Exclusive Deals in Commercial Real Estate

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(Preliminary: Please do not circulate)

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Abstract

Exclusive deals in commercial real estate are designed to change where retailers locate and how households shop. This paper provides the first estimates of the effect of these exclusive deals on retail competition and consumer welfare. Novel descriptive evidence, scraped from publicly-available leases and deeds, documents the prevalence of these private contracts, the kinds of retailers that employ them, and shows evidence consistent with the retailers' stated goal of limiting business competition. With this new data, I estimate a model of retailer location choice where exclusives are an equilibrium outcome in the commercial real estate market. In turn, the exclusive deals affect consumers by changing retailer prices, distances, and which stores locate near one another. I estimate the model with data from Chicago, and estimates show that retailers are willing to pay 30% higher rent for the exclusive deal and that the exclusives reflect the strongest substitutes. I compare consumer welfare to a counterfactual where these exclusive deals are banned.

1 Introduction

Restrictive covenants are exclusive deals in commercial real estate which forbid certain firms from operating on specific premises. These exclusive deals are agreements between private parties that are put in place to protect the business interests of at least one party. These exclusive deals are found in a wide range of retailer industries, such as grocery stores, big box stores, club stores, convenience stores, discount stores, dollar stores, pharmacies, discount department stores, gas stations, and home improvement stores. For example, Dollar General has included stipulations in a lease to prevent its landlord or any of its landlord's affiliates from leasing land within a mile of the premises to competitors, explicitly forbidding the operation of dollar stores such as Family Dollar, Dollar Tree, and Bill's Dollar Store, drug stores such as CVS and Walgreens, and discount stores such as Big Lots and Walmart.

The welfare effects of these exclusive deals are ambiguous. Both the theoretical economic literature, the legal literature, and the courts have deemed exclusive deals procompetitive in some cases and anticompetitive in others.[1] These exclusives can harm consumers in three cases: (1) if the landlord can charge a higher price for an exclusive deal, and the higher price is passed onto the consumer in the form of higher prices or less entry, (2) if retailers limit competition by keeping competitors at a distance, which can lead consumers to pay higher prices and travel longer distances (3) if retailers limit competition by foreclosing on competitors' entry entirely. In the case of the grocery industry, for example, the broader policy concern becomes that restrictive covenants cause food deserts: "food deserts are neither natural nor inevitable. They result from the deliberate choices of supermarkets blocking other grocery stores from operating" (Leslie (2021)). On the other hand, these exclusive deals can be beneficial to consumers when: (1) the restrictive covenant reflect consumer preferences. When consumers dislike distance, it's welfare-improving for the consumer to be able to shop at complementary stores nearby. Similarly, for retailers, locating next to complementary stores improves foot traffic and sales. As a result, the restrictive covenant can – by omitting complements – increase both firm profitability and consumer welfare by increasing the probability that two complementary stores will locate near one another. (2) Moreover, in set-

[1] For an example of a restrictive covenant held up in court see Child World, Inc. v. South Towne Centre (1986), wherein Child World, Inc wanted to vacate the property early but had signed a restrictive covenant limiting competitors, and the "restrictive provision was negotiated as an inducement to enter the lease and in return tenant agreed to 20 years of continuous operation." The restrictive covenant held up in the court, and as a result Child World could not vacate the premises. For an example of a restrictive covenant struck down in court see Davidson Bros., Inc. v. D. Katz & Sons, Inc. (1994), wherein the court struck down a restrictive covenant that forbid the operation of a grocery store on a vacant property, arguing that the covenant was not in the public interest and contributed to food deserts by limiting the availability of grocery stores.

tings with low demand, covenants can procompetitive if absent a covenant the retailer would not enter due to threat of competition, either because of high fixed costs or because the landlord cannot credibly commit to not leasing to competitors. In the case of the grocery industry, for example, the broader policy question becomes whether grocers in sparse retail environment only exist because they have a restrictive covenant on the property.

The goal of the paper is to assess the effect of restrictive covenants on consumer welfare. These covenants are documented in leases, deeds, and other legal documents. To ensure the covenant isn't violated, in the United States, retailers record the restrictive covenant with the county recorder office. I scrape the county recorder website and a build a dataset of these exclusive deals. Then, I document novel facts and characterization of the covenants, both about the covenants themselves, and the effect of the covenants on consumers and retailers. To understand how covenants change consumer shopping patterns and retailer competition, I model both the product market and the commercial real estate market, capturing the elements that are important for why covenants are implemented and how they shape consumer shopping patterns and welfare. In modeling the product market, I focus on the retailers with the most frequent purchases, with the largest expenditures, and in industries that employ covenants: grocery chains, discount store, and drug stores chains. In the commercial real estate market, I focus on how covenants change entry and prices.

The first part of the paper characterizes how widespread these restrictions are and the kind of stores that are likely to employ them. To this end, I create the first dataset of restrictive covenants. I find that these covenants are disproportionately employed by national chains, particularly in the food, discount, and drug industries. Focusing on Chicago, I find that about a third of the Chicago national grocery chains leases contain grocery covenants, and the majority of these covenants are from retailers with the largest market share. I also document an asymmetry in the types of stores that retailers block. That is: the retailers listed in the exclusive deals are those that might choose otherwise to locate near the retailer imposing the restrictive covenant. In the same vein, the restrictive covenant is often signed by the anchor tenant which drives most of the foot traffic for an area and attracts other stores to the same location.

Next, I show multiple effects consistent with the firms' presumed goal of limiting competition: not only do exclusive deals predict which firms compete with each other, but stores with exclusive deals also have fewer competitors nearby. In turn, firms with exclusives pay 30% more in average rent per square foot, compared to similar firms without exclusive deals. Specifically, with an event study regression, I show entry of presumably competing retailers – where I define "presumably competing" as blocked by the exclusive – decreases expen-

ditures for incumbent retailers. I also show that covenants are correlated with a lower density of immediate competitors, and farther away the density flips. This is consistent with a story of displacing competitors.

Importantly, I show that consumers experiencing a grocery store exit significantly reduce their grocery purchases, but only when an exclusive deal is present.

To understand which forces matter at play most, I model both the product market and real estate market. To quantify which effect matters the most for consumers, I estimate a demand model where consumers can bundle purchases across stores (consumers trip chain) and store complementarities are moderated by distance. These estimates show that the exclusives reflect consumer's preference with regards to cross-store complementarity, but that consumers show a strong distaste for distance, and so consumer welfare is harmed when the exclusives foreclose on close options.

I build a model where covenants are endogenous in the commercial real estate market. To explain the covenants, I focus on asymmetric information between landlord and tenant, which according to industry professionals is – along with commitment – one of the reasons that covenants are put in place to begin with. This asymmetric information is also a commonly given justification when speaking to leasing agents and industry experts. Faced with asymmetric information, the landlord can use the covenant to offer a menu of prices to the tenant, and in doing so extract additional rent compared with the case where the landlord can only offer one price. This is also demonstrated in a simple conceptual framework.

Finally, I compare consumer welfare in Chicago to a counterfactual world where landlords cannot offer exclusive deals to retailers.

1.1 Related literature

Commercial real estate covenants have yet to be studies by economists, and this is the first paper to do so. Legal scholars have characterized the presence of restrictive covenants in grocery store leases (Sturtevant, 1959), often last even after the land has been bought and sold to different landlords (Lundberg, 1973), studied how commercial restrictive covenants encumber development (Stubblefield, 2019), may be anticompetitive and cause food deserts, (Geier, 1994, Leslie (2021), Kang (2022)).

