Walmart and the CPA Community

Steven C. Hall, Professor
University of Nebraska at Kearney

Laurie S. Swinney, Professor
University of Nebraska at Kearney

ABSTRACT

This paper examines whether Walmart's presence impacts the number of CPAs, number of CPA firms, and size of CPA firm payrolls in the county in which a Walmart store is located. Using county data from the state of Nebraska, we find a positive association between Walmart exposure and number of Certified Public Accountants (CPAs). We also find that Walmart exposure is positively related to the size of CPA firm payrolls. Our results are mixed with respect to the effect of Walmart on the number of CPA firms within the county in which the Walmart is located; significant only when considering Walmart Supercenters alone and not significant when other types of Walmart stores are included. Overall, these results suggest that Walmart presence results in CPA firms with more employees and higher payrolls.

I. INTRODUCTION

The entrance of a Walmart Inc. meets with mixed reviews from the community. Positive reviews relate to the advantages of low-price, one-stop shopping for the general populace. Supporters of Walmart entry also cite new job and business opportunities for the citizens of the community. Finally, Walmart entry has even been shown to increase individuals' desire to stay in the same town for the rest of their lives (Carden, Courtemanche, and Meiners 2009).

Negative reviews opine that the new jobs created by Walmart are at the bottom of the pay and benefits scale. In addition, Walmart entry has been blamed for declining retail revenues and reduced numbers of retail establishments. Other naysayers take their concerns beyond the bottom line and suggest that Walmart entry destroys the social capital of communities.

Goetz & Rupasingha (2006) explain that professionals, including accountants, lawyers, and bankers, form the backbone of local social capital. When the demand for their services decreases because Walmart has centralized their supporting services at their corporate headquarters, then professionals may leave the community to seek opportunities elsewhere.

This study investigates the impact of Walmart exposure on the non-retail, professional service sector in Nebraska. We focus our investigation on the accounting profession, one of the professional groups mentioned by Goetz & Rupasingha (2006) and Hicks (2009). Although the results of Goetz & Rupasingha suggest reduced social capital following Walmart entry, Carden, Courtemanche, and Meiners (2009) do not find a significant decline in social capital relating to Walmart presence. Since the direct impact on social capital is unclear, then the underlying impact on the professional community is also unclear. In addition, since the literature is mixed relating to the impact of Walmart entrance on the retail sector, then the impact to the supporting non-retail, professional sector would also be ambiguous. Further, since Walmart's entrance makes material consumption less expensive, then the general populace may have more capital available for professional services. On the other hand, Walmart's lower wage base and impact on overall wages paid in the community may make the general populace less likely to seek costly professional services. Since the direction of expected results is unclear, this study investigates the null hypothesis, *Walmart entrance has no impact on the viability of the local accounting profession.*

Prior research (Goetz & Rupasingha, 2006; Hicks, 2009) suggests that professionals may leave a community to seek opportunities elsewhere when Walmart comes to town. Our research examines this issue by considering the number of CPAs by county rather than investigating measures of social capital. In addition, we consider the viability of the CPA firms by measuring CPA firm payrolls. Finally, we follow prior research that considers the impact of Walmart on other retail units by considering whether Walmart presence impacts the number of CPA firms. We find mixed results relating to the impact of Walmart presence on the local accounting profession.

We find consistent significant results relating to the impact of Walmart presence on the number of CPA firm employees and the CPA firm payroll. Our results indicate that the presence of a Walmart store or Supercenter is positively related to both the number of CPA firm employees and the size of the CPA firm payroll. Similarly, the significant positive relation holds even when the Walmart variable and the Supercenter variable consider the number of years the Walmart/Supercenter has been in the county.

Our results are mixed relative to the number of CPA firms in the county in which a Walmart is located. The presence of a Walmart, even when the Walmart variable considers the number of years the Walmart has been in the county, does not impact the number of CPA firms in the county in which a Walmart is located. However, both the Supercenter variable and the Supercenter variable that considers the number of years the Supercenter has been in the county are positively related to the number of CPA firms in the county.

