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SHIFT-SHARE ANALYSIS OF RURAL RETAIL TRADE PATTERNS

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Introduction

Economic growth in rural areas of Minnesota, as in many rural areas of the nation, has stagnated during the 1980s, reversing gains of the 1970s. Recession-like conditions in many rural areas of the state can be traced to several underlying causes: financial stress in the farm sector, reduced mining employment related to the restructuring of the U.S. steel industry, and slow recovery of rural manufacturing employment from the recession-induced decline between 1980-1982. Employment and income consequences of these developments have been summarized in detail by other analysts of Minnesota's economy , such as Maki [8]

In this paper, retail trade shifts during the 1980s related to stagnant income and employment growth in rural Minnesota are assessed. Retail trade shifts are traced through a reformulated shift-share framework. Instead of dividing greater Minnesota, defined as nonmetropolitan Minnesota, into subregions and carrying out a typical shift-share analysis, greater Minnesota is treated as one complete retail market with retail sales arranged into six hierarchies corresponding with central place theory.

The main interest here is to measure the extent and direction of retail trade shifts by type of retailing among communities of different size. Past research on rural retail trade patterns has shown a long-term trend of gradually declining retail activity in smaller communities. Population loss, development of regional shopping malls, improved highway travel, increased work-related commuting and declining purchasing power in rural areas have all been suggested as factors in the trend toward increasing concentration of retail trade in larger trade centers by Gustafson [6] and Walzer and Schmidt [10]. Results obtained here show a significant acceleration of the concentration trend.

Those interested in rural revitalization should find the results helpful in identifying the size of communities losing retail trade and the type of trade being lost.

Reformulated Shift-Share Approach

Shift-share analysis has been used frequently to investigate the relationship between regional growth, national growth, and industrial structure. Despite its wide use, the technique has been consistently criticized as being devoid of theoretical considerations and,

consequently, of limited use in explaining or predicting regional growth, as in Houston [7] and Ashby [1]. The theoretical validity argument is ignored here as the technique is used in this paper simply as a descriptive device to disaggregate retail trade shifts into broadly defined components of growth. The implicit assumptions underlying reformulation will be discussed to facilitate understanding of the findings.

Traditional shift-share analysis strives to divide regional growth, typically measured in employment growth, into three components or shares: national growth, industry mix and competitive effect. The national growth share is the expected regional growth given average national growth. The industry mix share measures regional growth due to differences in regional and national industrial structure. This component is usually considered to be influenced by regional forces. The residual growth, unaccounted for by either national or industry mix components is assigned to the competitive effect component. This component measures differences between regional and national rates of growth in individual sectors and is also considered to reflect regional forces at work.

A fundamental assumption of the typical shift-share analysis, one that is implicitly assumed usually without any discussion of the implications, is the national market orientation. Regional firms are assumed to be competing nationally. Thus, a positive competitive effect implies that regional firms have increased their national market shares at the expense of competing firms in other regions. The market assumed for this analysis is all retail trade activity in the state exclusive of the Minneapolis/St. Paul standard metropolitan area.[1] Residents and businesses outside of the metro area are assumed to purchase the majority of their retail goods in surrounding communities or nearby trade centers. An additional assumption is minimal retail sales leakage into or out of the state. Because we are interested in trade shifts across community size, retail sales are aggregated by hierarchy as opposed to regionally. By formulating the analysis in this manner, competition between retailers in different size or order communities is analyzed as opposed to competition between communities of the same size or order.

The rationale behind the market area delineation and hierarchical aggregation is rooted in central place theory, as in Chalmers [3]. Central place theory postulates the existence of an ordering or hierarchy of trade and service centers in which the level of functional complexity and market area increases as hierarchical rank increases. In this study the lowest order trade center is a hamlet characterized as a town or village with less than twenty retail stores generating $3 million or less in annual retail sales. The highest order trade center, regional trade centers, have over 200 retail establishments with total annual retail sales of over $70 million. Successive hierarchies consist of communities distinguished by

increasing sales volume, range of available retail goods, number of retail establishments, and size of market area served.

