Expert Intermediaries in Markets

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1 Introduction

In most of our everyday purchases, consumers are confident in what they've bought. They usually don't think twice as they just grab things off the shelf or rack and put it in their cart. However, when consumers make large or intensive purchases like property and insurance, often times their own preferences are not sufficient to make favorable decisions. Buyers might not know how much house or insurance they need and the confusing purchase procedure often requires deep institutional knowledge or other parties to complete. These markets are destined to be inefficient given the number of agents and steps necessary to seal the deal, leading some to seek expert intermediaries to help them make the optimal choice. This literature review identifies research on intermediaries such as agents in real estate markets and navigators and brokers in health and other insurance markets to understand how they can make markets more efficient.

2 The Economics of Intermediaries

Information gaps can be a source of market inefficiency, especially in complex markets like insurance. The source of complexity arises from the intricate language used in the insurance policy and the asymmetrical information of the consumer. Price is important, but in some cases not the most important factor for a consumer when they select a policy. Thus, cheaper policies are not necessarily the dominating choice. The role of intermediaries is "matchmaking" as they are tasked to match insurance needs of consumers with insurers who have the capability of meeting them. However, the incentives of intermediaries may not be aligned with consumers as they receive compensation from premiums sold as a percentage of the premium paid or through a specific insurance as a contingency. Therefore, it begs the question if intermediaries are correctly matching consumers and insurance plans based on their selection of risks. When information asymmetry between the

insurer and consumer are reduced, the market becomes more efficient by providing the consumer with a plan that adequately covers their risk and reduces adverse selection. Cummins & Doherty, 2006 examine how these incentives structure for intermediaries allow insurance market operate more efficiently.

2.1 The Economics of Insurance Intermediaries, (Cummins and Doherty 2006)

The authors examine the role of intermediaries and their compensation structure in the market for commercial property-casualty (PC) insurance. An intermediary is defined as an individual or business firm that stands between the the consumer (buyer) and insurer (seller). The distinction between brokers and agents is subtle, but it boils down to the the size and range of services provided. Agents tend to be more local and provide products for small businesses and individual buyers whereas brokers service larger entities and provide more complicated business insurance needs. Furthermore, the degree of independence of agents and brokers varies as some insurers use exclusive agents others might work for several insurers. Although agents and brokers differ by textbook definitions, the authors refer to them as just intermediaries in this paper and those who with several insurers. Intermediaries also underwrite information to insurers by evaluating assets and financial status to help determine if the insurer should take on the buyer based on their risk. This informational function is usually recognized in the intermediary's compensation.

In order understand how compensation effects buyers in matching them with the appropriate coverage, the authors identifies two types of commissions that intermediaries can earn: premium-based commissions and contingent commissions. Premium-based commissions is the compensation intermediaries receive as a percentage of the premiums paid on each policy whereas contingent commissions are based on the profitability of the intermediaries through volume and persistence of policies sold through a particular insurer. In the PC insurance market, evidence shows that most compensation comes from premium based commissions as opposed to contingent commission. Using data from National Association of Insurance Commissioners (NAIC), intermediaries can receive anywhere from 3.9 percent to 21.5 percent commission from premiums sold. Both rates depend heavily on the policy size and polices that are more information intensive and complex yield higher commission. Therefore, intermediaries have a greater incentive to sell more complex plans to buyers if they can effectively communicate the details.

All insurers in the PC insurance market provide premium based commissions, but not all of them provide contingent commissions. The top 50 PC insurers pay contingent commissions and although the average payout is only 2.3 percent of premiums, the incentive still exists as intermediaries might need to sell a certain

volume of policies to trigger the commission. The contingent commission between the intermediary and insurer reflect converging incentives as insurers want more buyers in a policy in order to spread out the risk and the intermediaries will receive more revenue from selling more polices from a specific insurer.

In their analysis, they investigate the relationship between premiums and commissions using the NIAC annual statement database for the sample period 1993-2004. Using pooled cross-section time-series regressions based on insurance groups and unaffiliated single insurers, they estimate their model using OLS. In regressions using current premiums to estimate expected losses, all covariates were very close to 1 implying a that almost all of the added costs from premiums are passed on to the buyer through the premium. Although commissions are passed on to the buyer, this does not mean that buyers are harmed by this additional cost they take on. Contingent commissions motivate intermediaries to do exceptional underwriting so insurers can decide whether or not they want the buyer in their policy. The efficiency of insurance markets is improved through competitive bidding between insurers who might have similar policies resulting in lower premiums for the buyer.