II. LITERATURE REVIEW

The publication of Stone's 1988 seminal study examining the "Walmart effect" spawned an extensive literature that continues to grow. Hicks, Keil, and Spector (2012) describe the estimation of the impact of Walmart's entry into a local retail market as "a bit of a cottage industry." Artz and Stone (2012) summarize Stone's original findings by stating that retailers who compete most directly with Walmart are negatively affected by Walmart entry while those who do not compete directly may actually benefit from Walmart entry. Artz and Stone also note that the results from the original study have been replicated in other geographical areas and in additional studies in Iowa. Other early studies reported that both small retail establishments and small discount retailers were displaced following Walmart entrance (Jia 2005). Hicks, Keil, and Spector (2012) confirm that local big box stores suffer following Walmart entry. Hicks et al. (2012) and Sobel and Dean (2008) however, find that local mom-and-pop establishments actually hold their own in the presence of the retail giant.

While many studies focus on the retail sector, Fishman (2006) notes that the Wal-Mart Effect extends beyond the "Walmart ecosystem in which its suppliers and competitors, and their suppliers and competitors, and their customers, all operate." Fishman states that Walmart has "reset the pace and the competitive landscape even for companies that try to do business outside the Wal-Mart ecosystem." Ficano (2013) considers not only retail births and deaths following Walmart entry, but also non-retail establishment births and deaths. Ficano fails to find a negative Walmart effect and reports decreased establishment deaths and an insignificant number of establishment births.

Hicks (2009) calls for research on Walmart's impact on the legal, accounting, and related administrative services centralized by Walmart in Bentonville, Arkansas. Goetz and Rupasingha (2006) investigate the impact of Walmart entry on the non-retail sector using measures of social capital. Goetz and Rupasingha explain that as the demand for professional services decreases, the accountants, lawyers, and bankers who form the backbone of local social capital leave the community to seek opportunities elsewhere. Their findings that the presence of Walmart dampens social capital stocks in local communities implies that the professional services community is also negatively affected. Carden, Courtemanche, & Meiners (2009), however, found that Walmart does not destroy communities by destroying their stocks of social capital. Similarly, Hicks et al. (2012) suggest that Walmart entrance does not hurt locally-owned subsidiary business

establishments including professional firms. Since the results indicating a significant negative impact on social capital are mixed, and these results only indirectly suggest an impact on non-retail professional services, we investigate directly the impact of Walmart exposure on the professional sector, focusing on the accounting profession.

III. METHODOLOGY

We test a linear model that uses a measure of CPA firm viability or prosperity as the dependent variable. The independent variable of interest is a measure of Walmart density in the county. In addition, the model includes a number of control variables. Descriptions of our dependent and independent variables are in the paragraphs that follow.

We consider the number of CPA firms per county and the number of CPA firm employees per county as proxies for the viability of the accounting profession in Nebraska. In addition, we consider CPA firm payroll by county as an indicator of CPA firm prosperity. To determine the impact of Walmart exposure specific to the accounting profession, we use *County Business Patterns* data from the U.S. Census Bureau, for NAICS Code 541211, Offices of Certified Public Accountants. We compiled the number of CPA firm offices, the number of CPA firm employees, and CPA firm payroll for each Nebraska county from 2003 to 2014.

We investigate the Walmart effect using four different measures of Walmart exposure. We follow the methodology of Carden et al. (2009) to determine the first two measures. Walmart Density is the number of Walmarts per 10,000 residents in the county. The Walmarts in this measure include not only Walmart Stores, but also Walmart Supercenters and Walmart Neighborhood Markets. The second measure, Aggregated Walmart Density, considers the length of time that Walmart has been in the county by summing Walmart Density over the years since the first store's establishment. The aggregated measure allows for the possibility that the impact of Walmart exposure could grow over time or the marginal impact of Walmart exposure could actually decrease over time.