Each trade center serves one or more overlapping trade areas. Retail establishments in hamlets serve only residents of the immediate area, whereas minimum convenience centers, communities in the second hierarchy, serve local residents plus residents of surrounding hamlets and their rural trade areas. The nesting of hierarchical trade areas, which varies in configuration depending on the type of retail good, continues to regional centers. Thus retail establishments in lower hierarchies compete with retail establishments in higher hierarchies for retail spending of residents in lower hierarchical communities. Although residents of larger trade centers may occasionally shop in smaller communities, the direction of retail spending is overwhelmingly from lower to higher trade centers.

Because competition for retail trade occurs across hierarchies not between regions, quantification of trade shifts between different size communities can be achieved by assigning communities to hierarchies, aggregating retail sales by trade sector within hierarchies, and comparing trade sector growth across hierarchies. The reformulated shift-share equation is,

$$\Delta S_{ij} + S_{ij} \times R_{oo} + S_{ij} \times (R_{io}-R_{oo}) + S'_{ij} \times (R_{ij}-R_{io}) + (S_{ij}-S'_{ij}) \times (R_{ij}-R_{io})$$

where:

ΔS_{ij} = Change in sales of retail trade sector i in hierarchy j.
S_{ij} = Retail sales of trade sector i in hierarchy j for the initial year.
R_{oo} = Growth rate of total retail sales in greater Minnesota.
R_{io} = Growth rate of sales in retail trade sector i in greater Minnesota.
R_{ij} = Growth rate of retail sales in trade sector i in hierarchy j.
S'_{ij} = Homothetic sales of retail trade sector i in hierarchy j.

Interpretation of the components of the reformulated shift-share equation is similar to standard interpretation, but instead of comparing regional and national growth, hierarchical retail sales growth is compared to regional retail sales growth. The regional share component, $S_{ij} \times R_{oo}$, is analogous to the normal national share component. It is the expected sales growth in retail trade sector i in hierarchy j given overall regional retail sales growth. The component corresponding to the standard industry mix component is $S_{ij} \times (R_{ij}-R_{oo})$ and will be termed the retail mix component here. Differential rates of hierarchical sales growth caused by variation in type of retail goods available among hierarchies will be identified by the retail mix component. The traditional competitive effect

is separated into the hierarchy effect, $S'_{ij} - (R_{ij} - R_{io})$, and the allocative effect $(S_{ij} - S'_{ij}) - (R_{ij} - R_{io})$. Together these two components account for sales growth generated by competitive advantages in retail sector i in hierarchy j. Homothetic retail sales, S'_{ij}, is included in the reformulated shift-share equation for two purposes. First, it eliminates all influence of retail mix on the competitive, or in this case hierarchy, effect as traditionally defined by Esteban-Marquillas [5]. Second, it arranges retail sales into a format that reveals which size communities have excess sales across retail trade sectors when compared to regional sales patterns.

The homothetic sales element provides an opportunity to compare actual trade flows to trade flows suggested by central place theory. Homothetic retail sales equal,

$$S'_{ij} = S_{oj} \times \frac{S_{io}}{S_{oo}} = S_{io} \times \frac{S_{oj}}{S_{oo}}$$

where

S_{oj} = total retail sales of hierarchy j;
S_{io} = total greater Minnesota retail sales of trade sector i; and
S_{oo} = total retail sales in greater Minnesota.

If the central place concept has merit, then actual sales minus homothetic sales, which is denoted by

$$(S_{ij} - S'_{ij}) = \left[\frac{S_{ij}}{S_{oj}} - \frac{S_{io}}{S_{oo}}\right] * S_{oj}$$

will measure excess sales of trade sector i goods in communities forming hierarchy j. The excess sales measure is a variation of the familiar location quotient. Excess sales should be positive for consumer goods such as furniture and apparel in higher hierarchies and negative in lower hierarchies. For frequently purchased retail goods such as gas or groceries, excess sales should be positive in lower hierarchies and negative in higher hierarchies.

Application

Table 1 summarizes the hierarchical delineation, showing sales volume and number of retail establishments ranges used in assigning communities. Both criteria had to be met for a community to be assigned to a hierarchy. The last column lists the number of communities allocated

to each hierarchy. Sales volume and number of establishments criteria are based on a past study of Minnesota trade hierarchy pattern, one by Borchert and Adams [2]. Three time periods were analyzed: 1979-1982, 1983-1986, and 1979-1986.[2] The two shorter time periods were chosen to correspond with the onset of noticeable farm financial problems in 1982.

