

Internet Appendix for

**“Consolidating Product Lines via Mergers and Acquisitions:
Evidence from the USPTO Trademark Data”**

Appendix IA1

Nice classification¹

GOODS

- Class 1 (Chemicals) Chemicals for use in industry, science and photography, as well as in agriculture, horticulture and forestry; unprocessed artificial resins, unprocessed plastics; fire extinguishing and fire prevention compositions; tempering and soldering preparations; substances for tanning animal skins and hides; adhesives for use in industry; putties and other paste fillers; compost, manures, fertilizers; biological preparations for use in industry and science.
- Class 2 (Paints) Paints, varnishes, lacquers; preservatives against rust and against deterioration of wood; colorants, dyes; inks for printing, marking and engraving; raw natural resins; metals in foil and powder form for use in painting, decorating, printing and art.
- Class 3 (Cosmetics and cleaning preparations) Non-medicated cosmetics and toiletry preparations; non-medicated dentifrices; perfumery, essential oils; bleaching preparations and other substances for laundry use; cleaning, polishing, scouring and abrasive preparations.
- Class 4 (Lubricants and fuels) Industrial oils and greases, wax; lubricants; dust absorbing, wetting and binding compositions; fuels and illuminants; candles and wicks for lighting.
- Class 5 (Pharmaceuticals) Pharmaceuticals, medical and veterinary preparations; sanitary preparations for medical purposes; dietetic food and substances adapted for medical or veterinary use, food for babies; dietary supplements for humans and animals; plasters, materials for dressings; material for stopping teeth, dental wax; disinfectants; preparations for destroying vermin; fungicides, herbicides.
- Class 6 (Metal goods) Common metals and their alloys, ores; metal materials for building and construction; transportable buildings of metal; non-electric cables and wires of common metal; small items of metal hardware; metal containers for storage or transport; safes.
- Class 7 (Machinery) Machines, machine tools, power-operated tools; motors and engines, except for land vehicles; machine coupling and transmission components, except for land vehicles; agricultural implements, other than hand-operated hand tools; incubators for eggs; automatic vending machines.
- Class 8 (Hand tools) Hand tools and implements, hand-operated; cutlery; side arms, except firearms; razors.
- Class 9 (Electrical and scientific apparatus) Scientific, nautical, surveying, photographic, cinematographic, optical, weighing, measuring, signalling, checking (supervision), life-saving and teaching apparatus and instruments; apparatus and instruments for conducting, switching, transforming, accumulating, regulating or controlling electricity; apparatus for recording, transmission or reproduction of sound or images; magnetic data carriers, recording discs; compact discs, DVDs and other digital recording media; mechanisms for coin-operated apparatus; cash registers, calculating machines, data processing equipment, computers; computer software; fire-extinguishing apparatus.
- Class 10 (Medical Apparatus) Surgical, medical, dental and veterinary apparatus and instruments; artificial limbs, eyes and teeth; orthopaedic articles; suture materials; therapeutic and assistive devices adapted for the disabled; massage apparatus; apparatus, devices and articles for nursing infants; sexual activity apparatus, devices and articles.

¹ Our description of the Nice Classifications is from two sources. The detailed class information is obtained from “International Classification of Goods and Services for the Purposes of the Registration of Marks (Nice Classification)” (11th Edition, 2018), by World Intellectual Property Organization, Geneva. (<http://www.wipo.int/classifications/nice/nclpub/en/fr/>). The class headings are obtained from <https://www.oppedahl.com/trademarks/tmclasses.htm>.