The last two measures consider the specific impact of the entrance of larger Supercenters. Walmart Supercenter Density is the number of Walmart Supercenters per 10,000 county residents. Finally, Aggregated Walmart Supercenter Density considers the length of time the Supercenter has been in the county by summing Walmart Supercenter Density over the years since the first Supercenter's establishment. We found the date that each store and supercenter was established using mapzone.io.[1] We used the population for each county from the 2000 Census for years 2003-2009 and the 2010 Census for years 2010-2014 to deflate each of the Walmart exposure variables.

We follow Sobel and Dean (2008) in using control variables traditionally used in studies of self-employment. This seems appropriate because most of the CPA firms in Nebraska are small and would have attributes more closely associated with self-employed proprietorships rather than with large manufacturing firms. We provide descriptions, sources, and descriptive statistics for all variables in Table 1.

[1] Since dates of Walmart store openings may no longer be available on that website, authors are willing to share the data gathered.

Table 1
Data Description and Sources

Variable name	Description	Mean
Dependent variables		
CPA firms[a]	Number of CPA firms per 10,000 population	1.73
CPA firm employees[a]	Number of CPA firm employees per 10,000 population	18.04
CPA firm payroll[a]	CPA firm payroll per 10,000 population	698.13
Independent variables		
Walmart density[b]	Number of discount stores, supercenters, and neighborhood markets per 10,000 population	.11
Walmart Supercenter density	Number of supercenters per 10,000 population	.09
Aggregated Walmart density	The Walmart density ratio for each year summed since the entrance of the first Walmart store.	2.00
Aggregated Walmart Supercenter density	The Walmart Supercenter density ratio for each year summed since the entrance of the first Supercenter.	.77
Control variables		
Median age[c]	Median age of population (in years)	43.2
Percent metropolitan population[c]	Metro population as a percent of state	25.9
Percent in poverty[c]	Percent of population for whom poverty status is determined	13.1
Median family income[c]	Median income	53,856
Percent nonwhite[c]	Percent of total population	6.3
Percent with college education[c]	Percent of population with a bachelor's degree or higher	18.9
Percent male[c]	Percent of population that is male	50.4
Land area[c]	Land area per 1,000 square miles	829.58
Unemployment rate[d]	Number of unemployed workers divided by the total civilian labor force, seasonally adjusted	3.6

[a]U.S. Department of Commerce, Census Bureau, *County Business Patterns*, Washington, DC, by year from 2003 – 2014.
[b]MapZone.io
[c]U.S. Department of Commerce, Census Bureau, *Census 2000* & *Census 2010*, Washington, DC.
[d]U.S. Department of Labor, Bureau of Labor Statistics, *Local Area Unemployment Statistics*, Washington, DC., 2003-2014

We use census data by county for all control variables except the unemployment rate. We use 2010 Census data for all years since the census was conducted mid-range in our investigation period. We use data from the U.S. Department of Labor to determine the unemployment rate for each year of our investigation period.

We chose Nebraska as our prime locale because of the disparity of Walmart locations across counties. Some counties have several Walmart stores, while others have only one, and over half do not have even one Walmart store. Such a setting provides for consideration of whether counties with significantly more Walmart stores really do have fewer accounting professionals after controlling for mitigating factors.

