Impact of unaffiliated investment management outsourcing on insurers' investment similarity

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Research question:

Is asset management outsourcing in insurance associated with increased investments similarity among insurers?

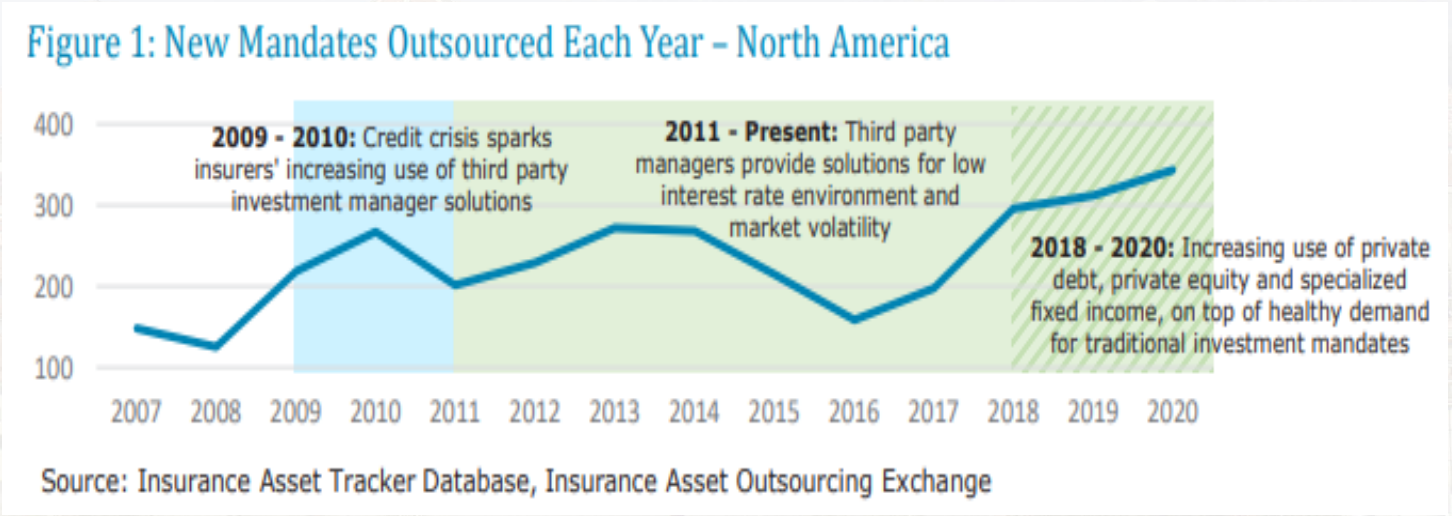
- **Context:**
  - Persistent trend of increased asset management outsourcing in insurance since the financial crises of 2008.
  - Recent literature showing that the portfolio choice of institutional investors has an important impact on asset prices.

- **Method:**
  - Study investment portfolio holding similarity (cosine similarity) at the asset class and issuer level, for all U.S. P&C and Life insurers.

Contribution

- The first study on potential implications of the use of unaffiliated asset management outsourcing in the insurance industry.
- We provide empirical evidence that similarity of investment portfolio holdings among insurers is positively related to the use of unaffiliated asset management.