Commercial restrictive covenants are an example of an exclusive deal, of which there is a long theoretical literature and a short empirical literature, due to lack of data (for a summary of the empirical literature, see Lafontaine and

Slade (2007). Perry (1980), Smith (1982),Aghion and Bolton (1987), Klein and Murphy (1988), Hughes and Turnbull (1996), Bernheim and Whinston (1998), Lafontaine and Slade (2007), Lafontaine and Scott Morton (2010), Lee (2013), Nurski and Verboven (2015), Asker (2016), Crawford et al. (2018), Cunningham et al. (2021), Le (2023)). This paper is related to the vertical integration literature, as a restrictive covenant is somewhere in between vertical integration and not vertically integrating. Importantly, this relates to the labor literature on noncompetes which asks the same economic questions and evaluates similar economic mechanisms when determining whether noncompetes benefit or harm workers (Krueger and Ashenfelter (2022)).

Second, there is a long literature on competition in space going back to Hotelling (1929) and Salop (1979). Modern day models often build off of Bresnahan and Reiss (1990), Bresnahan and Reiss (1991), and Berry (1992), that deal with entry and exit of stores in space (See Mazzeo (2002) for endogenize product differentiation, Seim (2006), Jia (2008), Ciliberto and Tamer (2009), Holmes (2011), Vitorino (2012), Ellison and Ellison (2011), Sweeting (2013), Asker (2016), Nishida (2015), Almagro and Domınguez-Iino (2023), Bodere (2023), Dinerstein et al. (2022), Ramos-Menchelli and Sverdlin-Lisker (2022), Moszkowski and Stackman (2022), Vitali (2022), Caoui et al. (2022)). However, firm entry and exit decisions problems are difficult to model, in part because there is little data on how firms choose locations. For this research, I collect and present a novel data on firm location choice. Specifically, I collect actual covenant data, and the language of the restrictive covenants provides firm's "revealed-preference" on which firms they find profitable to locate far away from. That is, the dataset provides exact information on the types of complementarity and substitutability between store types and retail formats/ industries. Then, I build on Seim-type models (Seim (2006)), adding the data and relevant information from the exclusive covenants to inform how firms to co-locate.

Third, this paper adds to the literature on trip-chaining and multi-stop shopping (Thomassen et al. (2017), Mehta and Ma (2012), Oh and Seo (n.d.), **?**, Rhodes and Zhou (2019), Relihan (2022)). In the model, households have preference over a bundle of store types, which can be separated in space. The model parameters are estimated in order to understand firms preferences for co-locating stores. Finally, this paper contributes to the nutrition inequality and food desert literature by studying the effect of grocery closure on consumer outcomes (Allcott et al. (2019), by comparison study the effect of grocery addition to the zip code). This paper builds upon the large literature that estimates demand at grocers and similar retailers (**?**, **?**, **?**, **?**, Smith and Øyvind Thomassen (2012), **?**, Thomassen et al. (2017), Handbury (2021), **?**), focused on estimating demand and complementarities at the retailer chain level.

Beyond academia, grocery covenants might be interest to policymakers interested in everything from improving food access to merger policy. For example, local, state, and federal governments spend many resources on food access in order to encourage healthy eating habits, and grocery covenants create a barrier for policymakers trying to increase convenient access to healthy food. As it is clear from Allcott et al. (2019), the average household will travel to the grocery stores no matter how inconvenient, and so the location of grocery stores is almost certainly a first-order concern in the household food consumption problem. This paper will be useful for policy makers trying to make it more convenient to access healthy food, by studying how supply-side contracts affect provision of food. There is interest in reforming commercial restrictive covenant law: some local governments, such as Washington DC and Chicago, have banned or attempted to partially ban grocery covenants going forwards.

2 Data

2.1 Commercial restrictive covenants (exclusive deals)

Figure 1 shows an example of part of a restrictive covenant in a Trader Joe's lease, recorded at the time that the lease is signed. The lease imposes restriction on the rest of the shopping center (called "development" or "property") for the remainder of Trader Joe's lease. One observation that is immediately striking is the variety of products that are blocked – from direct competitors (for example, other grocery stores), to competitors for parking spacey (for example, religious facilities), to class consideration (for example, second hand stores), to seemingly unrelated stores (dry cleaners), there both a vast set of stores that are prohibited to a fast set of stores that are allowed (for example, a gym).

The goal is to create the first dataset on grocery locations, their covenants, and the extent that these covenants can block competition. Covenant data is scraped from the county recorder office. For each grocery store and chain, store names are input into the county recorder website and the relevant legal documents are downloaded. Then, the legal documents are read through optimal character recognition (OCR) in order to determine which documents contain covenants. Documents that contain the world "restrictive" or "exclusive" are flagged as potential for a grocery covenant. In addition, data on the types of stores blocked (through mention of discount stores, big-box stores, dollar stores, grocery stores, conveniences) as well as specific store names (e.g. for dollar stores, dollar general, dollar tree, and family dollar) are flagged and recorded in order to document the types of stores that are blocked.

1. Any movie theater, bowling alley, dance hall or discotheque.
2. Schools of any nature (including, without limitation any cooking school or cooking classes (except as such may be run by Tenant), beauty school, barber college, reading room, place of instruction, or any other operation serving primarily students or trainees rather than retail customers). Except that tutoring businesses such as Kumon and Sylvan shall per permitted.
3. Any church, synagogue or other religious facility.
4. Any gasoline or service station, automotive service or repair business.
5. Any facility for the sale, lease or rental of automobiles, trucks, motorcycles, recreational vehicles, boats or other vehicles.
6. Except for any use associated with the operation of a grocery store by Tenant (e.g., an in store brew pub), any manufacturing facility.
7. Any dry cleaner (except that a drop off/pick up only type of facility shall be allowed).
8. Any retail operation in which more than twenty (20%) percent of the sales area of such operation is used for the display and/or sale of clothing or goods commonly referred to as close outs, manufacturer's overruns, or excess inventory or manufacturer's seconds or imperfect merchandise. Except that discounters such as DSW, TJ Maxx, Ross, Marshalls and Nordstrom Rack shall be permitted (provided nothing herein contained shall prohibit a "nationally recognized resale shop" such as "Half Priced Books," "Plato's Closet," "Once Upon a Child," "Play It Again Sports," or substantially similar users).
9. Any "second hand" store, used clothing or thrift store, pawn shop, salvation army type store, "surplus" store or liquidation outlet.
10. Any "dollar" stores such as Family Dollar (provided nothing herein contained shall prohibit a "5 Below" or substantially similar user).
11. Any mortuary or funeral parlor.
12. Any coin operated laundry.
13. Any children's recreational, or day-care facility.
14. Any massage parlor (except that a therapeutic massage facility such as "Massage Envy" shall be allowed).
15. Any marijuana dispensary, store or shop.
16. Any use inconsistent with the customary character of a first-class shopping center (such as, without limitation, any "head" shop, adult book shop or adult movie house, or tattoo or piercing parlor) provided nothing herein shall be deemed to limit use of the shopping center to exclusively retail only uses.

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Figure 1: Portion of a restrictive covenant between Trader Joe and its landlord. The lease memorandum this restrictive covenant was found in lists the types of competitors that cannot operate in the same shopping mall as the Trader Joe's.

Additionally, data is scraped from the county recorders office on the parties

involved (grantor and grantee), the covenant date, the address (which is additionally read from the documents).

Of the covenants that are flagged with a potential covenant, covenants are read manually. The following information are recorded: the date, address, and store name, as well as the address, covenant date, and type of covenant. Specifically, whether the covenant is from an owned or leased property, and, respectively, whether the store is being bought or sold, or leased anew or whether the lease is terminated. Furthermore, the length of the covenant is recorded, whether the covenant extends past the stay of the store, the radius of the covenant, and the length of the text: essentially whether only direct competitors are blocked or whether other store types are blocked as well.

