

MS17/2.2: Annex 4

Market Study

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# Wholesale Insurance Broker Market Study

Final Report: Annex 4 – Pay-to-play

February 2019

## Annex 4: Pay-to-play

### Introduction

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1. The [Wholesale Insurance Broker Market Study](#) seeks to understand whether competition in the London broking industry works effectively. To do this the market study focuses on several areas of potential concern, one of which is whether brokers compel insurers to sign up to consultancy-style service agreements to win placement business (see Chapter 4 of the Final Report).
2. This Annex lays out the details of our quantitative analysis to assess the existence of pay-to-play.
3. We had received evidence that brokers may compel insurers to sign up to agreements which relate to the purchase of consultancy-style services provided by the brokers, or to participate in placement facilities. Under pay-to-play, insurers that do not pay for the services (or pay relatively small amounts) and/or do not participate in broker-operated facilities/managing general agents (MGAs) may lose out on placement business from these brokers.
4. We consider that pay-to-play arrangements, if they exist, would be more likely to occur in soft market conditions where there is abundant capital available for underwriting. The greater supply of capital that characterises a soft market could lead insurers to compete more aggressively with each other to win placement business. One form of this competition could be in the form of an insurer signing agreements to buy a broker's services, which in turn may increase the likelihood of that insurer winning business from that broker (see Chapter 6, possible future changes in industry dynamics).
5. We assessed the pay-to-play concern through:
  - Insurer feedback on their experience with agreements.
  - A detailed examination of a large sample of agreements between brokers and underwriters. This review assessed the amount of money paid by the insurer to the broker, the type of arrangement, and any services rendered in exchange for the payments. See Chapter 4 for a description of the analysis.
  - A quantitative assessment to see whether there is empirical evidence consistent with brokers engaging in pay-to-play practices with insurers. In the quantitative work, we tested whether the share of business insurers win from brokers increases with the share of a broker's total revenues paid for non-placement agreements by each insurer or the subscription to broker-operated facilities or broker-operated MGAs. We performed the quantitative analysis on 2 samples of data: 1 provided by brokers and 1 provided by insurers.
6. A positive correlation between the volume of business won by an insurer and the existence of agreements between a certain broker and insurer pair would be evidence that insurers who pay brokers also receive additional business from them. However, a

positive correlation would not necessarily mean causation, i.e. that the act of signing an agreement caused the insurer to be awarded with greater business.

7. In the remainder of this annex, we discuss the prevalence of non-placement agreements, the revenues they bring to brokers, and assess whether insurers signing non-placement agreements also receive higher shares of placement business from brokers.
8. In the first part of the annex, we present the analysis based on data provided by brokers. In the second part, we present the analysis based on data provided by insurers.

## Analysis using data provided by brokers

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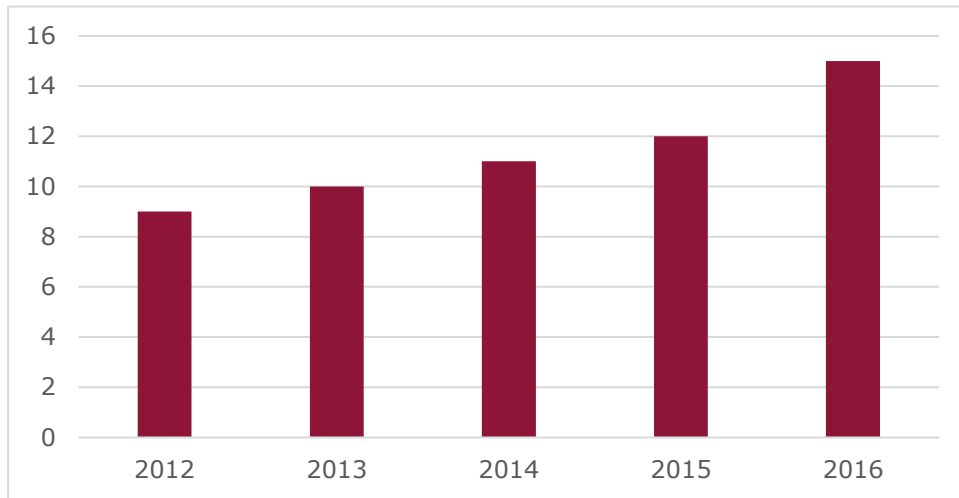
### Data

9. We use data submitted by 59 brokers as part of the Wholesale Insurance Broker Market Study. Data cover the period between 2012 and 2016 and includes:
  - the value of business (GWP) placed in the LIM for each broker, split by insurer
  - revenues brokers earned from insurers from non-placement agreements
  - revenues brokers earned from insurers for brokerage (i.e. placement services, such as commissions), and
  - business placed in facilities and MGAs, for each broker

### Non-placement agreements

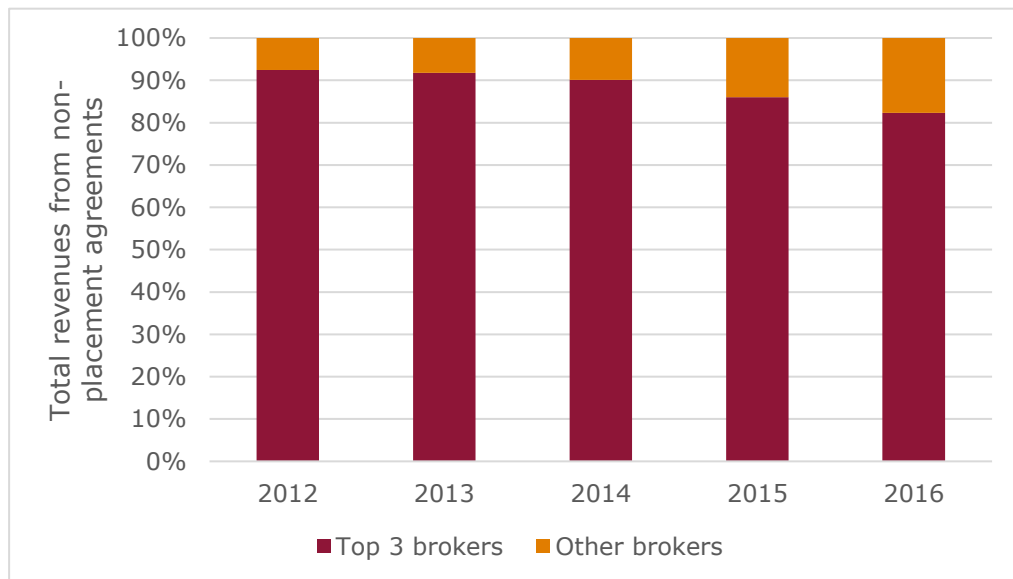
10. Several brokers enter into non-placement agreements with insurers. These include a varied range of activities such as:
  - Relationship management services to facilitate working relationships between the broker and insurer. These often include regular meetings to discuss, for example, clients' needs.
  - Data sharing to help the insurer manage their exposure.
  - Broker staff surveys that rank insurers by speed, pricing, and several other factors.
  - Consultancy services to provide strategy advice (for example, if insurers want to expand into a new risk class).
11. Figure 1 shows that the number of brokers entering into such agreements increased from 9 in 2012 to 15 in 2016.

