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The only way is up: retail format saturation and the demise of the American five and dime store, 1914-1941

Peter Scott and James Walker

International Business and Strategy

Henley Business School at the University of Reading

Abstract: We examine a classic ‘wheel of retailing’ episode – the abandonment of the five and dime pricing formula by American variety chains. These switched from a conventional product lifecycle, focusing on cost reduction through standardisation, to a reverse path up the ‘service cost - unit value’ continuum. We show that, rather than reflecting deteriorating managerial acumen, this was a response to the continued imperative for growth following retail format saturation. Firm-specific (rather than format-specific) competitive advantages were too weak for any chain to be confident it could win a within-format price war, making inter-format competition through raising price points more attractive.

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Introduction

For more than half a century the ‘wheel of retailing’ hypothesis has featured prominently in work on long-term retail change. This argues that new retail modes frequently emerge at the bottom end of the price and service spectrum, using low-cost, low margin, ‘no-frills’ formats to undercut incumbent competitors. However, once well-established, such retailers typically up-grade services and facilities, thus raising costs and prices and leaving themselves vulnerable to a new wave of low-cost entrants.

The wheel of retailing is more properly characterised as a hypothesis than a theory. It was first proposed by Malcolm McNair (who undertook extensive research on chain and department store retailers) as early as 1931, though it was not until he re-stated and elaborated the model in 1958 that it began to attract widespread attention.ⁱ McNair suggested that new types of retailer usually enter the market with an innovation that reduces operating costs, thus enabling them to cut margins. However, over time they up-grade their business models, with consequent increases in expense ratios. This process culminates in their entering a ‘mature’ phase as higher-cost, higher-service retailers, creating space for new retail formats to emerge at the bottom of the market. The enduring appeal of this ‘theory’ is that it describes a frequently (though not universally) observed phenomenon in retail change.ⁱⁱ Formats said to be characterised by this process include variety and other chain stores, supermarkets, discount stores, catalogue showrooms, warehouse clubs, home-shopping networks, and on-line auctions.ⁱⁱⁱ

Conversely, critics have highlighted the lack of any obvious motive for retailers to abandon a profitable business niche in favour of higher-price markets, where they would typically face greater competition from established retail formats. A review of early studies by Stanley Hollander identified various explanations, including the deterioration of

managerial acumen and development of a lax attitude towards cost control as retailers acquire status and wealth (the explanation proposed by McNair); market imperfections -such as resale price maintenance, restrictive trade associations, and an aversion to price wars - leading to growing emphasis on non-price competition through services; and improvements in living standards which transform an initially large 'no frills' retail segment into a progressively smaller one (but still attractive to new entrants).^{iv} Stephen Brown, writing over 30 years later, noted very few additions to Hollander's inventory of proposed causes.^v One of the most interesting further contributions was to conceptualise the wheel process as a lifecycle phenomenon, akin to the product lifecycle. However the maturity phase was still explained in terms of the dissipation of managerial vitality, or the extension of the business beyond the capabilities of its managerial team.^{vi}

The wheel model still lacks any over-riding explanatory framework and has thus been portrayed as deterministic; inflexible; pattern- rather than process-orientated; and treating management as essentially powerless in moderating this process.^{vii} It has also been criticised for ignoring "system changes"; focusing on institutions in isolation from changes in consumption patterns, government policy, and other environmental factors, or the critical innovations that mark each new retail era.^{viii}

We examine a classic example of the wheel phenomenon, the abandonment of the five and dime format by American variety stores. Five and dime chains experienced very rapid growth over the four decades to the end of the First World War. However, by the 1920s most had overridden their 10c price limits (with the notable exception of Woolworths) and by the late 1930s virtually all had raised their price limits to a dollar or more, or had no price limit. We ask the questions: "what drove the five and dime chains to abandon their low price limits?" and "what were the impacts of this move to higher prices limits on net profit margins and overall corporate performance?"

Most classic explanations of the wheel phenomenon can be easily dismissed for the variety store sector. Five and dime chains had a vigorous profit-driven management remuneration and promotion culture, making them unlikely candidates for managerial inertia or a lax attitude towards costs. Resale price maintenance was also unimportant in this sector – as retailers sought to take control over their supply chains wherever possible – often dictating product specifications, and sometimes even production methods, to manufacturers.^{ix} Furthermore, rather than facing declining consumer demand, low price ceiling variety stores are shown not only to have remained viable in the 1930s, but to have consistently produced larger profit margins than those chains which adopted higher limits.

We explore the factors that drove five and dime stores to move to higher price points, together with the consequences of this policy change, using qualitative sources, including the archives of the two largest chains - Woolworths and S.S. Kresge. We outline the key features of their original business model; the factors that initiated the trend towards higher price points; and how this changed their business model and differentiating advantage compared to other retailers. Our analysis indicates that this process was driven primarily by retail format saturation. Five and dime chains enjoyed strong inter-format competitive advantages, undercutting established retailers on price. However, they had weak intra-format competitive advantages over rival dime chains and generally avoided head-on within-format competition at the point of sale, as this risked ruinous price wars. Thus, following the onset of format saturation, they preferred extending their merchandise range into higher value goods, in competition with other retail formats. However, by doing so they both took on some of the additional costs of these retail formats and reduced their cost advantage in their traditional lines.

On the basis of this analysis we develop a conceptual model, which predicts that the transition to higher price points will compress variety chains' spread between gross and net margins and, therefore, profit rates. Dollar profit growth may still be substantial (though below that before retail format saturation), but only if firms are able to meet the new managerial challenges associated with their wider merchandise range and thereby achieve substantial sales growth. These hypotheses are then tested using published and archival data from the Harvard Bureau of Business Research (HBBR) variety chain surveys.

The rise of the five and dime format

The five and dime store is said to have been inspired by a drummer for the New York jobbers Spellman who, in around 1877, successfully launched a '5c counter' in a Michigan store.^x F.W. Woolworth's employer, Moore & Smith, copied this format from September 1878. Later corporate histories claim that Woolworth was put in charge of the counter, though a first-hand account by Woolworth merely states that he was 'watching this counter very carefully'.^{xi} Woolworth also noted that by January 1879, when he approached Mr Moore with the proposition that he should open a 5c store, these were already being successfully developed in New York state. Thus Woolworth was an early pioneer of the five and dime format, but not the originator.^{xii}

Woolworth developed the classic five and dime retail model, selling a wide selection of merchandise at low, fixed, clearly-marked prices, in large open stores, where customers were free to browse. Profit was based on sales volumes rather than high margins, store managers were paid by results, and business was conducted on a cash-only basis.^{xiii} Woolworths eschewed press advertising, relying on price appeal, strong retail branding (including extensive window display), and word of mouth advertising - a strategy boosted by

locating stores on prime sites, with large numbers of passing customers.^{xiv} This was also necessitated by the character of their merchandise, as people were rarely prepared to make a special journey to buy five and dime goods.^{xv}

By the turn of the century a number of other major variety store chains had emerged, generally founded by ‘old-stock’ protestants from rural areas and small towns in the north eastern United States.^{xvi} For example, Sebastian Spering Kresge, founder of America’s second-largest five and dime chain, was a hardware salesman of Pennsylvania Dutch heritage.^{xvii} In the course of this work he became personally acquainted with F.W. Woolworth and another five and dime pioneer, J.G. McCrory (for whom he managed a store in Memphis Tennessee, owning a half interest, as well as a half interest in a store opened in Detroit in 1899). Later that year he parted company with McCrory, taking full ownership in the Detroit store in exchange for his half share of the Memphis store.^{xviii}

Woolworths believed that under their sales formula goods sold themselves, the sales clerks’ duties being limited to wrapping purchases, making change, and keeping counters orderly stocked and price tagged. As a result they generally employed young girls, living with their parents, who were paid relatively low wages. In his annual letter of 1892 Woolworth noted that, ‘We must have cheap help or we cannot sell cheap goods. When a sales clerk gets so good she can get better wages elsewhere, let her go – for it does not require skilled and experienced salesladies to sell our goods.’^{xix} His views had moderated slightly by 1899, acknowledging that there might be a case for paying slightly more to retain good staff.^{xx} Yet even in 1933 the average age of Woolworths’ sales girls was only 21 and their duties had changed little.^{xxi}

While the sales clerk’s job was simpler than in most stores, the manager’s task was more challenging.^{xxii} In addition to the usual store management tasks (some of which, such as

detering shop-lifting, were accentuated by open display), they needed to ensure that only the fastest-selling lines for their local markets were stocked, as rapid stock-turn was crucial to operating profitably at low price points. Higher managerial positions placed an even greater premium on high quality recruits. The onus on rapid stock-turn involved heavy reliance on successful buyers, whose skill and effort played an important role in the overall success of the chain.^{xxiii} Coordinating the operations of their mushrooming branch networks and optimising chain stock-turn also entailed significant management skill - to collate and interpret the mass of data flowing from the stores to divisional and head office. For example, when Charlie Griswold became Woolworths' General Manager in 1915, he felt it necessary to divide each store into 32 merchandise departments, with weekly and sometimes daily reports required for each.^{xxiv}

Successful managerial recruitment and incentivisation proved a key challenge for the five and dime chains.^{xxv} Woolworths again pioneered the general variety store model, based on profit sharing, meritocratic promotion, and internal labour markets. Their 'pyramid of promotion' system required all executives to start in the stock room as trainees. Promotion was then by merit, to more senior positions within the store, then to management of progressively larger stores, and, potentially, to the tiers of territorial and finally head office management. Promotion was based on both business success and conforming to a detailed code of behaviour designed to temper opportunism (prohibiting gambling, financial speculation, or gifts from suppliers) and maintain the store's respectable image. Other variety stores sought broadly similar qualities in managers, though Kresge, Grant, and McCrory placed greater emphasis on trainees having a good education.^{xxvi}