Next, the covenant data is merged with the grocery store store SNAP data and in order to establish which grocers have covenants.

Covenant data is scraped from the county recorder office. For each grocery store and chain, store names are input into the county recorder website and the relevant legal documents are downloaded. Then, the legal documents are read through optimal character recognition (OCR) in order to determine which documents contain covenants. Documents that contain the world "restrictive" or "exclusive" are flagged as potential for a grocery covenant. In addition, data on the types of stores blocked (through mention of discount stores, big-box stores, dollar stores, grocery stores, conveniences) as well as specific store names (e.g. for dollar stores, dollar general, dollar tree, and family dollar) are flagged and recorded in order to document the types of stores that are blocked.

Additionally, data is scraped from the county recorders office on the parties involved (grantor and grantee), the covenant date, the address (which is additionally read from the documents).

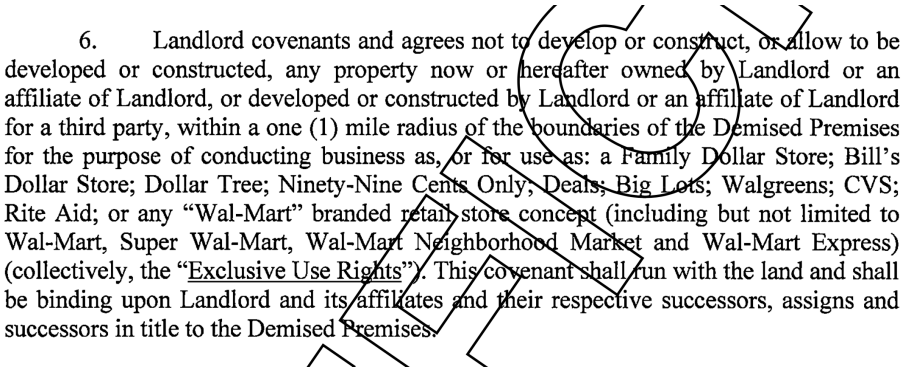
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Next, the covenant data is merged with the grocery store store SNAP data and we establish which grocers have covenants.

From reading these leases and deeds, I establish descriptive facts about covenants. There are three types of times when covenants are implemented: at the be-

ginning of a lease (henceforth referred to as entry covenants), during the stay of the grocery store (during covenants), and covenants when the grocer exits (exit covenants).

Meanwhile, Figure shows a standard dollar store lease (for example) is severely limited in the type of competition they can block: they only block other dollar stores, not grocery stores. This could be related to two things: [1] dollar stores want to locate next to grocery stores, which is why they don't block them and [2] dollar stores can't block grocery stores, because they don't have the leverage, because they don't have the credit and don't drive the foot traffic. First of all, they probably do have the leverage – dollar general, dollar tree are both doing extremely well. Second of all, they probably can't drive the foot traffic, although that it something I can test in the data. Also, I have suggestive evidence from this quote from the dollar stores expert and this quote from the grocery stores expert that says dollar stores want to be close to a Target or Wal-mart, presumably in order to get their foot traffic.



6. Landlord covenants and agrees not to develop or construct, or allow to be developed or constructed, any property now or hereafter owned by Landlord or an affiliate of Landlord, or developed or constructed by Landlord or an affiliate of Landlord for a third party, within a one (1) mile radius of the boundaries of the Demised Premises for the purpose of conducting business as, or for use as: a Family Dollar Store; Bill's Dollar Store; Dollar Tree; Ninety-Nine Cents Only; Deals; Big Lots; Walgreens; CVS; Rite Aid; or any "Wal-Mart" branded retail store concept (including but not limited to Wal-Mart, Super Wal-Mart, Wal-Mart Neighborhood Market and Wal-Mart Express) (collectively, the "Exclusive Use Rights"). This covenant shall run with the land and shall be binding upon Landlord and its affiliates and their respective successors, assigns and successors in title to the Demised Premises.

Figure 2: Restrictive covenant between dollar general and a landlord

Figure 3 shows second covenant example, one implemented during the grocery store's tenure at a property. In this case, Dominick's Finer Foods – a grocery store – owns property in a development. Then, in 2001, Dominick's Finer Foods sells a portion of the property owned to another company, named Summit. In the transaction, Dominick's ensures that this property (called Parcel 2) will not be used to sell food or as a grocery store. Specifically, the covenant states that: "Dominick's is the owner of Parcel II ... Summit will purchase Parcel II from Dominick's ... For 50 years, no portion of Parcel II shall be used as a grocery store...". To further emphasize the importance of the covenant, the agreement states the following as well: "Summit acknowledges and agrees that Dominick's would not convey Parcel II to Summit without the restrictive covenants".

Finally, we show an example of an "exit covenant". Exit covenants are rel-

atively rare. In this example, Dominick's Finer Foods and Jewel Osco are chain grocery stores in Chicago. The timeline is as follows: In 2013, Safeway is Dominick's Finer Foods parent company and at this point it is closing all of Dominick's Finer Foods stores. Then, in 2015, Safeway acquires Jewel Osco. Later, in 2015, at this location, Safeway and landlord agree to put a restrictive covenant on a former Dominick's Finer Food property. As shown in Figure ??, this means that no grocery store can enter on the now vacant property. Specifically, the covenant states that the "tenant operates a grocery store within 5 miles of the property". Furthermore, the 'landlord acknowledges tenant has made considerable investment in the property". This gives justification for the covenant: "no portion of the property shall be used as a grocery store".

1.1 Parcel I Ownership. Dominick's is the fee owner of Parcel I which is more particularly described on Exhibit A, attached hereto and incorporated herein by reference and of Parcel II which is more particularly described on Exhibit B, attached hereto and incorporated herein by reference. Parcel I and Parcel II are generally described as shown on the Site Plan attached hereto as Exhibit C and incorporated herein by reference and are sometimes collectively referred to herein as the "Property".

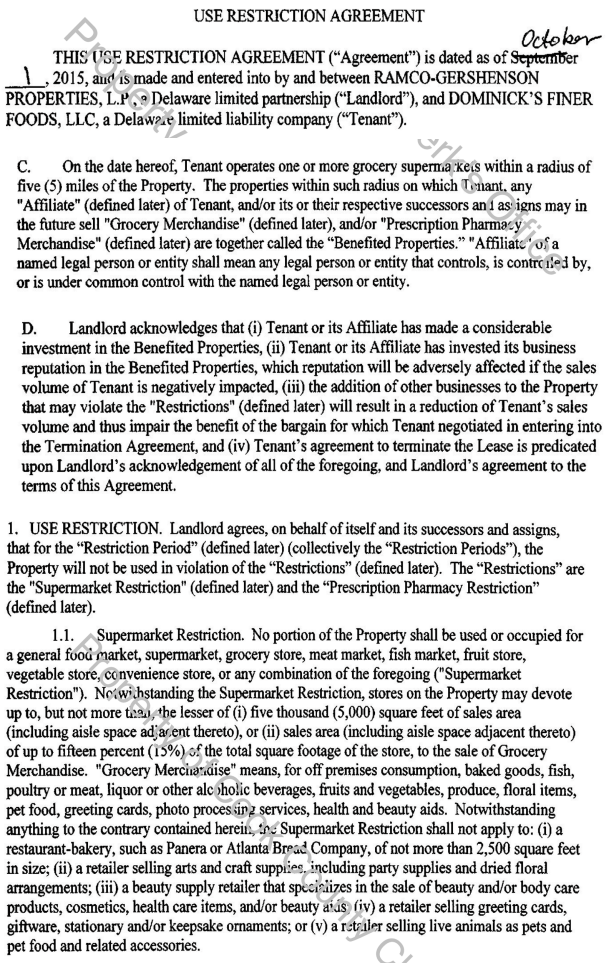
1.2 Sale of Parcel II. Dominick's and Summit have entered into an Agreement whereby Summit will purchase Parcel II from Dominick's.