**Figure 1: Number of brokers in our sample entering into non-placement agreements (2012-2016)**



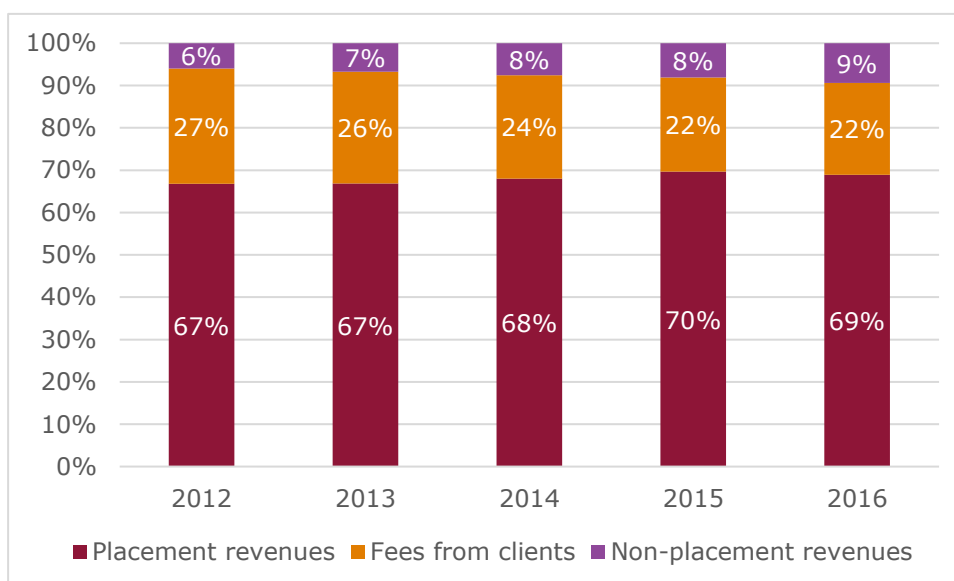
12. Figure 2 shows that the 3 largest brokers by GWP in our sample account for most of the total non-placement revenues.

**Figure 2: Total revenues earned from non-placement agreements (2012-2016)**



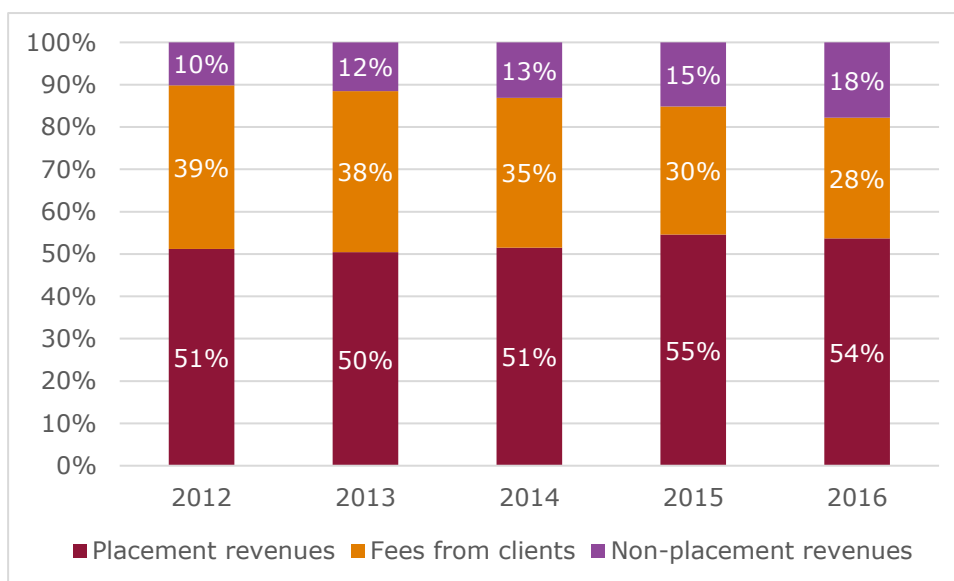
13. Figure 3 shows that across the market the importance of revenues from non-placement agreements compared to other sources of revenues (from placement and from clients) has increased from around 6% in 2012 to 9% in 2016. The contribution from placement revenues increased over this period while fees from clients decreased from 27% in 2012 to 22% in 2016.

**Figure 3: Sources of revenues (2012-2016) for all brokers in our sample**



14. We then focus on the largest brokers in our sample<sup>1</sup> based on their total GWP. Figure 4 shows that revenues for non-placement agreements for the 3 largest brokers by GWP grew from 10% of total revenues in 2012 to 18% in 2016.

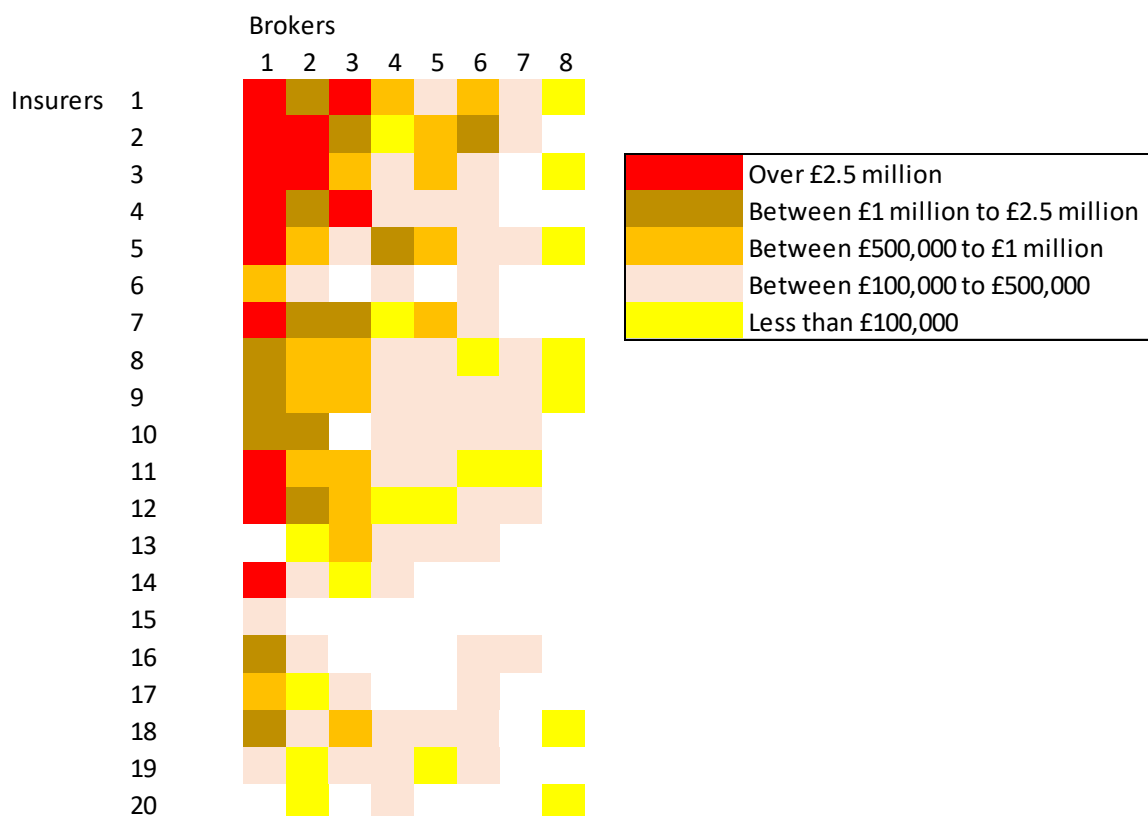
**Figure 4: Sources of revenues (2012-2016) for the 3 largest brokers**



15. Typically, agreements are between large brokers and large insurers. Figure 5 shows the payments for non-placement agreements between brokers and the top 20 largest insurers by GWP in 2016. Red cells indicate the largest payments and are concentrated among the largest brokers and insurers.

