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The Effect of Commission Bans on Household Wealth: Evidence from OECD Countries

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Abstract

In most OECD countries, financial advisors are primarily paid through commissions. This entails a principal agent problem in which the financial advisor has the incentive to sell financial products that maximize his income, not however the return of the investor seeking financial advice. To combat this conflict of interest, countries such as Denmark, Finland or Great Britain introduced commission bans. Our research finds an annual return difference of household wealth between 1.5 percent to 2 percent with a sample period from 1997 to 2020 for OECD countries with commission ban versus OECD countries without. This implies that households in commission ban countries can have close to double the amount of wealth compared to household in non-commission ban countries after 40 years. For Europe, our results indicate an annual household wealth loss of 375 billion EUR.

Zusammenfassung

In den meisten OECD-Ländern werden Finanzberater über Provisionen vergütet. Dieses System führt zu einem Principal-Agenten-Problem, bei dem der Finanzberater einen Anreiz hat, Finanzprodukte zu verkaufen, die sein Einkommen maximieren, nicht jedoch die Rendite des Anlegers. Um diesen Interessenskonflikt aufzulösen, haben Länder wie Dänemark, Finnland oder Großbritannien Provisionsverbote eingeführt. Unsere Ergebnisse zeigen, dass zwischen 1997 und 2020 OECD-Länder mit Provisionsverbot eine 1,5 Prozent bis 2 Prozent höhere jährliche Rendite auf ihr Vermögen erreicht haben. Dies kann nahezu zu einer Verdopplung des Haushaltvermögens nach 40 Jahren führen. Für Europa zeigen unsere Ergebnisse einen jährlichen Haushaltsvermögensverlust von 375 Milliarden EUR.

JEL: D14, D18, G2

1. Introduction

The question of private household wealth formation is one of eminent importance and relevance. This is especially the case for countries where aging societies increasingly place pressure on social security systems. Ultimately, these countries will have to encourage and facilitate wealth formation outside of crumbling pension systems to secure prosperity.

Optimizing household portfolio choices is of key importance in this respect. Professional financial advice can be helpful as most private households do not have the time nor the education to make individual investment choices. However, households have shown to make poor asset allocation choices. For instance, by their non-participation in the risky asset markets, investors lose about 2 to 6 percent equity premium annually (Calvet, Campbell and Sodini, 2007). Furthermore, households also choose more expensive vehicles within the same asset class. This is worrisome as costs for financial products play a similar if not more pronounced role in determining the performance of an investment (Sharpe, 2013).

Countries including Australia, Denmark, Finland, Great Britain, the Netherlands, New Zealand, and Norway introduced commission bans for the financial industry. The notion behind this policy is that instead of facing a financial conflict of interest, advisors must be paid directly by their customers instead of financial companies such as banks, funds or insurances. The latter entails a principal agent problem, whereby financial advisors have an incentive to sell products of low quality in high quantity to increase their commissions. In most countries commission based financial advice is still the common practice.

Our research sheds light on the connection between household portfolio choices, which effect their investment results, and commission-based systems. To our best knowledge, we are unaware of any academic paper that has tried to do so on a cross-country level to date. Chapter 2 will provide a comprehensive literature overview. The introduction of commission bans is described in Chapter 3. Our data and empirical approach will be introduced in Chapter 4 before we depict and discuss our results. Chapter 5 will deliver policy recommendations before Chapter 6 concludes our paper.

2. Literature Review

Household portfolio choices differ from institutional investor strategies. Most households do not possess either the knowledge nor the time to make informed decisions. To solve this issue financial advisors offer support to households. However, as described in the theory of financial intermediation[1], markets are not perfectly efficient if sellers have more information than buyers.

To begin with, financial decision making is not trivial; household must have a plan over their whole lifetimes. Households are confronted with concerns regarding diversification, how much to save to smooth consumption, and participation in risky assets, see e.g., Markowitz, (1952) and Calvet, Campbell and Sodini (2009). This includes a complete overview of the

[1] See Santomero (1984) and Bhattacharya and Thakor (1993).

individual financial situation (Yao and Zhang, 2005). In other words, professional financial planning often involves encouraging clients to engage in intertemporal decisions they would otherwise avoid. As a result, Kramer (2012) shows that advised accounts are better diversified. A lack of diversification is one of the potentially most costly mistakes (Gaudecker, 2015).

Yet, the mechanism and incentives behind financial advice are far from efficient. Campbell (2006) conveys that half of all households do not own equity despite high historical returns and significantly reduced information and transaction costs. In other words, although stock market participation promises high returns, participation is low for private households. This finding is consistent with what has been dubbed the "stock market participation puzzle" in the economic literature (Mankiw and Zeldes, 1991). In theory, financial advice should convey financial knowledge to private households and mediate investments in high yielding assets. Low stock market participation is one aspect that questions the functionality of financial advice and its incentives.

One explanation lies in the structure of the financial industry itself: financial products that maximize commissions for the agents/financial advisors and insurers do not necessarily maximize the customers financial outcome. This means that commission advisors will not de-bias behavioral clients when it is not in their best interest to do so Anagol, Cole and Sarkar (2017); a classic principal-agent problem (see Figure 1). For a specialized principal-agent-model for financial advice, see (Golec, 1992). Fees that are automatically deducted are attractive to sellers because they often go unrecognized by consumers, which is why commission-based financial advice is consumer unfriendly (Finkelstein, 2009). Jones, Lesseig and Smythe (2005) find that advisors making fund recommendations are more influenced by commissions and profits than by the knowledge of which is the best choice for the investor. Research by Gorter, (2012) adds to this by indicating that the quality of (independent) advice increases as commissions are lowered or banned.[2]