Over the seven year period, retail sales in greater Minnesota increased in nominal terms by $2.4 billion, a gain of slightly over 30 percent. Sales grew $852 million between 1979-1982, at an annual rate of 3.6 percent and by $1,548 million between 1982-1986, and at annual rate of 4.3 percent. Sales increased in all retail sectors except lumber/hardware between 1979 and 1986. Lumber/hardware sales declined 14 percent, reflecting the dependency of this sector on construction and farm-related purchases.

In Table 2 excess sales values for each hierarchy are displayed by trade sector. A positive (negative) excess sales value indicates that communities of a hierarchy are capturing a larger (lower) share of a particular retail sector than total hierarchical sales would suggest. For example, lumber/hardware sales accounted for 13.6 percent of total greater Minnesota retail sales in 1979, compared to only 9.8 percent of retail sales in regional center size communities. This implies that regional center size communities are less dependent on lumber/hardware sales than smaller size communities. Spatial patterns of retail sales in greater Minnesota compared to patterns predicted by central place theory show mixed results. Excess sales generally increase as community size increases in apparel and furniture trade sectors as suggested by the theory. In lumber/hardware and auto (including service station sales) trade sectors, the reverse occurs; excess sales decrease as community size increases. The other sectors show trade patterns which partially correspond to those suggested by central place theory. The mixed results may be due to the method used to assign communities to hierarchies or due to the trade sector delineation being too aggregated. Excess sales in general merchandise and eating and drinking sectors in hamlets probably reflect tourist trade in Minnesota's tourist regions.

Results of the shift-share analysis are shown in Table 3. If retail trade patterns had remained spatially constant between 1979-1986, increased retail sales in each hierarchy would have corresponded to those predicted by the regional effect. Trade in each hierarchy would have increased by 32 percent between 1979-1986. Instead, the analysis shows substantial shifts in retail sales from lower to higher hierarchical communities, especially since 1983. Aggregated retail sales for regional center and complete shopping size communities have increased by 47 and 37 percent respectively between 1979-1986.[3] Over the same time,

aggregated retail sales in lower ordered communities have increased by 15 percent or less. The disparity in sales growth widens considerably after 1983. Sales in regional centers increased by 24 percent and by 15 percent in complete shipping communities between 1983-1986, while sales decreased slightly in full and minimum convenience communities, increased slightly in hamlets and by 7 percent in partial shopping communities.

Examination of Table 3 shows hierarchical retail sales growth disparities were generated primarily from hierarchy effects as opposed to retail mix or allocative effects. The low magnitude of allocative effects implies that, on average, none of the communities forming the hierarchies enjoy a mix of retailing that is overwhelmingly skewed toward rapidly growing or declining types of retailing.

The total retail mix component is negative for partial shopping, minimum convenience, and hamlet hierarchies over each time period due to the above average concentration of lumber and hardware sales in smaller communities and a drop in lumber and hardware sales. Lumber and hardware sales have fallen in all hierarchies, but have negatively impacted retail trade activity more in smaller communities because of the concentration. The above average dependency of smaller communities' retail trade sector on lumber and hardware business, however, accounts for only 10 percent to 20 percent of slow retail trade growth. This is indicated by comparing the retail mix and hierarchy effect components for lower hierarchies. Hierarchy effects in smaller communities are seven to ten times larger than retail mix effects.

Regional center and complete shopping communities, conversely, have experienced higher rates of retail sales growth primarily by increasing their market shares of greater Minnesota retail trade by out-competing smaller trade centers and not as a result of having more favorable mix of retail establishments. This is revealed by the $473 million hierarchy effect component for regional center communities and the $75 million hierarchy effect component for complete shopping communities between 1979-1986.

Above average food, general merchandise, and auto sales growth has accounted for most of the large hierarchy effect in regional center communities. In complete shopping communities, gains in total retail sales have resulted from above average sales growth in the general merchandise and auto sectors. A strict shift-share interpretation of the large hierarchy effect components for larger trade centers indicates increasing market shares of retailing volume in greater Minnesota for these communities. Regional center communities, by capturing $473 million of sales from smaller trade centers, expanded their total market share by 9 percent between 1979-1986.[4] Complete shopping

communities expanded their market share by 4 percent while smaller ordered communities, as a group, lost market share.