<sup>1</sup> See chapter 3 for market shares.

**Figure 5: Map of non-placement agreements between brokers and top 20 insurers by GWP, based on broker data (2016)**



### Descriptive statistics

16. We also considered whether insurers that win larger shares of business from brokers sign non-placement agreements with brokers.
17. First, we found that, on average, insurers that sign non-placement agreements with a broker receive a larger share of that broker’s business compared to insurers that have not signed an agreement with that broker. Figure 6 illustrates this graphically by looking at the share of business that the largest 3 brokers (measured by GWP) awarded to various insurers in 2016.
18. Second, we found that, on average, an insurer signing agreements with a broker wins a larger share of business from other brokers. This can be seen in the figure below in the right-most box chart; the box shows that insurers that have signed some agreements, but not with broker X, win a greater share of broker X’s business than those insurers that have not signed any agreements.
19. The presence of spill-over could be evidence that agreements increase insurers’ quality. We consider this further in the econometric analysis.

**Figure 6: Share of business won by insurers with or without agreements and spill-over effect – top 3 brokers (2016)**



### Econometric approach

20. We have assessed whether there is any evidence of pay-to-play using econometric techniques. We looked at each broker-insurer pair in our sample and calculated the correlation between the share of business won by an insurer from a given broker and the following factors:
- whether the broker and insurer have signed a non-placement agreement
  - the share of a broker's total revenues paid for non-placement agreements by each insurer, and
  - whether the insurer has subscribed to the broker's own MGAs or facilities
21. A positive correlation would suggest that insurers that, for example, sign non-placement agreements also receive a larger share of a broker's business.

### Identification problem

22. A positive correlation between existence of agreements and winning business is to be expected. This is because some payments to brokers in exchange for services could plausibly lead to an improvement in insurer quality, which makes the insurer more likely to win business from that broker (and possibly other brokers, too).<sup>2</sup>
23. In this case we could falsely conclude that a positive correlation between payments from an insurer to a broker, and business won from that broker means pay-to-play has occurred.

<sup>2</sup> See Chapter 3 for the qualitative assessment of these agreements.

24. To address this problem and to solve some of the endogeneity concerns,<sup>3</sup> when regressing shares of business won by insurers on revenues paid by insurers we included in our analysis a measure of the size of the insurer (defined as the total GWP won by each insurer in each year) and a set of fixed effects. Specifically, we included time-fixed effects, broker-fixed effects, and insurer-fixed effects to control, respectively, for unobservable characteristics of brokers and insurers. We performed robustness checks by using broker-insurer fixed effects to control for unobservable characteristics of the relationship between brokers and insurers and broker-time fixed effects.
25. The use of fixed effects ensures that we compare the share of GWP won and the share of non-placement revenues for the same group of observations. For example, insurer-fixed effects allowed us to compare shares of GWP and shares of non-placement revenues for the same insurer.
26. We also looked at whether we have evidence of spill-over. As discussed above, a positive correlation between agreements and winning business maybe be explained by an increase in the quality of the insurer’s offering. If that is the case, we should therefore look at whether insurers signing agreements with a broker are winning a larger share also with other brokers.

### Analysis

27. We started by considering 2 sets of models. The first (presented in paragraphs 28 and following) assesses whether there is correlation between the amounts paid by insurers for non-placement agreements and share of premium won by an insurer. The second set of models (presented in paragraphs 31 and following) considers the existence of agreements signed between insurers and brokers, regardless of the amounts paid. Both sets of models control for the size of placement commissions, the existence of facilities and MGAs and the fixed effects described previously.
28. To assess whether insurers paying large amounts for non-placement agreements also win a larger share of business from brokers, we consider the following model:

$$\% \text{GWP}_{bit} = \alpha + \gamma \text{share of revenues from agreements}_{bit} + \theta \text{FAC}_{bit} + \rho \text{MGA}_{bit} + \zeta \text{share of placement commissions}_{bit} + S_i + f_t + \epsilon_{bit}$$

Where  $\% \text{GWP}_{bit}$ <sup>4</sup> is the proportion of business (measured in Gross Written Premium) that broker  $b$  awards to insurer  $i$  in year  $t$ ,  $\text{share of revenues from agreements}_{bit}$  is the proportion of non-placement revenues that broker  $b$  earns from insurer  $i$  in year  $t$ ,  $\text{FAC}_{bit}$  is a dummy variable equal to 1 if insurer  $i$  is subscribed to a facility operated by broker  $b$  in year  $t$ ,  $\text{MGA}_{bit}$  is a dummy variable equal to 1 if insurer  $i$  is subscribed to an MGA operated by broker  $b$  in year  $t$ ,  $\text{share of placement commissions}_{bit}$  is the average percentage commission that broker  $b$  receives from insurer  $i$  in year  $t$  for placing policies in the LIM.  $S_i$  is the total value of business won by an insurer in a year.  $f_t$  represent the year fixed effect.

29. The models are estimated using Ordinary Least Squares (OLS), with standard errors clustered by broker to account for the correlation in the behaviour of clients using the same broker.

<sup>3</sup> Endogeneity concerns may arise because of omitted variables, simultaneity (which occurs when a variable on the right-hand side of the equation and the variable on the left-hand side influence each other) and measurement error problems. Specifically, it is possible that larger insurers are more likely to enter in non-placement agreements than smaller insurers.

<sup>4</sup> We replicate this analysis using our insurer sample, however by construction this measure is more complete when using broker data.



30. Table 1 shows the results of regression controlling for revenues from non-placement agreements.

**Table 1: Results of models (1) to (4)**

	Model 1	Model 2	Model 3	Model 4
MGA	0.00551*** (0.000907)	0.000843 (0.000786)	-0.000159 (0.000386)	-0.000183 (0.000390)
Facility	0.0111*** (0.000938)	0.00401*** (0.000797)	0.000689* (0.000327)	0.000650* (0.000328)
Placement commissions (% of GWP)	-3.86e-09*** (1.02e-09)	-1.50e-09 (1.80e-09)	1.21e-10 (1.63e-10)	-0 (5.62e-11)
Share of non-placement revenues	0.0931*** (0.0299)	0.0208* (0.0112)	0.00671 (0.0129)	0.00850 (0.0128)
insurer_size		4.86e-08*** (8.87e-09)		
insurer_size_lag		-9.61e-09** (3.50e-09)		
Constant	0.00326*** (0.000914)	0.00392*** (0.00109)	0.00450*** (0.000187)	0.00431*** (4.34e-05)
Observations	12,117	12,117	12,117	12,117
R-squared	0.097	0.638	0.900	0.901
Broker FE	No	Yes	No	No
Insurer FE	No	Yes	No	No
Year FE	Yes	Yes	Yes	No
Broker-Insurer FE	No	No	Yes	Yes
Broker-Time FE	No	No	No	Yes

Note: Robust standard errors clustered by brokers are in parentheses. \*\*\* p < 0.01, \*\* p < 0.05, \* p < 0.1.