- Class 11 (Environmental control apparatus) Apparatus for lighting, heating, steam generating, cooking, refrigerating, drying, ventilating, water supply and sanitary purposes.
- Class 12 (Vehicles) Vehicles; apparatus for locomotion by land, air or water.
- Class 13 (Firearms) Firearms; ammunition and projectiles; explosives; fireworks.
- Class 14 (Jewelry) Precious metals and their alloys; jewellery, precious and semi-precious stones; horological and chronometric instruments.
- Class 15 (Musical instruments) Musical instruments
- Class 16 (Paper goods and printed matter) Paper and cardboard; printed matter; bookbinding material; photographs; stationery and office requisites, except furniture; adhesives for stationery or household purposes; drawing materials and materials for artists; paintbrushes; instructional and teaching materials; plastic sheets, films and bags for wrapping and packaging; printers' type, printing blocks.
- Class 17 (Rubber goods) Unprocessed and semi-processed rubber, gutta-percha, gum, asbestos, mica and substitutes for all these materials; plastics and resins in extruded form for use in manufacture; packing, stopping and insulating materials; flexible pipes, tubes and hoses, not of metal.
- Class 18 (Leather goods) Leather and imitations of leather; animal skins and hides; luggage and carrying bags; umbrellas and parasols; walking sticks; whips, harness and saddlery; collars, leashes and clothing for animals.
- Class 19 (Nonmetallic building materials) Building materials (non-metallic); non-metallic rigid pipes for building; asphalt, pitch and bitumen; non-metallic transportable buildings; monuments, not of metal.
- Class 20 (Furniture and articles not otherwise classified) Furniture, mirrors, picture frames; containers, not of metal, for storage or transport; unworked or semi-worked bone, horn, whalebone or mother-of-pearl; shells; meerschaum; yellow amber.
- Class 21 (Housewares and glass) Household or kitchen utensils and containers; cookware and tableware, except forks, knives and spoons; combs and sponges; brushes, except paintbrushes; brush-making materials; articles for cleaning purposes; unworked or semi-worked glass, except building glass; glassware, porcelain and earthenware.
- Class 22 (Cordage and fibers) Ropes and string; nets; tents and tarpaulins; awnings of textile or synthetic materials; sails; sacks for the transport and storage of materials in bulk; padding, cushioning and stuffing materials, except of paper, cardboard, rubber or plastics; raw fibrous textile materials and substitutes therefor.
- Class 23 (Yarns and threads) Yarns and threads, for textile use.
- Class 24 (Fabrics) Textiles and substitutes for textiles; household linen; curtains of textile or plastic.
- Class 25 (Clothing) Clothing, footwear, headgear
- Class 26 (Fancy goods) Lace and embroidery, ribbons and braid; buttons, hooks and eyes, pins and needles; artificial flowers; hair decorations; false hair.
- Class 27 (Floor coverings) Carpets, rugs, mats and matting, linoleum and other materials for covering existing floors; wall hangings (non-textile).
- Class 28 (Toys and sporting goods) Games, toys and playthings; video game apparatus; gymnastic and sporting articles; decorations for Christmas trees.

Class 29 (Meats and processed foods) Meat, fish, poultry and game; meat extracts; preserved, frozen, dried and cooked fruits and vegetables; jellies, jams, compotes; eggs; milk and milk products; oils and fats for food.

Class 30 (Staple foods) Coffee, tea, cocoa and artificial coffee; rice; tapioca and sago; flour and preparations made from cereals; bread, pastries and confectionery; edible ices; sugar, honey, treacle; yeast, baking-powder; salt; mustard; vinegar, sauces (condiments); spices; ice (frozen water).

Class 31 (Natural agricultural products) Raw and unprocessed agricultural, aquacultural, horticultural and forestry products; raw and unprocessed grains and seeds; fresh fruits and vegetables, fresh herbs; natural plants and flowers; bulbs, seedlings and seeds for planting; live animals; foodstuffs and beverages for animals; malt.

Class 32 (Light beverages) Beers; mineral and aerated waters and other non-alcoholic beverages; fruit beverages and fruit juices; syrups and other preparations for making beverages.

Class 33 (Wine and spirits) Alcoholic beverages (except beers).

Class 34 (Smokers' articles) Tobacco; smokers' articles; matches

SERVICES

Class 35 (Advertising and business) Advertising; business management; business administration; office functions.

Class 36 (Insurance and financial) Insurance; financial affairs; monetary affairs; real estate affairs.

Class 37 (Building construction and repair) Building construction; repair; installation services.

Class 38 (Telecommunications) Telecommunications

Class 39 (Transportation and storage) Transport; packaging and storage of goods; travel arrangement.

Class 40 (Treatment of materials) Treatment of materials

Class 41 (Education and entertainment) Education; providing of training; entertainment; sporting and cultural activities.

Class 42 (Computer, scientific & legal) Scientific and technological services and research and design relating thereto; industrial analysis and research services; design and development of computer hardware and software.

Class 43 (Hotels and Restaurants) Services for providing food and drink; temporary accommodation.

Class 44 (Medical, beauty & agricultural) Medical services; veterinary services; hygienic and beauty care for human beings or animals; agriculture, horticulture and forestry services

Class 45 (Personal) Legal services; security services for the physical protection of tangible property and individuals; personal and social services rendered by others to meet the needs of individuals.

Appendix IA2

Matching trademark assignees to Compustat/CRSP firms

We need to match trademark assignees in the USPTO Trademark Case Files Dataset with Compustat/CRSP firms, because the USPTO does not maintain a unique firm identifier; instead, they only keep assignee names in the dataset. We take the following steps to link the USPTO Trademark Case Files Dataset to the Compustat/CRSP database.