Woolworth store managers each received a percentage of their store's annual profit, plus a drawing account of \$10 a week, deducted from this commission.^{xxvii} Higher managers participated in a share of the profits for their relevant units and, in the case of the most senior,

of the entire concern. Five and dime chains also sought to foster a strong corporate culture, via frequent letters from headquarters, visits by supervisors (and, occasionally, more senior staff), and managers' conventions.^{xxviii} Variety store executives were well rewarded. Store managers were sometimes the most highly-paid salary men in small communities, while those few fortunate enough to reach the top of the largest chains might become millionaires.^{xxix}

Woolworths and the other early chains evolved broadly similar buying policies, based on direct purchasers from suppliers, who were persuaded to accept lower prices in return for bulk orders. New products were typically tested at a number of stores and then made generally available, orders being based on simple optimisation rules of achieving target sales per counter foot. Both individual lines and certain colours or sizes within those lines that did not make the target were ruthlessly discarded. These systems collectively provided major savings in inventory management. The weekly "checking list" system provided a perpetual inventory of stock, while sales per foot of counter-space rules removed problems of slow selling items. Direct purchases cut out the extra transport, loading, storage, order processing, and shrinkage costs of wholesaler supply. Moreover this allowed greater control over stock quality and lowered manufacturer's inventory costs by providing a more stable stream of orders.^{xxx} The development of motor transport enabled variety chains to expand direct to store delivery, thus reducing warehousing costs. The 1935 HBBR survey found that typical variety chains had more than 90 per cent of merchandise passing direct from the manufacturer to the individual stores.^{xxxi} This was more expensive for stores distant from the main production centres. Woolworths – the only variety chain operating in all U.S. states – addressed this by having a higher, 15c, price ceiling for stores west of the Missouri or in Canada (where they also faced higher taxes) and by developing regional warehouses in New York, San Francisco, and Toronto.^{xxxii}

Pressures for higher price points

By 1914 Woolworths had 737 stores and sales of \$69,619,669, its nearest competitors being S.S. Kresge (118 stores, \$16,097,393 sales); S.H. Kress (118 stores; \$11,897,989 sales); J.G. McCrory (116 stores, \$5,224,692 sales); and W.T. Grant (16 stores, £2,000,908 sales).^{xxxiii} Grant was the most recent of what later became known as the 'Big Five' variety store chains, opening his first store in 1906, but becoming the third largest chain in terms of sales from 1930. Grant had identified a gap in the market for a variety chain offering merchandise above the dime store price ceiling, initially adopting a 25c price limit (which had already been introduced by Kress from 1901) and later pioneering the 'to a dollar' store format.^{xxxiv}

F.W. Woolworth was adamantly opposed to raising price ceilings. In a General Letter of October 1910 on the danger of drifting into higher price points, Woolworth recounted the rise of fixed-price '99c stores' in the early 1870s, which were hugely successful for several years but subsequently declined after they adopted higher price limits.^{xxxv} However, ten cent price ceilings proved difficult to sustain given inflationary pressures during the First World War (retail prices rising by almost 80 per cent over 1914-19). Kresge raised the price limit for their red front stores to 15c in 1917 and, later in the same year, 25c. Then in 1920 the limit for their green front stores was raised from 50c to \$1.^{xxxvi} Towards the end of the War some Woolworths directors pressed for higher price ceilings and were only persuaded otherwise by F.W. Woolworth threatening to resign.^{xxxvii} Consequently Woolworths remained the only large U.S. variety chain with a 10c price limit by the 1920s.^{xxxviii}

Despite a long-term trend of lower prices during the 1920s and 1930s, variety stores continued to raise their price ceilings; by 1927 most had a maximum price of \$1 or more.^{xxxix} The whole concept of price ceilings was also coming under pressure. By 1922 Kresge were

selling special millinery at up to \$5 in their 25c - \$1 stores, while their range of over-a-dollar merchandise subsequently expanded.^{xl} Changes in consumer purchasing patterns made higher price points attractive to the variety chains. Real incomes rose over the 1920s, boosting a trend towards working-class purchases of women's ready-to-wear clothing. Such clothing sold on a combination of fashion and price appeal, with even the department stores often introducing more price-orientated promotions.^{xli} The Depression era witnessed a further trend towards 'price consciousness' as a major influence on buying behaviour, suggesting that the variety chain business model might profitably be extended to a much broader range of goods than their traditional niche.^{xlii}

However, the major factor driving the trend towards higher price ceilings was that the five and dime store had reached the limits of market *format* saturation. The major variety chains had generally sought to avoid head-on competition. For example, despite operating some 238 U.S. stores, in 24 states plus Washington DC by the end of 1909 (prior to the 1911 merger with five affiliated chains), Woolworths only faced direct competition at 52 locations, including Kresge at 18 points and McCrory at 10.^{xliii} Avoiding head-on competition was a conscious policy choice. For example, Samuel H. Kress, who opened his first store, in Memphis Tennessee, in 1896, chose to focus on the south because that region had no five and ten's.^{xliv} At an early stage he made a deal with Sebastian S. Kresge to avoid each other's territories (said to be at least partly on account of potential customer confusion, given their similar names and signage). Subsequently, no Kress and Kresge stores ever appeared on the same main street.^{xlv} This strategy was facilitated by geographical segmentation of the major chains. Even Woolworths was only active in 37 states at the beginning of 1912. Yet by 1920 there was no town of over 8,000 people in the USA without a Woolworths. For other variety chains, moving into towns above this size would therefore involve taking on Woolworths head-on or outflanking them with a broader range of merchandise.^{xlvi} By the late 1920s

grocery chains also faced format saturation, further expansion entailing invading one another's territories and thus competing their margins away - a strategy described by one analyst as 'suicidal'.^{xlvii}

Pressures to continue branch expansion subsequently led Woolworths to drop its minimum store size threshold, a policy Charles Phillips identified as a key factor behind Woolworths' declining profitability trend, evident even prior to the Depression.^{xlviii} Then, in 1932, it finally followed the other variety chains in seeking sales growth through higher price limits. Merchandise priced at 20c was successfully tested in 77 stores from March of that year and generally adopted three months later. In November 1935 Woolworths' board agreed to remove any fixed price limit, marking the end of the five and dime store era.^{xlix}

Chains responded to market saturation via two related strategies – both of which were assisted by extending their merchandise range into higher value goods. The first involved moving into smaller towns. Fifteen identical chains surveyed by HBBR over 1932-39 increased their number of outlets in towns of under 10,000 population by 23.71 per cent during this period, compared to an increase in total store numbers of only 8.32 per cent.¹ Geographical expansion via smaller units raised aggregate sales, but at the cost of reducing average sales per store and, therefore, productivity.^{li} Extending the product range increased the size of store that any given population could sustain and also helped deter new competitors – who would be reluctant to invest resources in a small community, already catered for by a chain serving a broad range of their customers' non-food needs (a strategy long pursued by the J.C. Penney "junior department store" chain).^{lii}

An alternative or complementary policy of growth through expanding existing stores, (again facilitated by extending the product range) offered greater scale economies, given that these were typically in larger communities). The G.C. Murphy chain rejected developing

smaller stores in favour of expanding existing stores and broadening their merchandise selection. This assisted them in achieving average sales per store in 1936 above those for Woolworth, Newberry, and McLellan and not far short of Grant, McCrory, and Kresge (all of which they were to overtake, on this measure, by 1940), despite a focus on relatively small towns. A key element of Murphy's strategy was the use of higher price points to expand lines such as clothing, which became increasingly important to their overall business.

Retail format saturation also limited the prospects of managerial recruits, a trend that, industry observers noted, might threaten the chains' ability to attract the right calibre of trainee.^{liii} Kresge responded to the growing intervals between promotion slots becoming available by reducing the minimum age of new trainees from 21 to 18 from October 1935.^{liv} More generally, variety chains were criticised for appointing conformists, with backgrounds, views, and personality traits socially acceptable to those in senior positions. They thus typically excluded ethnic minorities, women, and, to some extent ambitious people who sought faster promotion than their 'pyramid' system offered. The use of bureaucratic organisational systems to control the chains' extensive branch networks was also said to raise staff motivation problems, by regimenting managers' careers and restricting the scope for innovation.^{lv} Moreover, they faced management job market competition from new chains, especially the well-resourced store networks launched by Sears and Montgomery Ward, where rapid growth generated rapid promotion opportunities.^{lvi} However, such criticisms were relevant to most long-established American corporations and variety chains' profit-based remuneration systems still offered relatively good long-term prospects in a slack job market.

Woolworths' top executives also had to cope with expanding international operations outside mainland North America. Their first and largest subsidiary, in Britain and Ireland, proved highly successful and operated with considerable autonomy from the 1920s (its inter-

war Executive Committee minutes show very little evidence of interventions by the U.S. parent).^{lvii} However, expansions into Cuba from 1925 and Germany, from 1927, proved more problematic. For example, restrictions on new German store development, from 1932, were intensified during the Nazi era, when they were also targeted both by boycotts, protests, and acts of violence against Woolworth stores (precipitated by them bowing to domestic public pressure not to stock German goods).^{lviii} However, Woolworths were the only variety chain to pursue this strategy and such problems were not unusual for American multinationals at this time.

