FCA FINANCIAL CONDUCT AUTHORITY

Mortgages Market Study

Interim Report: Annex 8 - Econometric analysis for assessing the impact of commercial relationships

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Annex 8: Econometric analysis for assessing the impact of commercial relationships

Introduction

1. In this section we describe the methodology used to assess the potential harm to consumers arising from 3 of the commercial relationships explored in Chapter 7. In particular, we present the way we assessed whether intermediaries with commercial ties recommend on average more expensive products than intermediaries without ties. We consider intermediaries' relationships with:

    - estate agencies
    - developers, and
    - providers of conveyancing and valuation services

2. In each instance we control for borrower, product and property characteristics and other observed intermediary characteristics to ensure that we are comparing customers and intermediaries in similar circumstances.

Methodology for assessing the impact of commercial relationships on the price of the mortgage

Econometric approach

3. The following baseline specification is fitted to the data:

$$\text{Price}_{\text{libt}} = \theta\, X_i + \phi\, Y_p + \beta \text{Commercial Ties}_b + \gamma B_b + \epsilon Z_d + f_t + f_a + e_{\text{iblt}}$$

    where $\text{Price}_{\text{libt}}$ is the price of the mortgage provided by lender l, sold to borrower i by intermediary b at time t. X_i are borrower characteristics such as age, credit score and whether the application is on single or joint income basis. Y_p are product characteristics such as LTV bands, mortgage terms and loan value. Z_d are property characteristics; f_t are the year-month fixed effects. f_a are fixed effects for regional areas (using outward postcode[1]). θ, ϕ, β, γ and ϵ are the regression coefficients.

4. Commercial Ties_b is a dummy variable that takes value equal to 1 if an intermediary has commercial ties and 0 otherwise. B_b represents other intermediaries' observed characteristics, such as the size of the intermediary and the business model (whether the intermediary is a DA or a network).

5. When assessing the impact of ties with developers, the analysis is restricted to mortgages for new build properties only.

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[1] The outward postcode is the part of the postcode before the space in the middle and it is between two- and four-character long.

6. The model is estimated using Ordinary Least Squares (OLS), with standard errors clustered by intermediary to account for correlation in the behaviour of mortgagors using the same intermediary.

7. We are interested in the coefficient β, which indicates whether intermediaries with commercial ties recommend on average more expensive mortgage products, conditional on borrower, product, property and other observed intermediary characteristics (where this is the case the β coefficient is positive and significant). In the data we cannot distinguish whether a given transaction was executed through a commercial tie. Therefore we analyse all data from a single intermediary in aggregate and where these have a commercial tie, the model assumes that all transactions were executed through the commercial tie.

Sample construction

8. The main source of data is the Product Sales Data 001 (PSD001), which is a regulatory dataset collected quarterly by the FCA. PSD001 is a transactional-level dataset that covers all regulated first -charge mortgage transactions in the UK. The dataset includes information collected at point of origination on product characteristics (eg, loan amount, value of the property, mortgage term, variable vs. fixed rate, initial interest rates, procuration fees), borrower characteristics (eg, age, income, employment status) and the intermediary that sold the product, where applicable. PSD1 covers mortgage products originated since April 2005.

9. Our sample includes first charge residential mortgages sold in 2015. Given that a commercial relationship between intermediaries and estate agencies, developers or providers of ancillary services such as valuation and conveyancing are more likely to impact home buyers, we restrict the analysis to first time buyers and home movers. The sample excludes any specialist mortgages such as equity release mortgages, bridging loans, business loans and mortgages for high net worth individuals. In terms of borrower characteristics, the sample is restricted to full-time employed. The analysis is further restricted to 2-year fixed interest rate mortgages with a capital and interest repayment method.

10. To identify whether an intermediary has one of the commercial ties, the PSD1 dataset is merged with information from the Mortgage Market Study survey to network principals and DA firms.

11. The price of the mortgage is calculated on the basis on the initial interest rate charged over the initial incentivised rate period (ie 2 years) and fees. This is equivalent to assuming consumers only take into account the initial interest rate and switch to a new deal before the mortgage reverts to the reversion rate. We also assume that fees are rolled-up on the loan.