Background – Unaffiliated asset management outsourcing among insurers



Background – Unaffiliated asset management outsourcing among insurers

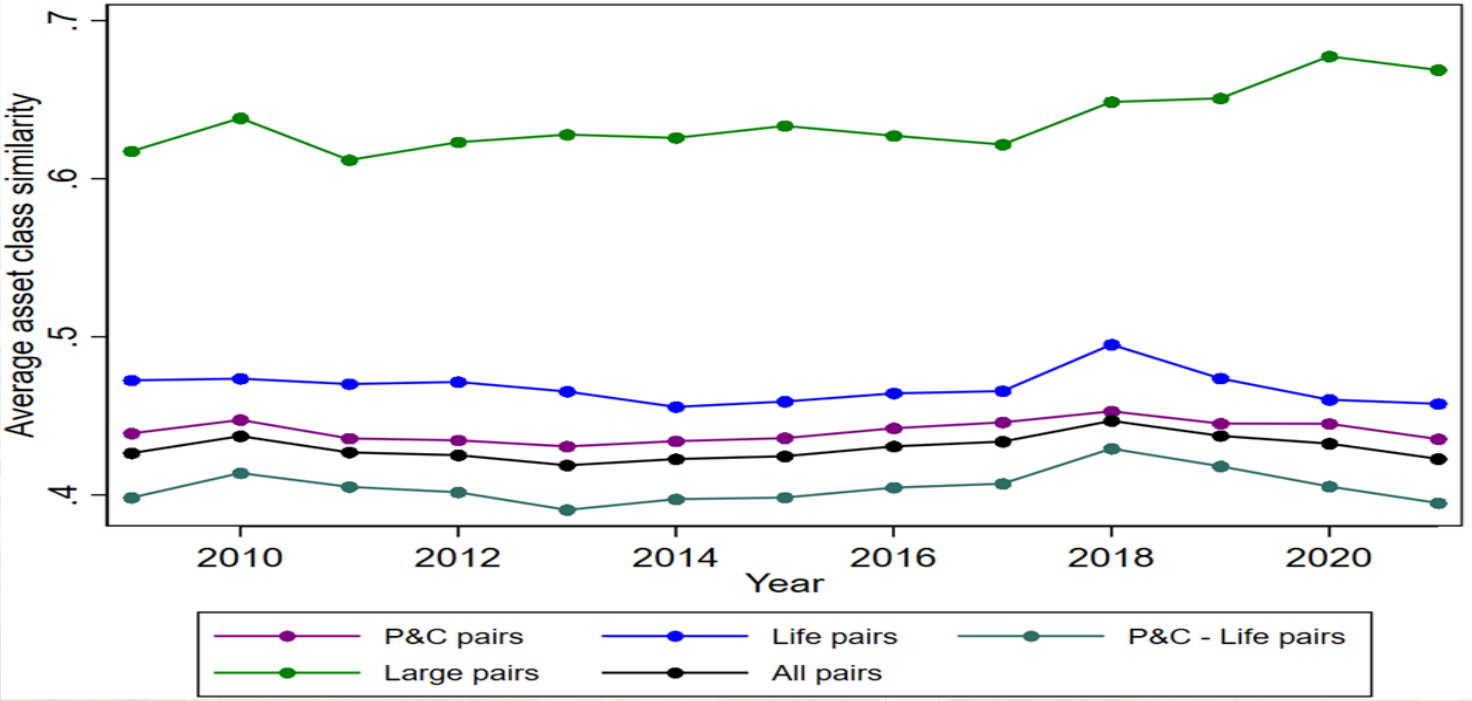
Tabel 1: Distribution of insurers' (outsourced AM) assets among unaffiliated asset management firms as of End of Year 2021.

Rank	Investment Management Firm	Insurers AuM (USD billions)	Insurers AuM (% industry outsourced total)
1	BlackRock	533.1	16%
2	Goldman Sachs	327	10%
3	J.P. Morgan Asset Management	212.3	6%
4	DWS	203.1	6%
5	Amundi	179	5%
6	Wellington Asset Management	156.2	5%
7	PIMCO	151.6	5%
8	abrdn plc	133.5	4%
	…	…	…
	Total	3'335	100%