Based on the 1979-1986 hierarchy effect component, communities of partial shopping, full convenience, minimum convenience, and hamlet size lost 11 percent, 12 percent, 17 percent, and 15 percent of their total retail market shares, respectively, to larger communities over the seven year period. By comparing hierarchy effects for 1979-1982 and 1983-1986 it is apparent that most of the spatial sales shift has occurred since 1982. Hamlet size communities lost 6 percent of their market shares between 1979-1982 versus 11 percent between 1983-1986. For minimum convenience size communities, market share loss increased from 3 percent during the earlier time period to 15 percent over 1983-1986.

Conclusions

The above findings show a substantial shift in retail spending from smaller to larger size communities in Minnesota during the 1980s. How much of the shift is cyclical, related to income decline, or structural, related to changing spatial patterns of spending, is open to debate. Because the shift-share framework utilized here aggregates by community size and not regionally, differences in income growth among multi-county regions of greater Minnesota will be spread over hierarchies. Although retail sales decline has been more severe in lower ordered farm communities than nonfarm communities, the disparity in sales growth between high and low ordered communities has occurred across the state in nonfarm as well as farm regions. Recent population and income figures from the U.S. Census Bureau support the view of a major structural shift; neither population or income by place of residence has increased in concentration enough to explain the increased concentration of retail sales.

Two other developments may help explain shifting retail sales. Rural income, while not declining enough to explain significant rural retail sales decline, may have altered rural spending in terms of consumption bundle. Increased uncertainty about future income as opposed to actual income loss may have caused rural residents to significantly curtail their retail spending. Just as plausible, though, is the argument of increased work-related commuting to larger communities by rural residents accompanied by increased retail spending in the community of employments at the expense of rural retailers. Implications for future retail trade activity in smaller communities differ under these two explanations. Rural retail trade will rebound as income conditions improve under the income-induced retail trade decline explanation, but

will continue to fall as employment concentrates in large trade centers under the other explanation.

Additional research is needed to clearly identify the underlying causes of falling rural retail trade in Minnesota. Different revitalization efforts are called for if the decline in small town retail trade is more cyclical than structural. Few, if any, direct retail marketing strategies seem appropriate if the decline has been caused primarily by falling income. Broader economic development efforts aimed at expanding basic employment and income are likely to be more successful in the long run at improving rural retail sales than programs or campaigns designed specifically to promote rural retail trade, if the decline is cyclical.

If the decline is more structural than cyclical, several types of direct retail promotion efforts may prove successful. Such efforts should be aimed at improving the competitiveness of small town retailers relative to retailers in larger trade centers. Improving the management skills of small town retailers is one option. Development of retail marketing plans for small town retail districts, which educate and organize retailers as well as local government officials and have proven successful in a number of small towns, is another option in attempting to reverse structural retail sales trends.

Endnotes

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1. Sales data were obtained from a special computer run of sales and tax data tapes compiled by the Minnesota Department of Revenue. The special run disaggregated retail sales in smaller communities into two digit retail sectors that were previously unavailable because of confidentiality rules. The summation of sales across hierarchies equals retail sales in nonmetropolitan or greater Minnesota.

2. In order to make the two shorter periods comparable, 1982 and 1983 sales were averaged and used as the terminal year for 1979-1982 and the initial year for 1983-1986.

3. Percentages calculated from the first three columns in Table 3.

4. Market share increase calculated as hierarchy effect divided by total retail sales.

References

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Table 1
Greater Minnesota Hierarchies

Hierarchy	Sales Volume* (in millions)	Number of Retail Establishments	Number of Communities
Regional center	Above $70	Above 200	23
Complete shopping	$25-70	80-200	31
Partial shopping	$15-25	60-80	40
Full convenience	$9-15	40-60	66
Minimum convenience	$3-9	20-40	128
Hamlets	Below $3	Below 20	516

*Sales volume in 1986 dollars

Source: Retail sales data supplied by Minnesota Department of Revenue, Tax Research Division.

Table 2
Excess Sales
(in millions of 1979 dollars)

	Regional Centers	Complete Shopping	Partial Shopping	Full Convenience	Minimum Convenience	Hamlets
Lumber/Hardware	-128	-6	82	-1	28	25
General Merchandise	118	-41	-46	-30	-7	7
Food Stores	-43	18	-8	17	16	0
Auto/gas stations	-88	40	23	34	6	-16
Apparel stores	34	8	-11	-10	-11	-11
Furniture stores	23	0	-9	-3	-8	-3
Eating and drinking	48	-20	-15	-4	-19	10
Miscellaneous retail	36	0	-17	-1	-5	-12

*Based on 1979 sales data.