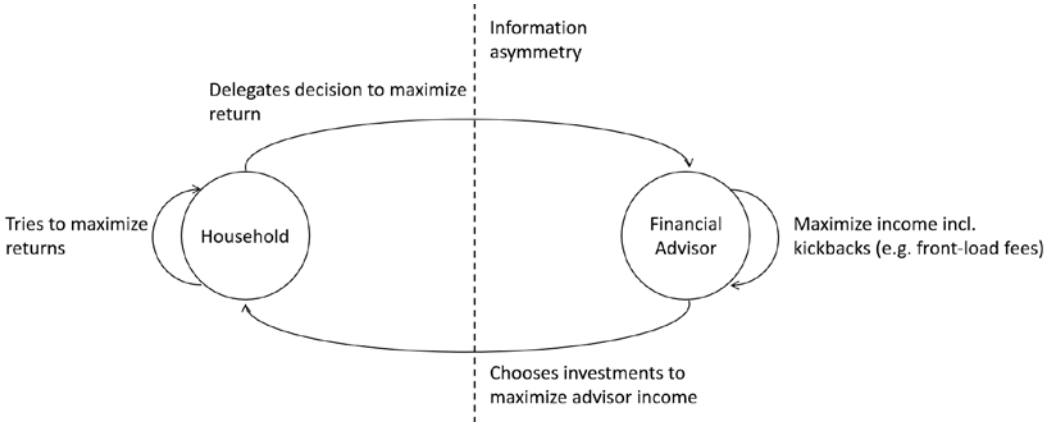
Furthermore, qualified advisors cannot stand out in the market, as good and bad advisors cannot be easily differentiated by consumers. This phenomenon is known as information asymmetry: most consumers are not able to assess the quality of the financial product as its utility only becomes visible long after the product was bought (Akerlof, 1970). Therefore, financial products are so called credence goods (Darby and Karni, 1973). The more complex financial products are, the harder it is for customers to merit the quality of the service provided by the intermediary. The risk of conflicting interests between agent and customer becomes higher (Jong, 2017).

Bas, Bruggert and van der Lijn (2004) demonstrated in the market for mortgages that consumers ended up buying more than average complex mortgages and accepted less favorable interest rates as well as quality when advised based on renumerations. The Great Financial Crisis (GFC) of 2007 can be contended to be a result of this structure, whereby

[2] Hackethal, Haliassos and Jappelli (2012) show that German customers who use a commission-compensated financial adviser have lower performing portfolios net of costs. This underscored by Hoechle *et al.* (2018) finding that the bank's own mutual funds and structured products are most profitable for the bank, and profits increase with trade size known as scale effects. This includes a high rate of churning among advisors to increase commissions (Hackethal and Inderst (2013).

advisors had an incentive to sell mortgages with a high loan amount to increase their commissions.

Figure 1 : Principal Agent Problem in the Financial Industry



Own illustration; based on: (van Slyke, 2007).

A popular view in academia is that the lack the lack of financial knowledge explains the difficulty for consumers to assess the service quality before and even after purchase of a financial product (Lusardi and Mitchell, 2008).[3] Anagol and Kim (2012) find that insurance agents routinely recommend inferior products to less knowledgeable customers while simultaneously recommending more suitable products to more sophisticated customers. Bucher-Koenen *et al.*, (2021) empirically verify that women (but not men) with higher financial aptitude reject recommendations more frequently, while woman in general are particularly vulnerable to receive more costly financial advice than men.

However, Hung and Yoong (2013) observe little evidence that even sophisticated consumers can perceive advice conflicts of interest. Findings by Inderst and Ottaviani (2012) accede Hung and Yoong's observation: most clients are unaware of potential conflicts of interest. Even worse, in Cain, Loewenstein and Moore (2005) paper, many participants have an excessive tendency to follow advice, even if distorting incentives behind advice are disclosed. This phenomenon is formulated by Muller and Turner (2021) as the "high-fee puzzle," which is that some people pay high-fees for financial advice and financial products when lower-fee advice and products are available.[4] This contradicts the logic of Sharpe that after costs the return on the average actively managed dollar will be less than the return on the average passively managed dollar.

When 8,000 customers were offered free independent expert advice, only five percent were willing to accept the advice (Bhattacharya *et al.*, 2011). This makes apparent that customers themselves do not act in their best self-interest when it comes to financial advice. It can however be attributed to the same psychological forces described by the sunk cost's fallacy (Arkes and Blumer, 1985). Worse still, van Swol and Sniezek (2005) find that the only

[3] Several papers have reported that a large proportion of the population is not financially literate and cannot grasp basic concepts of inflation and risk diversification, see for instance: Lusardi and Mitchell (2007); Lusardi and Mitchell (2011) and Lusardi, Mitchell and Curto (2010).

[4] Sharpe (2013) shows that a person saving for retirement who chooses low-cost investment could have a standard of living throughout retirement more than 20% higher than that of a comparable investor in high-cost investments.

significant predictor whether the decision matches the advisor's advice is the confidence of the advisor.

Another caveat of those calling for financial literacy is that from a welfare standpoint, financial advice can avoid costly investment in financial knowledge by households. Given the large potential loss in welfare from poor financial decisions, renting the expertise of financial professionals should be even more common than seeking the services of an attorney or an accountant (Finke, 2013).[5]

Lastly, we must address that poor financial advice has another negative aspect: it discourages saving. Benhabib, Bisin and Luo (2019) show that the extent to which proportional growth rates are persistent across individuals (type-dependence) or increasing in wealth (scale-dependence) generates positive feedback. This means that high rates of return tend to increase savings. This finding is supported by Feldstein (1976). Low rates of return ultimately discourage saving, a finding that should alert governments of ageing societies to act against misaligned financial advice.

3. Commission Bans

We established that most customers suffer from deep asymmetries of information, such that they often are dependent on advice from those selling to them and are not well able to assess any limitations to the advice provided. Denmark, Finland, the United Kingdom, Norway and the Netherlands, Australia and New Zealand introduced commission bans to combat this problem. These commission bans were brought into effect at different points in time.