Impacts of higher price ceilings

Although variety stores fared the depression much better than the department stores with whom they were increasingly competing, they nevertheless witnessed a pronounced dip in profits. Fifteen identical variety chains analysed by HBBR saw their aggregate net operating profits fall from 5.93 per cent of net sales in 1929 to only 0.31 per cent in 1932 and an annual average of 3.88 per cent over 1933-1940.^{lix} The three largest, Woolworth, Kresge, and Kress, witnessed a fall in their collective market share of the top ten multiple chains from over 70 per cent in 1929 to just over 61 per cent in 1940.^{lx} Some fared much worse; in 1933 both McCrory and McLellan (which had been the fifth and sixth largest variety chains respectively in 1929), fell into receivership, both being subsequently recapitalised under new managements.^{lxi}

Meanwhile the chains addressed the longer-term problem of developing merchandising policies appropriate to both their traditional and new lines. As the 1936 HBBR variety chain survey noted, 'The very nature of the limited price variety chain business makes it inevitable that price policies are also merchandise policies.'^{lxii} At least some chains recognised that higher-priced lines might impact on their brand image and selling methods in

ways detrimental to five and dime trade. Kresge initially dealt with this by opening a second chain of ‘Green Front’ stores in 1920, with goods priced from 25c to \$1, in addition to their ‘Red Front’ nickel and dime stores.^{lxiii} These parallel chains (often located side by side) were controlled jointly from their Detroit head office and came under the same real estate management. However, they had different sets of buyers and personnel managers, reflecting their different labor and merchandise requirements.^{lxiv} Murphy’s introduction of a dollar price limit in around 1923 was accompanied by a vertical, rather than horizontal, outlet segmentation strategy, with their 25c - \$1 and 5 & 10c lines being split between separate floors of the same buildings. Each floor had its own staff, store number, and external signage, to prevent damage to Murphy’s brand image as a five and dime retailer. However, this policy entailed splitting related items in the same product class, a problem that led to the integration of all their stores by 1928.^{lxv}

Kresge’s difficulties during the depression (accentuated by a strong presence in large auto, steel, and other heavy industry towns) eventually forced it to also abandon a two chain policy. Kresge’s “Green Front” stores were particularly hard-hit, as depression intensified competition with department and speciality stores. Their share price fell from \$57.50 to a low of \$5.50 and Kresge responded by broadening its stock, their Green Front stores raising their price ceiling to \$3.^{lxvi} Then, during the mid-1930s, they began combining the Green and Red Fronts into “combination” stores. In 1940 the buying divisions for the two store groups were also integrated.^{lxvii}

The down-side of this policy was that five and dime lines could not operate efficiently alongside higher value merchandise. Traditional variety store goods came to be seen as loss-leaders to pull in customers, rather than important earners in their own right. For example, in February 1932 Kresge conducted an audit of their 25c to \$1.00 stores, examining goods at each price point in terms of their contribution to selling floorspace, individual transactions,

and total sales revenue. While only 20 per cent of customers bought items priced above 50c in January 1932, these accounted for 43 per cent of sales revenue, while taking up only 38 per cent of counter space. Conversely, 'up to 25c' merchandise took up 37 per cent of floorspace and accounted for 60 per cent of individual transactions, but only 32 per cent of revenue. A clear trend towards a lower average sale than in the previous January was identified, with 80 per cent of customers buying merchandise priced at 50c or less. Yet, rather than wishing to further boost sales in this price range, staff were urged, 'to realize the importance of increasing the number of sales on higher priced items. The customers have shown that they favour low prices, and we propose to feature and show low prices to get them into the store, but we can increase the number of sales on higher priced items by sale suggestion and good salesmanship.'^{lxviii}

The memorandum went on to note that, 'Right now we have a great many outstanding \$1 items, but with Department Stores and direct competitors playing up low prices, we cannot feature the \$1 price. Our opportunity lies in bringing customers into the store with low priced items and then showing and selling higher priced merchandise'.^{lxix} In other words, Kresge were advocating a strategy similar to that employed by many down-market department stores.

Higher price limits opened up a much larger, but increasingly crowded, market. Competitors included department stores, expanding speciality chains in menswear, women's apparel, millinery, footwear, and hosiery, and drug stores (that were also extending their merchandise range).^{lxx} Nevertheless, variety chains preferred taking on such competition (where they enjoyed some cost advantage over established retailers, who typically had grander premises and more elaborate services), to head-on battles against other variety stores that would principally involve bidding down each other's margins. Moreover, given that much consumer expenditure occurred at prices over 25c, this market appeared to offer greater prospects for long-term growth. Indeed this strategy proved successful in increasing variety

stores' share of general merchandise trade from 14.03 per cent in 1929 to 17.24 per cent in 1939, as shown in Table 1. This was achieved at the cost of a much larger proportional rise in the number of retail units – mainly owing to the expansion into smaller communities, discussed earlier. Ominously, as the tables shows, a 22.08 per cent increase in real variety store sales over this period occurred at the cost of a 44.33 per cent rise in pay-roll expenses and a 32.59 per cent rise in their number of employees; implying negative labour productivity.

[Table 1 near here]

Competition in the over 25c market proved more difficult than the variety stores had anticipated. Even the department stores, which had the highest advertising and service costs of any large-scale retail format, managed to increase their share of total retail sales slightly above 1929 levels during the mid and late 1930s. Given their high sunk costs of expensive premises and accumulated good-will, most remained in operation even if they failed to cover total costs, while some were prepared to hold on even when revenue did not meet variable costs, in the hope of a return to better times. Department stores collectively generated a positive operating profit for only three years over 1930-39, yet they increased their market share through sale promotions and aggressive price competition to boost turnover and thus offset heavy fixed costs, even where this entailed unattractive margins.^{lxxi}

As many new lines, such as light women's clothing, had a significant fashion element, the variety stores began to encounter some of the merchandising problems of department stores. Style goods typically had high original mark-ups, high selling expenses, and high mark downs if not sold quickly.^{lxxii} This created much greater problems of inventory control than for traditional five and dime merchandise, which mainly constituted staple household items with slow fashion cycles.^{lxxiii} Fashion goods also required more intensive promotion,

leading the high price-limit chains to adopt some of the promotional practices of the department stores, such as advertising and cut-price sales events.^{lxxiv} By the late 1930s Grant launched big sales two or three times a year, supported by full-page ads, heavy with prices.^{lxxv}

Moreover, fashion merchandise required elements of the skilled, personal, selling approach that had traditionally sharply demarcated the department and variety store business models. By 1932 Kresge were strongly advocating a policy of pushing high gross margin items (compared to the average for each department) in their dollar stores, using 'suggestive selling'.^{lxxvi} These were indicated by placing 'Red Stars' on counters, so saleswomen knew which lines to push.^{lxxvii} Recommending complementary items required significant sales knowledge and training. As a 1935 note to managers argued:

'Knowledge of merchandise... is the first essential to successful salesmanship. You should possess this information in order to properly train your salesgirls in the art of increasing each sale. Of equal importance is a thorough understanding of the best methods for presenting your merchandise to the customer in such a manner that interest is aroused and the salesgirls' service appreciated... Verbal suggestions must be followed up by intelligent comment... Few salesgirls are instinctively able to do this. It is your duty to outline to them the various means of making suggestions effective... and training them to use the right approach for making each suggestion "strike home".'^{lxxviii}

A further, June 1936, Kresge letter to stores noted that: 'Whether or not we are realizing the most from this demand for style items depends to a considerable degree upon how well "style" minded our salesforce has become.'^{lxxix} Sales staff were expected to keep themselves informed regarding the latest styles by studying fashion magazines. Kresge stores

ran contests between groups of salesgirls to increase their enthusiasm for direct selling.^{lxxx} G.C. Murphy was also urging its sales clerks to use 'related item suggestion', by 1929, assisted by systematic staff training.^{lxxx} W.T. Grant preferred sales staff to physically show customers additional merchandise – 'additional showing'.^{lxxxii}

Pushing high margin items via suggestive selling left variety chains vulnerable to opportunistic behaviour by store managers who – in an effort to boost their profit-based commission - raised margins to levels that negated their price advantage. This might raise profits for the individual store, but damaged the company's overall reputation with both customers and suppliers. As an October 1936 Kresge note to stores warned: 'Profiteering is an open invitation to every little store in town to step in and compete with and undersell Kresge's... the truly efficient manager... can be glad he is not in the shoes of the profiteer when the truth is uncovered...'^{lxxxiii} A 1935 investigation of 17 stores had revealed margins typically higher than those specified by head office. In one case a manager had requested to raise prices:

"to those of the independent hardware dealer, yet the items mentioned figured 41% gross. He wanted 54%... A manufacturer writes in that his item is being sold at a higher price than agreed on in all stores visited. What a reputation the Kresge organization has with this man, and the others that have the experience of seeing their merchandise being sold at a price where they know the most sales resistance lies!"^{lxxxiv}

However, evidence reviewed by Alan Raucher suggests that this problem arose from Kresge's target-driven managerial culture. Store managers perceived that profit targets for bonuses and promotion could only be achieved through "profiteering".^{lxxxv}

In the 1936 HBBR survey, McNair highlighted the risks associated with the variety chains' move up the retailing wheel. This entailed foregoing the strong promotional appeal of low fixed price limits and brought new managerial problems in buying, merchandising and sales promotion. Even if these challenges were overcome, he predicted a decline in gross margins – owing to the increased likelihood of mark-downs for fashion items and retaliatory price-cutting by established retailers. Firms might gain some reduction in selling costs, which were strongly linked to the number of transactions, though only if this was not offset by the costs of more active and knowledgeable salesmanship.^{lxxxvi} McNair predicted the most likely result would be a fall in net margins, increased profits thus being reliant on producing sufficient extra sales volume to more than compensate for this.^{lxxxvii} J.K. Winkler concluded his 1940 biography of F.W. Woolworth on a similar note, “The new prices bring Woolworth into keener competition with important department stores... Indeed, when entering the streamlined, chromiomed emporiums on fashionable metropolitan thoroughfares, the shopper may wonder whether he and his dime have not strayed into the wrong place.”^{lxxxviii}

A model of retail change – the service cost - unit value continuum

The evidence reviewed above indicates that the retail lifecycle of variety chains (and, by extension, other low-price retail formats) is broadly inverse to the product life cycle (PLC). A key feature of the PLC model is that as markets mature, products become increasingly standardised, offering reductions in production costs for large firms, able to magnify the benefits of cost-reducing process innovations through economies of scale.^{lxxxix} While the PLC hypothesis leads to a movement from complexity to cost reduction and standardisation, the opposite is the case under the wheel of retailing, where mature firms move from extreme standardisation of products and price points to increasingly complex

product categories – requiring a growing element of customer service. This in turn creates substantial managerial challenges, regarding growing product/service complexity, greater uncertainty (given their lack of knowledge of the new market and the likely competitive reaction of incumbents) and adverse impacts on established product lines.