This article provides empirical evidence that both premium-based and contingent commissions are passed on to buyer in the premium. In order for the market to be more efficient, insurers need accurate information to underwrite and price policies to balance the insurance pool. Intermediaries are critical to reduce information imperfections that can lead to adverse selection, hence the commissions passed on to the buyer in the premium could compensate for the information gains that intermediaries provide in the market. This paper contributes to literature in a number of ways, but most importantly through extensive background and theory on search and intermediaries. Furthermore, the authors suggest future research regarding the design of contingent commissions the the relationship between intermediary compensation and market efficiency in other empirical studies.

3 Intermediaries in Real Estate Markets

Another market that is considered inefficient is the residential real estate market. Similar to insurance markets, the inefficiency arises from imperfect information and intermediaries such as brokers and agents are a natural solution. Agents and brokers can affect buyer search behavior and ultimately the final price they pay for the house. These intermediaries improve marginal efficiency by guiding or limiting search and as a result, reduce the overall search cost for the buyer. Essentially, buyers who purchase through brokers are not only purchasing a house, but also the services of the broker. If buyers use an agent, do they find their "perfect home" faster than if they did it themselves? Moreover, are there unique characteristics of buyers that make them more likely to utilize an agent? Should

everyone use an agent when they buy a home? How does the number of agents and brokers in a market impact the price a buyer pays? Ztanpano and coauthors are the leading researchers in the role of agents/brokers (similar to (Cummins and Doherty 2006), the authors use them interchangeably even though the are subtle technical differences) in the real estate market by developing empirical models answer these questions.

3.1 Buyer Search Duration in the Residential Real Estate Market: The Role of the Real Estate Agent, (Baryla and Ztanpano 1995)

In practice, it is rational to seek help on a purchase like a home. The market is riddled with imperfect information and information is costly to obtain. Intermediaries like agents play a critical role in residential real estate as they can leverage economies of scale in information gathering and generate gains in the form of lower transaction and information cost. If the agent is efficient and all else equal, the time saved on the buyer's end more than justifies the use of an agent despite the commission fees. The purpose of this paper is to develop an empirical model based on buyer search theory to measure the impact of using a real estate on the amount of time it takes for a buyer to purchase a home.

This study is a demand side analysis that relaxes Morgan and Manning 1985 optimal search model to an empirical duration model that relaxes the constraint of one observation per period. This allows for buyers to search over time and choose more than one home per period. The authors include a search intensity variable within the structure of a duration analysis model, which effectively examines the sequential dimension of search over time while including a variable that captures the intensity of search within the period. The model uses data from a cross-section subsample from a 1987 nationwide survey of home buyers conducted by the Research Division of the National Association of Realtors and is estimated using the maximum likelihood technique in survival analysis. The data contains variation in the type of purchase: agent-assisted and for-sale by owner (FSBO) to compare the types of transactions on buyer duration.

Several controls and covariates are included in the model. To measure opportunity cost, they use weekly household income to capture the increasing cost of search. Income also captures the fact choices increase with high incomes as less affluent buyers might have a harder time finding homes within their price range and limited financing opportunities. Previous literature indicates that greater search efforts results in faster match or the buyer might lower their reservation price as the duration of search increases. This is captured by including an intensity ratio defined as the number of units the buyer visit divided by the duration. Obviously,

demographics such as marriage status and number of children influence the urgency home buying and are included in the model. A buyer might be less price sensitive if the purchase is prompted by an employer. This type of buyer might receive some compensation or re-location allowance that would make them more likely to use an agent given that some of the costs are passed on. Seasonal factors might also influence buyer search since sellers are more likely to list in warmer months than colder months. Therefore, the model includes indicators that capture the difficulty of finding a home in colder months. Finally, to control for the different information levels among buyers, they create an indicator representing first time buyers and buyers coming from another location. This should be positively correlated as these buyers will need more time to learn about the process and the new market they are buying in.