Denmark's commission ban entered into force on 1 July 2017. The New Law Insurance Mediation Act in Finland introduced a general commission ban in 2005. In the United Kingdom, the ban on commissions was introduced in 2013.

Moreover, in 2013 the Netherlands introduced a commission ban for the mediation of complex financial products like life-and investment insurances and mortgages. In 2014 a ban on commissions for the sale of investment products was introduced (Jong, 2017). Norway introduced a commission ban for independent brokers regarding non-life insurance in 2004 and in 2007 for life-and pension-insurance.

In July 2020, the Australian government introduced a commission ban on listed investment company (LIC) sales. The government in New Zealand introduced a commission ban in 2019.

On the European level, there is a consensus between national governments, EIOPA (European Insurance and Occupational Pension Authority), FSUG (Financial Services User Group) and financial supervisors that the logic of the commission-system leads to mis-selling (Jong, 2017). Paradoxically, these findings have not led to a Europe-wide introduction of commission bans. The European legislature in both Article 18 MiFID and Article 23 MiFID II

[5] Unsurprisingly, the Financial Conduct Authority (2017), which conducts robust large-scale quantitative surveys annually, concludes that all consumers and not just uneducated cannot judge the quality of financial advice. It also stresses that over-reliance on financial literacy constitutes the most significant problem to shortcomings in disclosure and financial advice.

(Markets in Financial Instruments Directive) simply stipulates that investment firms must take all appropriate steps to identify and prevent or manage conflicts of interest.

MiFID II, which was enacted in 2014, requires disclosure of any payment or benefit to or from the financial service provider (Jong, 2017). The original proposal for the MiFID amendment called for a Europe-wide ban on commission-based advice. However, this provision was subsequently changed by the European Parliament to an optional provision where each member states is responsible for the implementation of the directive. It is argued that the EU was not able to prevail against the resistance from the financial industry.

In 2015, the EU PRIIPs Regulation made it compulsory to hand out Key Information Documents (KIDs) prior to investment. For those that have held KIDs in their hands, it is questionable whether they affect customer confusion. It can be contended that the only binding EU legislation on commissions is that conflict of interest must be disclosed.

Cain, Loewenstein and Moore (2005) find that the disclosure of conflicts of interest leads to an increase of the advice bias because advisors are released from moral concern and even feel encouraged to give wrong advice. According to Inderst and Ottaviani (2012) a disclosure leads to a reduction of commissions but may also lead to a sales increase of more costly products.

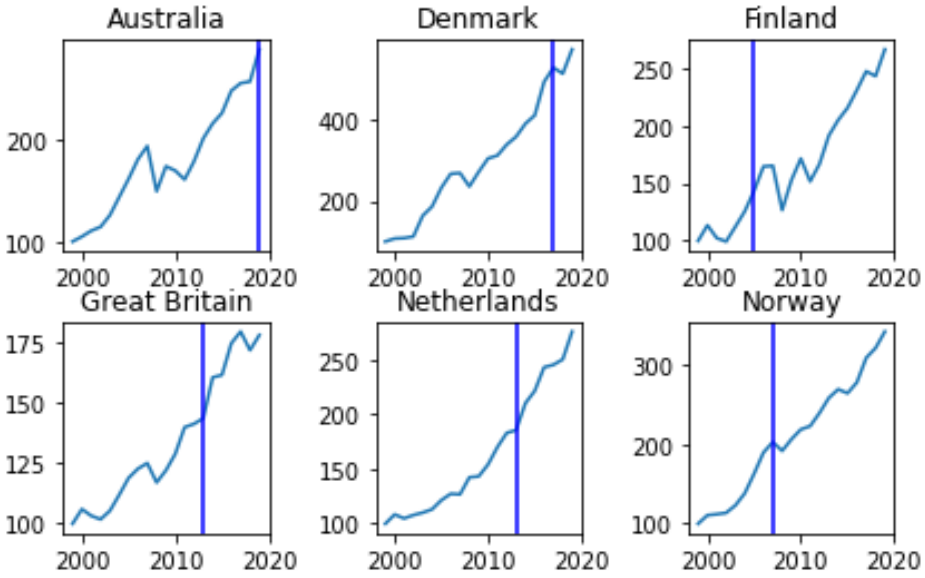
The CMU Action Plan launched in 2005 led to no significant changes, even though it aims to ensure that retail investors in the EU are offered bias-free advice and fair treatment (European Commission *et al.*, 2023). As of beginning 2023, the EU Commission is again considering a general ban on commission-based investment advice to protect consumers from high costs and poor advice. The EU commissioned a study to feed into the development of the retail investment strategy announced for 2022 that confirmed that the cost for products that carry inducements are 24-26 percent higher than those products which do not carry inducements (European Commission *et al.*, 2023).

Considering this, our research could not be more relevant. Our research empirically analyses how commission bans impacted the investment success of private households.

4. Empirical Approach

4.1. Data Overview

Figure 2 : Development of Invested Household Wealth in Countries that Introduced Commission Bans



Finland 2005, Norway 2007, Great Britain 2013, Netherlands 2013, Denmark 2017, Australia 2019

Figure 2 shows that there is no simple absolute effect on the wealth development when commission bans are introduced, showing that a commission ban will not lead to a loss of prosperity.

In order to understand the real effect of commission bans, the previous simple comparison of invested household wealth is not enough. Therefore, we retrieved annual OECD data from 1996-2020 for all available countries (OECD, 2023a). By implementing a two-ways fixed effects model we are able to account for both country as well as time fixed effects and find the impact of commission bans.

Our focus lies on the influence of commission-based consulting on the returns on the invested wealth. We therefore analyze the development of household wealth while accounting for savings.

Table 1 gives a short introduction to our main indicators, retrieved from 1997-2020. They include 568 unbalanced panel observations from 38 countries (see Table 2). The first of the six commission bans in this sample was introduced by Finland in 2005. All absolute values are denoted in USD to account for different real returns due to the varying inflation over time and currencies.