Our model views shifts from low to higher value merchandise as being driven by retail format saturation in the low price niche. No frills retail formats compete primarily on price. However, for very low price merchandise substantial gross margins are necessary to cover high handling cost to price ratios. Price wars between rival stores adopting the same format are thus potentially ruinous. The alternative is to move into higher value lines, but this necessarily involves adding more services – to meet the minimum expectations of consumers and provide the information and advice they require. The relationship between price and services thus represents a continuum, as shown in Figure 1 (for inter-war retailers with a broad product mix of mainly non-food items). We use the HBBR classification of variety stores into three groups: Class A - price range 5c - 25c, low average sale; B - price up to \$1, low average sale; and C - up to \$1, high average sale.^{xc} The upper merchandise bounds of groups B and C increasingly overlapped with ‘junior department stores’ – small department stores selling a limited range of goods at relatively low prices – exemplified by J.C. Penney. They also increasingly competed with lower-end line specialised multiples, drug stores, and with the staple merchandise of down-market mainstream department stores.

[Figure 1 near here]

In practice, given their broad product selection, both unit prices and associated services varied substantially within each store. However, the classification is important, as it determines the level of human and physical capital required to sustain the format, with major implications for costs and price mark-ups. In terms of market segmentation, variety stores were strongly segmented by price and services, yet attracted customers across a broad social

spectrum. High grade department stores were strongly segmented by both price and the class of customer. Meanwhile retail formats in the middle of the spectrum served the largest markets –constituting a particularly attractive target for variety stores facing retail format saturation within their price class.

Yet there are risks in up-grading products and associated services, as discussed in the broader literature on product range extension and corporate performance.^{xcvi} Change is a process that requires substantial managerial time and resources, making established capabilities less relevant and disrupting organisational routines.^{xcvii} The literature predicts that firms which expand their product scope too dramatically may run into rigidities in existing resources and capabilities, hampering effective change due to imperfect learning and/or impediments on resource reconfiguration.^{xcviii} Over-ambitious extensions of product/service offerings may also produce disproportionate increases in their cost base, even incurring losses in extreme cases.^{xcix} Moreover, firms sometimes lack the managerial capabilities or organizational structures necessary to efficiently absorb such changes without inefficient and costly adjustment and coordination problems.^{xcv} For example, variety stores faced extra costs in selling fashion-orientated goods alongside traditional lines, as the selling skills necessary for the fashion items were wasted on five and dime merchandise. The potential for cost inflation is also influenced by the changing nature and degree of competition as firms shift to higher market segments, as incumbents may have advantages in services provision (such as strong retail brand reputations, or embeddedness in local communities).

Our model thus implies that moves up the unit cost – services continuum will be accompanied a reduction in the spread between gross margins and total expenses. Five and dime stores based their competitive advantage on reducing selling tasks to wrapping merchandise and giving change, thus giving them a major cost advantage over other retailers who built a greater service element into the sales task. However, variety chains' transition to

higher value goods involved embracing this more active and (for any given price point) more expensive form of selling, which raised selling costs even for their five and dime lines. Net margins would therefore be compressed to levels nearer to (though not necessarily as low as) those of retailers with a business model based on personal selling, such as department stores and line-specialised multiples. Impacts on total profit growth would be dependent on how successfully each chain responded to the potential problems associated with the broader merchandise range. However, even if they successfully negotiated these challenges profit growth is likely to slow, relative to their initial phase of growth, when they enjoyed relatively little local within-format competition and could substantially undercut the prices of established formats. The following section examines quantitative evidence regarding these predicted outcomes.

Quantifying the profit implications of moving up the service cost - unit value continuum

HBBR's systematic compilation of variety chain cost and margin data enable us to analyse whether moving up the service cost – unit price continuum did indeed involve accepting lower profit rates. The first HBBR variety chain store survey, for 1931 (with a comparison for 1929), encompassed 33 chains operating some 2,565 stores. Conversely, the 1932 survey covered 29 chains, but – following the inclusion of Woolworths - around twice as many stores, including practically all the large firms. From that date onward the surveys, conducted annually, were broadly representative of the sector. It was estimated that during the mid-late 1930s they captured over 90 per cent of total variety chain volume.^{xcvi} These included the Canadian stores of US variety chains, as well as several chains operating entirely in Canada.^{xcvii} The HBBR definition of a variety store was almost identical to that of the Census Bureau, only one large national chain included in the HBBR sample not being so

classified by the Census Bureau in 1933.^{xcviii} Most were local or regional chains. Of the 30 chains reporting in 1934, only seven were ‘national’ in scope, though most of these were not represented in all states.^{xcix}

Aggregate time-series data from the surveys show a declining trend of net profit (as well as the expected cyclical variation), but this evidence is not compelling in itself, given the changed retail environment of Depression and post-Depression America. A more useful approach is to examine the performance of variety stores with different pricing policies at the same points in time. Before examining this data it is useful to briefly summarise a number of other factors identified in the surveys as influencing the performance of variety chains. As might be expected, larger chains reaped managerial economies of scale for activities conducted centrally.^c Their greater purchasing power would also contribute to lower purchase prices, providing higher gross margins at each price point. Average store size was also identified as an important differentiator. Chains of small stores were found to suffer from lower stock-turn; higher proportional utility costs (reflecting lower sales per square foot and discounts sometimes offered for higher consumption); and both higher labour costs and lower labour productivity (as larger stores required fewer staff per square foot of selling space).^{ci} To reflect these additional factors data on these variables are included alongside average transaction values in Tables 2-4 and in the regression analysis summarised in Table 5.

The surveys identified merchandising policy as a key differentiator of costs and margins. Stores which retained a 25c limit (with an average sale of 17.5 cents in 1935) were found to have markedly higher gross margins than ‘to a dollar’ stores, reflecting higher handling cost to price ratios for low unit value merchandise, together with lower rates of mark-downs and shortages.^{cii} To a dollar stores had much higher proportionate apparel and accessories sales (which were particularly prone to mark-downs and shortages, in common with other fashion-related goods). These accounted for only 7.49 per cent of sales for stores

with price limits of 25c or less in 1933, but 31.75 per cent of sales for dollar stores with a low average sale and 44.94 per cent for dollar stores with a high average sale.^{ciii} However, HBBR found that differences in the performance of variety chains could not be explained simply in terms of variations in the proportion of apparel and accessory merchandise, which traditionally had higher price mark-ups than goods of equivalent value, to compensate for mark-downs and 'shortage' losses.^{civ} Pricing policies appear to have a broader impact, not confined to any particular class of merchandise.

Cross-sectional aggregate data from the surveys suggest that 5-25c stores had significantly higher net profit *rates* than variety stores with higher price limits. Table 2 shows operating results over 1933-35, for 5-25c stores and \$1 (or more) stores, the latter being disaggregated into stores with low and high average sales. In addition to higher gross margins, stores with lower price points or average sales were found to have higher pay-roll costs (both reflecting the higher relative handling costs of small transactions). Tenancy costs were also higher; possibly due to the fact that five and dime stores required prime sites and passing trade, whereas people were prepared to go out of their way for higher-value purchases.

[Table 2 near here]

Overall, despite lower costs in areas such as advertising, 25c stores were found to have slightly higher expenses ratios than \$1 stores, while low average sale dollar stores had higher expenses than high average sale dollar stores. Yet lower expenses ratios were insufficient to offset the lower margins on higher ticket goods, resulting in markedly lower trading profits, and total net gain as a proportion of net sales, for stores with higher average unit prices.^{cv}

While the table suggests that stores with higher price limits and average sales had lower net margins, such aggregate data still do not provide conclusive evidence. 5-25c stores differed significantly from their higher-price counterparts in terms of average sales per firm and per store – two factors which the surveys showed to have important impacts on profitability. To disentangle the influence of average sale, firm size, and store size, analysis is necessary at the level of the individual firm. While no original returns to these surveys have survived, the HBBR archives, at Harvard's Baker Library, include worksheets providing some firm-level data for 1929 and 1931-34. Table 3 shows available data for all national chains for 1933 and 1934 (other than McCrory and McLellan, for which no usable data are available, presumably owing to the fact that they were in receivership). The table shows a tendency for chains with higher price limits and average transaction values to have lower net margins. However, as predicted, this is driven by total expenses being higher *relative to gross margins*. This compression of net margins for firms with higher unit value merchandise is corroborated by longer-term (1929-38) data on net income to sales ratios.^{cvi}

[Table 3 near here]

W.T. Grant (the only chain shown with a high price limit and high average sale policy) had a lower gross margin than the others, which was not compensated for by its expense ratio, thus producing the lowest net margin among the five chains. However, in terms of aggregate profits growth, it was more successful than its 25c price limit competitors – as this margin was combined with a 20 per cent increase in dollar sales over 1929-33, while Woolworths, Kresge, and Kress had all experienced falling sales. G.C. Murphy (essentially a large regional chain) also had a higher price limit policy than Woolworths, Kresge, or Kress, but with a lower average sale than Grant. Murphy's achievement of both a respectable net margin and rapid growth reflected its strong focus on small towns with no department or variety stores (as reflected in its low average sales per store). In these it developed a

profitable local niche spanning both variety and department store lines, in a similar manner to J.C. Penney.

Grant's success at applying the variety store formula to high ticket lines (many with a considerable fashion element) required a high stock turn - to avoid heavy mark-downs. The risks associated with dependence on rapid stock turn of fashion goods are illustrated by the example of McLellan, America's sixth largest variety store chain in 1929. Their high unit price policy provided a 1932 gross margin of only 26.86 per cent, some 7.04 percentage points below their total expenses, forcing it into receivership.