From the Trademark Case Files Dataset, we obtain a list of owner names, denoted as list A. Next, from the Compustat/CRSP database, we obtain a list of public company names and their PERMNO numbers, denoted as list B1. It is worth noting that when compiling list B1, we have taken into account name changes for public companies, such as the “Minnesota Mining and Manufacturing Company” changed to “3M.” Moreover, we note that firms tend to use their official names rather than abbreviations to register for trademarks, such as “International Business Machines Corporation” instead of “IBM” which is reasonable given the legal implications of trademark registration, and such practice increases the precision of our matching. However, list B1 only identifies the public company itself, not its subsidiaries. To partially address this problem, we expand list B1 by a list of (current) subsidiaries’ names for public companies from Capital IQ, denoted as list B2. In this way, subsidiaries whose names are totally different from their parent companies’ names are captured, such as “Geoffrey” of “Toys “R” Us,” or “LinkedIn” of “Microsoft.”

We then conduct fuzzy matching between list A and list B2 using the Levenshtein distance to keep the closest ten possible matches and then manually verify each possible match to rule out incorrect ones. To ensure accuracy in matching, we also use the location information in the trademark dataset and compare it with the location of a public company from the Compustat/CRSP database.








In the end, for the Trademark Case Files Dataset, we are able to match 528,219 registered trademark records to 14,856 public companies over the period 1887 to 2015. Our matched sample size is comparable to that used in Heath and Mace (2020).

Appendix IA3

Classifying product and marketing trademarks

Most trademarks are registered when new products are launched. However, there are trademarks that are not related to specific products (such as a company logo) or are registered for marketing purposes (such as an advertising slogan or a redesign of a product logo). Given that our study focuses on a company’s product lines, we will separate its trademark portfolio into product and marketing trademarks and only use the former in our empirical analysis. Here are some examples of well-known product and marketing trademarks.

Panel A: Examples of product and marketing trademarks

Product trademarks	Marketing trademarks
	 
	
	

Our classification scheme relies on two key variables in the trademark dataset.

- 1) **mark drawing code:** A four-digit code which indicates whether the registration or application is for a standard character mark, a mark with stylized text, a design with or without text (such as sound, smell, etc.), or a mark for which no drawing is possible. The large majority of annual registrations are consistently issued for standard character marks. According to Graham et al. (2013), registrations of standard character marks and design marks with characters make up over 90% of registrations issued during the last decade.
- 2) **mark identification character:** If the mark includes any words, letters, or numbers, this variable will contain that text. If the mark is a design without text, this variable is missing.

First, we classify a mark whose ‘mark drawing code’ is design without text (such as pure logo, sound, smell, etc.) to be a marketing trademark. This is because these marks are usually not associated with any specific new products. If they do, it is merely for registering a product logo rather than a product name. Examples include Nike’s swoosh logo, Starbucks’ mermaid logo, and MGM’s sound of a roaring lion.






Second, for a mark (1) whose ‘mark drawing code’ is stylized text or design with text and (2) whose number of words within the mark is equal to or more than 4, we classify it to be a marketing trademark. This is because these marks are very likely to be an advertising slogan. Note that our classification is not perfect. Product names such as ‘Mac OS X Server Essentials’ are classified as a marketing trademark because it has a long product name of 5 words. Advertising slogans such as Nike’s ‘Just Do It’ may not be captured because it has only 3 words. Nonetheless, the threshold ‘4’ is believed to be optimally balancing the type I and type II errors.

Third, for a mark (1) whose ‘mark drawing code’ is standard character mark and (2) whose number of words within the mark is fewer than 4, we classify it as a product trademark.






Fourth, and finally, for a mark (1) whose ‘mark drawing code’ is design with text and (2) whose number of words within the mark is fewer than 4, this becomes somewhat complicated. It can be a product trademark when a company

registers a new product name using a trademark with some designs and/or artistic drawings. It can also be a marketing trademark if a company has already registered the product name and the current registration is for protecting or updating the product logo. For instance, the text ‘Coca Cola’ has been registered 48 times, most of which are for redesigning the logo. To differentiate these two cases, if the text of a mark is the first to appear in its class, the mark is classified as a product trademark. All subsequent marks with the same text and registered in the same class are classified as marketing trademarks. The example below helps illustrate our classification scheme.