Table 1: Overview Dependent and Independent Variables

Independent Variable	**Unit**	**Source**
Social contributions	% of GDP	OECD (2023a)
Working population	% of total population	OECD (2023a)
Education	% of total population which achieved a tertiary education	OECD (2023a)
Share of female population	% of total population	World Bank (2022)
Dependent Variable	**Unit**	**Source**
Return on Invested Wealth	% of wealth	Based on OECD (2023a)

Our dependent variable is the approximate performance of invested money of all private households. We use the intuitive definition of invested money by assuming that investments happen at the end of the period. Therefore, we extract the wealth gain less savings (i.e., household wealth development less currency, deposits and savings in relation to household assets).

$$Return_{i,t} = LnChangeInvested\ Wealth_{i,t} - Savings_{i,t} - 1$$

We define invested wealth as the total wealth of households excluding currency and deposits. Therefore, we focus on the selection ability within one asset class of investors instead of the strategic asset allocation, determined by the household's risk appetite ((Sharpe, 1964); (Lintner, 1965).

$$Invested\ Wealth\ in\ USD_{i,t} = \ Wealth\ in\ USD_{i,t} \ * (1 - \%\ Currency\ and\ Deposits_{i,t})$$

Our dependent variable contains the wealth held in life insurances, mutual funds, pension funds, securities other than shares as well as shares and other equities. Our savings variable is defined as the saving rate in percent of household wealth (OECD, 2023b).

For control variables we include social contribution, tertiary education, percent working population, as well as the percentage of females out of the total population.[6]

As our data includes outliers, we correct for the most extreme data points by removing changes in wealth of more than 20 percent. We also remove countries with missing values (i.e., Brazil, Russia, New Zealand and Colombia).

[6] These control variables were selected from a broader set of variables and included due to their significant impact on our dependent variable.

Table 2: Commission Ban in OECD Countries

(as of 2021)

Country	**Commission ban**
Finland	Yes (2005)
Great Britain	Yes (2012)
Netherlands	Yes (2013)
Norway	Yes (2007)
Australia	Yes (2019)
Denmark	Yes (2017)
Austria	No
Belgium	No
Canada	No
Czech	No
France	No
Germany	No
Greece	No
Hungary	No
Iceland	No
Ireland	No
Italy	No
Japan	No
Korea	No
Luxemburg	No
Mexico	No
Poland	No
Portugal	No
Slovakia	No
Spain	No
Sweden	No
Switzerland	No
USA	No
Chile	No
Estonia	No
Israel	No
Slovenia	No
Turkey	No
Brazil	No
Latvia	No
Lithuania	No
South Africa	No
India	No

4.2. Model Specification

Figure 3 : Household Wealth Development

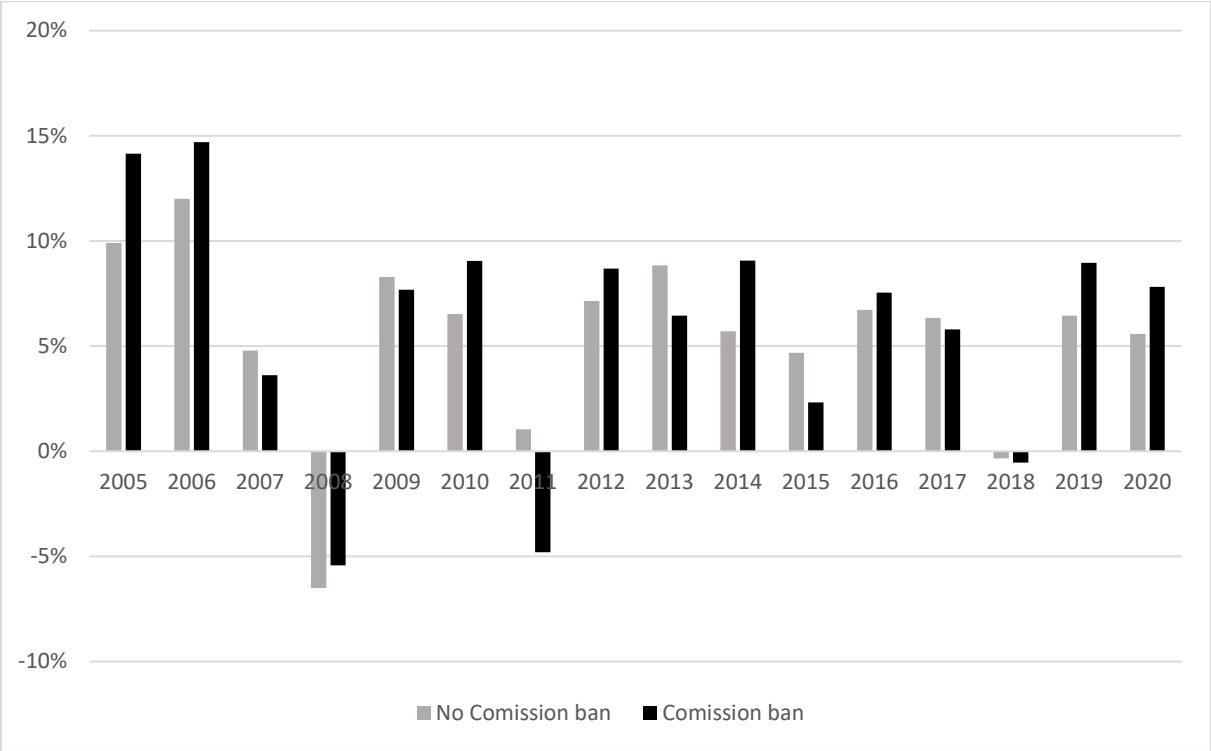


Figure 3 shows the average wealth development for households in countries with commission bans compared to countries without it. Visualizing our data does not convey a clear trend. Households with commission ban experience a slightly increased average annual development of wealth of 5.9 percent, whereas households without commission bans display a 5.4 percent annual household wealth development.