McNair's concerns regarding the risks of lower gross margins leading to declining (and potentially negative) net profits in the absence of sufficient extra sales volume thus appear well-founded. However, we also need to control for firm-level purchasing and administrative scale economies from high aggregate sales, and for store-level technical scale economies, proxied by average sales per store. HBBR archival data sheets enable us to do so for 16 chains, the descriptive statistics for which are shown in Table 4. These are classified into HBBR's three price ranges – Class A (5c to 25c price range, low average transaction value); Class B (dollar price limit, low average transaction); Class C (dollar price limit, high average transaction).

[Tables 4 and 5 near here]

Table 5 provides ordinary least squares estimates of firm net margins for this sample.^{cvii} In specification 1 the price bands are analysed using the lowest price band, Class A, as the reference group. The results indicate that - relative to this class - there are lower net margins, of 6.0% and 6.8% respectively, for Classes B and C. Our findings thus suggest that moving to dollar price ceilings did indeed sacrifice net margin for growth; and, therefore, headline profits. These results are sustained, albeit with higher coefficients, when we

incorporate payroll expenditure in specification 2. In specification 3 we also control for firm-level economies, through total sales volumes, and store-level economies - via average sales per store (factors shown in Tables 3 and 4 to vary significantly between firms). We find that net margins are positively associated with net sales per store, suggesting that technical scale economies are important. However, we do not find that total sales volumes are important - though this may reflect our relatively small sample and the fact that we are already capturing firm-specific fixed-effects.

The regression results thus provide strong support for our hypothesis that moving to higher price limits and average transaction values was associated with a substantial decline in net margins and net income to sales ratios, a result corroborated by our analysis of financial data for the largest individual chains. Impacts on sales growth are found to be very variable between firms – though for every major chain growth was markedly slower than during the dime store era.^{cviii} Firms that successfully managed the change process nevertheless achieved significant growth during the 1930s, while others that failed to do so, such as McLellan, could face losses and potential liquidation.

Conclusions

Our findings support McNair's original conception of the wheel of retailing as a process – characterised by low cost retailers eventually finding it necessary to upgrade their business models, thereby reducing the spread between their gross and net margins and thus creating space for new retail formats to emerge at the bottom of the market. However, they do not support his more tentative conclusion that this was the result of declining managerial acumen.^{cix} Instead our study identifies the wheel process as a phenomenon of retail format saturation, at a time when there was no obvious new business model that might enable

innovative variety chains to under-cut their competitors (analogous to the supermarket format, which enabled some grocery chains to reinforce their price advantage during the 1930s).^{cx} Variety chains faced an imperative for continued growth, to meet the expectations of both shareholders and of executives whose incomes and promotion prospects were strongly dependent on expanding the promotion pyramid.^{cx} Perceiving that within-format competition at the point of sale would be mutually destructive (given their essentially similar systems, and reliance of substantial gross margins, given high handling cost to price ratios), they instead chose to move into higher priced merchandise.

This up-grading strategy could be successful, as shown by the examples of Grant and Murphy. Even these firms experienced a marked reduction in net profit rates, but this is hardly surprising given that they moved from a position of clear price advantage (assuming no within-format competition at the point of sale) to one where their business model was less differentiated from that of service-orientated department stores and line-specialised chains. We conclude that, at least in this instance, the wheel phenomenon does not reflect a systematic deterioration of management across the format, or even a decline in performance (relative to market conditions) but a change in those conditions from a situation where their novel format provided an element of local monopoly to one where they were competitors in a crowded market. However, even where successful, up-grading inevitably left space at the bottom of the market for another turn of the wheel, by new retail formats at the start of their lifecycle.

Table 1: Variety store growth, employees, and labour costs - growth over time and comparison with other retailers, 1929-39

	Variety Stores	All General Merchandise ^a	All Stores	Variety/General Merchandise	Variety (real values) ^b	Variety, real growth since 1929 (%)
Number of stores						
1929	12,110	54,636.00	1,476,365	22.16	N/A	0.00
1935	11,741	44,651.00	1,587,718	26.30	N/A	-3.05
1939	16,946	50,267.00	1,770,355	33.71	N/A	39.93
Sales (\$,000)						
1929	904,147	6,444,101.00	48,329,652	14.03	800,130	0.00
1935	780,819	4,619,751.00	32,791,212	16.90	813,353	1.65
1939	976,801	5,665,007.00	42,041,790	17.24	976,801	22.08
No. of employees						
1929	159,715	814,937.00	4,286,516	19.60	N/A	0.00
1935	171,375	729,195.00	3,898,258	23.50	N/A	7.30
1939	211,766	867,007.00	4,600,217	24.42	N/A	32.59
Total pay roll						
1929	95,362	818,930.00	5,044,128	11.64	84,391	0.00
1935	91,295	608,817.00	3,568,167	15.00	95,099	12.69
1939	121,804	803,485.00	4,529,499	15.16	121,804	44.33

Source: United States, Bureau of the Census, *Seventeenth Census of the United States, 1940, Census of Business, Vol. 1, Retail Trade 1939, Part I* (Washington, 1943), 16.

Notes: ^a Department stores, variety stores, and dry goods & general merchandise stores; ^b 1939=100, deflated using Bureau of Labour Statistics wholesale price index, Malcolm P. McNair and Eleanor G. May, "The American Department Store 1920-1960. A Performance Analysis based on the Harvard Reports," *Harvard Bureau of Business Research Bulletin*, 166 (1963), 16.

Table 2: Operating results for variety chains classified by average sale, 1933-35.

Items	1933			1934			1935		
	5-25c	\$1 (low avg.)	\$1 (high avg.)	5-25c	\$1 (low avg.)	\$1 (high avg.)	5-25c	\$1 (low avg.)	\$1 (high avg.)
Average sale (cents)	16	20	30	17	23	29	17.5	24	30
No. of chains	5	5	11	5	8	10	4	6	11
Net sales (\$,000)	441,502	39,458	167,433	483,051	50,786	186,573	484,332	56,396	198,770
Average sales per store (\$) ^a	149,156	115,711	116,929	162,316	117,018	130,506	161,443	129,647	136,706
Gross margin ^b	38.78	36.59	33.99	38.33	36.47	32.81	37.97	35.83	32.22
Salaries and wages	15.47	14.68	13.48	15.98	15.43	13.73	16.00	15.05	13.50
Tenancy costs	11.63	10.38	9.67	10.81	8.56	8.84	10.88	8.26	8.47
Light, water, power	0.98	1.07	1.18	0.91	0.94	1.12	0.95	0.94	1.11
Depreciation ^c	0.81	0.76	0.85	0.72	0.68	0.74	0.63	0.64	0.75
Supplies	1.13	1.23	0.93	1.07	0.90	0.98	1.14	0.81	1.03
Advertising	0.01	0.19	0.59	0.00	0.35	0.56	0.00	0.46	0.58
Other expenses ^d	1.39	2.84	2.54	1.38	2.53	2.45	1.37	2.57	2.38
Total expenses before interest	31.42	31.15	29.24	30.87	29.39	28.42	30.97	28.73	27.82
Total expense including interest	33.39	33.02	30.78	32.76	31.11	29.91	32.92	30.40	29.30
Net profit/loss	5.39	3.57	3.21	5.57	5.36	2.90	5.05	5.43	2.92
Total net other income	4.05	2.28	1.91	3.47	1.90	2.11	3.64	1.90	2.26
Net gain before income taxes:									
Percentage of net sales	9.44	5.85	5.12	9.04	7.26	5.01	8.69	7.33	5.18
Percentage of net worth ^e	14.64	17.75	15.06	14.69	22.96	15.58	13.73	22.49	15.81

Sources: McNair, "Expenses and Profits of Variety Chains in 1933," 19-20; Teele, "Expenses and Profits of Limited Price Variety Chains in 1934," 32-3; S.F. Teele, "Expenses and profits of limited price variety chains in 1935," *Harvard Bureau of Business Research Bulletin*. 103 (1936), 15-16.

Notes: All cost and margin data are shown as a percentage of net sales. ^a Figures on this item were not reported by all firms in all years; ^b Net of cost of merchandise, plus freight, express, postage and truckage; ^c On fixtures and equipment; ^d Insurance (except on real estate); taxes (except on real estate or income); travelling; and miscellaneous; ^e Because of inadequate balance sheet data for a few chains, the net gain figure for 5-25c retailers is not comprehensive.

Table 3: Operating results for the five main variety store chains, 1933 and 1934

Name	Class	Average transaction (\$)	Gross Margin	Pay Roll	Rent	Total Expenses	Net Margin	Stock Turn	Net sales (\$)	Sales growth from 1929 (%)	Net sales per store (\$)
1933											
Woolworths	A	16.0	40.30	16.43	12.78	33.51	6.79	4.74	251,163,459	-17.3	129,399
S.S. Kresge	A	18.0	38.82	14.91	11.85	34.21	4.61	4.99	125,973,000	-18.8	178,612
W.T. Grant	C	n.a.	32.96	12.18	9.91	29.59	3.37	6.10	79,073,136	20.0	173,406
Kress	A	17.0	33.05	12.63	7.07	27.67	5.38	3.95	65,018,000	-5.0	282,687
G.C. Murphy	B	20.0	37.12	15.43	9.40	32.45	4.67		21,844,872	38.9	122,724
1934											
Woolworths	A	16.5	39.98	16.96	11.85	33.92	6.06		250,517,000	-10.7	128,536
S.S. Kresge	A	19.0	38.49	15.44	10.89	33.77	4.72	4.48	131,682,376	-15.1	193,651
W.T. Grant	C	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	5.89	85,069,612	29.1	184,934
Kress	A	16.6	32.24	13.17	6.45	26.57	5.67	4.05	75,152,677	9.8	325,336
G.C. Murphy	B	23.0	36.08	15.70	7.73	30.29	5.79	4.21	27,955,481	77.8	153,602

Sources: Baker Library, Harvard, Harvard Bureau of Business Research, , Arch E75.A15, Case 2, Variety chain studies, 1933 and 1934 files, undated worksheets.