Background

Holding similarity among insurers ' investment portfolios

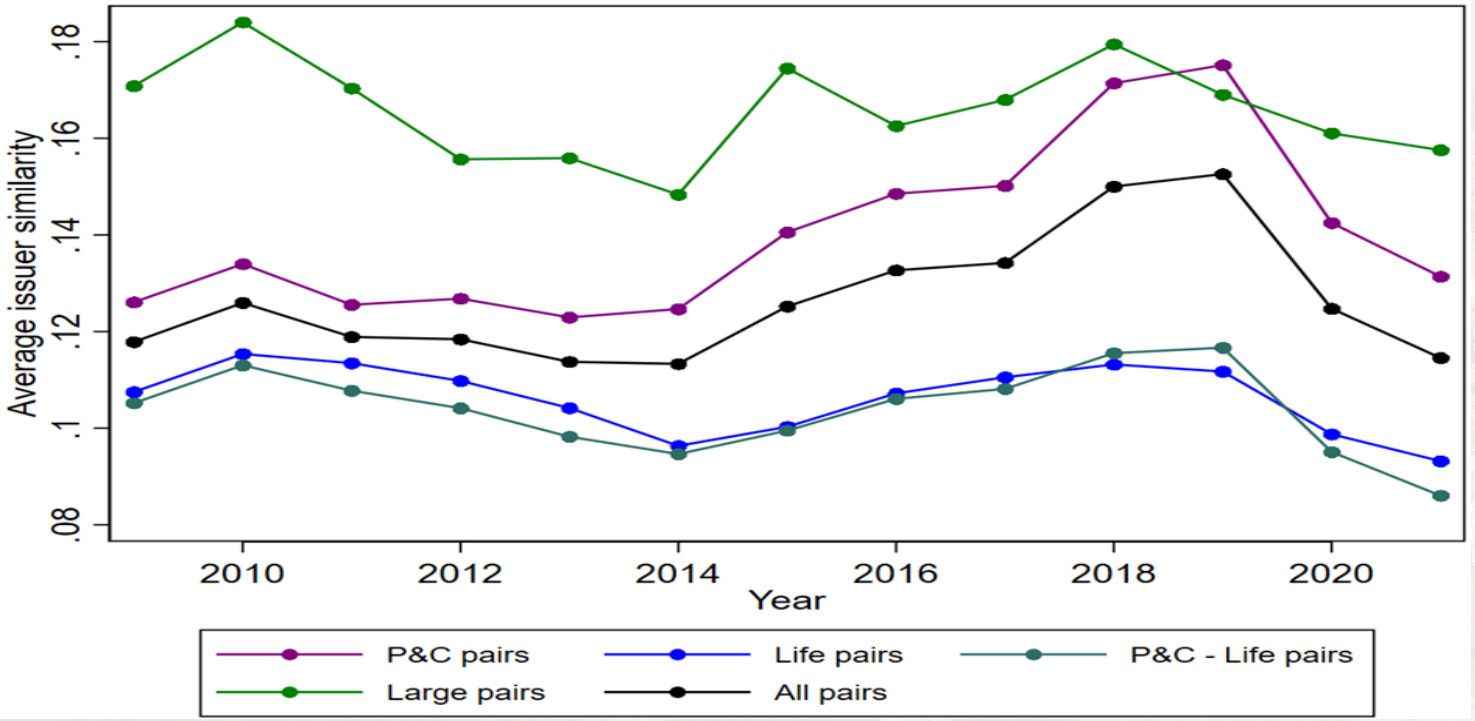
Figure 2: Portfolio similarity at the asset class level.



Background

Holding similarity among insurers ' investment portfolios

Figure 3: Portfolio similarity at the issuer level.



Data

- US Insurers holding data from Schedule D filings (Part 1 and Part 2) with NAIC for the years 2009 - 2021.
- Indicators on Unaffiliated asset management outsourcing as reported in the General Interrogations with NAIC Part 1 – Common interrogatories, years 2016 -2021.
- Total assets (excluding separated accounts) and investment portfolio assets data as reported in the annual reports filed with NAIC.
- Net premium written per line of business as provided by S&P Capital Intelligence.
- Information on insurance group belonging and filer type as filed with NAIC, provided by S&P Capital Intelligence.
- Economic sector information based on The Refinitiv Business Classification as provided by REFINITIV.