For fifty (50) years following the date of recording of the Deed from Dominick's conveying fee title to Parcel II to Summit no portion of Parcel II (or any improvement constructed thereon or any portion thereof) shall be occupied or used, directly or indirectly, for the purposes of a general market or a grocery store, meat market, fish market, food store, vegetable store, prescription pharmacy or any combination thereof (each a "Restricted Use"). Notwithstanding the foregoing,(i) nothing herein set forth shall limit or impair occupancy or use of the property for a non-prohibitive primary use which may include the incidental sale of food items including snack foods in an area not to exceed 1,500 square feet; (ii) nothing contained herein shall prevent Parcel II from being occupied or used as a corporate or administrative office for any lessee or person engaged in the business of any of the foregoing Restricted Uses; (iii) nothing herein shall prevent any tenant of Parcel II from prescribing or selling prescription or non-prescription pharmaceuticals or drugs which is ancillary to such tenant's use of Parcel II as a medical practice, dental practice or for the provision of other professional health care services; and (iv) nothing herein shall limit or impair the occupancy or use of no more than 1000 square feet of the Building on the Property by the occupant thereof for prescribing or selling prescription or non-prescription pharmaceuticals or drugs.

Summit acknowledges and agrees that Dominick's would not convey Parcel II to Summit without the restrictive covenants set forth herein and the covenants are a material portion of the consideration for the conveyance of Parcel II to Summit, and of the agreements of Dominick's contained herein. In the event of any violation or threatened violation by any person of this restrictive covenant, Dominick's shall have the right, without posting bond or security, to enjoin such violation or threatened violation, to bring an action for specific performance in a court of competent jurisdiction or to bring an action at law for the damages. In the event a party brings an action to enforce or interpret or seek redress for breach of this restrictive covenant, the prevailing party in such action shall be entitled to its costs and reasonable attorneys' fees incurred at trial, on appeal or on petition for review, in addition to all other appropriate relief. If the duration of these restrictive covenants is determined to be unreasonably long by a court of competent jurisdiction, then it shall be deemed automatically amended to the maximum period of time as the court determines to be reasonable, and if any other clause, sentence or other portion of this Agreement shall become illegal, null or void for any reason, or shall be held by any court of competent jurisdiction to be so, the remaining portion shall remain in full force and effect. This restrictive covenant shall run with the land and be binding on and inure to the benefit of the heirs, successors and assigns of Dominick's and Summit.

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Figure 3: Restrictive Covenant



USE RESTRICTION AGREEMENT

THIS USE RESTRICTION AGREEMENT ("Agreement") is dated as of ~~September~~ October 1, 2015, and is made and entered into by and between RAMCO-GERSHENSON PROPERTIES, L.P., a Delaware limited partnership ("Landlord"), and DOMINICK'S FINER FOODS, LLC, a Delaware limited liability company ("Tenant").

C. On the date hereof, Tenant operates one or more grocery supermarkets within a radius of five (5) miles of the Property. The properties within such radius on which Tenant, any "Affiliate" (defined later) of Tenant, and/or its or their respective successors and assigns may in the future sell "Grocery Merchandise" (defined later), and/or "Prescription Pharmacy Merchandise" (defined later) are together called the "Benefited Properties." "Affiliate" of a named legal person or entity shall mean any legal person or entity that controls, is controlled by, or is under common control with the named legal person or entity.

D. Landlord acknowledges that (i) Tenant or its Affiliate has made a considerable investment in the Benefited Properties, (ii) Tenant or its Affiliate has invested its business reputation in the Benefited Properties, which reputation will be adversely affected if the sales volume of Tenant is negatively impacted, (iii) the addition of other businesses to the Property that may violate the "Restrictions" (defined later) will result in a reduction of Tenant's sales volume and thus impair the benefit of the bargain for which Tenant negotiated in entering into the Termination Agreement, and (iv) Tenant's agreement to terminate the Lease is predicated upon Landlord's acknowledgement of all of the foregoing, and Landlord's agreement to the terms of this Agreement.

1. USE RESTRICTION. Landlord agrees, on behalf of itself and its successors and assigns, that for the "Restriction Period" (defined later) (collectively the "Restriction Periods"), the Property will not be used in violation of the "Restrictions" (defined later). The "Restrictions" are the "Supermarket Restriction" (defined later) and the "Prescription Pharmacy Restriction" (defined later).

1.1. Supermarket Restriction. No portion of the Property shall be used or occupied for a general food market, supermarket, grocery store, meat market, fish market, fruit store, vegetable store, convenience store, or any combination of the foregoing ("Supermarket Restriction"). Notwithstanding the Supermarket Restriction, stores on the Property may devote up to, but not more than, the lesser of (i) five thousand (5,000) square feet of sales area (including aisle space adjacent thereto), or (ii) sales area (including aisle space adjacent thereto) of up to fifteen percent (15%) of the total square footage of the store, to the sale of Grocery Merchandise. "Grocery Merchandise" means, for off premises consumption, baked goods, fish, poultry or meat, liquor or other alcoholic beverages, fruits and vegetables, produce, floral items, pet food, greeting cards, photo processing services, health and beauty aids. Notwithstanding anything to the contrary contained herein, the Supermarket Restriction shall not apply to: (i) a restaurant-bakery, such as Panera or Atlanta Bread Company, of not more than 2,500 square feet in size; (ii) a retailer selling arts and craft supplies, including party supplies and dried floral arrangements; (iii) a beauty supply retailer that specializes in the sale of beauty and/or body care products, cosmetics, health care items, and/or beauty aids; (iv) a retailer selling greeting cards, giftware, stationary and/or keepsake ornaments; or (v) a retailer selling live animals as pets and pet food and related accessories.

Figure 4: Exit Covenant

To understand the circumstances under which the covenants are implemented, I establish descriptive statistics on these covenants. Table 1 provides background on these covenants. There are 196 grocery covenants in Chicago. The majority of the covenants from leasing agreements between a landlord and a grocery store tenant, the majority of which are entry covenants (half of the covenants overall are entry covenants). Amongst the covenants for properties that are owned by the grocery store, 80% are established when the property is sold: after the grocery store presence is gone from that specific location (whether there was a grocery store to begin with is unclear). These covenants are found in a variety of legal documents: lease memoranda, deeds, agreements, restrictions, easements, and terminations.

Table 2 provides further detail of the extent to which the covenants might restrict competition. Covenants that are longer restrict more store types, and constitutes 60% of the observed covenants. Shorter covenants typically only

block the same store type. Next, the covenant can bind at a variety of different radii: the property (typically the shopping center), within a certain mile radius (the median is .5), and the adjacent property. The vast majority of covenants bind at that specific shopping center. Finally, covenants can last even when a grocery store is not present at that location. The median duration is 8 years, and 62 explicitly detail a duration after exit.