31. To assess whether insurers entering into non-placement agreements (regardless of the size of the payment) also win a larger share of business from brokers, we consider the following model:

$$\%GWP_{bit} = \alpha + \beta \text{agreements}_{bit} + \gamma \text{agreements with third party brokers}_{bit} + \theta \text{FAC}_{bit} + \rho \text{MGA}_{bit} + \zeta \text{share of placement commissions}_{bit} + S_i + f_t + \epsilon_{bit}$$

32. Where  $\%GWP_{bi}$  is the proportion of business (measured in Gross Written Premium) that broker  $b$  awards to insurer  $i$  in year  $t$ ,  $\text{agreements}_{bit}$  is a dummy variable equal to 1 if broker  $b$  sells non-placement services to insurer  $i$  in year  $t$ ,  $\text{agreements with third party brokers}_{bit}$  is a dummy variable equal to 1 if insurer  $i$  only has non-placement agreements with other brokers other than  $b$  in year  $t$ ,  $\text{FAC}_{bit}$  is a dummy variable equal to 1 if insurer  $i$  is subscribed to a facility operated by broker  $b$ ,  $\text{MGA}_{bit}$  is a dummy variable equal to 1 if insurer  $i$  is subscribed to an MGA operated by broker  $b$  in year  $t$ ,  $\text{share of placement commissions}_{bit}$  is the average percentage commission that broker  $b$  receives from insurer  $i$  in year  $t$ .  $S_i$  is the total value of business won by an insurer in a year  $f_t$  represent the year fixed effects.
33. The models are estimated using OLS, with standard errors clustered by broker to account for the correlation in the behaviour of clients using the same broker. We use robust standard errors.
34. Table 2 shows the results of regression controlling for whether insurers have agreements with brokers.

**Table 2: Results of models (5) to (8)**

	Model 5	Model 6	Model 7	Model 8
Agreements between broker b and insurer i	0.0118*** (0.00332)	0.00545*** (0.00187)	0.000446 (0.000684)	0.000188 (0.000683)
Agreements only with third party brokers	0.0131*** (0.00142)	-0.000609 (0.000912)	9.29e-05 (0.000674)	0.000143 (0.000733)
MGA	-0.00148 (0.00187)	-0.000533 (0.00136)	9.74e-05 (0.000388)	1.04e-06 (0.000369)
Facility	0.00609** (0.00259)	0.00766*** (0.00152)	0.00248*** (0.000720)	0.00237*** (0.000767)
Placement commissions (% of GWP)	-6.08e-09*** (1.98e-09)	-2.16e-10 (1.41e-09)	8.18e-10 (7.51e-10)	1.20e-10 (3.46e-10)
Insurer size		4.99e-08*** (1.54e-08)		
Insurer size lag		-1.43e-08*** (5.13e-09)		
Constant	0.00588*** (0.00127)	0.00705*** (0.000971)	0.0110*** (0.000358)	0.0112*** (0.000303)
Observations	28,097	28,097	28,097	28,097
R-squared	0.025	0.419	0.866	0.882
Broker FE	No	Yes	No	No
Insurer FE	No	Yes	No	No
Year FE	Yes	Yes	Yes	No
Broker-Insurer FE	No	No	Yes	Yes
Broker-Time FE	No	No	No	Yes

Note: Robust standard errors clustered by brokers are in parentheses. \*\*\* p < 0.01, \*\* p < 0.05, \* p < 0.1.

### Regression results

35. Model (1) and model (5) show a positive correlation between payments for non-placement agreements and the share of placement business won by an insurer. Model (1) and model (5) also show that insurers subscribed to a facility also win a larger share of business. However, a positive correlation does not imply that pay-to-play is occurring. Some payments from insurers to brokers could plausibly lead to an improvement in insurer quality, which makes the insurer more likely to win business from the broker. Alternatively, larger insurers that typically win a larger share of business from brokers may also happen to be those that sign non-placement agreements.
36. To address this point, models (2) to (4) and models (6) to (8) control for different combinations of the size of the insurer and a set of fixed effects to capture unobservable characteristics of brokers, insurers, broker-insurer pairs and broker-time pairs. The magnitude of the coefficient of the payments for non-placement agreements decreases and, in models (3) and (4), the coefficient is not statistically different from zero.
37. The variable 'facilities' is the only variable of interest that has a statistically significant coefficient in models (2) to (4) and models (6) to (8). However, in all models the coefficient on facility is economically small.
38. Coefficients on the other variable of interests in models (2) to (4) and models (6) to (8) are not statistically significant.<sup>5</sup>

<sup>5</sup> We also run alternative analysis using models (1) to (8) for each high-level risk class. Results are not robust across risk classes.

### Spill-over effects

39. The coefficient on the dummy variable that flags whether insurers have agreements only with third-party brokers could indicate whether there exists a spill-over effect arising from non-placement agreements. If entering into non-placement agreements to purchase services increases the quality of the insurer's offering, the insurer should be able to win a larger share of business from other brokers even if the insurer has no agreement with these other brokers. Model (1) suggests there is a positive spill-over effect arising from non-placement agreements. However, this effect disappears when we add insurer or broker-fixed effects.
40. The absence of evidence of spill-overs in models (6) to (8) may indicate that non-placement agreements do not increase the quality of insurers when dealing with third-party brokers. But, it is important to note that the results could also reflect a lack of variation in the data or quality spill-overs that take different forms (such as a rebalancing towards more profitable business).
41. We also consider whether insurers signing new agreements or increasing the payments for non-placement agreements also receive more placement business. We consider the following model:

$$\Delta\% \text{GWP}_{bit} = \alpha + \beta \text{new\_AGR}_{bit} + \theta \text{new\_FAC}_{bit} + \rho \text{new\_MGA}_{bit} + \gamma \Delta\% \text{revenues}_{bit} + f_t + \epsilon_{bit}$$

42. Where  $\Delta\% \text{GWP}_{bit}$  is the change in the share of business won from a year to the next one,  $\text{new\_AGR}_{bit}$  is a dummy variable equal to 1 if broker  $b$  and insurer  $i$  sign a new non-placement agreement in year  $t$ ,  $\text{new\_FAC}_{bit}$  is a dummy variable equal to 1 if insurer  $i$  subscribed to a new facility operated by broker  $b$  in year  $t$ ,  $\text{new\_MGA}_{bit}$  is a dummy variable equal to 1 if insurer  $i$  subscribed to a new facility operated by broker  $b$  in year  $t$  and  $\Delta\% \text{revenues}_{bit}$  is the change in the share of non-placement revenues that broker  $b$  earns from insurer  $i$ .  $f_t$  represents the year fixed effect.
43. Table 3 shows the results of the regression.

**Table 3: Results of models (9) to (12)**

	Model 9	Model 10	Model 11	Model 12
New non-placement agreement	0.000133 (0.000449)		4.46e-05 (0.000427)	
New MGA	0.000178 (0.000261)		0.000561 (0.000354)	
New facility	0.000427 (0.00111)		0.000169 (0.00112)	
Change in placement commission	7.21e-10 (6.56e-10)	0 (0)	9.55e-11 (7.34e-10)	-7.23e-10*** (2.00e-10)
Change in non-placement payments		0.00993 (0.00887)		0.00950 (0.00902)
Constant	-0.000690** (0.000329)	-3.83e-05 (2.20e-05)	-0.000682*** (0.000211)	-0.000499*** (0.000123)
Observations	19,190	7,856	19,190	7,856
R-squared	0.000	0.003	0.083	0.053
Broker FE	No	No	Yes	Yes

	Model 9	Model 10	Model 11	Model 12
Insurer FE	No	No	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

44. Entering an agreement or subscribing to a facility or an MGA do not appear to be associated with a statistically significant change in premium won.
45. See paragraphs 78 and following for conclusions.