The authors use two versions of the model to measure duration in search. The first is a baseline version and the second is an expanded version that includes interaction terms. In both models, the covariate of interest, agent assisted, is negative and statistically significant as it directly follows their role. Other covariates that suggest lower duration of search include: employer sponsored move, intensity ratio, and warmer weather which are all statically significant. Furthermore, the only covariate that is statistically significant and has a positive effect on duration is first time buyers. This is not unexpected as they need to spend more time on search, but the results are not the same for those coming from a new location who face similar information gaps. This suggests that previous homeowners can leverage their past experiences with homebuying.

The results from this early study provide evidence that agents can reduce information asymmetries, ultimately shorted the duration of search. This paper limited in that they can only evaluate the effects of agents on search time, but not the other facets of market efficiency. They are unable to look at consumer satisfaction and prices paid to truly determine the value of real estate agent services.

3.2 Buying a House and the Decision to Use a Real Estate Broker, (Zumpano, Elder, and Baryla 1996)

This study looks at the factors that home buyers consider when they use a real estate broker and the consequences it has on the purchase price. When a buyer uses a broker, they are not only buying the home, but the services of the broker as they charge a commission on the offer if it is the winning bid. Brokers not only help buyers find homes within their budget constraint and preferences, but also help with mortgage financing, property insurance, and recording the title. This suggests that brokers provided an added value to the buyer and thus are willing to pay for it. Previously, the authors have examined the use of brokers on search

duration. Similar to the 1995 paper, the authors develop an empirical model of broker choice on prices paid which should provide some insight to the efficiency of the residential real estate market.

Their model uses a Heckman two-stage model and the same data from the 1995 paper. There is a strong possibility of selection bias which warrants the use of a Heckman two-stage model. If selection bias is present, and housing prices are higher for broker-listed properties, the price differences observed could be attributed to the predisposition of buyers using a broker to pay more for their homes.

In the first step, a buyer decides whether to use a broker to assist with the search modeled as a probit equation where the choice is a function of the cause of the move, income, age, experience, market knowledge of the buyer, and other buyer characteristics. The second step is the purchase modeled as a function of house characteristics, buyer characteristics and whether it was broker-assisted. The covariates are similar to the 1995 study, but with the addition of the Inverse Mills Ratio from the first stage and an indicator variable that takes the value of 1 if a previously occupied home was purchased, and 0 otherwise. This additional indicator variable is added to control for the fact that new homes are marketed by builders and not brokers. The inclusion the Inverse Mills Ratio and new indicator variable allows us to test for sample selection bias, and if present, control for its effects.

The results of the probit estimates correspond to findings in previous literature. Expected buyer income and the use of a real estate broker are positively related, however, inexperienced buyers do not choose to use a broker. This result may suggest that first-time home buyers are unaware of search costs, may only seek out non-broker listed homes. This could model a belief that such homes will be less expensive because the seller would not charge a commission. In the second stage, using OLS, the dummy for buyer assisted is positive and statistically significant. Altogether, there is evidence that homes purchased buy buyers using brokers are higher, but is that the true? The two stage estimate accounts for selection bias if present, therefore the estimate demonstrates that factors affecting choice are considered and those who use a broker actually pay less controlling for characteristics of the house and household characteristics. The authors note that this bold finding is sensitive to the specification and robustness checks are necessary in future research.

4 Intermediaries in Health Insurance Markets

Health insurance markets in the US are also characterized by imperfect information and adverse selection, providing an opportunity for intermediaries to intervene. Similar to the PC insurance market, intermediaries play a significant role in

access, finance, and delivery of health insurance products. In general, brokers and agents provide specialized services to help consumers navigate the complexities of insurance products when the consumer lacks this expertise. Agents and brokers receive commissions typically from the insurer for plans they sell. Commissions structures are similar to the ones described by (Cummins and Doherty 2006) as premium-based and contingent based. Karaca-Mandic and coauthors look at the role of agents and brokers on health insurance offering decisions for smalls firms and Meyerson and Li examine the efficiency of the navigator program launched by the Affordable Care Act (ACA).