Figure 1
Walmart locations across Nebraska Counties

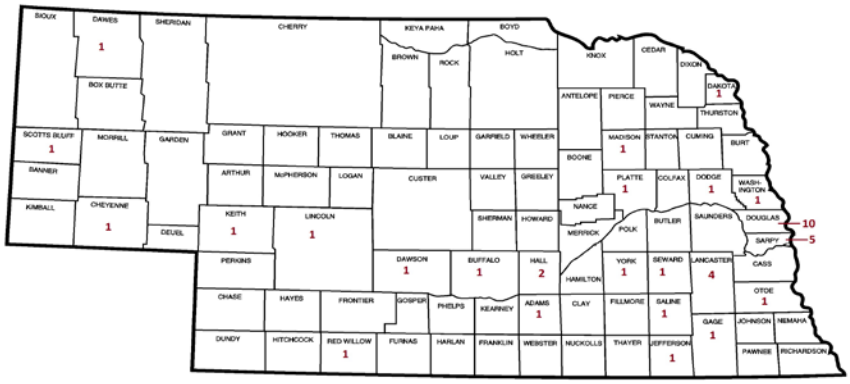


Table 2 reports CPA viability variables for the counties that have a Walmart density greater than 70%, counties with a Walmart density less than or equal to 70%, and counties without a Walmart.

Table 2
CPA viability indicators for Counties by Walmart Density

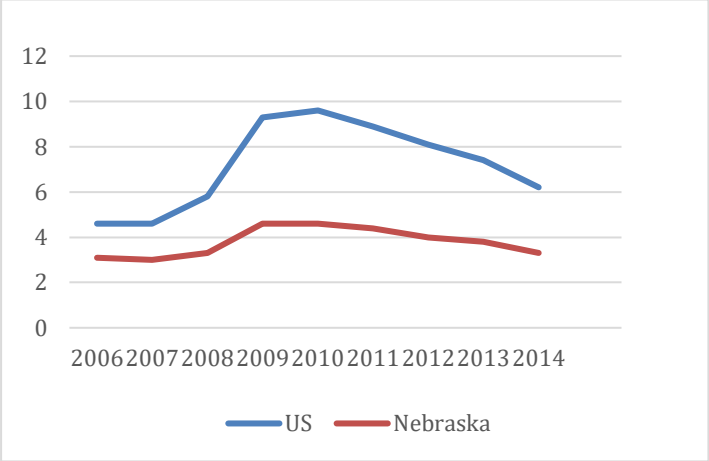
	CPA firms	CPA firm employees per 10,000 population	CPA firm payroll
Walmart density > .70	2.98	22.20	$825.90
0 < Walmart density <= .70	2.00	17.42	749.66
Walmart density = 0	1.52	17.76	558.92

Note: Variable descriptions, descriptive statistics, and sources can be found in Table 1.

In addition, Nebraska's economy is strong and remained relatively stable during the research period from 2003 to 2014. Figure 2 shows that Nebraska's unemployment rate, one of the lowest in the country, increased to a high of only 4.6% in 2009 from 3.3% in 2008 compared to the national rate of 9.3% in 2009 and 5.8% in 2008. Further, Nebraska's gross domestic product increased 37.2 percent in real dollars between 2000 and 2014 compared to a national increase of only 24.0 percent (Nebraska Department of Economic Development, 2015). Finally, Nebraska places in the top third of states in rankings compiled by US News

(2017) for its high rankings in education and infrastructure and by CNBC (2016) for its high rankings in education and business friendliness.

Figure 2
Unemployment Rates
2006 to 2014



IV. RESULTS

We estimate separate models for each of the three accounting firm viability variables by each the four measures of Walmart exposure using ordinary least squares. Collinearity diagnostics indicate some collinearity among the control variables (particularly, percent in poverty, percent with a college education, and median family income), but not between the Walmart density variables and control variables. The Durban-Watson test statistic of 0.4 indicated the presence of autocorrelation. To overcome the problem of autocorrelation, we applied the bootstrap technique to our regression models. Bootstrapping technique does not require distributional assumptions such as normally distributed errors. Significance levels reported in the following tables are the results of bootstrapping.

The F statistic for all twelve models was statistically significant at $p < 0.001$. Table 3 reports the regression coefficients for the models relating the number of CPA firms in a county and Walmart exposure. We find that Walmart Supercenter Density and Aggregated Walmart Supercenter Density are significantly and positively related to number of CPA firms. Neither Walmart Density within a county nor Aggregated Walmart Density since establishment provide significant explanatory information relating to number of CPA firms.