The number of countries with commission bans increased slowly over time. Finland was the first country to introduce one in 2005 with others following in different years (2007, 2012, 2013, 2017, 2019). Therefore, the simple comparison of wealth gains is impacted by the timing and number of countries.

Typically, country specific effects, especially when there were few commission ban countries, impact the dependent variable. For instance, historical and cultural reasons might lead to differences in household allocation decisions between countries.

In this paper, we overcome issues of country-specific factors by including country fixed effects and additionally heteroskedasticity corrected standard errors. Investment returns are also sensitive to market shocks, for instance the global financial crisis in 2009. To consider these year-specific changes in wealth performance we also implement time-fixed effects.

For the above-mentioned reasons and as it is commonly used in the literature[7], we estimate the following two-ways fixed effects model:

[7] See e.g. Roth *et al.* (2022) for an overview.

$$Y_{i,t} = CFE_i + TFE_t + \beta * ComissionBans_{i,t} + X_{i,t} + \varepsilon_{i,t}$$, where

$Y_{i,t}$: Return at time t for country i

CFE_i: Country i fixed effects

TFE_t: Time fixed effects at t

$ComissionBans_{i,t}$: Dummy variable when commission ban is implemented in country i and time t

β: estimated impact of commission ban

$X_{i,t}$: (optional) control variables

$\varepsilon_{i,t}$: Error term (heteroskedasticity corrected)

4.3. Hypotheses and Results

The main hypothesis that we investigate is:

H0: households in countries with commission bans do not show higher returns compared to countries without commission bans.

H1: households in countries with commission bans exhibit higher returns compared to countries without commission bans.

Table 3: The Effect of Commission Bans on Household Wealth (Global Results)

No. Observations	568	568
R-squared	0.8223	0.8363
Adj. R-Squared	0.8036	0.8177
F-statistic	107.8611	127.4823
P-value(F-stat)	0.0000	0.0000
Commission Bans	1.7035*** (2.8004)	1.1812** (1.9768)
Region	Total	Total
Incl. Control Variables?	No	Yes

***=1%, **=5%, t values in parentheses

Introducing a commission ban translates to a relative increase in household wealth returns significantly by 1.7 percent p.a. Even when accounting for control variables, the outperformance persists (1.2 percent p.a.). The added explanatory power by the control variables is relatively low, as they are rather static compared to the wealth development.

Our result might even underestimate the effects, as we treat the United States and Sweden as countries without commission ban. Here, fee-based financial advice (contrary to commission-based advice) is widely spread but there is no explicit ban. Our results remain robust when we take these 'quasi commission ban' countries into account (see Table 12).

Additionally, the residuals do not show clear trends and only few outliers as shown in 5 for the sample without controls.

As most countries that introduced commission bans are European, we further analyze this group. Here, a more homogeneous group of countries might change the overall results.

Table 4: The Effect of Commission Bans on Household Wealth (European Results)

No. Observations	417	417
R-squared	0.7943	0.8184
Adj. R-Squared	0.7694	0.7943
F-statistic	56.6014	72.4788
P-value(F-stat)	0.0000	0.0000
Commission Bans	2.0756*** (3.1915)	1.7382*** (2.6461)
Region	Europe	Europe
Incl. Control Variables?	No	Yes

***=1%, **=5%, t values in parentheses

Even when only analyzing European countries, the impact of commission bans is highly positive and significant (see Table 4). The effect increases to ~2 percent or 1.7 percent when taking controls into account. We can conclude that commission bans significantly positively impact household wealth returns.

When using the change in savings as the dependent variable we find that they are not negatively impacted by a commission ban, neither for our total sample nor only European countries. The results are presented in Table 5 and Table 6. Therefore, our results indicate that commission bans do not change the savings behavior of households.

Table 5: Results for Change in Savings Rate as the Dependent Variable (Total)

No. Observations	568	568
R-squared	0.0990	0.1004
Adj. R-Squared	0.0044	-0.0019
F-statistic	0.2606	0.2469
P-value(F-stat)	1.0000	1.0000
Comission Bans	1.7310 (0.858)	1.7992 (0.848)
Region	Total	Total
Incl. Control Variables?	No	Yes

t values in parentheses

Table 6: Results for Change in Savings Rate as the Dependent Variable (Europe)

No. Observations	417	417
R-squared	0.1100	0.1129
Adj. R-Squared	0.0023	-0.0052
F-statistic	0.1953	0.1854
P-value(F-stat)	1.0000	1.0000
Comission Bans	2.2803 (0.8356)	2.6876 (0.842)
Region	Europe	Europe
Incl. Control Variables?	No	Yes

t values in parentheses

To test whether the two-ways fixed effects model is appropriate for our data, we conducted tests following Sun and Abraham (2021) and Callaway and Sant'Anna (2021). Results can be found in the Appendix.

4.4. Modelling the Impact of Commission Bans

Furthermore, we model the impact of a commission ban using our results for Europe from Section 4.3. We analyze the effect in wealth changes with the following equation:

$$Wealth_{t+1} = Wealth_t * (1 + Return_t) + SavingsPlan_t$$

With a return difference of ~1.7 percent, we find that after 40 years a private household in a commission ban country with initial savings of 100.000 EUR and a yearly savings plan of 1.200 € will have ~750.000 EUR or 84 percent more of their average invested money for their pension when the base return is 5.2%.[8] This is in line with Sharpe (2013), who finds that retirees who saved in low-cost investment products have a standard of living 20 percent higher compared to those that invested into high-cost financial products. Further calculations can be found in Table 7.

$$Wealth_r = Savings_t * (1 + Return)^n + \sum_{t=1}^{n} Savings_t * (1 + Return)^{n-t}$$

[8] Average return of non-commission ban countries between 2010–2020. Results will vary with different assumptions on base return or on the duration of the saving plan.

