POST-PRINT DEMOCRACY: THE DECLINE OF NEWSPAPERS AND
THE EFFECTS ON POLITICAL INFORMATION, POLITICAL PARTICIPATION AND
POLITICAL POWER

by

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Abstract:

This thesis analyzes the loss of political information and decline in political participation associated with newspaper closures and circulation decline in order to help assess the impact on democracy from the precipitous decline of newspapers over the last several years. It also weighs this decline in the context of the changing media environment by analyzing the extent to which the Internet can compensate for losses associated with newspaper decline. This thesis analyzes the patterns of failures of newspapers from 1955 to 2010 and from 2000 to 2010 utilizing a Cox survival method analysis to determine what attributes of newspapers and the communities they serve are associated with failure and the implications of these trends. The thesis finds that papers with smaller circulations, lower rates of broadband access and locations in rural counties and state capitals demonstrate higher risks of failure. An additional analysis utilizes a fixed effects model to analyze change in voting turnout between the 2006 and 2010 Congressional elections based on changes in number of newspapers, newspaper circulation, unemployment, closeness of race, conterminous state and governor elections and levels of broadband access. It finds that circulation decline is associated with a modest overall decline in voter turnout with stronger evidence of patterns of lower turnout for rural counties, micropolitan counties and counties with lower rates of broadband access. The findings that some kinds of counties – particularly rural ones – are being hit harder by newspaper decline suggest the development of what I identify as a "print divide:" as newspapers contract, groups experience different degrees of loss in terms of access to information and levels of participation. This has implications for a redistribution of power in democracy. The findings further show that for some counties, the Internet is not compensating for newspaper decline but there is a dual deficit in political information and the

combined effect also is associated with lower voter turnout. The findings from this thesis underscore the need for continued research into the effects of our "post-print democracy," including those effects on political information, political participation and political power.

Dissertation Readers: Dr. Richard Katz, Dr. Adam Sheingate

Preface

Thank you very much to my thesis advisor Richard Katz, my academic advisor Adam Sheingate and the Department of Political Science at Johns Hopkins University for helping shepherd me through a challenging and rewarding doctoral program and dissertation project.

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Chapter 1: Introduction

> Since the nation's founding, the community's story, as told through the
> local paper, has been an everyday part of American life. Weakened
> newspapers will shrink local communities as places where self-
> government is practiced. (Patterson, 2007, p. 33)

Political scientists, sociologists, economists and media-watchers, like Thomas
Patterson above, have theorized, often with foreboding tone, that state and local
democratic processes suffer with the decline of print (Besley & Roberts, 2010; Dorrah,
2009; Filla & Johnson, 2010; Gentzkow, Shapiro & Sinkinson, 2011; Jones, 2009;
McChesney & Nichols, 2010; Mondak, 1995; Patterson, 2007; Schulhofer-Wohl &
Garrido, 2013). This thesis will assess the impact on democracy from the decline of
print, as measured by effects on political information and political participation. This
thesis will also discuss the implications for the distribution of political power based on
the findings. This analysis is based on three sets of empirical analyses using data on
voting, circulation, demographics, Internet access, rural-urban composition and other
variables at the county level.

As many scholars documented herein have found, newspapers play an important
role in democracy of informing the citizenry about politics, eliciting political
participation, spurring civic engagement in the community and performing an important
watchdog role on government by functioning as the "fourth estate," or fourth branch of
government. Thus, the consequences of their demise merit study by political scientists.
In many ways, newspapers are precious to our democracy. They have historically played,
and continue to play, a unique role among media forms in our democracy, a role that has
been cited over centuries by scholars. In 1831, Alexis de Tocqueville (1835/1969)

viewed the large number of newspapers in early America as key to its liberal participatory democracy. Park (1929) wrote that the very boundaries defining cities were established based on newspaper circulation. Starr (2004) discusses how newspapers helped mobilize political forces in revolutionary America.

