes on Investment and Entrepreneurship. *American Economic Journal: Macroeconomics* 2, 31-64.
- Djankov, S., La Porta, R., López-de-Silanes, F. and Shleifer, A. (2008). The Law and Economics of Self-Dealing. *Journal of Financial Economics* 88, 430-465.
- Ellul, A., Pagano, M. and Panunzi, F. (2010). Inheritance Law and Investment in Family Firms. *American Economic Review* 100(5), 2414-2450.
- European Commission. (2011). Business Dynamics: Start-ups, Business Transfers and Bankruptcy. Brussels: Entrepreneurship Unit, Directorate-General for Enterprise and Industry, European Commission.
- Financial Times (2015a). Advice for businesses that want to keep it in the family. Book review published on July 16, 2015.
- Financial Times (2015b). How large family businesses prepare to pass on the baton. Published on September 18, 2015.
- García-Álvarez, E., López-Sintas, J. and Gonzalvo, P.S. (2002). Socialization Patterns of Successors in First to Second-Generation Family Businesses. *Family Business Review* 15(3), 189-203.
- Family Firms Institute, Inc. (n.d.). Global Data Points – Family Enterprise Statistics from around the world. Retrieved May 2, 2015, http://www.ffi.org/?page=globaldatapoints

- Grégoir, S. and López-de-Silanes, F. (2015). What do French Middle Sized Family Firms Really Look Like ? Overall Management Efficiency and Corporate Governance. EDHEC Position Paper.
- Grossmann, V.,& Strulik, H. (2010). Should continued family firms face lower taxes than other estates? *Journal of Public Economics* 94(1-2), 87–101.
- Hofstede, G., Hofstede, G. J. and Minkov, M. (2010). Cultures and Organizations: Software of the Mind. Third Edition, McGraw-Hill Professional.
- Joseph, A. (2014). Culture Determinants and Family Business Succession in Jos Metropolis, Plateau State Nigeria. *Journal of Emerging Trends in Economics and Management Sciences* 5(5), 379-390.
- KPMG (2015). Baromètre Européen des Entreprises Familiales. Retrieved November 4, 2015, http://www.kpmg.com/FR/fr/IssuesAndInsights/ArticlesPublications/Documents/4e-barometre-europeen-entreprises-familiales-2015.PDF
- La Porta, R., López-de-Silanes, F. and Shleifer, A. (1999). Corporate ownership around the world. *The Journal of Finance* 54(2), 471-517.
- La Porta, R., López-de-Silanes, F. and Shleifer, A. (2008). The Economic Consequences of Legal Origins. *Journal of Economic Literature* 46(2), 285 - 332.
- La Porta, R., López-de-Silanez, F., Shleifer, A. and Vishny, R.W. (1997). Legal Determinants of External Finance. *The Journal of Finance* 52(3), 1131-1150.
- La Porta, R., López-de-Silanes, F., Shleifer, A. and Vishny, R.W. (1998). Law and Finance. The Journal of Political Economy 106(6), 1113-1155.
- La Porta, R., López-de-Silanes, F., Shleifer, A. and Vishny, R. W. (2000). Agency Problems and Dividend Policies around the World. The Journal of Finance 55(1), 1-33.
- Le Nouvel Economiste.fr (2015). Philippe D'Ornano, coprésident du Mouvement des ETI : « Pour un Vrai Mittelstand Français ». Published on August 4, 2015. http://www.lenouveleconomiste.fr/philippe-dornano-copresident-du-mouvement-des-eti-pour-un-vrai-mittelstand-francais-27770/
- Les Echos Business.fr (2015). Entreprises Familiales: Les Compétences Passent Désormais avant la Filiation. Published on April 14, 2015.
- Les Echos (2015). Berlin revoit son régime fiscal de transmission d'entreprise. Published on July 9, 2015.
- López-de-Silanes, F. and Waxin, T. (2014). Family Firms and Performance : Where Do We Stand ? EDHEC Position Paper
- Mazzola, P., Marchisio, G. and Astrachan, J. H. (2006). Using the Strategic Planning Process as a Next-Generation Training Tool in Family Business. In P. Z. Poutziouris, K. X. Smyrnios and S. B. Klein (Eds.), Handbook of Research on Family Business (pp. 402-421). Cheltenham, UK and Northampton, MA, USA: Edward ELGAR.
- Murray, B. (2003). The Succession Transition Process: A Longitudinal Perspective. *Family Business Review* 16(1), 17-33.

- Perez-Gonzalez, F. (2006). Inherited control and firm performance. *American Economic Review* 96(5), 1559–1588.
- Pyromalis, V. D., Vozikis, G. S., Kalkanteras, T. A., Rogdaki, M. E. and Sigalas, G. P. (2006). An Integrated Framework for Testing the Success of the Family Business Succession Process according to Gender Specificity. In P. Z. Poutziouris, K. X. Smyrnios and S. B. Klein (Eds.), Handbook of Research on Family Business (pp. 422-442). Cheltenham, UK and Northampton, MA, USA: Edward ELGAR.
- Sharma, P., Chrisman, J. J. and Chua, J. H. (2003). Predictors of Satisfaction with the Succession Process in Family Firms. Journal of Business Venturing 18(5), 667–687.
- Sharma, P. (2004). An Overview of the Field of Family Business Studies: Current Status and Directions for the Future. *Family Business Review* 17(1), 1–36.
- Family Business Institute (n.d.). Succession Planning. Retrieved May 2, 2015, http://www.familybusinessinstitute.com/index.php/Succession-Planning/
- Transregio (2005).- Transmission d'entreprises dans sept régions européennes. Rhône-Alpes: ci-media, http://www.rhone-alpes.cci.fr/transregio/Brochure.pdf
- Tsoutsoura, M. (2015). The Effect of Succession Taxes on Family Firm Investment: Evidence from a Natural Experiment. *The Journal of Finance* 70(2), 649-688.
- Wall Street Journal (2015a). Careers: The Cost of Germany's Graying. Published on July 29, 2015.
- Wall Street Journal (2015b). Family Firms Welcome Outside Buyers. Published on August 21, 2015.
- Ward, J. (1987). Keeping the Family Business Healthy: How to Plan for Continuing Growth, Profitability, and Family Leadership. Jossey-Bass Eds.
- Ward, J. (2004). Perpetuating the family business. 50 lessons learnt from long-lasting, successful families in business. Palgrave Macmillan Eds.

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NOTES

EDHEC BUSINESS SCHOOL

LILLE
24 avenue Gustave Delory - CS 50411
59057 Roubaix Cedex 1 - France
Tél. : + 33 (0)3 20 15 45 00
Fax : + 33 (0)3 20 15 45 01

NICE
393 promenade des Anglais - BP 3116
06202 Nice Cedex 3 - France
Tél. : + 33 (0)4 93 18 99 66
Fax : + 33 (0)4 93 83 08 10

PARIS
16-18 rue du 4 septembre
75002 Paris - France
Tél. : + 33 (0)1 53 32 76 30
Fax : + 33 (0)1 53 32 76 31

LONDON
10 Fleet Place, Ludgate
London EC4M 7RB - United Kingdom
Tél. : + 44 (0)207 871 67 40
Fax : + 44 (0)207 248 22 09

SINGAPORE
1 George Street
#07-02 Singapore 049145
Tél. : + 65 (0)6438 0030
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