Table 7: Difference in Wealth Outcomes between Commission-Ban countries vs. Non-Commission-Ban Countries (Timespan: 40 years)

	Initial Investment (EUR)	Yearly Savings Plan (EUR)	Added value through commission ban (EUR)	Added value in % of average investments
(1)	-	1,200	81,240	53%
(2)	-	6,000	406,202	53%
(3)	-	12,000	812,405	53%
(4)	50,000	1,200	422,639	79%
(5)	50,000	6,000	747,601	66%
(6)	50,000	12,000	1,153,803	61%
(7)	100,000	1,200	764,037	84%
(8)	100,000	6,000	1,088,999	72%
(9)	100,000	12,000	1,495,201	66%

Our results also allow us to calculate the household wealth lost for countries without a commission ban. Table 8 summarizes the wealth lost by the lack of commission bans. In total, introducing a commission could add ~375 billion EUR household wealth every year.

Table 8: Household Wealth loss in the European Union from Commission-Based System in 2021 (in bln EUR)[9]

Total	375
DEU	98
FRA	79
ITL	72
SPA	33
SWE	26
BE	20
AUS	10
IRE	7
POL	7
POR	5
CZH	4
GRE	3
HUN	3
LUX	2
EST	1
LIT	1
SLO	1
SLV	1
MAL	.5

[9] According to data from 'Allianz Global Wealth Report', 2022.We assume a 1.7% return difference.

4.5. Determinants of Commission Bans

Our results from Section 4.3. show that our control variables have an influence on household wealth formation, especially in Europe. The following logit regression model aims to help us draw conclusions about the country specific characteristics that increase the probability of a commission ban:

$$\log\left(\frac{P_{i,t}}{1-P_{i,t}}\right) = \beta_0 + \beta * X_{i,t} + \varepsilon_{i,t}, \text{ where}$$

$P_{i,t}$: Probability that the country i has a commission ban in effect at time t

ß: Estimated impact of variables

$X_{i,t}$: control variables

$\varepsilon_{i,t}$: Error term

Table 9: Effect of Control Variables on Likelihood of a Commission Ban

No. Observations	568	417
Pseudo R-squared	0.33	0.47
Log-Likelihood	-105.88	-74.56
P-value(LLR)	0.0000	0.0000
SocialContr	0.088098** (1.9641)	0.165874** (2.4141)
TertiaryEd	0.069591*** (2.6802)	0.297164*** (4.9035)
%WorkingPop	-0.458773*** (-4.6285)	0.4905 (0.0280)
Population, female (% of total population)	-2.439634*** (-5.1947)	-1.581930*** (-3.2532)
Region	Total	Europe
Incl. Time Fixed Effects?	No	No

***=1%, **=5%, t values in parentheses

The percentage of social contributions have a significant positive effect on the likelihood of a country introducing a commission ban for all our regressions. This result supports the idea that countries with a strong social welfare system also prioritize consumer financial protection in form of commission bans, which we have shown to have a positive performance impact.

In addition, high tertiary education, which correlates positively with financial literacy, increases the probability of introducing a commission ban significantly in all regions. A well-educated public might be easier to convince and mobilize for the introduction of a commission ban. Our results show that an educated public is a prerequisite for introducing an intervention such as commission bans.

Especially countries with a high percentage of working population, who save wealth during their working lives, require qualified and optimal financial advice for their savings decisions (van de Ven and Fano, 2017). Our results, however, predict a low probability for countries with a high employment rate to introduce a commission-ban at least globally and in developed countries. It might be that in more developed countries where ageing societies are more common, comparably high financial wealth of households sparks more interest in questions around optimal financial advice laying the ground for commission ban. For Europe and Western Europe, we do not find any significant relationship.

Moreover, a high percentage of female population decreases the prospect of a commission ban significantly in every region considered. Both models show a significant negative effect for western Europe at a 1 percent level. This supports research by Bucher-Koenen *et al.*, (2021) who show that female clients are recommended more costly products by financial advisors compared to men. Women sate a preference for delegating decisions but appear unaware of associated higher costs. According to Bluethgen *et al.*, (2008) being male is positively correlated with the equity faction of the respective portfolio.

5. Policy debate

Our results show that commission bans increase the rate of return on wealth for private households. This begs the question what alternatives are there?

The main alternative to a commission-based system is fee-based financial advice. Fee-based financial advice means paying the financial advisor directly. Irrespective of the benefits of resolving the conflict of interest induced by commission-based financial advice, there are indications that some groups of consumers are struggling to pay directly for financial advice (Jong, 2017). Also, the fixed fee model is not fully free of conflict of interest itself as it can lead to shirking and over-billing.

Another common issue with fee-based financial advice is that those consumers able to pay for fee-based financial advice, are not always prepared or willing to pay directly for advice. As Jong (2017) discovers: consumers tend to choose the cheapest form of advice instead of the best advice. This logic is however flawed. Compared to fee-based financial advice, commission based financial advice simply 'feels' free of charge. In most cases, consumers are oblivious to the fact that commission based financial advice is financed by the fees included in the price of the financial instrument.

Another alternative are asset-based models, which tie the compensation to the performance. The advisor receives a small percentage of assets under management. Theoretically, this performance-based payment should align interests of advisors and investors as both parties are better off when the investment increases in value. But the advisor might also try to increase assets under management and thus decrease investments outside the fee arrangement. We encourage future research on both fee-based and asset-based models.

Research by Finke (2013) shows that a key issue for households seeking financial advice is understanding how differences in compensation methods and regulatory frameworks affect incentives of financial advisors. Based on this finding, commission bans will need to be accompanied by educational programs that teach the impact of costs on the performance of financial vehicles. Financial education programs designed by Lusardi et al. for instance cover this area of financial knowledge among a range of topics, yet we do not see the topic of costs prioritized to the extent that might be necessary to stick with the public.