Table 3
Shift-Share Analysis of Greater Minnesota Retail Sales
1979-1982, 1983-1986, 1979-1986
(millions of current dollars)

	Retail Sales			Regional Effect			Retail Mix Effect			Hierarchy Effect			Allocative Effect			Change		
	1979	Avg. 82-83	1986	1979 1982	1983 1986	1979 1986	1979 1982	1983 1986	1979 1986	1979 1982	1983 1986	1979 1986	1979 1982	1983 1986	1979 1986	1979 1982	1983 1986	1979 1986
Regional Center																		
Lumber/Hard.	334	289	325	52	41	106	-109	-32	-155	17	37	56	-5	-10	-16	-45	36	-9
Gen. Merch.	462	502	690	72	71	147	-47	12	-42	11	78	91	4	27	31	40	168	228
Food Stores	530	720	918	82	102	169	85	14	111	25	88	117	-2	-6	-9	190	198	388
Auto/Gas	912	1067	1336	141	151	291	-8	4	-6	24	126	152	-2	-12	-13	155	269	424
Apparel Stores	128	156	195	20	22	41	0	8	7	6	7	14	2	3	5	28	39	67
Furniture Str.	151	172	198	23	24	48	-17	-4	-23	12	4	18	2	1	3	21	26	47
Eat & Drink Pl.	325	413	482	50	59	104	35	3	43	2	7	9	0	1	1	88	69	157
Misc. Retail	554	717	865	86	102	176	93	11	117	-15	35	16	-1	1	1	163	148	311
Total Retail	3396	4034	5008	525	572	1082	32	16	53	82	382	473	-2	5	3	638	974	1612
Complete Shopping																		
Lumber/Hard.	162	121	131	25	17	52	-53	-14	-75	-14	7	-8	0	-1	0	-41	10	-31
Gen. Merch.	85	117	129	13	17	27	-9	3	-8	41	-8	38	-13	1	-12	32	12	44
Food Stores	227	301	355	35	43	72	36	6	47	2	5	8	0	0	1	74	54	128
Auto/Gas	405	478	589	63	68	129	-4	2	-3	13	38	52	1	4	6	73	111	184
Apparel Stores	42	41	42	6	6	13	0	2	2	-6	-7	-13	-1	0	-3	-1	1	0
Furniture Str.	47	36	39	7	5	15	-5	-1	-7	-13	-2	-15	0	1	0	-11	3	-8
Eat & Drink Pl.	81	109	126	13	15	26	9	1	11	8	1	11	-2	0	-2	28	17	45
Misc. Retail	189	283	292	29	40	60	32	4	40	33	-32	2	0	-3	0	94	9	103
Total Retail	1237	1485	1702	191	211	394	6	3	8	64	2	75	-15	2	-10	248	217	465

Table 3 (continued)
Shift-Share Analysis of Greater Minnesota Retail Sales
1979-1982, 1983-1986, 1979-1986
(millions of current dollars)