Notes: Class A = price range 5c - 25c, low average sale; B = up to \$1, low average sale; C = up to \$1, high average sale. Kresge was presumably classified in Class A owing to the dominance of its 25c stores in its overall business at that time.

Table 4: Descriptive Statistics for 16 Variety Store Chains (1929 and 1931- 34)

Harvard id	Store Name	City (Head Quarters)	State (Head Quarters)	Net margin (%)	Price Class	Net Sales (mns)	Store size (000s)
3	M H King Co.	Burley	Idaho	2.10	B	0.22	35.06
6	Perry Bros. Inc.	Howell	Michigan	0.63	B	1.60	27.58
13	Rose's 5c-10c-25c Stores	Henerson	North Carolina	2.38	A	2.10	36.68
16	Scott Stores	Chicago	Illinois	-8.46	A	4.30	53.11
18	S.H. Kress & Co	New York	New York	4.74	A	68.00	315.81
22	Autenreith's Dollar Stores	Pittsburgh	Pennsylvania	1.41	C	1.20	56.06
27	G.C. Murphy Co.	McKeesport	Pennsylvania	3.50	B	21.00	121.26
34	Schulte United, Inc.	Chicago	Illinois	2.04	B	0.91	25.16
42	People's 5-10-15c to \$1 Stores, Ltd	Montreal	Quebec	-0.44	C	1.70	60.15
45	Neisner Bros. Inc.	Rochester	New York	2.23	B	15.00	220.86
46	McLellan Store Co.	New York	New York	0.88	C	21.00	83.46
56	M.H. Fishman Co. Inc.	New York	New York	4.62	C	2.70	95.69
59	Walbert Stores Co. Ltd.	Oklahoma City	Oklahoma	-15.85	B	0.10	16.10
66	S.S. Kresge Co.	Detroit	Michigan	3.95	A	140.00	209.67
69	W.T. Grant	New York	New York	2.53	C	76.00	200.84
79	F.W. Woolworth Co	New York	New York	6.29	A	250.00	129.43
Average				0.78		37.86	105.43

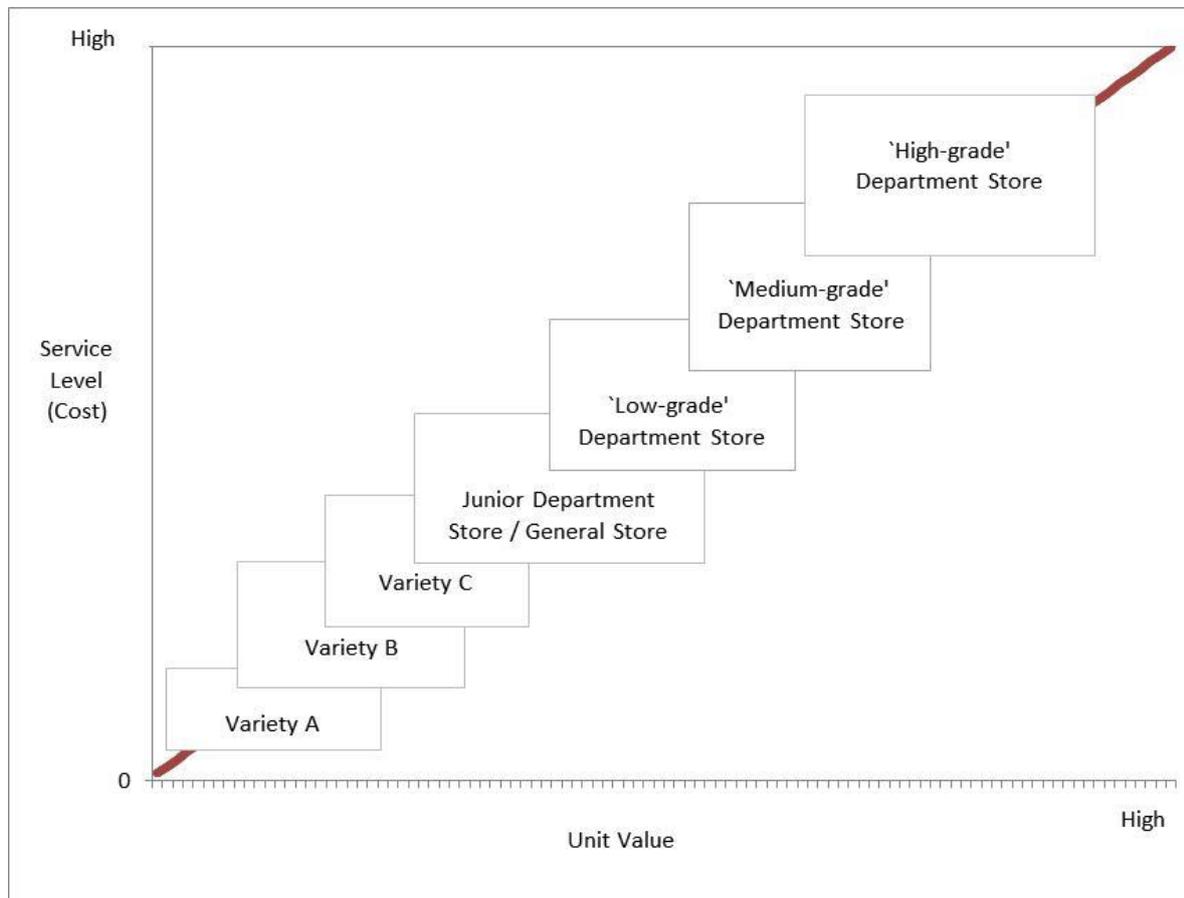
Notes: Table shows full period means.

Table 5 Determinants of Variety Store Net Margins (N=61)

		Coefficient	t-stat		Coefficient	t-stat		Coefficient	t-stat	
Price Bands	Class B	-6.02	(2.81)	***	-9.71	(3.10)	***	-8.02	(1.90)	*
(Ref. Class A)	Class C	-6.79	(2.70)	***	-14.04	(4.40)	***	-12.85	(4.90)	***
Services Costs	% of Payroll				-1.81	(2.41)	**	-1.84	(2.65)	***
Firm Size	Sales per Store (000s)							0.04	(2.77)	**
Level Economies	Net Sales (millions)							-0.04	(0.73)	
Controls	Firm Effects	YES			YES			YES		
	Year Effects	YES			YES			YES		

Notes: 1. Class A relates to variety stores in the 5c to 25c price range (with a low average sale price); Class B equates to the price range below \$1 (with a low average sale price); Class C equates to the price range below \$1 (with a high average sale price); 2. Robust t-statistics reported.

Figure 1: The service cost - unit value continuum for multi-product retailers with a broad product range in the 1930s



Notes: For a discussion of low, medium, and high grade department stores, see Peter Scott and James Walker, "Sales and advertising expenditure for interwar American department stores," *Journal of Economic History*, 71 (2011), 32-60.

- ⁱ M.P. McNair, "Trends in Large-scale Retailing," *Harvard Business Review*, 10 (1931), 30-39; M.P. McNair, "Significant Trends and Developments in the Postwar Period," 1-25 in A.B. Smith (ed.), *Competitive Distribution in a Free, High-level Economy and its Implications for the University* (Pittsburgh, 1958), 17-18.
- ⁱⁱ Stephen Brown, "The Wheel of Retailing: Past and Future," *Journal of Retailing*, 66 (1990), 143-9, pp. 144-6.
- ⁱⁱⁱ Stephen Brown, "Variations on a Marketing Enigma: the Wheel of Retailing Theory," *Journal of Marketing Management*, 7 (1991), 131-55, p. 134, briefly reviews this literature. See also Victor J. Massad, Mary Beth Nein, and Joanne M. Tucker, "The Wheel of Retailing Revisited: Toward a "Wheel of E-tailing?"", *Journal of Management and Marketing Research*, 8 (2011), 1-11.
- ^{iv} Stanley C. Hollander, "The Wheel of Retailing," *Journal of Marketing*, 24 (July 1960), 37-42, p. 38; McNair, "Trends in Large-scale Retailing," 39.
- ^v Brown, "Variations on a Marketing Enigma," 144.
- ^{vi} William R. Davidson, Albert D. Bates, and Stephen J. Bass, "The Retail Lifecycle," *Harvard Business Review*, 54 (1976): 89-96.
- ^{vii} Brown, "Variations on a Marketing Enigma," 137.
- ^{viii} Ronald Savitt, "Innovation in American Retailing, 1919-39: Improving Inventory Management," *International Review of Retail, Distribution, and Consumer Research*, 9 (1999), 307-320, p. 311; Vicki Howard, *From Main Street to Mall. The Rise of the American Department Store* (Philadelphia Penn: University of Philadelphia Press, 2015), pp. 5-6
- ^{ix} W.D. Darby, *Story of the Chain Store* (New York, 1928), 129.
- ^x Charlton papers, John D. Nichols, "Milestones of Woolworth" typescript, 1948, Part 1, 3-7.
- ^{xi} Woolworths Archive, Business Box 8, F.W. Woolworth, memorandum to officers, office managers, buyers, inspectors & store managers of F.W. Woolworth Co. on history of 5 and 10c stores, 27 Feb. 1912, 4-5.
- ^{xii} Woolworths Archive, Business Box 8, F.W. Woolworth, memorandum to officers, office managers, buyers, inspectors & store managers of F.W. Woolworth Co. on history of 5 and 10c stores, 27 Feb. 1912, 5.
- ^{xiii} Mark G. Dixon, "Stephenson, William Laurence (1880-1963), Chain Store Chairman," in David Jeremy (ed), *Dictionary of Business Biography*, Volume 5 (London, 1986), 303-8, p. 303.
- ^{xiv} Charles F. Phillips, "A History of the F.W. Woolworth Company," *Harvard Business Review*, 13 (1935), 225-36, p. 235.
- ^{xv} S. F. Teele, "Expenses and Profits of Limited Price Variety Chains in 1937," *Harvard Bureau of Business Research Bulletin*, 107 (1938), 9.
- ^{xvi} Raucher, "Dime Store Chains," 136-7.
- ^{xvii} Stanley S. Kresge and Steve Spilos, *The S.S. Kresge Story* (Racine, Wisconsin, 1979), 52-3.
- ^{xviii} Kresge Archive, roll 1, 101-4, "Kresge's Golden Anniversary Year 1899-1949," privately published booklet, 1939; "Kresge Achievement 1899-1949," *Chain Store Age* (June 1949), 5-19, pp. 7-8; Kresge and Spilos, *The S.S. Kresge Story*, 3-5.
- ^{xix} F.W. Woolworth, quoted in John K. Winkler, *Five and Ten. The Fabulous Life of F.W. Woolworth* (New York, 1940), 109-10.
- ^{xx} Winkler, *Five and Ten*, 124.
- ^{xxi} Charlton papers, MC31/1/14-24, John D. Nichols, "Milestones of Woolworth," typescript, 1948, Part 15, 2-4.
- ^{xxii} Alan R. Raucher, "Dime Store Chains: the Making or Organization Men, 1880-1940," *Business History Review*, 65 (1991), 130-063, p. 140.
- ^{xxiii} Charlton papers, MC31/1/14-24, John D. Nichols, "Milestones of Woolworth" typescript, 1948, Part 3, 23.
- ^{xxiv} Winkler, *Five and Ten*, 213.
- ^{xxv} Raucher, "Dime Store Chains," 131.
- ^{xxvi} Alan R. Raucher, "Dime store chains: the making of organisation men, 1880-1940," *Business History Review*, 65 (1991), 130-163, pp. 139-144.
- ^{xxvii} University of Massachusetts Dartmouth Library Archives (hereafter UMass), Earle P. Charlton family papers, MC31/1/14-24, John D. Nichols, "Milestones of Woolworth" typescript, 1948, Part 15, pp. 1-2.
- ^{xxviii} Alan R. Raucher, "Dime store chains: the making or organization men, 1880-1940," *Business History Review*, 65 (1991), 130-063, p. 139.
- ^{xxix} Alan R. Raucher, "Dime store chains: the making of organisation men, 1880-1940," *Business History Review*, 65 (1991), 130-163, p. 144.
- ^{xxx} For a discussion of these costs, see Richard S. Tedlow, *New and Improved. The Story of Mass Marketing in America* (Oxford: Heinemann, 1990), pp. 209-213.
- ^{xxxi} S.F. Teele, "Expenses and profits of limited price variety chains in 1935," *Harvard Bureau of Business Research Bulletin No.103* (1936), p. 6.
- ^{xxxii} Charles F. Phillips, "A History of the F.W. Woolworth Company," *Harvard Business Review*, 13 (1935), 225-236, p. 235.