Methodology

- Analysis conducted on Insurance group level
- Investment similarity measured using pair cosine similarity, in two levels: issuer similarity and asset class similarity
- Two indicators of the use of unaffiliated asset management outsourcing
  - A proxy of the use of unaffiliated asset management outsourcing, equal to one if any of the firms in the group reports unaffiliated outsourcing AM of at least 10%.
  - A proxy of the use of unaffiliated asset management outsourcing for at least 50% of the investment portfolio, equal to one if the firms within the group that report unaffiliated AM outsourcing make up for at least 50% of the total investment portfolio of the group.
- OLS regression

Results

Baseline determinants of investment similarity

Table 2: Determinants of portfolio similarity on the asset class level

	[1]	[2]	[3]	[4]	[5]
P&C pair	0.0565***	0.0272	0.0565***		
	(0.0027)	(0.0160)	(0.0027)		
Life pair	0.0383***	0.1094***	0.0373***		
	(0.0020)	(0.0128)	(0.0021)		
Prod size	0.0089***	0.0228***	0.0089***	0.0097***	0.0162***
	(0.0001)	(0.0030)	(0.0001)	(0.0005)	(0.0014)
Large pair	0.0848***			-0.0064	0.0696***
	(0.0134)			(0.0067)	(0.0130)
Prod conc AC	-0.8638***	-15.2189***	-0.8634***	-0.7735***	-1.1792***
	(0.0277)	(0.9555)	(0.0277)	(0.0227)	(0.1005)
Constant	0.1113***	-0.3548*	0.1111***	0.1356***	-0.1299*
	(0.0060)	(0.1462)	(0.0060)	(0.0181)	(0.0574)
Year FE	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.10	0.33	0.10	0.08	0.21
N	2,814,986	4,541	2,810,445	1,748,874	125,672

The table presents OLS regression estimates for insurer pairs in the time period 2016-2021. The dependent variable is the cosine similarity between the pairs' portfolio weights at the asset class level.

Column [1] presents the results for all pairs in the sample. Columns [2] and [3] present the results of large pairs and non-large pairs only, respectively. Columns [4] and [5] present estimates for P&C pairs and life pairs only, respectively.

Results

Baseline determinants of investment similarity

Table 3: Determinants of portfolio similarity on the issuer level

	[1]	[2]	[3]	[4]	[5]
P&C pair	0.0556***	0.0884***	0.0555***		
	(0.0028)	(0.0082)	(0.0028)		
Life pair	-0.0052*	0.0973***	-0.0061**		
	(0.0022)	(0.0103)	(0.0022)		
Prod size	0.0052***	-0.0189***	0.0052***	0.0077***	0.0054***
	(0.0005)	(0.0033)	(0.0005)	(0.0009)	(0.0004)
Large pair	-0.0027			-0.0394**	0.0497***
	(0.0082)			(0.0118)	(0.0082)
Prod conc I	1.4332***	3.4349	1.4335***	1.4671***	1.2373***
	(0.2046)	(7.3939)	(0.2046)	(0.2232)	(0.2426)
Constant	-0.0917***	1.0471***	-0.0918***	-0.1304**	-0.1045***
	(0.0207)	(0.1662)	(0.0207)	(0.0334)	(0.0149)
Year FE	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.04	0.1	0.04	0.03	0.07
N	2,814,986	4,541	2,810,445	1,748,874	125,672

The table presents OLS regression estimates for insurer pairs in the time period 2016-2021. The dependent variable is the cosine similarity between the pairs' portfolio weights at the issuer level.

Column [1] presents the results for all pairs in the sample. Columns [2] and [3] present the results of large pairs and non-large pairs only, respectively. Columns [4] and [5] present estimates for P&C pairs and life pairs only, respectively.

Results

Does unaffiliated asset management outsourcing explain holding similarity among insurers?