Panel B: A snapshot of ‘Coca Cola’ trademark history

	Mark content	Classification
In 1892, Coca cola registered its very first coca cola trademark (design with text) in the class ‘light beverage’—indicating new product line.		Product
In 1927, it redesigned its trademark, thus registering a new trademark in the class ‘light beverage’—no new product line, just updating logo.		Marketing
In 1982, it registered the coca cola trademark in a new class ‘fabrics’—indicating that it has a new product line and sell under the name of coca cola.		Product
In 1982, it registered the coca cola trademark in a new class ‘metal goods’—indicating that it has a new product line and sell under the name of coca cola.		Product
In 1986, it again redesigned its trademark, thus registering a new trademark in the class ‘light beverage’—no new product line.		Marketing

Panel C: A summary of our classification scheme

		Mark drawing code		
		Plain text	Design with text	Design without text (such as sound, smell, etc.)
Mark identification character	≥ 4 words	<p>Marketing -</p> <p>KFC slogan: 'It's finger lickin good'</p> <p>McDonald slogan: 'What we're made of'</p>	<p>Marketing -</p> <p>the Coke side of life</p> 	<p>Marketing -</p> 
	< 4 words	<p>Product -</p> <p>MacBook Pro; IPAD Pro; XBOX 360</p>	<p>Product - If 'mark identification character' is the first in its class for the firm</p>  <p>(The first 'coca cola' mark registered in the class 'light beverage')</p> <p>Marketing - Subsequent marks with the same 'mark identification character' and in the same class</p>  <p>(The redesigned 'coca cola' mark in the class 'light beverage')</p>	

Appendix IA4

A case study of trademarks owned by firms acquired by Microsoft

This appendix illustrates how Microsoft handles its target firms' trademarks after deal completion. By 2016, Microsoft has made nine acquisitions each worth over one billion dollars: Visio Corporation (2000), Navision (2002), aQuantive (2007), Fast Search & Transfer (2008), Skype (2011), Yammer (2012), Nokia (2013), Mojang (2014) and LinkedIn (2016). We will focus on the first five deals as the later ones are too recent to observe the full impact of takeovers on trademarks of the target firms after deal completion (i.e., the earliest maintenance threshold for a trademark is at the 6th anniversary since registration). The table below summarizes the number of product trademarks for each target and how many of them are discontinued afterwards.

Panel A: The number of target trademarks before versus after deal completion

Target firms	Date of deal completion	# of target trademarks before the deal	# of target trademarks discontinued after the deal	Ratio of discontinued trademarks
Visio Corporation	07 Jan 2000	24	10	42%
Navision	12 Jul 2002	8	6	75%
aQuantive	13 Aug 2007	11	9	82%
Fast Search & Transfer	25 Apr 2008	17	17	100%
Skype	10 May 2011	20	10	50%

On average, about 70% of target trademarks are discontinued after the takeover, suggesting a significant shrinking of the target's product lines. The table below provides a detailed list of involved trademarks. Bold number inside the parentheses indicates the number of trademarks under the same name.

Panel B: The list of target trademarks before versus after deal completion

Target firms	Target trademarks before the deal	Target trademarks discontinued after the deal
Visio Corporation	VISIORX; VISIO FINANCIAL SERVICES; SWISS VISIO; AFORNISTA; FLUXLD; XIRM; VISIERO; SATAGO; CRISTILINE; NISI; R E O R; EXESTO; ADNUO; ARCHT; VISIO (3); SHAPESHEET; AUTODISCOVERY; VISUALIZE YOUR BUSINESS; VISIO SOLUTIONS LIBRARY; DESIGNED FOR VISIO; DRAG, DROP, DONE; POLJOT;	VISIO (3); AUTODISCOVERY; VISUALIZE YOUR BUSINESS; VISIO SOLUTIONS LIBRARY; DESIGNED FOR VISIO; DRAG, DROP, DONE; POLJOT
Navision	FLOWFILTER; FLOWFIELD; THE WAY TO GROW; NAVISION; NAVISION ATTAIN; NAVISION AXAPTA; ASSISTBUTTON; SUMINDEXFIELD	THE WAY TO GROW; NAVISION; NAVISION ATTAIN; NAVISION AXAPTA; ASSISTBUTTON; SUMINDEXFIELD
aQuantive	FRANCHISE GATOR; RAZORFISH; PARTNER FOR RESULTS (2); BIDMANAGER (2); SELECTOR; CHANNELSCOPE; ATLAS ON DEMAND; AQUANTIVE (2)	PARTNER FOR RESULTS (2); BIDMANAGER (2); SELECTOR; CHANNELSCOPE; ATLAS ON DEMAND; AQUANTIVE (2)
Fast Search & Transfer	FAST IMPULSE; FAST ESP; FAST METAWEB; FAST CONTEXTUAL INSIGHT; FAST MSEARCH; CORPORATE RADAR; FAST SCOPE SEARCH; FAST PROPUBLISH; FAST INSTREAM; FAST INPERSPECTIVE; FAST SENTIMETER; FAST MARKETTRAC; NXT; LIVEPUBLISH; FAST; UNDERHEAD TECHNOLOGY; FOLIO	FAST IMPULSE; FAST ESP; FAST METAWEB; FAST CONTEXTUAL INSIGHT; FAST MSEARCH; CORPORATE RADAR; FAST SCOPE SEARCH; FAST PROPUBLISH; FAST INSTREAM; FAST INPERSPECTIVE; FAST SENTIMETER; FAST MARKETTRAC; NXT; LIVEPUBLISH; FAST; UNDERHEAD TECHNOLOGY; FOLIO