## Analysis using data provided by insurers

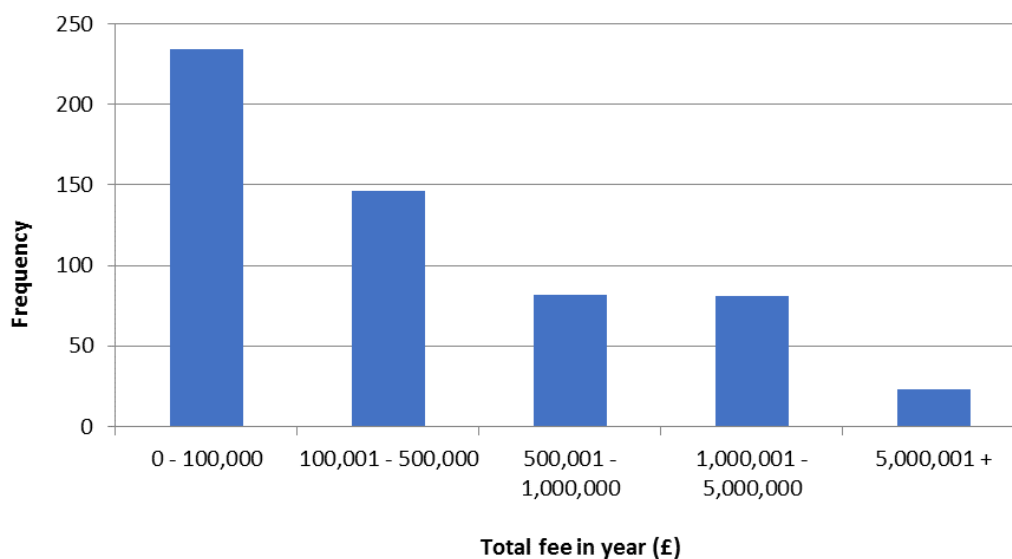
46. We also test for the existence of pay-to-play using the data submitted by insurers.

### Data

47. Our sample of 44 insurers submitted data on a total of 2,021 agreements. Our primary interest for the pay-to-play theory of harm is non-placement services, but we recognise that some of these services (data provision, consulting, pipeline discussions) may be delivered as part of traditional placement agreements such as facilities. We identified 1,308 agreements estimated to contain some non-placement services (see Annex 7 for details on the data cleaning process). These agreements range from large, multi-country strategic agreements to small-scale, short-term agreements with small brokers. We further trimmed the sample of agreements by removing agreements that only relate to a specific class of business rather than being universal.
48. Our level of observation is an insurer-broker pair over the period 2012 to 2016. After collapsing our data by insurer, broker and year, and cleaning the sample as described above, there are 575 insurer-broker-year observations with a non-placement agreement (or 602 observations with a total agreement fee)<sup>6</sup>. We matched the agreement data with GWP data on all insurer-broker pairs over the same period. This means that there are 29,667 insurer-broker-year combinations without an agreement, which are coded as a fee of zero. Figure 7 summarises all non-placement agreement fees, after having been aggregated at the insurer-broker pair level in each year.

<sup>6</sup> The discrepancy arises as a combination of 2 reasons: there are some agreements for which we do not have the corresponding fee (e.g. in rare circumstances only a percentage fee was reported), and we code agreements (but not fees) as applying only if they are effective for at least three months of a calendar year.

**Figure 7: Histogram of aggregated non-placement agreement fees in our sample (excluding observations without an agreement), 2012-2016**



Source: FCA analysis of insurer data request.

## Approach

49. The aim of our analysis was to test whether signing a non-placement agreement leads to an insurer winning greater GWP from a broker, controlling for other observable factors.
50. We investigated 3 main dependent variables:
  - a) the total GWP between an insurer and broker pair
  - b) the GWP in (a) expressed as a proportion of the broker's total GWP in that year,<sup>7</sup> and
  - c) the GWP in (a) expressed as a proportion of the insurer's total GWP in that year
51. To analyse the relationship between these dependent variables and agreements, we used a linear regression model. To control for unobserved heterogeneity among brokers and among insurers, we included fixed effects at either the insurer, broker or insurer-broker level. We also clustered standard errors at the level of the fixed effect. Fixed effects ensure that we compare GWP and agreements, *within* certain groups. Our preferred version, insurer-broker fixed effects, examines the variation in GWP or proportion of GWP within insurer-broker pairs. This helps address the possibility that unobserved characteristics of insurers and brokers drive both the likelihood of a non-placement agreement and the GWP between the pair.
52. As an alternative specification, we ran the same regressions in first differences (the change in a variable at the insurer-broker pair level from one period to the next). However, it should be noted that there is relatively little variation in agreement status over time – in total there are 44 cases of an insurer having no agreement with a broker having had one the year before, and 140 cases of insurers having an agreement with a broker having not had one the previous year. This compares to around 21,000

<sup>7</sup> For example, if all insurers combined report 100 units of GWP with broker A in 2016, and one insurer reports 30 units of GWP with broker A, then the variable would have a value of 0.3 for that insurer-broker pair in 2016.

observations with no change in agreement status (either an agreement that is renewed or, in the majority of cases, no agreement in consecutive years).

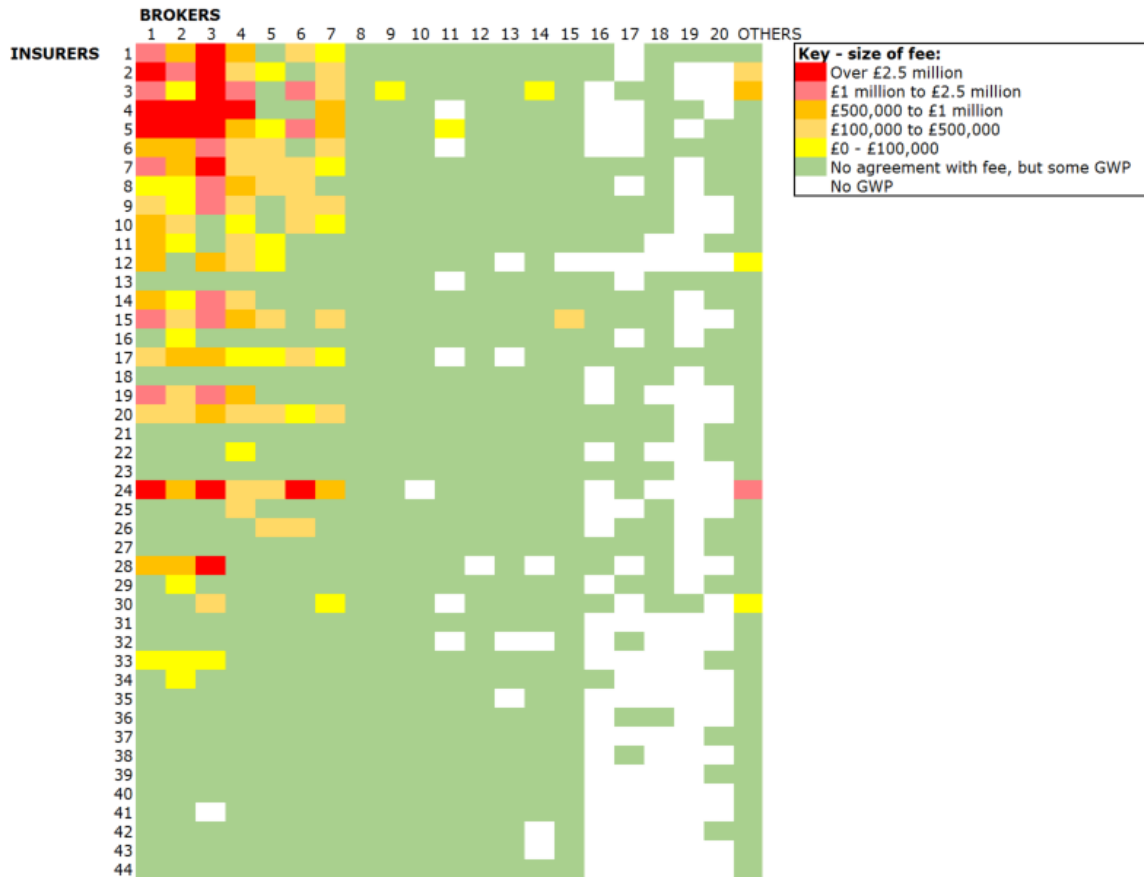
53. We included controls for insurer size and broker size, measured by total annual GWP for each firm. Since the GWP of the insurer-broker pair and total GWP may be highly correlated and even coincide for small brokers, it is important to check our analysis against versions run on restricted samples of larger brokers (see robustness checks later).
54. We controlled for risk class by using a set of control variables that, for each insurer-broker pair, represent the proportion of GWP that belongs to each high-level risk class.<sup>8</sup>
55. Under this approach it is difficult to distinguish between higher GWP stemming from pay-to-play effects or from enhanced insurer quality. Non-placement agreements may be expected to increase an insurer's ability to win more business with a broker. We have explored this issue further in 2 main ways.
  - First, by examining the change of agreement status we can test whether exiting an agreement is associated with a reduction in GWP from a broker, which might be harder to reconcile with insurer quality (as it would imply a reduction in quality in a relatively short time period).
  - Second, by including a control variable for whether insurers report non-placement agreements with other brokers we can investigate more directly whether signing agreements generates a spill-over effect. We included this as a dummy variable equal to 1 if the insurer has non-placement agreements with other brokers in the same year and 0 otherwise, or a scalar of the total other non-placement fees the insurer pays during the year. These variables allowed us to test whether, on average, non-placement agreements benefit insurers' relationships with other brokers. Conditional on a positive correlation between agreements and share of business won, a significant positive coefficient would imply some form of 'spill-over' from agreements, which could indicate enhanced insurer quality and hence be evidence to contradict the pay-to-play theory.