- ^{xxxiii} Raucher, "Dime store chains" 133-4; Kresge Archives, Roll 1, 110-133, "Record of the 5 and 10 Stores' growth," unsigned statistical sheets, January 1949.
- ^{xxxiv} Alan R. Raucher, "Dime store chains: the making of organisation men, 1880-1940," *Business History Review*, 65 (1991), 130-163, p. 134; Harvard Bureau of Business Research, Arch E75.A15, Case 2, variety chain study, 1934 file, un-dated worksheet; Thomas, *America's 5 & 10 Cent Stores*, 5.
- ^{xxxv} University of Massachusetts Dartmouth Library Archives, Earle P. Charlton family papers, [hereafter Charlton Papers], MC31/1/14-24, John D. Nichols, 'Milestones of Woolworth' typescript, 1948, Part 2, 36; National Building Museum, Washington, Woolworths Archive, [hereafter Woolworth Archive], Business Box 8, F.W. Woolworth, memorandum to officers, office managers, buyers, inspectors & store managers of F.W. Woolworth Co. on history of 5 and 10c stores, 27 Feb. 1912, 2.
- ^{xxxvi} Charles F. Phillips, 'A history of the F.W. Woolworth company,' *Harvard Business Review*, 13 (1935), 225-236, p. 233.
- ^{xxxvii} Charles F. Phillips, 'A history of the F.W. Woolworth company,' *Harvard Business Review*, 13 (1935), 225-236, p. 233-4.
- ^{xxxviii} Mary Elizabeth Pigeon, "Women in 5- and 10-cent Stores and Limited-price Chain Department Stores," *Bulletin of the Women's Bureau*, 76 (1930), 2.
- ^{xxxix} W.S. Hayward and P. White, *Chain Stores: Their Management and Operation*, 3rd edn. (New York, 1928), 530.
- ^{xl} Kresge archives, Roll 2, 22, copy of .S. Kresge, "What Kept our Business Growing Through 1921," *System*, XLI, 4 (1922), 55; Anderson, Morrell Associates, "The Variety Chains Store Group," industry review and forecast, 12 May 1937.
- ^{xli} Vicki Howard, *From Main Street to Mall. The Rise and Fall of the American Department Store* (Philadelphia Penn.: University of Pennsylvania Press, 2015), pp. 73-77.
- ^{xlii} Ronald Savitt, "Innovation in American Retailing, 1919-39: improving inventory management," *International Review of Retail, Distribution, and Consumer Research*, 9 (1999), 307-320; Vicki Howard, *From Main Street to Mall. The Rise and Fall of the American Department Store* (Philadelphia Penn.: University of Pennsylvania Press, 2015), p. 94.
- ^{xliii} Charlton papers, MC31/1/14-24, John D. Nichols, "Milestones of Woolworth" typescript, 1948, Part 2, 33-4.
- ^{xliv} B. L. Thomas, *America's 5 & 10 Cent Stores. The Kress Legacy* (New York, 1997), 4-5.
- ^{xlv} Thomas, *America's 5 & 10 Cent Stores*, 7.
- ^{xlvi} Charlton papers, MC31/1/14-24, John D. Nichols, "Milestones of Woolworth" typescript, 1948, Part 11, 1.
- ^{xlvii} A.M. Michener, "The chain store enters the grocery field", *Commerce Monthly*, 10 (Dec. 1928), cited in Richard S. Tedlow, *New and Improved. The Story of Mass Marketing in America* (Oxford: Heinemann, 1990), p. 236.
- ^{xlviii} Charles F. Phillips, "A History of the F.W. Woolworth Company," *Harvard Business Review*, 13 (1935), 225-236, p. 232.
- ^{xlix} Phillips, "History of the F.W. Woolworth Company," 225; Robert C. Kirkwood, *The Woolworth Story at Home and Abroad* (New York NY: Newcomen Society of North America, 1960), p. 10.
- ^l E. A. Burnham, "Expenses and Profits of Limited Price Variety Chains in 1939," *Harvard Bureau of Business Research Bulletin*, 112 (June 1940), 6.
- ^{li} M.P. McNair, "Expenses and Profits of Variety Chains in 1932," *Harvard Bureau of Business Research Bulletin*, 93 (1934), 14-18.
- ^{lii} See Mary Elizabeth Curry, *Creating an American Institution. The Merchandising Genius of J.C. Penney* (New York: Garland 1993).
- ^{liii} Raucher, "Dime Store Chains," 147.
- ^{liv} Kresge Archive, roll 6, 1935 letters, 122, "Non-prospects", letter to all stores by R. G. Forshee, 22nd October 1935.
- ^{lv} Alan R. Raucher, "Dime Store Chains: The Making of Organisation Men, 1880-1940," *Business History Review*, 65 (1991), 130-163, p. 131.
- ^{lvi} Alan R. Raucher, "Dime Store Chains: The Making of Organisation Men, 1880-1940," *Business History Review*, 65 (1991), 130-163, p. 161; John Perkins and Craig Freedman, "Organisational Form and Retailing Development: The Department and the Chain Store, 1860-1940," *Service Industries Journal*, 19 (1999), 123-46, p. 135.
- ^{lvii} Woolworths UK, Executive Committee minutes, 1926-1939 (held by Shop Direct at the time of this research).
- ^{lviii} Richard A. Hawkins, "The Influence of American Retailing Innovation in Britain: a case study of F.W. Woolworth & Co., 1909-82," *CHARM* (2009), 138-134, p. 124; Jean Maddern Pitrone, *F.W. Woolworth and the American Five and Dime. A Social History* (Jefferson N.C., McFarland, 2003), p. 93.