Skype	SKYPE MANAGER; SKYPE TO GO; S (2); SKYPE (2); QIK; SKYPE ACADEMY; SKYPE ACCESS; SILK; SKYPE PRIME; SKYPE CERTIFIED; SKYPE OUT (2); SKYPE ME; SKYPE IN (2); SKYPECASTS; SKYPEFIND; SKYPE ZONES	SKYPE CERTIFIED; SKYPE OUT (2); SKYPE ME; SKYPE IN (2); SKYPE IN; SKYPECASTS; SKYPEFIND; SKYPE ZONES
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Appendix IA5

Withdrawn bid sample construction and examples

This appendix provides the statistics for our initial sample of 461 withdrawn bids that we could identify and categorize reasons. We also provide two examples for each reason for withdrawal. We only keep bids withdrawn due to competing bids (177 cases), objections by regulatory bodies (53 cases), or adverse macroeconomic/market conditions (19 cases) in the initial sample of bids withdrawn for exogenous reasons (249 bids).

Reasons for withdrawal	# Withdrawn bids
1 Difference in opinion on growth strategy	35
2 Disagreement over restructuring including top personnel matters and labor (union) disputes	10
3 The process of due diligence revealed some news about or negative development in acquirer's or target firm's operations or unexpected legal actions that prevented a merger to go through	62
4 Acquirer/acquirer shareholders or target/target shareholders refusal of the offer due to disagreement over valuation	92
5 Other competing bids/better targets emerged and the acquisition with the competing bidder/better target went through	177
6 Poor fit between acquirer and target firm	5
7 Trouble with/difficulty in securing financing	8
8 Objections by regulatory bodies	53
9 Adverse macroeconomic and/or market conditions (stock market crashes or other macroeconomic shocks, events like 9/11, etc)	19
Initial sample	461

Examples of Different Reasons for Withdrawal

1. Difference in opinion on growth strategy

Acquirer: Sound Advice Inc

Target: Image Retailing Group Inc

Date Announced: 5/30/1991 Date Withdrawn: 7/16/1991

Peter Beshouri, Chairman and Chief Executive Officer of Sound Advice, and Gary Thorne, President and Chief Executive Officer of Image Retailing, jointly stated that the two companies believe it would be more advantageous to pursue growth opportunities in their home markets on an individual basis.

Acquirer: National Energy Group Inc

Target: Panaco Inc

Date Announced: 7/6/1995 Date Withdrawn: 8/7/1995

Panaco Inc. (PANA) said its board decided not to accept a merger offer from National Energy Group Inc. (NRGIA), unanimously affirming the company's intent to pursue its strategic plan as an independent entity.

2. Disagreement over restructuring including top personnel matters and labor (union) disputes

Acquirer: Lotus Development Corp

Target: Novell Inc

Date Announced: 4/6/1990 Date Withdrawn: 5/18/1990

The companies said the breach opened over composition of the merged company's board. Novell wanted equal representation, a request Lotus, Cambridge, Mass., refused.

Acquirer: FPL Group Inc

Target: Entergy Corp

Date Announced: 7/31/2000 Date Withdrawn: 3/30/2001

In announcing the collapse of the deal Monday, FPL said Entergy's financial forecasts were overblown, while Entergy said FPL wanted to oust all of Entergy's top managers.

3. The process of due diligence revealed some news about or negative development in acquirer's or target firm's operations or unexpected legal actions that prevented a merger to go through

Acquirer: The Cooper Cos Inc

Target: Marquest Medical Products Inc

Date Announced: 6/25/1991 Date Withdrawn: 9/30/1991

In a press release, Cooper said that in light of the recent action taken by the Food and Drug Administration against Marquest, Cooper is reevaluating its interest in Marquest.

Acquirer: Intuit Inc

Target: Electronic Clearing House Inc

Date Announced: 12/15/2006 Date Withdrawn: 3/27/2007

Electronic Clearing House Inc. said it mutually agreed to end an agreement to be acquired by Intuit Inc., at least in part because of a probe into allegations of use of its electronic-payment systems for online gambling.

4. Acquirer/acquirer shareholders or target/target shareholders refusal of the offer due to disagreement over valuation

Acquirer: Broadcom Corp

Target: Emulex Corp

Date Announced: 4/21/2009 Date Withdrawn: 7/9/2009

Emulex has sent a message to its shareholders: reject the Broadcom offer, which it says "significantly undervalues" its long-term prospects and doesn't adequately compensate shareholders.