Table 3
CPA firms by Walmart Exposure Measures

N = 1087	Walmart Density	Walmart Supercenter Density	Aggregated Walmart Density	Aggregated Walmart Supercenter Density
	Coefficient *Probability*	*Coefficient* *Probability*	*Coefficient* *Probability*	*Coefficient* *Probability*
Constant	-3.454	-3.504	-3.385	-3.319
	.002	.001	.005	.004
Walmart Exposure	**.012**	**.439**	**.006**	**.096**
	.931	**.036**	**.494**	**.001**
Median age	.076	.082	.076	.090
	.001	.001	.001	.001
Percent metropolitan	.025	.024	.025	.023
population	.001	.001	.001	.001
Percent in poverty	-.002	-.002	-.002	-.002
	.586	.644	.599	.680
Median family income	-.426	-.393	-.420	-.313
	.001	.001	.001	.002
Percent non-white	-.008	-.006	-.008	-.002
	.299	.442	.308	.830
Percent with college	.039	.035	.039	.029
education	.001	.004	.001	.010
Percent male	.056	.049	.054	.032
	.001	.001	.001	.003
Land area	.000	.000	.000	.000
	.001	.001	.005	.001
Unemployment rate	-.055	-.059	-.057	-.069
	.293	.289	.312	.200
Model	*Adjusted R^2* *F-Statistic* *Probability*	*Adjusted R^2* *F-Statistic* *Probability*	*Adjusted R^2* *F-Statistic* *Probability*	*Adjusted R^2* *F-Statistic* *Probability*
	.155	.156	.165	.161
	20.874	21.120	20.898	21.820
	.000	.000	.000	.000

Although Walmart exposure might not result in the births or deaths of CPA firms, Walmart presence could impact the number of employees within the firms. Table 4 reports the regression coefficients for the models relating the number of CPA firm employees in a county and Walmart exposure. We find that the number of CPA employees is significantly and positively related to all four measures of Walmart exposure.

Table 4
CPA firm employees by Walmart Exposure

N = 223	Walmart Density	Walmart Supercenter Density	Aggregated Walmart Density	Aggregated Walmart Supercenter Density
	Coefficient *Probability*	*Coefficient* *Probability*	*Coefficient* *Probability*	*Coefficient* *Probability*
Constant	-68.431	-67.546	-66.295	-57.314
	.001	.001	.001	.001
Walmart Exposure	**8.276**	**8.242**	**.567**	**.633**
	.001	**.001**	**.001**	**.003**
Median age	.860	.841	.949	.784
	.001	.001	.001	.001
Percent metropolitan	.228	.228	.220	.222
population	.001	.001	.001	.001
Percent in poverty	1.989	1.984	1.955	1.851
	.001	.001	.001	.001
Median family income	5.176	5.207	4.679	4.844
	.001	.001	.001	.001
Percent non-white	-.475	-.469	-.465	-.430
	.001	.001	.001	.001
Percent with college	-.412	-.425	-.255	-4.37
education	.001	.001	.017	.001
Percent male	-.025	-.023	-.156	-.082
	.620	.617	.004	.240
Land area	-.002	-.002	-.001	-.002
	.003	.005	.005	.003
Unemployment rate	-.894	-.876	-.731	-.952
	.080	.107	.182	.088
Model	R^2 *F-Statistic* *Probability*	R^2 *F-Statistic* *Probability*	R^2 *F-Statistic* *Probability*	R^2 *F-Statistic* *Probability*
	.494 22.667 .000	.497 22.914 .000	.534 26.484 .000	.477 21.248 .000

`In addition to Walmart exposure increasing or decreasing CPA firm staff size, Walmart presence could also impact the amount that employees are paid. If Walmart presence has provided a boon/drain to the county economy, then we would expect that CPA firm payrolls would increase/decrease even if number of employees remains constant. Table 5 reports the regression coefficients for the models relating CPA firm payroll and Walmart

exposure. Once again, we find that CPA firm payroll is significantly and positively related to each of the four measures of Walmart exposure.