Regression results

12. The regression results of the Model are presented in Table 8.1 below. The first column shows the regression result for the model with the dummy variable taking a value equal to 1 when the intermediary has commercial relationships with the developers and 0 otherwise. The analysis is restricted to mortgages for new build properties. The coefficient of the dummy for the commercial ties is not statistically significant at 5%[2]. This suggests that, conditional on the size and the business model

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[2] The coefficient of the commercial ties is significant only at 10%. The magnitude of the coefficient is small, as the coefficient is smaller than 3 basis points.

of the intermediary, we did not find evidence that the price paid by consumers using an intermediary with ties to developers is not on average statistically different from the price paid using intermediaries without these arrangements.

13. The second column shows the regression results for the model with the dummy variable taking a value equal to 1 when the intermediary has commercial relationships with an estate agent and 0 otherwise. As before, the coefficient of the dummy is not statistically different from zero. Therefore, we do not find that the intermediaries with commercial ties with estate agents are associated with consumers on average paying a higher price for their mortgage.

14. The third column shows the regression results for the model with the dummy variable taking a value equal to 1 when an intermediary has commercial relationships with providers of ancillary services such as valuation and conveyancing, and 0 otherwise. The result is similar to the previous cases. Therefore, we do not find that the intermediaries with commercial links to the ancillary service providers sell on average more expensive mortgage products, conditional on borrower, product, property, and other observed intermediary characteristics.

Table 8.1: Regression results

Dependent variable: Price of the mortgage	Relationship with developers		Relationship with estate agents		Ancillary Services	
Intercept	6.20706	***	6.66654	***	6.67603	***
	0.14875		0.06885		0.06804	
Commercial ties, dummy	0.02669	*	0.01358		0.01344	
	0.01451		0.01355		0.00934	
Business model, dummy	-0.01905		-0.02710		-0.03714	***
	0.01468		0.01704		0.01465	
Tot number of sales, intermediary, log	0.01166	***	0.00421		0.00325	
	0.00280		0.00283		0.00261	
LTV band, 65%-75%	0.22971	***	0.19080	***	0.19059	***
	0.01026		0.00669		0.00673	
LTV band, 75%-85%	0.23348	***	0.41395	***	0.41399	***
	0.01650		0.01174		0.01171	
LTV band, 85-95%	1.22178	***	1.51463	***	1.51491	***
	0.04748		0.01633		0.01617	
LTV band, >95%	2.45948	***	2.54679	***	2.54694	***
	0.56327		0.02315		0.02292	
LTI band, 2-3.5	0.03027		0.01166		0.01169	
	0.01951		0.00865		0.00875	
LTI band, 3.5-4.5	0.02779		-0.01213		-0.01200	
	0.02041		0.01051		0.01080	
LTI band, >4.5	-0.05278	*	-0.13550	***	-0.13520	***
	0.02862		0.01347		0.01382	
Age, 30-40 years	0.00443		0.01415	***	0.01418	***
	0.00939		0.00332		0.00329	
Age, 40-50 years	0.02507		0.08173	***	0.08150	***
	0.01580		0.00520		0.00524	
Age, >50 years	0.03325		0.15188	***	0.15158	***
	0.02362		0.01442		0.01468	
Personal current account, dummy	0.01590	*	-0.01814	***	-0.01808	***
	0.00849		0.00547		0.00550	
Home movers, dummy	-0.05659	***	-0.12541	***	-0.12533	***
	0.01156		0.00379		0.00379	
Joint income basis, dummy	0.02214	**	0.05965	***	0.05973	***
	0.00914		0.00573		0.00578	
Credit score	-0.00018	***	-0.00007	***	-0.00007	***
	0.00006		0.00003		0.00003	
Impaired credit history, dummy	-0.10150		0.04773		0.04753	
	0.06365		0.03704		0.03708	

Mortgage term	0.00077	***	0.00125	***	0.00125	***
	0.00008		0.00005		0.00005	
Loan value, log	-0.31457	***	-0.36884	***	-0.36887	***
	0.00973		0.00576		0.00584	
Lender FE	Yes		Yes		Yes	
Postcode FE	Yes		Yes		Yes	
Month and Year FE	Yes		Yes		Yes	
Number of observations	17,919		109,468		109,468	
R-squared	57.35%		67.60%		67.60%	

Standard errors are clustered at broker level and reported below the estimates. *** significant at 1%, ** significant at 5%, * significant at 10%

Methodology for assessing the impact of commercial relationship on intermediary fees

15. This section describes the analysis of the fees charged by an intermediary to consumers. We first present some descriptive statistics and then results of the econometric analysis.