Acquirer: Sequenom Inc

Target: Exact Sciences Corp

Date Announced: 1/9/2009 Date Withdrawn: 1/28/2009

Sequenom, a genetic analysis instrument maker based in San Diego, tried to buy Exact Sciences earlier in January. It offered \$41 million, or \$1.50 per share. Exact Sciences rejected that bid, and said it was pursuing a more valuable option.

5. Other competing bids/better targets emerged and the acquisition with the competing bidder/better target went through

Acquirer: Grand Casinos Inc

Target: Casino Magic Corp

Date Announced: 1/20/1998 Date Withdrawn: 2/19/1998

California-based Hollywood Park Inc. agreed Thursday to buy Casino Magic for \$340 million, beating out Grand Casinos for the Bay St. Louis-based hotel-casino company. Hollywood Park agreed to buy 35.7 million shares of Casino Magic stock for \$2.27 per share and assume \$263 million in debt.

Acquirer: JDA Software Group Inc

Target: QRS Corp

Date Announced: 6/17/2004 Date Withdrawn: 9/2/2004

QRS Corp. (QRSI.O), a provider of commerce technology to retail companies, on Friday said it terminated a merger pact with JDA Software Group Inc. (JDAS.O) to accept a richer, \$116 million offer from Inovis International Inc.

6. Poor fit between acquirer and target firm

Acquirer: Western Pacific Airlines Inc

Target: Frontier Airlines Inc

Date Announced: 6/30/1997 Date Withdrawn: 9/29/1997
Frontier Airlines Inc. and Western Pacific Airlines Inc. said Monday that “respective cultural differences” had forced them to end a previously announced merger agreement and their current codeshare deal. The codeshare agreement will be terminated on Nov. 16. The airlines also cited “the contrast in scheduling philosophies” in announcing the rift.

Acquirer: ITEQ Inc
Target: Matrix Service Co
Date Announced: 12/16/1997 Date Withdrawn: 1/19/1998
Iteq Inc. and the Matrix Service Company have agreed to end their merger agreement, citing “unanticipated difficulties” in integrating their “divergent corporate cultures.”

7. Trouble with/difficulty in securing financing

Acquirer: ACMAT Corp
Target: Bank Building & Equipment Corp of America
Date Announced: 12/2/1986 Date Withdrawn: 4/29/1987
Acmat Corp. said it has advised the board of Bank Building & Equipment Corp. of America that it will not pursue the acquisition of Bank Building in view of the “unreasonable deadline” announced by Bank Building in connection with Acmat’s proposal to acquire all outstanding shares of Bank Building \$14.25 a share, subject to completion of financing arrangements.

Acquirer: Integrated Health Services Inc
Target: Coram Healthcare Corp
Date Announced: 10/21/1996 Date Withdrawn: 4/7/1997
The deal, which was terminated by Integrated Health, was viewed as important for Coram because the struggling Denver home health-care concern is saddled with \$464 million in debt that Integrated was expected to refinance at more favorable terms, Oppenheimer & Co. analyst Lori Price said. “Coram has turned the corner operationally, but they have a balance-sheet problem that can’t be solved without a partner,” Price said.

8. Objections by regulatory bodies

Acquirer: Exelon Corp
Target: Public Service Enterprise Group Inc
Date Announced: 12/20/2004 Date Withdrawn: 9/14/2006
Exelon pulled the plug on plans to purchase Newark-based PSEG, citing “insurmountable” differences with the New Jersey Board of Public Utilities, whose approval was the deal’s final regulatory hurdle.

Acquirer: Checkers Drive-In Restaurants Inc
Target: Rally’s Hamburgers Inc
Date Announced: 3/25/1997 Date Withdrawn: 6/16/1997
Financial obstacles resulting from the inability to obtain prior approval from the Securities and Exchange Commission for favorable accounting treatment was the primary factor in the termination of the merger negotiations. Under the terms of the letter of intent signed March 25, 1997, all of the issued and outstanding shares of Rally’s capital stock was to be converted into and become Checkers common stock at a ratio of one share of Rally’s common stock for three shares of Checkers common stock.

9. Adverse macroeconomic and/or market conditions (stock market crashes or other macroeconomic shocks, events like 9/11, etc)

Acquirer: Louisiana Land & Exploration Co
Target: LL&E Royalty Trust
Date Announced: 10/2/1991 Date Withdrawn: 2/4/1992
Louisiana Land attributed its decision primarily to the recent decline in oil and gas prices.