- lix S. F. Teele, "Expenses and Profits of Limited Price Variety Chains in 1938," *Harvard Bureau of Business Research Bulletin*, 110 (1939), 5 & 8; Burnham, "Expenses and Profits of Limited Price Variety Chains in 1942," 32-33. Net operating profit is calculated before income from real estate operations, interest on net worth, and other non-trading revenue.
- lx Raucher, "Dime Store Chains," p.148.
- lxi Raucher, "Dime Store Chains," p. 147; Merrill Lynch & Co., *Chain Store Statistics* (June 1939), 17-18.
- lxii Malcolm P. McNair, "Expenses and Profits of Limited Price Variety Chains in 1936," *Harvard Bureau of Business Research Bulletin*, 105 (1937), 24.
- lxiii Gillian Wolf, "Kmart Corporation," 110-12 in Adele Hast et. al. *International Directory of Company Histories* (Detroit: St. James Press, 1992), Vol. 5, 110.
- lxiv Kresge Archives, Roll 2, p. 55, Anderson Morrell Associates, "The Variety Chains Store Group," industry review and forecast, 12 May 1937.
- lxv Togyer, *For the Love of Murphy's*, 29-33.
- lxvi Wolf, "Kmart Corporation," 110.
- lxvii Kresge Archive, roll 1, 101-4, "Kresge's Golden Anniversary Year 1899-1949", privately published booklet, 1939; "Kresge Achievement 1899-1949", *Chain Store Age* (June 1949), 5-19, pp. 9-10.
- lxviii Kresge Archive, roll 6, 77, H. I. Burch, "Salesmanship. Needed to Sell Higher Priced Merchandise," note to 25c to \$.1.00 stores (29 Feb. 1932), (emphasis in original).
- lix Ibid.
- lxx Darby, *Story of the Chain Store*, 23-4; McNair and May, "American Department Store," 8.
- lxxi Peter Scott and James Walker, "Sales and Advertising Expenditure for Interwar American Department Stores," *Journal of Economic History*, 71 (2011), 40-69, pp. 50-51; idem, "The British 'failure' that never was? The Anglo-American 'productivity gap' in large scale interwar retailing – evidence from the department store sector," *Economic History Review*, 65 (2012), 277-303, p. 294.
- lxxii McNair, "Expenses and Profits of Variety Chains in 1932," 1-7.
- lxxiii Ronald Savitt, "Innovation in American Retailing, 1919-39: Improving Inventory Management," *International Review of Retail, Distribution, and Consumer Research*, 9 (1999), 307-320, p. 311.
- lxxiv Teele, "Expenses and Profits of Limited Price Variety Chains in 1937," 9-10.
- lxxv John Guernsey, *Retailing Tomorrow* (New York, 1929), 56.
- lxxvi For department stores' use of personal selling see S.P. Benson, *Counter Cultures. Saleswomen, managers, and customers in American department stores, 1890-1940* (Urbana, Ill., 1988), 286-7; Sarah Elvins, *Sales and Celebrations. Retailing and Regional Identity in western New York State, 1920-1940* (Athens, O., 2004), 25-6.
- lxxvii Kresge Archive, roll 6, 239, report of superintendents' convention, Chicago District Office, 28-29 1932, by C. E. Holzworth.
- lxxviii Kresge Archive, roll 6, 106, "Increases by Suggestive Selling," note to managers by R. G. Forshee, 12 Sept. 1935.
- lxxix Kresge Archive, roll 6, 1936 letters, 63, "Knowing the Fashions," letter by R.G. Forshee to all ten cent stores, 4 June 1936.
- lxxx Kresge Archive, roll 6, 112, 'Increase Sales by Suggestion', note to all stores by W.F. Johnson, n.d., c. Sept. 1935.
- lxxxi G.C. Murphy Co., *Suggestive Selling*, booklet, 1929, cited in Togyer, *For the Love of Murphy's*, 68; Togyer, *For the Love of Murphy's*, 54-5.
- lxxxii W.T. Grant Co., *Manual For Saleswomen* (W.T. Grant, privately published, 1934), 11.
- lxxxiii Kresge Archive, roll 6, 1936 letters, 154, "Whispering Campaign", general letter to all stores by C.E. Holzworth, 20 October 1936.
- lxxxiv Kresge Archive, Roll 6, 49-50, 'Sales Resistance', general letter to all 5-10-25 cent stores by J.L. Pickering, 21 May 1935.
- lxxxv Alan R. Raucher, "Dime store chains: the making of organisation men, 1880-1940," *Business History Review*, 65 (1991), 130-163, p. 150.
- lxxxvi McNair, "Expenses and Profits of Limited Price Variety Chains in 1936," 5.
- lxxxvii Ibid., 5.
- lxxxviii Winkler, *Five and Ten*, 240.
- lxxxix See Steven Klepper, "Entry, Exit, Growth, and Innovation Over the Product life Cycle," *American Economic Review* 86(3), (1996), 562-583.
- xc See Table 4.
- xci Moshe Farjoun, "Beyond Dualism: Stability and Change as a Duality," *Academy of Management Review*, 35 (2010), 202-22; Patricia Klarner and Sebastian Raisch, "Move to the Beat - Rhythms of Change and Firm Performance," *Academy of Management Journal*, 56, (2013), 160-184.

- ^{xcii} Ingemar Dierickx and Karel Cool, "Asset Stock Accumulation and Sustainability of Competitive Advantage," *Management Science*, 35 (1989) 1504–1511; Edith T. Penrose, *The Theory of the Growth of the Firm* (New York, 1959).
- ^{xciii} Dorothy Leonard-Barton, "Core Capabilities and Core Rigidities: a Paradox in Managing New Product Development," *Strategic Management Journal*, 13 (1992), 111–125; David J. Teece, Gary Pisano, and Amy Shuen, "Dynamic Capabilities and Strategic Management". *Strategic Management Journal*, 18 (1997), 509-533.
- ^{xciv} Michael E. Porter, *The Competitive Advantage of Nations* (New York, 1985).
- ^{xcv} Niron Hashai, "Within-industry Diversification and Firm Performance-An S-shaped Hypothesis," *Strategic Management Journal*, forthcoming; Evan Rawley, "Diversification, Coordination Costs and Organizational Rigidity: Evidence from Microdata," *Strategic Management Journal*, 31 (2010), 873–891; Tom Cottrell and Barry R. Nault, "Product Variety and Firm Survival in the Microcomputer Software Industry," *Strategic Management Journal*, 25 (2004), 1005-1025; Olav Sorenson, "Letting the Market Work for You: An Evolutionary Perspective on Product Strategy," *Strategic Management Journal*, 21 (2000), 577-592; Yue M. Zhou, "Synergy, Coordination Costs and Diversification Choices." *Strategic Management Journal*, 32 (2011), 624–639; J.P. Eggers, "All Experience is not Created Equal: Learning, Adapting, and Focusing in Product Portfolio Management," *Strategic Management Journal*, 33, (2012), 315–335.
- ^{xcvi} M.P. McNair, "Expenses and Profits of Variety Chains in 1932," 2-6; Burnham, "Expenses and Profits of Limited Price Variety Chains in 1939," 13; McNair, "Expenses and Profits of Limited Price Variety Chains in 1936," 1.
- ^{xcvii} McNair, "Expenses and Profits of Limited Price Variety Chains in 1936," 6.
- ^{xcviii} S.F. Teele, "Expenses and Profits of Limited Price Variety Chains in 1935," *Harvard Bureau of Business Research Bulletin* 103 (1936), 5.
- ^{xcix} Teele, "Expenses and Profits of Limited Price Variety Chains in 1934," 7.
- ^c Teele, "Expenses and Profits of Limited Price Variety Chains in 1934," 28.
- ^{ci} This was partly offset by lower tenancy costs, reflecting the limited purchasing power of small communities. E. A. Burnham, "Expenses and Profits of Limited Price Variety Chains in 1940," *Harvard Bureau of Business Research Bulletin*, 114 (June 1941), 10; Teele, "Expenses and Profits of Limited Price Variety Chains in 1938," 15-16 & 25. Where properties were owned by the chain, the rental element of tenancy costs was based on an estimated market rental.
- ^{cii} Teele, "Expenses and Profits of Limited Price Variety Chains in 1935," 15. The surveys' definition of gross margin involved subtracting cash and other discounts from merchandise costs – thus increasing the gross margin by the amount of the discounts. Meanwhile inward transportation costs were added to the net cost of merchandise sold (thus reducing gross margins by at least 2.5 percentage points). This procedure ensured comparability with the HBBR surveys for other types of retailer. S.F. Teele, "Expenses and Profits of Limited price Variety Chains in 1934," *Harvard Bureau of Business Research Bulletin No.98* (1935), 9.
- ^{ciii} M.P. McNair, "Expenses and Profits of Variety Chains in 1933," *Harvard Bureau of Business Research Bulletin No.95* (1934), 7.
- ^{civ} Teele, "Expenses and Profits of Limited Price Variety Chains in 1938," 16; E. A. Burnham, "Expenses and Profits of Limited Price Variety Chains in 1940," *Harvard Bureau of Business Research Bulletin No. 114* (June 1941), 19.
- ^{cv} Dollar stores' performance was much better when measured using net gain as a proportion of net worth (invested capital). However this was noted to be a problematic indicator, substantially influenced by the proportion of stores the firm owned, rather than rented - Burnham, "Expenses and Profits of Limited Price Variety Chains in 1940," 33-4. Meanwhile net gain/sales ratios corroborated the findings for net margins, that low price ceilings produced higher profit rates.
- ^{cvi} Net incomes to sales ratios over 1929-38 averaged 3.76 per cent for Grant, 3.89 percent for McLellan (available only for 1919-31 and 1935-38, owing to receivership); 5.84 per cent for Murphy, 6.92 per cent for Kresge, and 6.99 per cent for Kress. Meryll Lynch & Co. Inc., *Chain Store Statistics* (June 1939), pp. 9; 11; 13-14; 17-18; 21; 23-5. Data for Woolworths are more problematic, owing to the presence of foreign subsidiaries, though an estimate for 1932-36, gives an average of ratio of 10.52 per cent: Source: Kresge archives, Roll 2, pp. 68-70, Anderson Morrell Associates, "The Variety Chain Store Group," industry review and forecast, 12 May 1937.
- ^{cvi} These include a full set of fixed effects, which may also indirectly capture firm and store level factors and other unobservable elements. We also include year effects to capture economy-wide exogenous impacts specific to any given year.

^{cviii} Based on annual report data on sales from 1908 (or the earliest available year thereafter) to 1940. Source: Kresge Archives, Roll 1, pp. 110-133, 'record of the 5 and 10 stores' growth, unsigned statistical sheets, January 1949.

^{cix} M.P. McNair, "Trends in Large-scale Retailing," *Harvard Business Review*, 10 (1931), 30-39; M.P. McNair, "Significant Trends and Developments in the Postwar Period," 1-25 in A.B. Smith (ed.), *Competitive Distribution in a Free, High-level Economy and its Implications for the University* (Pittsburgh, 1958), 17-18.

^{cx} Tedlow, *New and Improved*, 236-246.

^{cxii} For discussions of the importance of aggregate sales growth as a key goal for chain stores, see Darby, *Story of the Chain Store*, 125; G.C. Murphy Co., *Merchandising. The G.C. Murphy Company's Policies and Practices* (privately published, 1929), 47.