Table 4: Unaffiliated Asset Management as a Determinant of Portfolio Similarity

	Asset Class		Issuer	
	[1]	[2]	[3]	[4]
P&C pair	0.0410***	0.0412***	0.0506***	0.0508***
	(0.0024)	(0.0024)	(0.0028)	(0.0028)
Life pair	0.0327***	0.0321***	0.0036*	0.0031
	(0.0020)	(0.0019)	(0.0016)	(0.0016)
Liability similarity	0.0391***	0.0394***	-0.0140***	-0.0138***
	(0.0010)	(0.0009)	(0.0026)	(0.0027)
Prod size	0.0087***	0.0093***	0.0051***	0.0055***
	(0.0001)	(0.0001)	(0.0006)	(0.0005)
Large pair	0.0895***	0.0849***	0.0063	0.0030
	(0.0145)	(0.0141)	(0.0082)	(0.0080)
Prod conc I			1.5170***	1.5339***
			(0.2107)	(0.2106)
Prod conc AC	-0.8021***	-0.7929***		
	(0.0283)	(0.0290)		
UAM pair	0.0449***	0.0317***	0.0423***	0.0321***
	(0.0031)	(0.0023)	(0.0029)	(0.0033)
UAM 50% pair		0.0358***		0.0274***
		(0.0026)		(0.0033)
Constant	0.1001***	0.0794***	-0.1021***	-0.1165***
	(0.0060)	(0.0063)	(0.0229)	(0.0220)
Year FE	Yes	Yes	Yes	Yes
Adjusted R^2	0.11	0.11	0.05	0.05
N	2,814,986	2,814,986	2,814,986	2,814,986

The table presents OLS regression estimates for insurer pairs in the time period 2016-2021. In Columns [1] and [2], the dependent variable is the cosine similarity between the pairs' portfolio weights at asset class level. In Columns [3] and [4], the dependent variable is the cosine similarity between the pairs' portfolio weights at the issuer level.

Results

Does unaffiliated asset management outsourcing explain holding similarity among insurers?

Table 5: Unaffiliated Asset Management as a Determinant of Portfolio Similarity individual insurer

	Asset Class		Issuer	
	[1]	[2]	[3]	[4]
P&C	0.0236***	0.0231***	0.0498***	0.0493***
	(0.0019)	(0.0021)	(0.0030)	(0.0031)
Avg liability similarity	0.0578***	0.0676***	-0.1595***	-0.1490***
	(0.0110)	(0.0111)	(0.0230)	(0.0234)
IP size	0.0056***	0.0064***	0.0086***	0.0094***
	(0.0004)	(0.0004)	(0.0010)	(0.0010)
Large	-0.0615***	-0.0618***	-0.0307***	-0.0308***
	(0.0053)	(0.0052)	(0.0044)	(0.0043)
Concentration I			0.1866***	0.1924***
			(0.0285)	(0.0287)
Concentration AC	-0.3359***	-0.3319***		
	(0.0042)	(0.0046)		
UAM	0.0172***	0.0063**	0.0320***	0.0199***
	(0.0025)	(0.0020)	(0.0023)	(0.0026)
UAM 50%		0.0185***		0.0203***
		(0.0018)		(0.0026)
Constant	0.3706***	0.3558***	-0.0669**	-0.0816**
	(0.0076)	(0.0068)	(0.0209)	(0.0207)
Year FE	Yes	Yes	Yes	Yes
Adjusted R^2	0.44	0.44	0.12	0.12
N	5,803	5,803	5,803	5,803

The table presents OLS regression estimates for insurer in the time period 2016-2021. In Columns [1] and [2], the dependent variable is the average portfolio similarity at the asset class level. In Columns [3] and [4], the dependent variable is the average portfolio similarity at the issuer level.

Results

Does unaffiliated asset management outsourcing explain holding similarity among insurers in low-risk assets?