			Num	*Frac*
Total	→		196	
Own/Lease	→	Own	64	0.33
		Lease	131	0.67
Buy/Sell	→	Buy	8	0.21
		Sell	30	0.79
Type	→	Deed	28	0.19
		Agreement	27	0.19
		Memorandum	77	0.53
		Restriction	11	0.08
		Termination	2	0.01
Grocery Grantor	→	Yes	80	0.5
		No	72	0.54
Covenant Timing	→	Enter	94	0.48
		During	74	0.38
		Exit	13	0.07
		Not Grocery	15	0.08

Table 1: Covenants Observed in Chicago

			Num	*Frac*
Total	→		196	
Text Length	→	Short	72	0.39
		Long	113	0.61
Radius	→	Property	104	0.58
		Adjacent Property	44	0.25
		Miles (median 0.5)	30	0.17
Duration After	→	Years (median 8)	62	0.46
		No	72	0.54
Covenant Timing	→	Enter	94	0.48
		During	74	0.38
		Exit	13	0.07
		Not Grocery	15	0.08

Table 2: Covenants Restrictions Observed in Chicago

2.2 Existing Retailer Locations, Potential Retailer Locations, and Lease Characteristics

2.3 Panel on consumer purchases

Numerator data is a omni-channel consumer panel data available through the Kilts Center at the University of Chicago. The panel begins in 2017 and covers a broad range of consumer purchases as a broad range of stores, including e-commerce, grocer, mass, club, c-store, liquor store, etc... Information on stores include store location (longitude and latitude), retailer, and store identifier. Information on the consumer panel includes purchase amount, product quantity, product descriptions, brand description, as well as demographics (marital status, children, employment, education, ethnicity, and postal code).

The relevant set of households are the households who live in each market; for Chicago, the households who live in cook county

Shopping has two modes: in person and online (the numerator variable is delivery method type).

On a trip, consumers purchase multiple items. We consider a trip to be all of the stores a household shops at in person on the same day. The argument is that these households only incur the cost of distance travel once. Items

purchased at home are considered separate trips. A trip is a unit of incurring a single distance cost.

On a trip, a consumer purchases a set of individual items – Item ID's – that comprise the individual's basket of purchases for that trip. As in the Nielsen data, the Numerator data classifies items in to several categories, broader and broader categories. Figure **??** shows these categories. For example, a single item "French's Crispy Fried Jalapenos 5oz", belongs to a larger category of goods that are similar to the consumer but might be quite different in terms of content. These categories are then grouped into larger departments, which are itself grouped into larger groceries.

3 Descriptive Statistics

3.1 Commercial Restrictive Covenants

Figure 3 show the covenants of prevalence of covenants in Chicago. Of the 196 total covenants that are implemented by grocers in Chicago, 92% are found on grocery properties. A third of grocery store chains have at least one covenant on a property. Of the chain stores with at least one covenant, 32% of the chain stores have covenants on them.

Covenants	Total	w/ Grocer Location	Frac
	196	181	0.92
Grocery Chains	All	w/ Covenants	Frac
	39	14	0.36
Grocery Chain Stores	Total	w/ Covenants	Frac
with at Least 1 Covenant	492	159	0.32
Large Grocery Stores	Total	w/ Covenants	Frac
(SNAP definition)	1289	159	0.12

Table 3: *Notes:* Table reports prevalence of covenants amongst chains. Data is for Cook County, IL. Data comes from the Cook County office recorder.

4 Consumers reduce grocery expenditures following grocery exit if the grocer had a restrictive covenant

There are various ways the covenants can affect consumers: (1) changing the number of firms in the economy – this changes the consumer choice set (2) changing the location of firms in the economy – this changes the cost (in time and gas) required to reach each place (3) increasing the rent the firm might otherwise pay (in a world where covenants are banned) – this rent might be passed along to consumers in the form of higher prices (4) decreasing the amount of firm competition, thus allowing firms to raise prices and decrease consumer welfare. However, consumers do not observe covenants and are largely unaware of them. This begs the question: do covenants indirectly affect consumer outcomes?

As an example of how covenants can affect consumers, I show the effect of grocery exit on consumers, comparing with and without covenants. To do so, I run an event study regression on consumer outcomes where the event is a grocery store exit.

I run the following event study specification,

$$Y_{it} = \Sigma_{k=-T_1}^{-2} \delta_k \times D_{ik} + \Sigma_{k=0}^{T_2} \delta_k \times D_{ik} + household_i + year_t + \epsilon_{it}$$

where the event is a grocery exit in a chain, for those that exit with a covenant and those that exit without a covenant. The outcomes are log grocery store expenditure and log dollar store expenditure, shown respectively in Figure 5 and Figure 6.

I find that the grocery covenant doesn't change outcomes for those in zip codes where the grocery exit doesn't have a covenant attached. Meanwhile, for households in the zip codes where the exit had a covenant, household significantly decrease their grocery store expenditure and increase their dollar store expenditure. This indicates a loss in grocery access only for consumers that stopped at stores with a covenant.

A common concern with the event study strategy is grocery store exit is related to other features of the local retail environment that would affect other retailers. However, if grocery stores respond to changes in local demand conditions, other grocery stores would likely enter or exit even before the grocery store enters. To test for changing patterns before grocery store entry, I estimate the treatment effect in the years leading up to the entry of a grocery store. I find

a precisely estimated flat pre-trend, and a significant trend break at the time of the entry.

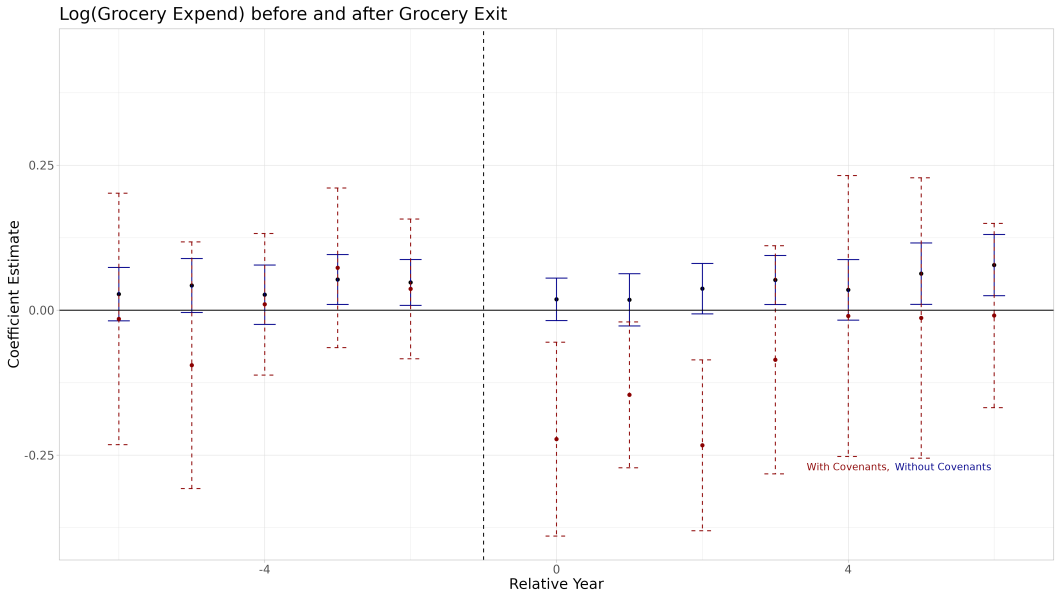


Figure 5: Consumer response (in terms of grocery expenditure) to grocery exit, for those with covenants and those without covenants.