## Descriptive statistics

56. Agreements predominantly exist between large brokers and large insurers. Figure 8 shows a concentration in agreement fees towards the top left of the chart. Red cells indicate agreements involving fees over £2.5m in 2016, while orange and yellow cells indicate lower payments. Green cells indicate that the insurer and broker undertake business with each other but no agreement payments are made, and white cells indicate that the insurer and broker do not interact. The chart suggests that most payments are made to the largest 7 brokers. Around 25 insurers in our sample pay brokers for these agreements.

<sup>8</sup> These sum to one so one of the 8 high-level classes is omitted.

**Figure 8: Map of non-placement agreements between insurers and top 20 brokers by GWP, based on insurer data (2016)**

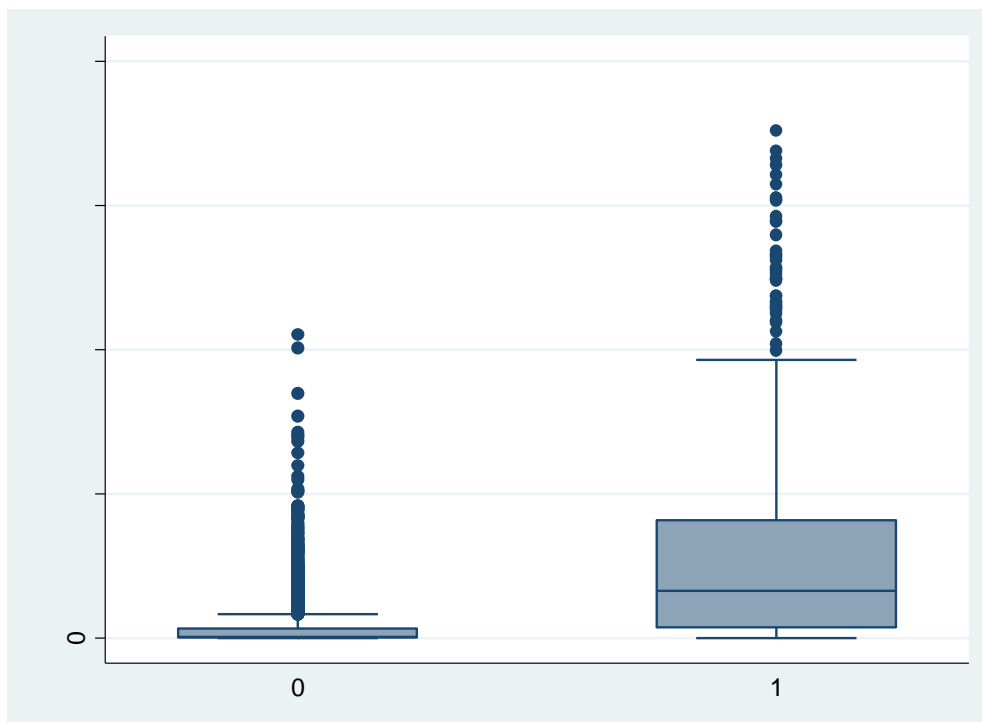


Source: FCA analysis of insurer data request.

Notes: Insurers and brokers are ranked from largest to smallest according to their 2016 GWP as reported by insurers in our sample. The data cleaning procedure for non-placement agreements is set out in Annex 7; fees include only fixed initial and ongoing fees, excluding fees defined as a percentage of GWP.

- Among brokers who operate some form of non-placement agreement, insurers with an agreement have a higher average GWP than those who do not (Figure 9). The aim of the regression analysis is to ascertain whether this type of relationship holds after controlling for other factors.

**Figure 9: Box plot of insurer-broker pair GWP among brokers who operate non-placement agreements, by agreement status, 2012-2016**

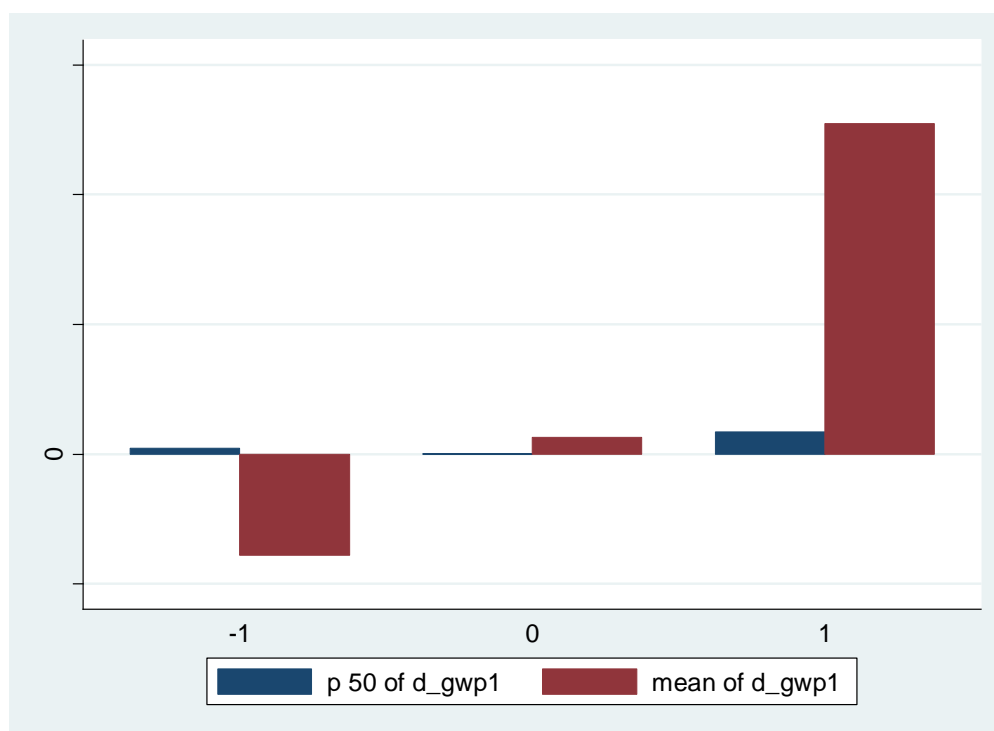


Source: FCA analysis of insurer data request.