Table 6: Unaffiliated Asset Management as a Determinant of Portfolio Similarity in low-risk securities

	Asset Class		Issuer	
	[1]	[2]	[3]	[4]
P&C pair	0.0360***	0.0362***	0.0711***	0.0712***
	(0.0031)	(0.0032)	(0.0033)	(0.0034)
Life pair	0.0681***	0.0673***	0.0114***	0.0112***
	(0.0023)	(0.0023)	(0.0028)	(0.0028)
Liability similarity	0.0316***	0.0322***	-0.0206***	-0.0204***
	(0.0033)	(0.0032)	(0.0041)	(0.0041)
Prod size	0.0098***	0.0104***	0.0105***	0.0106***
	(0.0003)	(0.0004)	(0.0008)	(0.0008)
Large pair	-0.0175	-0.0218*	0.0394**	0.0383**
	(0.0099)	(0.0094)	(0.0103)	(0.0104)
Prod conc I			4.5765***	4.5852***
			(0.3760)	(0.3781)
Prod conc AC	-1.5770***	-1.5706***		
	(0.0428)	(0.0435)		
UAM pair	0.0585***	0.0479***	0.0583***	0.0556***
	(0.0024)	(0.0019)	(0.0031)	(0.0034)
UAM 50% pair		0.0315***		0.0080
		(0.0033)		(0.0045)
Constant	0.1298***	0.1091***	-0.2905***	-0.2956***
	(0.0126)	(0.0131)	(0.0296)	(0.0299)
Year FE	Yes	Yes	Yes	Yes
Adjusted R^2	0.11	0.11	0.09	0.09
N	1,872,537	1,872,537	1,872,537	1,872,537

The table presents OLS regression estimates for insurer in the time period 2016-2021. In Columns [1] and [2], the dependent variable is the cosine similarity between the pairs' portfolio weights at asset class level among low-risk securities. In Columns [3] and [4], dependent variable is the cosine similarity between the pairs' portfolio weights at the issuer level among low-risk securities.

Results

Does unaffiliated asset management outsourcing explain holding similarity among insurers in high-risk assets?

Table 7: Unaffiliated Asset Management as a Determinant of Portfolio Similarity in high-risk securities

	Asset Class		Issuer	
	[1]	[2]	[3]	[4]
P&C pair	0.0136**	0.0138**	0.0026**	0.0026**
	(0.0034)	(0.0035)	(0.0009)	(0.0009)
Life pair	-0.0322***	-0.0330***	0.0089***	0.0089***
	(0.0028)	(0.0029)	(0.0007)	(0.0007)
Liability similarity	0.0604***	0.0610***	0.0203***	0.0204***
	(0.0037)	(0.0038)	(0.0011)	(0.0011)
Prod size	0.0319***	0.0324***	-0.0013***	-0.0013***
	(0.0006)	(0.0007)	(0.0001)	(0.0001)
Large pair	0.1029***	0.0986***	0.0261***	0.0256***
	(0.0058)	(0.0066)	(0.0019)	(0.0018)
Prod conc I			0.1279**	0.1323**
			(0.0378)	(0.0370)
Prod conc AC	6.1867***	6.2520***		
	(1.2808)	(1.2744)		
UAM pair	0.0879***	0.0771***	0.0041**	0.0030
	(0.0024)	(0.0034)	(0.0014)	(0.0015)
UAM 50% pair		0.0319***		0.0033***
		(0.0073)		(0.0003)
Constant	-0.9459***	-0.9658***	0.0598***	0.0577***
	(0.0204)	(0.0247)	(0.0046)	(0.0044)
Year FE	Yes	Yes	Yes	Yes
Adjusted R^2	0.13	0.14	0.02	0.02
N	1,872,537	1,872,537	1,872,537	1,872,537

The table presents OLS regression estimates for insurer in the time period 2016-2021. In Columns [1] and [2], the dependent variable is the cosine similarity between the pairs' portfolio weights at asset class level among high-risk securities. In Columns [3] and [4], dependent variable is the cosine similarity between the pairs' portfolio weights at the issuer level among high-risk securities.

Discussion and open points:

- Portfolio similarity on the issuer and the asset class level is significantly higher for insurers that outsource the investment management of at least part of their investment portfolio. This relationship is more pronounced for insurers that outsource the investment management of at least 50% of their investment portfolio

- Further analysis: studying differences in share invested in high-risk securities in insurers that outsource AM vs. those who don't.

Thank you!