Whereas educational programs in developing countries without functioning financial advice markets should emphasize basic financial knowledge, in developed countries these programs need to address the elephant in the room: incentive biases of financial advisors. Financial education alone will not do the job as commission compensation is generally opaque since many investors are unaware of how much they pay for investment loads, and disclosure does not appear to alleviate this confusion (Beshears *et al.*, 2009).

Governments who rallied and rally against commission bans such as Germany, France and Italy see commission bans as an unfavorable free market intervention. Sadly, they fail to notice that a commission-based system innately leads to less competition - a core fundament of a free market - between financial advisors. When advice is seen as free of charge, consumers will not necessitate comparing providers. At the same time, agents who recommend lower-cost, lower commission products will ultimately be forced out of

business by agents recommending less suitable, higher-commission products who are able to use the excess revenues to increase marketing expenses, rent more expensive office suits, and hire more talented employees (Jong, 2017).This adverse selection will prevail unless commissions are banned. Bolton, Freixas and Shapiro (2007) show that conflicts of interest are reduced by competition, something a commission-based system will not enable.

Commission bans are not the only potential solution to fostering a fair competition between financial advisors. Well performing contribution plans or governmental pension funds such as in Norway or the Netherlands foster competition by setting a strong benchmark to beat for the private industry. The fact that countries with investment-based pension contribution plans also implemented a commission ban speaks for itself.

Another issue that is often addressed in the realm of the debate is that the number of financial advisors would dramatically decrease because of a commission ban. This prediction does not find empirical evidence in countries that have introduced commission bans or at least stricter fiduciary standards. The Netherlands for instance has not seen an extra decrease of independent financial advisors (Jong, 2017). This is supported by the UK Financial Conduct Authority (2020), which finds, that the number of Financial Advisors in the UK rose by 4% since 2012 with the commission ban in place since 2013. Furthermore, Finke and Langdon (2012) discover no evidence in the US that stricter fiduciary standards with regards to commission-based financial advice reduce the number of registered representatives within the state, or negatively impact representative's ability to provide services to lower-wealth clients.

Theoretically, Thiel (2020) shows that commission bans are associated with so called "advice gaps", meaning that advice becomes less accessible as financial advisors are squeezed out of the market. Although this phenomenon might theoretically exist, our results reveal that a potential "advice gap" does not necessarily have to be bad. Instead, no advice can be better than advice at all when the advice given is flawed by conflict of interest. Low-cost products, such as exchange-traded funds (ETFs), are rarely offered to investors because these low-margin products do not pay a commission to distributors, however ETFs can be bought self-sufficiently through any online broker nowadays and the average passively invested dollar has been proven to have a higher return after costs than averagely actively managed dollar.

For future research, it is important to learn from the experiences in countries. In particularly with micro-level data and case studies for countries that have introduced commission bans in the past. While our research aims to answer the question on a cross-country level, it fails to analyze the effects of commission bans in more depth on a national level.

6. Conclusion

Our paper addresses the effect of commission bans on wealth formation. The academic literature presented draws a clear picture of the principal agent problem inherent in the financial advice industry. Although misaligned incentives of financial advisors created by commission-based systems have been shown to have a negative impact on the quality of financial advice, many countries decided not to introduce commission bans. In the European Union, only five including the UK countries followed the recommendation of the Commission to ban commission-based financial advice. This policy discrepancy enabled our empirical research.

We compared OECD data on household wealth to calculate the difference in return on wealth between commission countries versus commission-ban countries. Our regressions show positive significant effects of commission bans on wealth formation in all OECD countries. This effect is even stronger for Europe. Countries with commission-bans in place have seen an outperformance of their wealth between 1.7 percent and 2 percent annually.

To fully understand the economic extent of our results we model the impact of commission bans in absolute number. We find that a household in a commission-ban country achieves wealth levels double the amount of a household in a non-commission-ban country over the period of 40 years with the most conservative estimate (typical timespan for retirement provision). On the macro-level we calculate how much household wealth is foregone without a commission ban in the European Union. In total, we find that countries that have not implemented commission bans lost ~375 billion EUR of household wealth last year.

In another step, we try to explain whether certain characteristic increase the likelihood of a commission ban. Our logit regression model indicates that countries have a higher probability of introducing a commission ban when they have strong social security system, high educational levels among society, and a low percentage of female population. This result is alarming: if countries, which are already economically strong also implement better policies to foster wealth formation then ultimately standard of livings will diverge between OECD countries.

We hope our paper sparks new interest in academic research on measures that promise and deliver private household wealth creation in times of ageing societies and pressurized pension systems. Our results support the EU's attempt to introduce a mandatory European-wide commission ban.

Appendix

Table 10: Descriptives

	Wealth return	Commission ban	SocialContr	TertiaryEd	%WorkingPop	Female Pop (%)
count	586	586	586	586	586	586
mean	-3.85	0.08	9.94	30.63	66.73	51.13
std	5.17	0.27	4.38	10.59	2.22	1.00
min	-27.22	0	0.00	8.84	59.50	49.47
25%	-5.94	0	6.45	23.37	65.35	50.45
50%	-3.61	0	11.25	31.03	66.64	50.91
75%	-1.48	0	13.30	38.42	68.00	51.48
max	33.02	1	17.66	59.96	73.42	54.21

Table 11: Correlation Matrix

	Wealth return	Commission ban	SocialContr	TertiaryEd	%WorkingPop	Female Pop (%)
Return Wealth	1.0000	-0.1690	-0.0076	-0.1050	-0.1578	0.2299
Commission ban		1.0000	-0.0145	0.2740	-0.2383	-0.2185
SocialContr			1.0000	-0.3123	-0.0305	0.2517
TertiaryEd				1.0000	-0.2867	-0.3940
%WorkingPop					1.0000	-0.0162
Female Pop (%)						1.0000

Table 12: Results including USA and SWE as Commission Ban Countries (Total)

No. Observations	568	568
R-squared	0.8215	0.8364
Adj. R-Squared	0.8028	0.8178
F-statistic	116.6641	127.1272
P-value(F-stat)	0.0000	0.0000
Comission Bans	1.069479** (2.4206)	1.256194** (2.1096)
Region	Total	Total
Incl. Control Variables?	No	Yes