58. Figure 10 shows that the mean change in GWP moves in line with the agreement status (red bars). However, no pattern is apparent from the median change in GWP (blue bars). Indeed, median GWP is marginally higher after exiting an agreement. This reflects a large amount of variability in the data. While the pattern in mean changes in GWP could potentially be consistent with either pay-to-play or enhanced insurer quality, the median figures appear less consistent with these hypotheses.



**Figure 10: Mean and median change in gross written premium following a change in agreement status. Change in GWP (£000s)**



Source: FCA analysis of insurer data request.

### Regression results

59. We present 2 sets of regression results. The first looks at agreements using a dummy variable, the second examines agreement fees.
60. Table 4 shows the regressions where the independent variable of interest is a dummy variable indicating whether the insurer-broker pair had a non-placement agreement in that year.

**Table 4: Results of regressions using agreement dummy variable**

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>	<b>Model 5</b>	<b>Model 6</b>
Dependent variable	Log GWP	Δ GWP	Proportion of insurer's GWP	Δ Proportion of insurer's GWP	Proportion of broker's GWP	Δ Proportion of broker's GWP
Agreement	0.151*** (0.0366)		0.00302** (0.00142)		0.0153** (0.00671)	
Log broker size	0.750*** (0.0287)		0.000619*** (8.64e-05)			
Log insurer size	0.643*** (0.0463)				0.00652* (0.00367)	
Other agreements dummy	-0.0189 (0.0383)		-0.000295 (0.000387)		0.00428 (0.00375)	

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>	<b>Model 5</b>	<b>Model 6</b>
Exit agreement		-495.8 (638.8)		-0.00105 (0.000921)		-0.0124 (0.0110)
Enter agreement		1,407* (806.0)		0.00168 (0.00134)		0.00612 (0.00511)
Δ Broker size		0.0245*** (0.00359)		4.35e-08*** (7.10e-09)		
Δ Insurer size		0.00426*** (0.000579)				1.93e-08 (1.19e-08)
Constant	-9.743*** (0.665)	-66.37*** (22.79)	0.00269** (0.00106)	-0.000163*** (5.73e-05)	0.224*** (0.0492)	-0.00547*** (0.000838)
Observations	30,001	21,257	30,028	21,257	30,001	21,139
R-squared	0.279	0.1019	0.009	0.0295	0.008	0.0002
Year fixed effects	Yes	No	Yes	No	Yes	No
Class controls	Yes	No	Yes	No	Yes	No
Fixed effects	Insurer-Broker	No	Insurer-Broker	No	Insurer-Broker	No

Notes: Clustered standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

61. The results show that fixed effects models predict a statistically significant positive association between the presence of an agreement and the GWP variables, but no association is apparent for regressions in first differences. The R-squared for all regressions with proportions as the dependent variable is low, indicating that the model explains a low proportion of the variance in the independent variable. However, all the models pass a test for overall statistical significance.
62. In model (1), the approximate interpretation of the coefficient on agreement is that an agreement is associated with GWP of around 15% higher compared to no agreement. The coefficient is significant at the 1% level. Model (3) suggests that the expected mean difference between insurers with and without an agreement in the fraction of an insurer's GWP accounted for by a broker is 0.3 percentage points. Model (5) would suggest that an agreement is associated with an insurer winning 1.5 percentage points more of a broker's total GWP compared to an equivalent insurer without an agreement. Both of the latter results are significant at the 5% level.
63. Entering or exiting an agreement does not appear to be associated with a statistically significant change in GWP compared to no change in agreement status.
64. There is no evidence to suggest that the presence of agreements with third party brokers affects an insurer's GWP with another broker, but it should be noted that this dummy variable suffers from a lack of variation so may not be able to detect any effect. Where a dummy variable for an insurer's other agreements is included, there is no statistically significant association with the GWP variables. Therefore, subject to the caveat above, we do not find any evidence for spill-overs from these models.

65. Table 5 shows the results of regressions where the independent variable of interest is a scalar representing the total fees for non-placement agreement services in that year (in natural logarithms).

**Table 5: Results of regressions using agreement fees**

	<b>Model 7</b>	<b>Model 8</b>	<b>Model 9</b>	<b>Model 10</b>	<b>Model 11</b>	<b>Model 12</b>
Dependent variable	Log GWP	Δ GWP	Proportion of insurer's GWP	Δ Proportion of insurer's GWP	Proportion of broker's GWP	Δ Proportion of broker's GWP
Log agreement fee	0.0147*** (0.00345)		0.000385*** (0.000139)		0.00151*** (0.000512)	
Log other agreement fees	-0.00242 (0.00336)		-3.58e-05 (3.46e-05)		0.000249 (0.000336)	
Log broker size	0.749*** (0.0287)		0.000616*** (8.62e-05)			
Log insurer size	0.647*** (0.0470)				0.00641* (0.00357)	
Δ Fee		0.00138*** (0.000295)		3.25e-10 (2.94e-10)		1.13e-09* (6.20e-10)
Δ Other agreement fees		-1.58e-05*** (6.10e-06)		0 (0)		9.92e-11 (3.68e-10)
Δ Broker size		0.0257*** (0.00371)		4.55e-08*** (7.27e-09)		
Δ Insurer size		0.00433*** (0.000602)				1.84e-08 (1.25e-08)
Constant	-9.783*** (0.668)	-54.24** (22.59)	0.00281** (0.00111)	-0.000160*** (6.06e-05)	0.226*** (0.0479)	-0.00552*** (0.000852)
Observations	29,970	21,225	29,997	21,225	29,970	21,107
R-squared	0.579	0.1108	0.219	0.03015	0.0064	0.0001
Year fixed effects	Yes	No	Yes	No	Yes	No
Class controls	Yes	No	Yes	No	Yes	No
Fixed effects	Insurer-Broker	No	Insurer-Broker	No	Insurer-Broker	No

Notes: Clustered standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

66. The results from models including fees provide a similar overall picture to those with the agreement dummy variable. Model (7) implies that a 1% increase in non-placement agreement fee is associated with a 0.015% increase in GWP. The coefficient on change in fee in model 8 is statistically significant but not economically significant

(the coefficient indicates that a £1 increase in agreement fee is associated with a £0.0014 increase in GWP).

67. The coefficients on the fee variable for the 2 regression models on proportions are small. Model (9) suggests approximately that a 10% increase in non-placement agreement fee is associated with a 0.004 percentage point increase in the proportion of insurer's GWP, while model (11) would associate the same increase in fee with a 0.015 percentage point increase in the proportion the broker's total GWP. R-squared values are generally low apart from model (7).
68. Higher non-placement agreement fees with third party brokers do not appear to be associated with higher GWP received from a broker. The coefficients on the other fees variables are generally statistically insignificant, except in the case of model (8) where a positive change in fee is associated with a reduction in GWP.