4.1 The Role Of Agents and Brokers in the Market for Health Insurance, (Karaca-Mandic, Feldman, and Graven 2018)

The role of agents/brokers is particularly important for small businesses (firms with less than 50 employees) because they lack expertise and human resources to select from a menu of offerings. Therefore, they rely on agents/brokers to provide expertise given their financial constraints. The authors investigate the effect of agent and broker market structure on the health insurance offering decisions of small businesses. They predict that smalls firms in more competitive agent/broker markets will be more likely to offer insurance and employees would pay lower premiums.

Using data from the 2008 Medical Expenditure Panel Survey–Insurance Component (MEPS-IC) and the National Association of Health Underwriters (NAHU) to examine whether the structure of the market for health insurance agents/brokers that serve small firms is related to the probability that small firms offer insurance and the premiums of plans offered. Furthermore, they link the Area Resource File (ARF) by zip code to control for economic and demographic factors related to the demand for insurance.

Empirical studies of market structure and performance run into a reverse causality issue, and in this case, agents/brokers that serve small firms may locate in areas with strong unobserved demand for insurance by small firms. They use fixed effects at the county and state level as well as an instrumental variable approach exploiting variation in the number of agents/brokers that do not serve small firms. From the MEPS-IC, they pull outcome variables that indicator whether the employer offers health insurance and he total premiums for single coverage. On the agent/broker side, the NAHU data contains information on agents/brokers in a zip code to construct different markets for analysis. The authors note that geographical proximity of the broker and client is important, leading them to consider 4 different definitions of markets to evaluate market power: County, Core-Based

Statistical Areas (CBSA), Fixed Radius (25 miles), and Variable Radius using minimum of nearest zip codes within 25 miles with a cumulative population of 1 million people, or all zip codes within 25 miles. For each market, the measure of broker competition is the number of brokers that serve small firms per 100,000 people in the market by quartile.

The authors estimate the models using a two-stage residual inclusion (2SRI) approach with the probability of offering health insurance as a function of market structure. Then they use OLS to evaluate the effect on estimated average premium conditional on offering health insurance using the same explanatory variables as the 2SRI. In the first stage, compared to brokers that serve small firms, there are more firms in the IV as these brokers sell policies in Medicare or long-term care insurance markets that greater demand. In the second stage, the probability of offering health insurance increases by firm size even when we just look at small businesses. Using the first quartile in each market as a reference to agent/broker market competition on insurance offering, firms in higher quartiles of broker competition are more likely to offer health insurance with exception of the second quartile. This is persistent across all market definitions. When evaluating the effects on premiums, firms with 25-50 employees have lower premiums than firms with 25 or less employees, confirming that agents/brokers play an important role in making health insurance both more available and affordable. These results can be interpreted as the offer and premium gradients estimated for broker competition.

The research lacks in causal interpretations where they cannot directly say the effect of one additional agent/broker in the market and the probability of offering insurance given that they are analyzing quartiles. This research contributes one of the few studies of agent/broker availability and its impact on health insurance availability. With the introduction of the Small Business Health Options Program by the ACA, there are more coverage options for small businesses and clarity of offerings. It is currently unclear how this will affect agents/brokers serving small businesses and is logical next area to research.

4.2 Information Gaps and Health Insurance Enrollment: Evidence from the affordable Care Act Navigator Programs, (Myerson and Li 2022)

The ACA overhauled the individual health insurance market and created a new exchange for individuals and small business to shop for insurance. The new provisions helped standardize insurance products, improve transparency, and reduce information costs through advertisements and websites to facilitate informed consumer choice among health insurance. Moreover, funds from the ACA were allotted to intermediaries called navigators who are given grants to help buyers sign up for

government plans on the exchange. Navigators specifically target populations who are low-income and speak a language other than English at home. This is apparent in how the government's grantee criteria. Unlike brokers and agents, navigators are individuals or organization that do not earn commissions signing consumers up for policies and do not engage in underwriting. Their role as an intermediary can be described as an assister because they provide consumers with general information that can make it easier to understand what's available in terms of coverage and financial assistance. These changes and the introduction of new intermediaries would reduce search cost and information frictions in the health insurance market that could potentially diminish the role of brokers and agents.