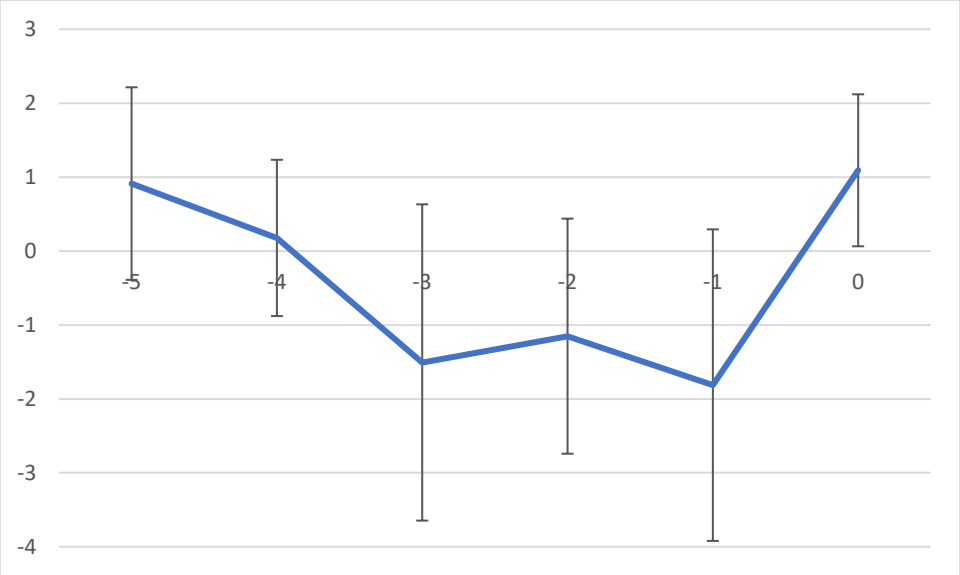
**=5%, t values in parentheses

Table 13: Results Placebo test

0.975 percentile	-0.8859	-0.8821	-1.3155	-0.8821
0.025 percentile	0.9563	0.9324	1.1847	0.9324
Region	Total	Total	Europe	Europe
Incl. Control Variables?	No	Yes	No	Yes

We ran a placebo test as suggested by Callaway and Sant'Anna (2021). Here, we simulated 10.000 regressions for each sample with randomly assigned commission ban variables (for times when no ban was in place). 11 presents our results. No significant effect on the 5% confidence level could be detected in any subset, supporting the validity of our model.

Figure 4 : Lead variable analysis for total sample



We (pre-)tested the parallel trends assumption in spirit of Sun and Abraham (2021). This means that our control and treatment group show similar wealth trends before the commission ban was introduced. This was implemented by adding lead variables to our model (t-1 to t-5) and running the regression. The resulting coefficients for the total sample without control variables are visually shown in 4, as the results of the other samples differ very little. In this case, no lead effect is significantly different from zero on a 5% confidence level.

Figure 5 : Residual plot for total sample

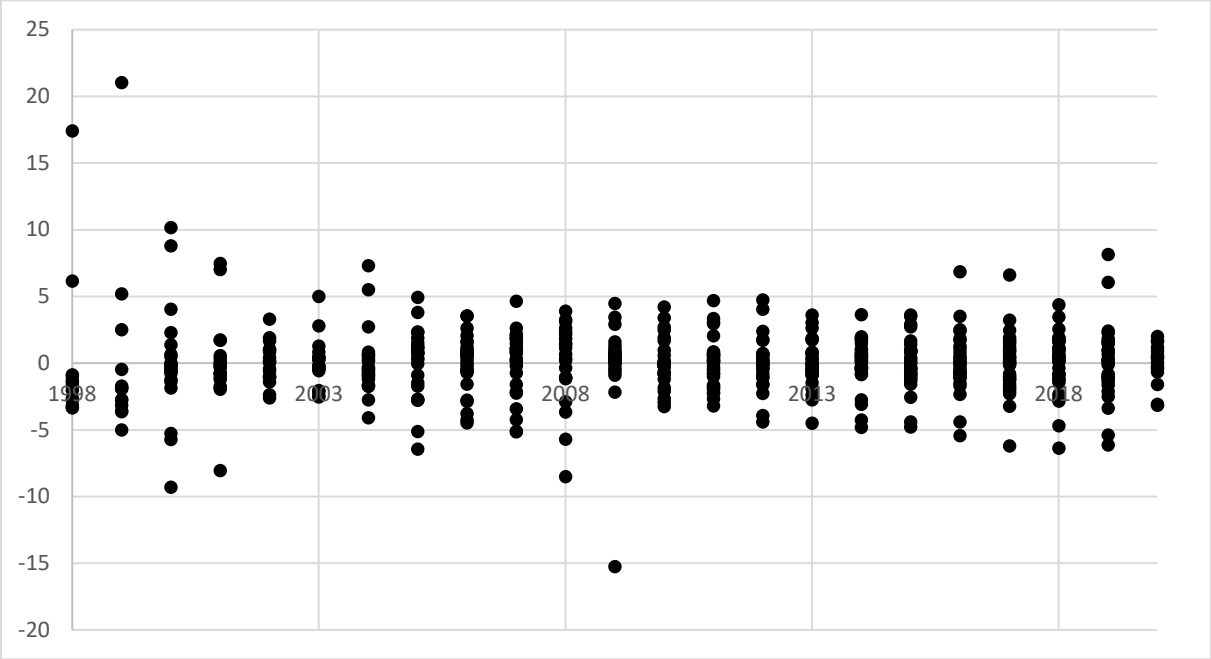


Table 14: Approximate Household Wealth loss by country in 2021 (in EUR)

DEU	**2,400**
FRA	**2,550**
ITL	**2,800**
SPA	**1,700**

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