	Retail Sales			Regional Effect			Retail Mix Effect			Hierarchy Effect			Allocative Effect			Change		
	1979	Avg. 82-83	1986	1979 1982	1983 1986	1979 1986	1979 1982	1983 1986	1979 1986	1979 1982	1983 1986	1979 1986	1979 1982	1983 1986	1979 1986	1979 1982	1983 1986	1979 1986
Partial Shopping																		
Lumber/Hard.	192	124	118	30	18	61	-63	-14	-89	-20	-7	-26	-15	-3	-20	068	-6	-74
Gen. Merch.	36	28	25	6	4	11	-4	1	-3	-21	-23	-43	13	15	24	-8	-3	-11
Food Stores	129	174	179	20	25	41	21	3	27	5	-22	-18	0	-1	1	45	5	50
Auto/Gas	262	300	324	41	43	84	-2	1	-2	-1	-16	-19	0	-3	-2	38	24	62
Apparel Stores	12	13	17	2	2	4	0	1	1	0	2	2	1	-1	-1	1	4	5
Furniture Str.	22	22	22	3	3	7	-2	0	-3	-2	-4	-4	0	1	1	0	0	0
Eat & Drink Pl.	51	63	76	8	9	16	6	0	7	-2	5	1	0	-1	0	12	13	25
Misc. Retail	107	127	152	17	18	34	18	2	23	-17	6	-14	2	-1	2	20	25	45
Total Retail	811	851	913	127	122	258	-26	-6	-39	-58	-59	-121	1	6	5	40	62	102
Full Convenience																		
Lumber/Hard.	98	93	92	15	13	31	-32	-10	-46	12	-3	8	0	0	0	-5	-1	-6
Gen. Merch.	44	39	34	7	6	14	-4	1	-4	-12	-23	-33	5	12	13	-5	-5	-10
Food Stores	139	191	194	22	27	44	22	4	29	7	-24	-17	1	-4	-2	52	3	55
Auto/Gas	249	279	259	39	40	79	-2	1	-2	-5	-53	-59	-1	-7	-9	30	-20	10
Apparel Stores	10	11	11	2	2	3	0	1	1	-1	-5	-5	1	2	3	1	0	1
Furniture Str.	24	26	23	4	4	8	-3	-1	-4	1	-6	-6	0	1	1	2	-3	-1
Eat & Drink Pl.	55	63	65	9	9	18	6	0	7	-7	-9	-16	1	1	1	8	2	10
Misc. Retail	110	138	157	17	20	35	19	2	23	-8	-3	-11	0	0	0	28	19	47
Total Retail	729	840	835	114	121	232	6	-2	4	-13	-126	-139	7	4	7	111	-5	106

Table 3 (continued)
Shift-Share Analysis of Greater Minnesota Retail Sales
1979-1982, 1983-1986, 1979-1986
(millions of current dollars)

	Retail Sales			Regional Effect			Retail Mix Effect			Hierarchy Effect			Allocative Effect			Change		
	1979	Avg. 82-83	1986	1979 1982	1983 1986	1979 1986	1979 1982	1983 1986	1979 1986	1979 1982	1983 1986	1979 1986	1979 1982	1983 1986	1979 1986	1979 198	1983 1986	1979 1986
Minimum Convenience																		
Lumber/Hard.	142	129	121	22	18	45	-46	-14	-66	9	-8	0	2	-3	0	-13	-8	-21
Gen. Merch.	78	80	33	12	11	25	-8	2	-7	-3	-65	-69	0	5	6	2	-47	-45
Food Stores	158	187	198	24	27	50	25	4	33	-18	-18	-38	-2	-1	-4	29	11	40
Auto/Gas	253	282	275	39	40	81	-2	1	-2	-7	-47	-56	0	-2	-1	29	-7	22
Apparel Stores	12	14	16	2	2	4	0	1	1	0	-2	-1	0	1	0	2	2	4
Furniture Stores	24	27	33	4	4	8	-3	-1	-4	2	4	6	-1	-1	-2	3	6	9
Eat & Drink Pl	50	62	70	8	9	16	5	0	7	-1	-2	-4	0	1	1	12	8	20
Misc . Retail	123	152	160	19	22	39	21	2	26	-11	-17	-29	0	1	1	29	8	37
Total Retail	839	933	907	130	133	268	-8	-5	-12	-29	-155	-191	-1	1	1	94	-26	68
Hamlets																		
Lumber/Hard.	96	92	86	15	13	31	-31	-10	-45	9	-5	4	3	-4	1	-4	-6	-10
Gen. Merch.	60	39	27	9	6	19	-6	1	-5	-21	-24	-41	-3	6	-5	-21	-12	-33
Food Stores	87	98	95	13	14	28	14	2	18	-17	-20	-39	0	2	0	11	-3	8
Auto/Gas	137	137	130	21	19	44	-1	0	-1	-23	-32	-56	2	5	6	0	-7	-7
Apparel Stores	3	3	4	0	0	1	0	0	0	-1	1	-3	2	0	3	0	1	1
Furniture Stores	17	14	17	3	2	5	-2	0	-3	-4	1	-3	1	0	0	-3	3	0
Eat & Drink Pl	52	67	74	8	10	17	6	0	7	1	-2	-2	0	-1	0	15	7	22
Misc. Retail	67	104	134	10	15	21	11	2	14	18	13	37	-3	1	-6	37	30	67
Total Retail	520	555	567	79	79	166	-9	-5	-15	-38	-68	-103	2	9	-1	35	12	47

Figures may not sum due to rounding.
Source: Retail sales data supplied by Tax Research Office, Minnesota Department of Revenue.