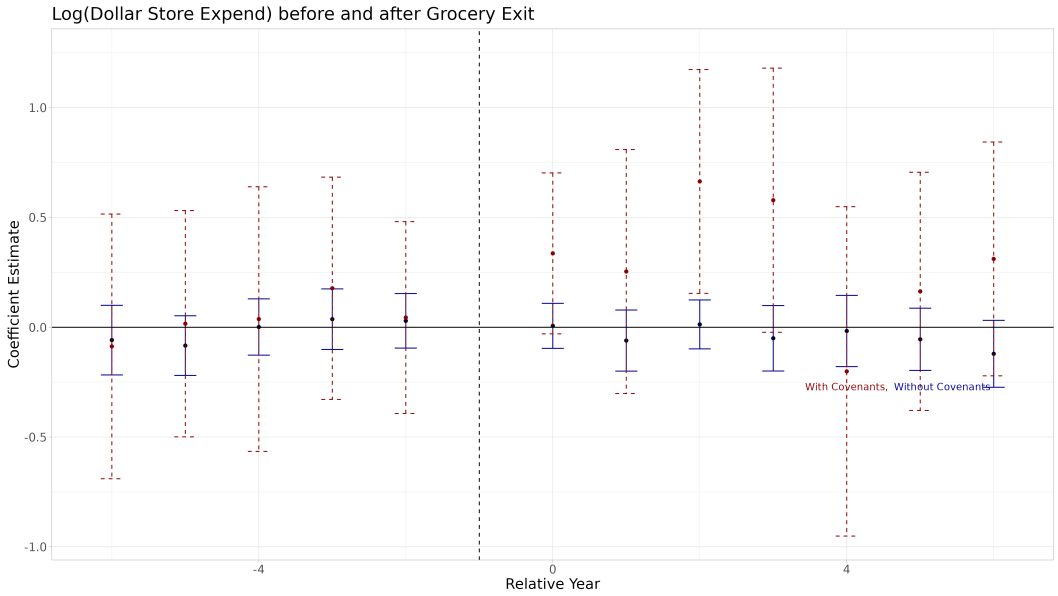


Figure 6: Consumer response (in terms of dollar store expenditure) to grocery exit, for those with covenants and those without covenants.

5 Effects consistent with the firms' presumed goal of limiting competition

5.1 Understanding the reduction in consumer expenditure at the grocery store

The change in the consumer responses is almost certainly driven by changes in market structure. Ultimately, the goal is to understand how covenant affects entry, exit, and the density of grocery store locations. As an example of how covenants might affect consumers through changes at market structure, I look at the effect of grocery exit on market structure (to compare with the consumer results above). Specifically, I compare grocery exit with and without covenants. Since covenants are all chains, the control group are chain stores that also exit in Cook county, but those that do not enter with a covenant. The goal is then to compare the market structure within a radius after a grocery store exits with a covenant as opposed to when a grocery store enters without a covenant. The specification run is then the two-way fixed effect difference-in-difference-in-difference:

$$y_{r(i)t} = \sum_{k=-T, k\neq 1}^{T} \delta_k D_{it} + zip_i + year_t + \epsilon_{it}$$

$$y_{r(i)t} = \sum_{k=-T, k\neq 1}^{T} \beta_k cov_i D_{it} + cov_i + zip_i + year_t + cov_i year_t + cov_i zip_i + zip_i year_t + \epsilon_{it}$$

Figure 7 shows the results of these event studies. The outcome, $y_{r(i)t}$, is the number of grocery stores within radius $r(i) = 1$ mile of the grocery store entry. The coefficient of interest are β_k and δ_k. The results show that the loss of a grocery store is mechanical in both cases: both coefficients fall to -1 in the first year. However, there is recovery in locations without covenants as compared to locations with covenants.

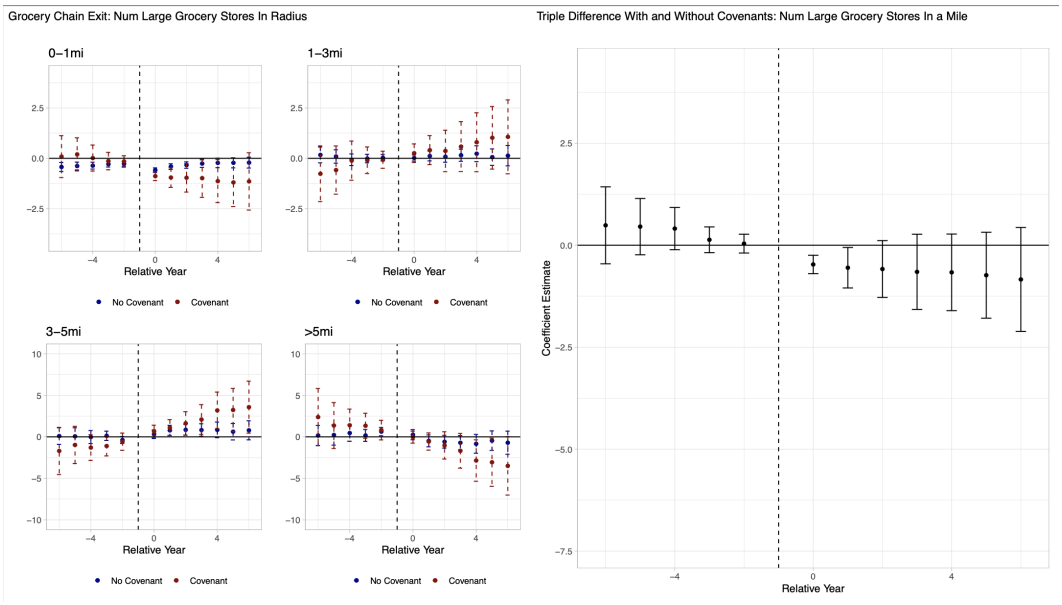


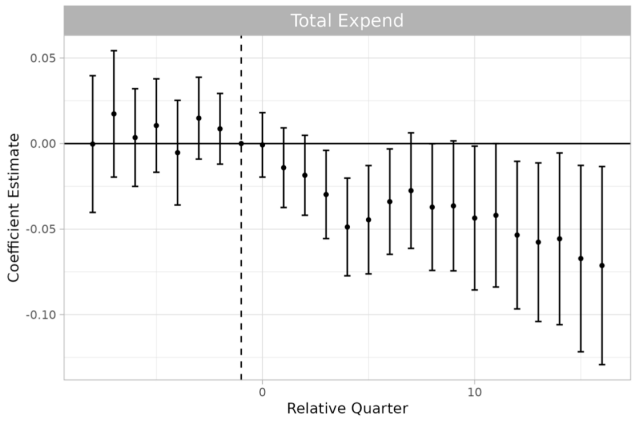
Figure 7: Number of grocers response to grocery store exit.

5.2 Covenants are indicative of complementarites and competition across store types

Evidence from the dollar store:

$$\log y_{jt} = \alpha + \beta_{j'} 1\{t \in t^*\} 1\{j' \in J\} + \phi_{j'} + \sigma_t + \sum_{k,\tau,r} \beta_{k\tau r} x_{kr_j\tau} + \epsilon_{ijt} \qquad (1)$$

where y_{jt} (approx) revenue store j in market t, or consumer expenditures, and j' is the competing/complementary store.



5.3 Stores with exclusive deals have fewer competitors immediately nearby, and more competitors farther away

Density of grocery stores around covenants. The Table show a regression of the number of stores in the vicinity on whether or not there was a covenant on that store. The treatment group are large and medium grocery stores with covenants. The control group are large and medium grocery stores without covenants. The regression coefficient is interpreted the additional number of stores around a grocery store if it has a covenant on the property. The results show that in the closest vicinity to the property - 0 to .2 mi -, grocery stores with covenants are surrounded by fewer medium and large grocery stores, and the result is significant. This 0-.2 mile radius is important both because it is the radius of a typical shopping mall and also because it is the radius at which the trip chaining literature has documented spillovers across stores (Qian et al. (2023)). At a larger radius, expanding to 0-1 mile, the effect goes away: there are similar number of medium and large grocery stores near stores with covenants and stores without covenants. At a radius of 1-3 miles, the effect reverses. These results are consistent with the hypothesis that the covenant restrict competitions by pushing competitors farther away. When looking at the furthest radius, the effect goes away completely.

$$num\ stores_{r(i)t} = \beta cov_{it} + zip_i + year_t + \epsilon_{it} \tag{2}$$

	Number of Medium and Large Grocers				
	0-.1mi	0-.2mi	0-1mi	1-3mi	3-5mi
	(1)	(2)	(3)	(4)	(5)
1{covenant}	-0.1990**	-0.3742**	-0.0108	5.947***	0.5602
	(0.0767)	(0.1554)	(0.3818)	(0.6712)	(0.7858)
Observations	4,295	4,336	4,388	4,390	4,403
R^2	0.37737	0.54699	0.78047	0.89015	0.91279
chain_year fixed effects	✓	✓	✓	✓	✓
chain_zip5 fixed effects	✓	✓	✓	✓	✓

5.4 Willingness to pay for covenants

To understand the role of covenants in the real estate market: First, we want to look at how covenants change terms of the lease. This should capture something about relative importance of different aspects of the covenants for landlords and tenants. This should also show how the covenant affects landlord profitability through rent.