We follow Hicks et al. (2009) and Hicks et al. (2012) in choosing to omit endogeneity corrections for the entrance of a Walmart. They explain that if Walmart is systematically entering markets with retail store growth, then regression estimates will be biased towards finding a positive effect of Walmart exposure. Hicks et al. (2012), however, state that although there has been a considerable analysis of the endogeneity problem, a solution to the problem is not yet a settled matter.

Table 5
CPA firm payroll by Walmart Exposure

N = 235	Walmart Density	Walmart Supercenter Density	Aggregated Walmart Density	Aggregated Walmart Supercenter Density
	Coefficient *Probability*	*Coefficient* *Probability*	*Coefficient* *Probability*	*Coefficient* *Probability*
Constant	-2646.566 .001	-2606.642 .002	-2726.600 .002	-2835.557 .001
Walmart Exposure	**267.108** **.001**	**260.135** **.002**	**23.528** **.001**	**44.029** **.001**
Median age	26.691 .041	26.064 .007	33.562 .002	31.426 .001
Percent metropolitan population	10.730 .001	10.743 .001	10.722 .001	10.035 .001
Percent in poverty	76.232 .001	75.697 .001	77.581 .001	81.758 .001
Median family income	198.081 .001	196.431 .001	188.016 .001	290.067 .001
Percent non-white	-1.732 .736	-1.525 .737	-.844 .978	3.101 .508
Percent with college education	-12.235 .058	-12.476 .047	-6.210 .324	-18.889 .003
Percent male	-1.212 .582	-1.102 .631	-7.989 .003	-9.475 .002
Land area	.028 .270	.027 .275	.028 .285	.019 .487
Unemployment rate	-67.458 .018	-66.759 .022	-66.386 .017	-82.625 .003
Model	R^2 *F-Statistic* *Probability*	R^2 *F-Statistic* *Probability*	R^2 *F-Statistic* *Probability*	R^2 *F-Statistic* *Probability*
	.381 15.383 .000	.381 15.375 .000	.424 18.204 .000	.417 17.753 .000

V. Summary and Conclusions

This research investigates directly the impact of Walmart entrance on the non-retail, professional service sector in Nebraska, focusing on the accounting profession. Prior research investigating the relation between Walmart exposure and the retail sector of a community has reported mixed results. Prior literature has also suggested that Walmart entrance could impact the non-retail professional community primarily because of Walmart's centralization of supporting services in Bentonville (Hicks 2009). This relation, however, has only been investigated indirectly (Carden et al. 2009; Goetz and Rupasingha 2006; Hicks et al. 2012).

Our results, based on numbers of CPA firms, agree with Carden et al. (2009) who find that social capital does not decrease with Walmart presence and Hicks et al. (2012), and who find that Walmart's primary effect falls on other big box stores and not on locally-owned subsidiary business establishments. We find that the number of CPA firms is not significantly related to the total number of Walmart stores or the number of Walmart stores over time. We did find, however, that the number of CPA firms is significantly higher when considering the number of Walmart Supercenters and the number of Walmart Supercenters over time.

We also find that the number of CPA firm employees and the size of CPA firm payrolls are significantly related to Walmart exposure. Contrary to Goetz and Rupasingha (2006), who found a decline in social capital relating to Walmart presence, we find a positive relation between Walmart presence and both the number of CPA employees and the size of CPA firm payroll.

Our results are in line with Artz and Stone (2012) who summarize the "Walmart effect" literature by stating that "retailers who compete most directly with Walmart are negatively affected by the mass merchandiser's entry, whereas *others* can benefit." Artz and Stone (2012) also conclude that Walmart's presence stabilizes or even expands the local retail sector of most rural host communities. We find that the accounting profession is one of the *others* who benefit from the economic expansion that Walmart brings to town.

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