Acquirer: Euronet Worldwide Inc

Target: MoneyGram International Inc

Date Announced: 12/13/2007 Date Withdrawn: 2/28/2008

“Although the acquisition has tremendous industrial logic, and may be quite beneficial to MoneyGram’s shareholders, the current debt and equity markets will not enable us to acquire MoneyGram on terms that would give our Euronet shareholders the accretion and return on investment that we would require,” Euronet said.

Table IA1
Trademark portfolio size and operating performance

This table presents the association between a firm's trademark portfolio size (*Trademark stock*) and its operating performance using a sample of Compustat/CRSP firm-years with active trademarks. The dependent variables are average performance measures over the next five years. In Panel A, the key independent variable is the natural logarithm of (*Trademark stock* + 1). In Panel B, the key independent variable is the natural logarithm of (*Trademark stock (top 2)* + 1). We control for firm size, M/B, ROA, leverage, cash, sales growth, and prior-year stock return. Definitions of the variables are provided in the Appendix. Robust standard errors clustered at the firm level are reported in parentheses. Superscripts *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Panel A: Trademark stock in all classes and operating performance

	Sales growth $_{t+1, t+5}$		ROA $_{t+1, t+5}$		ROE $_{t+1, t+5}$	
	(1)	(2)	(3)	(4)	(5)	(6)
ln(Trademark stock + 1)	0.004*** (0.001)	0.005*** (0.002)	0.008*** (0.001)	0.005*** (0.001)	0.018*** (0.003)	0.017*** (0.004)
Other controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	No	Yes	No	Yes	No	Yes
Observations	84,455	84,455	84,455	84,455	84,455	84,455
Adjusted R^2	0.093	0.110	0.467	0.478	0.062	0.066

Panel B: Trademark stock in the top two classes and operating performance

	Sales growth $_{t+1, t+5}$		ROA $_{t+1, t+5}$		ROE $_{t+1, t+5}$	
	(1)	(2)	(3)	(4)	(5)	(6)
ln(Trademark stock (top 2) + 1)	0.005*** (0.001)	0.006*** (0.002)	0.009*** (0.001)	0.006*** (0.001)	0.020*** (0.003)	0.018*** (0.004)
Other controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	No	Yes	No	Yes	No	Yes
Observations	84,455	84,455	84,455	84,455	84,455	84,455
Adjusted R^2	0.093	0.110	0.466	0.478	0.062	0.065

Table IA2
Correlation matrix

This table presents the correlation matrix of acquirer product market and firm characteristics using the sample in Table 2 Panel A.

	Product market concentration	SIC concentration	HP concentration	Firm size	M/B	ROA	Leverage	Cash	Sales growth	Prior-year stock return
Product market concentration	1.000									
SIC concentration	0.034***	1.000								
HP concentration	0.079***	0.106***	1.000							
Firm size	-0.117***	-0.089***	-0.216***	1.000						
M/B	-0.012***	-0.025***	-0.026***	-0.069***	1.000					
ROA	0.005	0.040***	0.038***	0.216***	-0.035***	1.000				
Leverage	0.105***	0.065***	0.024***	0.165***	-0.076***	-0.046***	1.000			
Cash	-0.080***	-0.085***	-0.107***	-0.272***	0.199***	-0.169***	-0.383***	1.000		
Sales growth	0.015***	-0.008***	-0.068***	-0.092***	0.170***	-0.043***	-0.018***	0.138***	1.000	
Prior-year stock return	-0.014***	-0.010***	-0.011***	0.034***	0.207***	0.142***	-0.073***	0.073***	0.171***	1.000

Table IA3**Product market concentration and becoming acquirers: Including industry fixed effects**

This table examines the relation between product market concentration and the likelihood of a firm becoming an acquirer including industry fixed effects. The sample consists of M&A deals made by public firms over the period 1983-2016 (corresponding to trademark data and firm characteristics over the period 1982-2015). The dependent variable takes the value of one for an acquirer in a given year, and zero otherwise. Columns (1) and (2) present the regression results using the linear probability model (LPM). Columns (3) and (4) present the regression results using the logit model. Definitions of the variables are provided in the Appendix. Robust standard errors clustered at the firm level are reported in parentheses. Superscripts *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

	LPM (1)	LPM (2)	Logit (3)	Logit (4)
Product market concentration	-0.606*** (0.119)	-0.368*** (0.114)	-5.916*** (1.288)	-3.357*** (1.166)
SIC concentration	0.051 (0.068)	0.052 (0.068)	0.105 (0.806)	0.105 (0.801)
HP concentration	-0.068*** (0.008)	-0.029*** (0.008)	-0.584*** (0.077)	-0.335*** (0.075)
Firm size		0.030*** (0.001)		0.234*** (0.011)
M/B		0.002*** (0.000)		0.013*** (0.004)
ROA		0.029*** (0.005)		1.155*** (0.132)
Leverage		-0.054*** (0.012)		-0.396*** (0.117)
Cash		0.008 (0.012)		0.113 (0.110)
Sales growth		0.044*** (0.005)		0.355*** (0.029)
Prior-year stock return		0.047*** (0.003)		0.319*** (0.021)
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	68,868	66,519	68,868	66,519
Adjusted R^2 /Pseudo R^2	0.026	0.068	0.035	0.088