In a hedonic price regression, I regress rental prices on lease characteristics, demographics, and whether or not there is an exclusive on the property.

$$\log y_{ijt} = \alpha_0 + \gamma cov_{ijt} + \sum_k \beta_k \log x_{kjt} + zip_j + year_t + \epsilon_{ijt}$$

I find that stores pay a premia for an exclusive. I regress prices on lease characteristics including rent, and include fixed effects to control for potential confounders.

	log(Net Effective Rent)
	OLS
1{Covenant}	0.3221***
	(0.0811)
1{Grocer}	0.0458
	(0.0533)
log(Transaction Sqft)	-0.0579***
	(0.0072)
log(Lease Term)	0.0008
	(0.0186)
log(Real Income)	-0.0823
	(0.0480)
log(Pop Density)	0.0402*
	(0.0179)
Share Unemployed	0.1379*
	(0.0705)
Poverty	0.4996
	(489,924.0)
Share Women	-1.331
	(304,593.8)
Share Black	-0.4683
	(0.4032)
Share White	0.3861
	(0.3181)
Share Hispanic	0.3058*
	(0.1410)
Share Asian	0.4250
	(0.3330)
Share Advanced Degree	0.1095
	(2,976.9)
Share Travel Time to Work: $<$ 30 mins	-0.0474
	(4,862.6)
Share Travel Time to Work: 30-60 mins	5.43×10^{-7}
	(0.0037)
Housing Occupied	0.1405
	(15,739.9)
1{Covenant} 1{Grocer}	-0.4604
	(0.5900)
Observations	6,478
R^2	0.41514
Fixed Effects	
Submarket	✓
Year Start	✓
Tract	✓
Space Type	✓
Building Class	✓

Table 4: *Source* SNAP, Cook County Recorder Office, and Compstak.

6 Model

In order to understand how covenants in the real estate market affect firm entry and consumer welfare, the model has a product market and a real estate market. Since restrictive covenants affect which firms co-locate, the effect of covenants on consumer welfare depends on whether consumers gain more from competing stores co-locating or non-competing stores co-locating. If competing stores co-locate, consumers gain from competitive pressure on prices. If non-competing stores co-locate, consumers gain from the increased variety of having stores of different types co-locate. Thus, in the model, consumers choose a bundle of stores to shop at, and preferences depend on store characteristics, prices, and distance.

For firms, the effect of covenants on firm profitability depends on the extent to which firm profitability is asymmetric across locations and firm types. If some locations are much more profitable than others, the covenant is more salient because demand is concentrated at a few locations. Similarly, the covenant is more salient if cross-firm competition is asymmetric: when a firm benefits from the foot traffic generated by another firm but cuts into the other firm's demand. To establish intuition, consider a grocery store choosing between a better location which also has a spot for a liquor store and a worse location that does not have a spot for a liquor store. If the landlord allows it, the liquor store will locate close to the opened grocery store: the grocery store drives foot traffic for the liquor store. However, the liquor store skims off the grocer's profits. As a result, the grocery store might prefer to locate at the worse location than to be next to the liquor store. In other case, if cross-firm competition is symmetric, the grocer and the liquor store will try to locate together (if there are complementarities) or try to locate apart (if they are substitutes). Overall, the goal of the model is to estimate these preference and profitability parameters in order to estimate the value of covenants and evaluate counterfactuals.

6.1 Consumer Demand for Bundles of Stores

A household chooses stores to shop at on a particular day. The consumer's preference for a store depends on the prices, characteristics, distance from home, market-level demand shocks, and idiosyncratic factors. The consumer can stop at multiple stores on the same day, and travels a shorter distance when shopping at the stores together than separately. Since the exclusive are aimed with maximizing store-level demand, the model is discrete choice, and consumers are assumed to purchase a representative good at each store according to the following preferences:

$$u_{ibt}^m = -\alpha^m P_{bt}^m + \xi_{bt}^m + \Gamma_b + \gamma^m d_{ib} + zip_i + \sum_{k,l} \sigma_{kl}^m X_{k(b)} y_{l(i)} + \epsilon_{ibt} \qquad (3)$$

where u_{ibt}^m is the utility household i in income group m receives from shopping at store bundle $b \in \mathcal{B}$ in market t.

The model is thus trying to understand where the consumer goes conditional on deciding to shop. The stores that comprise $\mathcal{B}$ are the most popular stores to shop at, such as the main national chain grocery stores, discount stores, drug stores (treated as one store), dollar stores (treated as one store), liquor stores (treated as one store), other grocery stores – the independent grocers – (treated as one store). I assume that household stop in either one or two stores in one day, because trips to more than two stores comprise less than .05% of the data. The outside good comprises all the other stores that the consumers take trips to. When a "store" in $\mathcal{B}$ is in fact a category of store (drug stores or other stores), the consumer is choosing from their *preferred* store in the set. That is, the store represents the maximum utility the consumer can get from that store set (the same interpretation is taken in Cao et al. (2024)). Similarly, the outside good is the most-preferred of all of the other stores they might shop at.

The set of goods are

$$\{\underbrace{\text{Jewel Osco, Mariano's, Whole Foods}}_{\text{chain grocer}}, \underbrace{\text{Meijer, Costco,Sam's Club, Target, Walmart}}_{\text{Big Box}}$$

$$\underbrace{\text{Aldi, Food 4 Less,Trader Joe's}}_{\text{Specialty food}}, \text{Other Food}, \underbrace{\text{Drug, Liquor, Dollar,}}_{\text{remaining outside}} \underbrace{\text{Other}}_{\text{outside good}} \}$$

Preferences depend on the price of the bundle, P_{bt}^m. When a household shops at one store, it is simply the price of that store, when the household stops at multiple stores, it is the sum of price of the good at each store.

$$P_{bt}^m = \sum_{j \in b} \log p_{jt}^m$$

Prices vary across markets t and retailers j, and we assume retailers set prices uniformly for all their stores in the same city, and vary these prices weekly

(evidence on uniform pricing comes from DellaVigna and Gentzkow (2019)). A market t is thus a city-week-year. In order to compare prices across different stores, prices need to be aggregated from household purchases of individual barcodes to a store-level price, p_{jt}. I aggregate from individual barcode-level prices using a Stone price index following Atkin et al. (2018). Specifically, I regress expenditure-weighted log bar code prices on store fixed effects and bar code fixed effects, and use the store fixed effects as the store price. The price is thus the relative price of the retailer in the market, and the comparison across retailers is based on products common to all retailers in the market. Results are robust to different aggregation methods, and relative prices are similar when following alternative aggregation methods, such as following Thomassen et al. (2017) or when considering only key purchase categories.