### Robustness checks

69. To test the robustness of our results, we ran the same analysis on several different cuts of the insurer data.
70. There are several reasons to test the analysis on data other than the full sample. Our insurer sample reported a long tail of small premiums with small brokers. While we control for observable broker characteristics, it is interesting to test if the regression results hold among a more homogeneous group of brokers. Larger brokers exercising pay-to-play also represent the greatest potential for harm. An additional motivation is that the dependent variable representing GWP as a proportion of a broker's total GWP is only meaningful if a certain number of insurers use the same broker. We also varied some of our assumptions regarding the agreements sample.
71. We report below headline results from the following 4 cuts of the insurer data:
  - only brokers who operate at least 1 agreement
  - only large brokers that deal with at least half of the sample of insurers (22 insurers)<sup>9</sup>
  - defining agreements as applying if they apply for at least 6 months of the calendar year,<sup>10</sup> and
  - removing global agreements<sup>11</sup>
72. Table 6 below summarises the results of regression model (1) and model (7) above for the 2 independent variables of most interest, agreement/fees and other agreements/fees. All other controls remain the same as in Table 4 and Table 5. The comparison is generally representative of the robustness checks for other models. The estimated effect of an agreement or a 1% increase in fees is lower for the 2 samples including only larger brokers or only brokers that operate agreements, but around the same magnitude for the 2 samples with different agreement definitions. Some of the results for the larger broker samples are not statistically significant. None of the coefficients on other agreements or fees are significant at the 5% level.

<sup>9</sup> Note these are not necessarily the largest brokers, but ones that allocate GWP to a large proportion of our insurer sample.

<sup>10</sup> We do not exclude insurer-broker pairs but replace the agree we agreement dummy with zero unless the agreement applies for at least 6 months of the calendar year. Fees are unchanged (explaining the unchanged results for model 7).

<sup>11</sup> Our agreement data contains around 30 agreements that we have identified as referring to a broker-insurer relationship on a global or multi-region basis, not limited to the London market. These agreements tend to have the largest fees in our sample, and the largest 2 or 3 agreements could be considered outliers.

**Table 6: Robustness checks on regression model (1) and (7). Selected coefficient results only.**

<b>Model 1</b>	<b>Coefficient on agreement dummy</b>	<b>Standard error</b>	<b>Coefficient on other agreements dummy</b>	<b>Standard error</b>
Original sample	0.151***	(0.0366)	-0.0189	(0.0383)
Only brokers operating agreements	0.0633*	(0.0375)	0.0403	(0.0498)
Large brokers dealing with half of insurer sample	0.0941**	(0.0452)	-0.0745	(0.0483)
Agreements must apply for 6 months of calendar year	0.127***	(0.0355)	-0.0185	(0.0383)
Excluding global agreements	0.144***	(0.0362)	-0.0154	(0.0374)

Observations respectively: 30,007, 4,353, 8,920, 30,007, 30,007

<b>Model 7</b>	<b>Coefficient on log fees</b>	<b>Standard error</b>	<b>Coefficient on log other fees</b>	<b>Standard error</b>
Original sample	0.0147***	(0.00345)	-0.00242	(0.00336)
Only brokers operating agreements	0.00553	(0.00361)	0.00205	(0.00461)
Large brokers dealing with half of insurer sample	0.00906**	(0.00408)	-0.00810*	(0.00431)
Agreements must apply for 6 months of calendar year	0.0147***	(0.00345)	-0.00242	(0.00336)
Excluding global agreements	0.0140***	(0.00343)	-0.00218	(0.00327)

Observations respectively: 21,994, 2,645, 4,610, 21,994, 21,994

Notes: Clustered standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

73. We conducted other robustness checks not reported here. We ran all regression models using all the different samples above. The pattern of results is generally similar. Restricting analysis to large brokers or only brokers that operate agreements reduces the estimated effect of an agreement or fee on the GWP variables. Other agreements or fees do not have a statistically significant coefficient.
74. We also tested restricting the sample to balanced panels only, in which case the coefficients of interest are generally slightly smaller than the original sample. We used different fixed effects levels for the within-groups models, for instance using only broker fixed effects to model GWP as a proportion of a broker's total GWP. These results produced higher estimates of the effect of an agreement, but it may be that unobserved insurer heterogeneity partially drives the result<sup>12</sup> so insurer-broker fixed effects are preferred. We also tested using net written premium to derive our

<sup>12</sup> When only broker fixed effects are included, the estimated effect of a 1% increase in fees on GWP won as a proportion of a broker's total GWP is around ten times higher in the original sample than the sample that includes only the largest brokers, suggesting heterogeneity could be a factor in the original model.

dependent variables<sup>13</sup>, finding that there was very little difference from using gross written premium. Finally, we tested all agreements reported by insurers, rather than attempting to focus only on agreements with non-placement services. Again, the results in this case were very similar to those reported above.

### Interpretation of results using insurer data

75. Using data from our sample of insurers, non-placement agreements do appear to be associated with a higher amount of risk placement between broker-insurer pairs compared to pairs without an agreement. These results could reflect increased insurer quality or some form of pay-to-play, but it is possible that unobserved heterogeneity affects the results. (The results contrast with the findings on brokers' data, in which we found no robust association between non-placement agreements and risk placement.) The estimated effect sizes are relatively small and robustness checks appear to suggest that this effect size may be smaller than the unconstrained models. Many of our regression models are low powered, with considerable unexplained variability in the data.
76. We do not find any evidence of spill-overs from agreements. An absence of evidence of spill-overs could reflect the relatively small association between an insurer's non-placement agreements and GWP gained from that broker – any secondary effects with other brokers may be too small to detect. It could also be that any enhancement in insurer quality from non-placement agreements acts in a way that we cannot observe, such as an insurer rebalancing towards more profitable business with third party brokers.
77. Bearing these caveats in mind, to the extent that our results suggest that non-placement agreements do lead to any improvement in insurer quality, they may be apparent only in terms of the bilateral broker relationship. While this seems plausible for certain types of services that are specific to the broker's client base (such as pipeline information), it would be less easy to reconcile with services of wider applicability or wide market coverage. We do not find any statistically significant effect of exiting an agreement on insurer's GWP, but the low levels of variation in agreement status should be noted.

### Conclusion

78. We have tested whether the share of business insurers win from brokers increases with the share of a broker's total revenues paid for non-placement agreements by each insurer or with the subscription to broker-operated facilities or broker-operated MGAs.
79. We ran this test on both our broker and insurer samples. The results are not consistent across the two samples. Therefore, we have not found a robust correlation between the share of business insurers win from brokers and the money they pay to brokers for consultancy-style services, or the subscription to broker-operated facilities and MGAs. Therefore, we do not have robust evidence that pay-to-play is happening.
80. Moreover, even if pay-to-play is occurring, our analysis suggests that the economic effect is small. An important caveat to our results is that the use of non-placement agreements, as well as subscription to facilities and MGAs, appears widespread among large insurers, which implies that in the event pay-to-play arrangements existed it may be difficult to establish in our data set.

<sup>13</sup> In the absence of any profitability measures of insurers, we are not able to test whether agreements are associated with insurer profitability. However, we do observe net written premium (ie premium after deducting acquisition costs)

81. As a result, while our quantitative assessment does not provide robust evidence of pay-to-play, the widespread use of agreements by insurers and brokers means that we cannot rule out its existence based solely on this econometric analysis.