Table IA4
Product market concentration and target choices

This table examines the relation between product market concentration and acquirer-target trademark similarity. The sample consists of M&A deals made by public firms over the period 1983-2016 (corresponding to trademark data and firm characteristics over the period 1982-2015). The dependent variable is *Acquirer-target trademark similarity*. To compute the measure, we further require the target firm be a public firm. We control for firm size, M/B, ROA, leverage, cash, sales growth, and prior-year stock return. Definitions of the variables are provided in the Appendix. Robust standard errors clustered at the firm level are reported in parentheses. Superscripts *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

	Acquirer-target trademark similarity			
	(1)	(2)	(3)	(4)
Product market concentration	-0.799*** (0.195)	-0.696*** (0.191)	-0.726*** (0.225)	-0.747*** (0.234)
Other controls	No	Yes	No	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	No	No	Yes	Yes
Observations	1,982	1,982	1,982	1,982
Adjusted R^2	0.049	0.067	0.158	0.175

Table IA5**Postmerger discontinued trademarks: Established versus new trademarks**

This table examines the relation between trademark age and the likelihood of a trademark being discontinued postmerger. This sample consists of all completed deals in Tables 3-5. For each deal, we track its acquirer's and target firm's active trademarks as of $qyr-1$ over the period from $cyr+1$ to $cyr+5$. The dependent variable, *Discontinued*, is an indicator variable that takes the value of one if a trademark is discontinued postmerger, and zero otherwise. Other controls include acquirer/target product market and firm characteristics. Definitions of the variables are provided in the Appendix. Robust standard errors clustered at the firm level are reported in parentheses. Superscripts *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

	Discontinued			
	Acquirers		Target firms	
	(1)	(2)	(3)	(4)
Trademark age	-0.002*** (0.000)	-0.001*** (0.000)	-0.003*** (0.001)	-0.002*** (0.001)
Other controls	No	Yes	No	Yes
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	139,466	139,446	22,929	22,878
Adjusted R^2	0.071	0.074	0.114	0.115

Table IA6
Postmerger product market outcome: Test of the pre-trend assumption

This table tests the pre-trend assumption for the analysis of discontinued trademarks and newly registered trademarks using withdrawn bids in Table 6 as the control sample. For each deal, we track acquirers and their control firms from five years before year *ayr* to five years after deal completion/withdrawal (year *cyr*). Definitions of the variables are provided in the Appendix. Robust standard errors clustered at the deal level are reported in parentheses. Superscripts *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

	Discontinued			Target firms	Newly registered	
	Acquirers		Unique to Acquirer		Acquirers	
	All	Common			All	Unique to Target
	(1)	(2)	(3)	(4)	(5)	(6)
Complete × Before ⁴⁵	0.005 (0.080)	0.019 (0.080)	-0.014 (0.015)	0.114 (0.071)	-0.070 (0.044)	0.048 (0.035)
Complete × Before ²³	0.104 (0.085)	0.103 (0.083)	0.001 (0.014)	0.016 (0.058)	0.025 (0.037)	0.042 (0.030)
Complete × After ²³	0.193** (0.084)	0.165** (0.081)	0.028** (0.013)	0.066 (0.094)	0.045 (0.041)	-0.019 (0.040)
Complete × After ⁴⁵	0.107 (0.081)	0.115 (0.083)	-0.008 (0.016)	0.162* (0.086)	-0.111** (0.048)	-0.105** (0.051)
Before ⁴⁵	0.099 (0.079)	0.078 (0.081)	0.021 (0.017)	-0.034 (0.073)	-0.038 (0.037)	-0.080*** (0.029)
Before ²³	0.006 (0.081)	-0.017 (0.081)	0.023** (0.012)	0.031 (0.059)	-0.134*** (0.031)	-0.083*** (0.025)
After ²³	-0.250*** (0.077)	-0.250*** (0.075)	-0.000 (0.011)	0.026 (0.091)	-0.073** (0.031)	0.054 (0.038)
After ⁴⁵	-0.246*** (0.080)	-0.283*** (0.084)	0.037** (0.016)	-0.015 (0.084)	-0.045 (0.040)	0.159*** (0.050)
Other controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	12,161	12,161	12,161	12,161	12,161	12,161
Adjusted R ²	0.764	0.727	0.594	0.523	0.667	0.345