Crucial to the utility and the question of restrictive covenants are the cross-store complementarities. Preference also depend on an average measure of quality of the store or the store-bundle Γ_b. When the household shops at multiple stores, Γ_b captures both the quality of each individual store and the complementarity between these different stores (this follows the definition complementarities in Gentzkow (2007)).

To capture the importance of food access in the model, $\gamma^m d_{ib}$ is the utility (or distaste) from shopping at stores farther away. When a consumer shops at a single store, the distance is measured as the shortest possible distance home-store-home, when the consumer stops at two stores, the distance measured as the shortest possible distance home-store1-store2-home.

I do not assume that households all have the same preferences within income group. Higher-order terms $\sum_{kl} \sigma_{kl} x_{k(b)y_{l(i)}}$ capture the interaction between household characteristics and store characteristics, as in Bayer et al. (2007). In the baseline estimation, the higher order terms are the interaction between household income and distance to store, represented by $y_{l(i)}$ and store characteristics such as prices and bundle quality, represented by $x_{k(b)}$.

The relative magnitudes of key parameters – $\alpha^m, \Gamma_b^m, \gamma^m, \sigma_{kl}^m$ – capture the importance for stores to place covenants on their property, and the extent to which covenants influence the consumer shopping experience. For example, as γ^m becomes more negative, the distaste for distance becomes more salient, the incentive to foreclose on a rival increases, and the value of covenants to the firm increases, and covenants become more salient. In the extreme $\gamma^m \to -\infty$ a consumer effectively only shops at the closest store, and so a covenant that blocks stores from locating close to consumers can be extremely extremely valuable to the firm.

In addition, household preference for a specific firm are assumed to have an idiosyncratic component, represented by an additive bundle-specific Type 1

Extreme Value shock. The shock represents the day-of preference for a specific bundle, and represents an idiosyncratic preference for a specific set of stores on that day, or idiosyncratic shocks that change the set of stores shopped at (eg a road closure).

6.1.1 Endogenous parameters: price and distance

Household utility also depends on unobserved market-level shocks that cannot modeled but are the same for all consumers, ξ_{bt}. These shocks can represent unobserved features of the market such as unobserved quality or time-varying store discounts. As a result, these shocks can be correlated with price. To address the endogeneity, price is instrumented for with a measure of average retailer price, following Hausman et al. (1994). The average retailer price exploits the idea that local demand shocks are likely uncorrelated with prices in different markets. Intuitively, local pricing decisions depend on both supply and demand factors, and the average price in different markets captures the supply component without capturing the idiosyncratic demand in a market.

Because firms choose to locate on the basis of where their consumers live, and because consumers choose to live near amenities, distance is endogenous. To address this, I control for household zip. The identifying assumption is that the zip represents an exogenous measure of neighborhood quality, and that conditional on the zip, household location choice is as-good-as-random. Similarly, conditional on the average quality of the neighborhood, store location is as-good-as-random. I use variation of household locations within-zip to then identify distance parameter γ^m. While in practice the "quality" of a zip code does change over time, the assumption is zip code quality changes slowly enough for households and firms treat zip quality as given when making location decisions.

6.2 Product market supply

Prices are set in a static model after entry and exit has occurred. Stores compete on prices and sell a composite good that is differentiated from other store's goods by location, quality, and exogenous demand shocks. A chain retailer chooses a price for all of its store locations in market j each week, and sets separate prices for each income group m. An independent retailer sets a price for its individual store for each income group as well:

$$\max_{p_{jt}^m} \sum_m s_{jt}^m (p_{jt}^m - mc_{jt}) \tag{4}$$

Suppressing market indices for clarity, firm j's share of the market is sum over all shares of bundles with firm j, $b \in j$, summed over the shares from all households in the market.

$$s_j^m = \sum_i \omega_i \sum_{\substack{j' \\ b \in (j,j')}} s_{ib}^m \tag{5}$$

$$= \underbrace{\sum_i \omega_i}_{\text{hhlds}} \underbrace{\sum_{j'=1}^{J}}_{\text{stores}} \underbrace{\frac{e^{-\alpha(P_j + P_{j'}) + \xi_{jj'} + \Gamma_{jj'} + zip_i + \gamma d_{ijj'} + \sum \sigma X_{jj'} y_i}}{1 + \sum_{j,j'} e^{-\alpha(P_j + P_{j'}) + \xi_{jj'} + \Gamma_{jj'} + zip_i + \gamma d_{ijj'} + \sum \sigma X_{jj'} y_i}}}_{\substack{\text{share bundle } jj' \text{ for hh } i \\ j' \text{ index is dropped for } j'=j}} \tag{6}$$

Consumers only shop at the most convenient location for each bundle. So adding stores increases shares (and thus profits) by lowering distances a customer travels to get to the closest bundle, but new stores cannibalize existing stores because each store location generates less revenue, and attracts fewer customers, and has to pay rent and fixed costs of entry.

Then stores set prices according to

$$p_{jt}^m = mc_{jt} + \left[\frac{\partial s_{jt}^m}{\partial p_{jt}^m}\right]^{-1} s_{jt}^m - \frac{\partial s_{jt}^m}{\partial p_{jt}^m} \tag{7}$$

7 Estimates

Demand parameters are estimated with individual-level data from Numerator with a maximum likelihood estimator (Bayer et al. (2007)). The estimation proceeds in two steps: first, the household-specific parameters are estimated as well as an average parameter estimate. Then, instrumental variables are used to identify each of the average parameters, ie. to separate price and quality terms. The data is estimated with store information on latitude, longitude, address, retailer name, household information on demographics, and purchase information such as the bar codes scanned, and the price paid for each bar code, the stores traveled to and the time of day. This data allows us to directly measure trip chaining. Household information contains demographics such as income, employment, marital status, number of children, etc.. Household location information is provided a the zip level, and the households are placed at the centroid of their likely census block group using Bayes rule, and comparing household demographcis to ACS demographics. The house-

hold demand is estimate based on Numerator scanner data from 2017-2019 in Chicago.

Variable	Estimate
log Price	-1.05^*
	()
log Dist (mi)	-2.12^*
	()

Table 5: * Current standard errors mark as significant at the 5% level

Variable	Jewel	Aldi	Trader Joe's	Drug	Dollar	Liquor
Jewel		-1.2^*	-0.1	-2.3^*	$.8^*$	.4
Aldi	-1.2^*		.5	1.2^*	-1.4^*	$-.6$
Trader Joe's	$-.1$	.5		$-.5$	.1	$.9^*$
Drug	-2.3^*	1.2^*	$-.5$		$-.3$	.2
Dollar	$.8^*$	-1.4^*	.1	$-.3$		-1.7^*
Liquor	.4	$-.6$	$.9^*$	.2	-1.7^*	

Table 6: * Current standard errors mark as significant at the 5% level

Results from the estimation show disutility for prices and distance, and twice the disutility of distance as compared to price. For each additional 1% price increase, the average household that travels .5 miles to a store is willing to drive an additional .3 miles to get the same price. The complementarity terms are also illuminating: Jewel (also known as Safeway or Star Market), Aldi, Trader Joe's are all grocery stores. Aldi and Trader Joe's are owned by the same company, and it is unsurprising that they are located in a way that there is neither competition nor complementarities between them: Aldi targets low income neighborhoods, Trader Joe targets high income neighborhoods. Meanwhile, there is competition between Jewel and Trader Joe and Jewel and Aldi, as Jewel locates in both high income and low income neighborhoods, and they provide similar products. Jewel, which contains a pharmacy inside and provides all the same products as a typical drug store competes strongly with drug stores. Aldi, meanwhile, which does not contain a pharmacy inside, is viewed as complementary by consumers to the drug store. Indeed, Jewel stores often have covenants against pharmacies and drug stores, and Aldi stores typically do not.

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