Intermediary firms' strategy for intermediary fees

16. Intermediary firms' strategies for setting fees vary significantly across the market. For example, fees may vary based on either the complexity of the consumer characteristics or transaction type or based on the size of the loan (such fees are typically capped at a few percentage points). Some firms charge lifetime fees, whereby consumers pay a one-off fee and the intermediary commits to provide advice for future transactions. Responses also show some degree of flexibility in setting the fees, and discounts or reduced fees are common for returning customers or based on individual circumstances. Some firms do not charge consumers fees at all.[3]

Sample construction

17. The main source of data is the Product Sales Data 001 (PSD001) and the sample is constructed as described in paragraphs 8 to 10. We removed products sold by 4 lending groups that did not provide information on broker fees.

Econometric approach

18. The following baseline specification is fitted to the data:

$$\text{intermediary fee}_{blit} = \theta\, X_i + \Phi\, Y_p + \beta \text{Commercial Ties}_b + \gamma B_b + f_t + f_a + e_{iblt}$$

where $\text{intermediary fees}_{blit}$ is the fee charged by intermediary b, for the mortgage provided by lender l sold to borrower i at time t. X_i are borrowers' characteristics such as age, credit score and whether the application is on single or joint income basis. Y_p are products' characteristics such as LTV bands, mortgage terms, and loan value. f_t are the year-month fixed effects; f_a are fixed effects for regional areas (using outward postcode[4]). θ, Φ, β and γ are the regression coefficients.

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[3] A number of firms also told us that they do not charge fees when dealing with new build.

[4] The outward postcode is the part of the postcode before the space in the middle and it is between 2- and 4- character long.

19. Commercial Ties$_b$ is a dummy variable that takes value equal to 1 if an intermediary has commercial ties and 0 otherwise. B_b represent other intermediary observed characteristics, eg, the business model (whether the intermediary is a DA or a network).

20. We are interested in the coefficient β, which indicates whether intermediaries with commercial ties sell on average more expensive mortgage products, conditional on borrower, product and other observed intermediary characteristics. In the data we cannot distinguish whether a given transaction was executed through a commercial tie, therefore, we rely on the analysis at the intermediary level.

Regression results

21. The regression results of the model are presented in Table 2 below. The table shows the regression results for the model with the dummy variable taking a value equal to 1 when the intermediary has commercial relationships with an estate agent and 0 otherwise. The coefficient of the dummy for commercial ties is not statistically significant, suggesting that the fee charged by intermediaries associated with estate agents is not on average statistically different from the fee charged by intermediaries without these arrangements.

22. There are a number of other interesting results. For example, borrowers with lower credit scores pay on average higher intermediary fees. This may suggest that intermediaries charge higher fees for more complex applications. Similarly, borrowers with higher LTI pay on average higher fees.

Table 2: Regression results

Dependent variable: intermediary fees		
Intercept	603.13812	***
	125.56980	
Commercial ties, dummy	39.32658	
	28.12325	
Procuration fees	0.03404	***
	0.00965	
Business model, dummy	-30.80472	
	35.39430	
Tot number of sales, intermediary, log	7.70858	
	6.41312	
LTV band, 65%-75%	-10.20475	*
	5.99991	
LTV band, 75%-85%	0.37308	
	6.17230	
LTV band, 85-95%	18.90134	**
	8.04037	
LTV band, >95%	37.99338	***
	14.65532	
LTI band, 2-3.5	-1.60130	
	4.21061	
LTI band, 3.5-4.5	5.51592	
	5.64113	
LTI band, >4.5	18.14807	**
	7.74614	
Mortgage term	-0.07258	
	0.04844	
Impaired credit history, dummy	67.32629	***
	22.98245	
Home movers, dummy	-23.29259	***
	5.78922	

Loan value, log	-44.81997	***
	10.57346	
Credit score	-0.12870	***
	0.02342	
Age, 30-40 years	10.04333	***
	2.83976	
Age, 40-50 years	32.53851	***
	6.91988	
Age, >50 years	38.50229	***
	12.92226	
Lender FE	Yes	
Postcode FE	Yes	
Month and Year FE	Yes	
Number of observations	124,020	
R-squared	22.56%	

Standard errors are clustered at intermediary level and reported below the estimates. *** significant at 1%, ** significant at 5%, * significant at 10%