(Myerson and Li 2022) investigate the effects of navigators on health insurance outcomes by exploiting the 84 percent cut in the funding for the navigator program under the Trump administration as a natural experiment. They discovered that within each state, some counties were more affected by funding cuts than others and using this geographical temporal variation to estimate event study models that measured changes in health insurance outcomes. Since the navigator program is local, they used county-level differences in prior exposure to the local navigator programs within each state for prior identification. In a CMS survey from 40 representative navigator programs, budget cuts lead to cuts in staff and sometimes closures. Anecdotally, the impact of these cuts was substantial in that most programs started to limit their hours and their time to help consumers with complex cases. The authors hypothesize that given these cuts, health insurance coverage would also decrease.

In order to estimate their event study, the authors used CMS data to identify service areas before and after the budget cuts and administrative data from Healthcare.gov to measure enrollment in health insurance marketplaces. To measure changes in total health insurance coverage and Medicaid coverage, they used ACS data and panel data from a cohort of individuals using Medical Expenditure Panel Survey (MEPS) and merged (National Health Interview Survey) NHIS data to measure changes in coverage status and health care use over time. The event study compared changes in outcomes across two types of counties in the pre-cut period of 2015-2017 to the post-cut period in 2018 and tested for changes in differences over time. The treated group are those served by local navigator programs in 2016, and the control are those not served by the local navigator programs in 2016. The model also included state-by-year fixed effects and county fixed effects, as well as covariates like unemployment to adjust for local unemployment trends.

The results indicate that the cuts to the navigator program did not have a significant impact on enrollment in health insurance and in plans with cost-sharing reductions. When examining the impact on total health insurance coverage and Medicare coverage rates using ACS data, there was also no significant effect from

navigator program cuts on total health insurance coverage. Finally, when they examine the impact on the health insurance coverage and consumption using the MEPS and merged NHIS data, they find similar results to ACS where navigator funding cuts did not change the use of outpatient care, inpatient care and emergency care. Considering all these results, cuts to the program did not have as large of an impact on health insurance coverage as the authors predicted.

This paper provides one of the first analyses of intermediaries as navigators in health insurance markets contributing to the literature on health insurances choices and information gaps. The analysis has limitations as the authors did not evaluate the intensity of navigator activities in each county, such as how funds were distributed in multi-county navigator programs. This area of research has potential given that the data ACA data are more available. This area of research could also benefit from an instrumental variable analysis with a rich paneled dataset.

5 Further Research

Despite what economist know about search and information theory and empirical research that dates back to the 90s, there still exists market inefficiencies in markets such as insurance and plenty of research to conduct. With health care statues and polices always changing, it provides a basis and data to ask new questions and data to potentially answer them.

5.1 Open Questions

1. How does internet use compared with intermediaries (agents, brokers, navigators) impact health insurance choices?
2. Are health insurance intermediaries helping buyers pick policies with: too little, too much, or enough coverage?
3. Is there a better way to instrument market power of a broker/agent in understanding health insurance choices? (an extension/rework of the Karaca-Mandi paper)
4. For individuals who signed up in ACA exchanges, how does their health care utilization compare with consumers who used an intermediary and those who did not?

5.2 Research Proposal

This semester I was a research assistant for Professor Saltzman at Emory working on a paper that has been on the back burner. He has a rich administrative dataset

from Covered California indicating the policies individuals selected and whether or not they used an intermediary when signing up. With this dataset, I hope to work on the third question and improve on it.

The fourth question would be interesting given the right data. In this class, we used a couple datasets where we could construct outcome variables that allowed us to evaluate healthcare utilization. I will need to research if there exists such a dataset that has individual level information on healthcare utilization, healthcare coverage, policy type, and if they used an intermediary. If this data does not exists, I would like to think about ways we could merge data and develop a model that would have meaningful results we could interpret not on the individual level. The previous insurance literature demonstrates that intermediaries can help close information gaps and match buyers to optimal insurance products, but do buyers comprehend the benefits of their policy and utilize all of them? If intermediaries create more efficiency as we have seen in insurance and real estate markets, we could compare individuals in a particular health insurance market who used an intermediary versus those who did not and compare their health care utilization. My hypothesis is that individuals who use an intermediary have higher health care utilization than those who purchased policies on their own. This is because intermediaries are likely to interact with the buyer more and fully explain to them what provisions are in their policy. For example, we could find a low or no cost service/procedure that is covered by insurance and compare utilization. This is a preliminary idea and I know it can get messy quite quickly.

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