Benedict Anderson (1983) coined the term "print democracy" to refer to the role that newspapers played in contributing to the development of national identity and cohesion. Now, following over a decade of steep newspaper decline, this research considers the implications of an era of "post-print democracy" as newspapers fail and circulation declines at alarming rates. The decline of daily newspapers has repercussions for democracy because of the link between newspapers, political knowledge and political participation. Past studies have shown that newspapers convey political knowledge (Arnold, 2004; Mondak, 1995) and that when newspapers fail, it leads to reduced voter turnout as measured across all U.S. counties that have daily newspapers from1869 to 2003 (Gentzkow, et al., 2011) as well as for two newspaper towns such as Cincinnati that have lost one paper (Schulhofer-Wohl & Garrido, 2013).

This thesis demonstrates measurable effects on political information and political participation for counties associated with the closure of newspapers and decline in newspaper circulation. These effects display a pattern of differential impact on types of counties that lose newspapers, showing that rural counties are being hit hard, among other geographical patterns. This has implications for political power in a democracy: changes in distribution of political information and participation lead to selective disenfranchisement. What is at stake is a "print divide," whereby the decline of newspapers affects some populations more than others and thereby has the potential to

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change the distribution of who has access to political information and who participates in the political process. The print divide is the term originated in this thesis to refer to the uneven distribution of access to newspapers.

In each of three chapters, this research contributes an original empirical study documenting the effects of newspaper closure on the political process. As a first step, in Chapter 3, this research measures patterns in the decline of political information, by examining the dynamics of newspaper failure for the more than 2,200 daily newspapers circulating from 1955 to 2010 through an empirical method known as "survival analysis." The analysis in this chapter measures risks of newspaper failure associated with characteristics of newspapers and the communities they serve - including circulation size, number of competitors, AM/PM distribution, party affiliation and rural-urban composition. This chapter is the first to reveal evidence of a print divide. When it comes to political information, newspapers with small circulations and in rural counties tend to have a higher risk of failure than newspapers with larger circulations in urban counties. The analysis also suggests that newspapers in state capitals are at higher risk of failure, a finding that suggests newspapers' role as watchdogs over state government may be imperiled.

Chapter 4 tests whether declines in newspaper circulation are associated with declines in voter turnout from the 2006 to 2010 Congressional elections for counties with daily newspapers in 45 states. The findings show that total voter turnout in Congressional elections decreased between 0.2% and 1.3% associated with newspaper circulation decline across counties and that there are differential effects on voter turnout in different types of counties. In addition to evidence of a print divide in terms of

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political information as found in Chapter 3, Chapter 4 reveals evidence of a divide when it comes to political participation: rural counties and micropolitan counties (counties with small cities) are associated with a greater decline in voter turnout than more populous urban counties when circulation declines.

Chapter 5 tests whether alternative sources of information in the media environment have the potential to mitigate the loss of newspapers and reduce the negative effects of a print divide. Specifically, Chapter 5 tests whether there are compensatory sources from the Internet to offset the loss of newspapers and the decline in voting by mapping patterns of access to the Internet onto the survival analysis of newspapers from 2000 to 2010 (Chapter 3) and the analysis of voter turnout from 2006 to 2010 (Chapter 4). The analysis finds that rural counties are not only more at risk for a loss of political information from a higher rate of newspaper closures but also have less access to political information from the Internet as measured by lower rates of Internet broadband access. Secondly, the analysis finds that when counties have lower rate of broadband access coupled with circulation decline, the association with a decline in voter turnout is greater.

According to Francis Bacon (1957), "knowledge is power." As Markus Prior (2007) writes, "changes in the set of available media. . .affect who follows the news, who learns about politics, and who votes – in short they affect 'the distribution of political power in a democracy'" (p. 6). In this study, we identify signs of a print divide with geographical patterns: rural counties lose more papers and have decreased political information and lower voter turnout as a result of newspaper failure. Counties with other characteristics also are differentially affected: state capitals lose more papers than counties that do not contain state capitals, and political participation declines when

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newspaper circulation declines in micropolitan counties in addition to rural counties. Furthermore, the role of the uneven distribution of alternatives in the media environment can reinforce the print divide. As a result, there are consequences for a redistribution of power occurring in American democracy when newspaper closures hit the population unevenly. There are also consequences for the power of citizens in general compared to elites when newspaper reporters no longer serve as "eyes" on local and state government.

This thesis, *Post-print Democracy*, was motivated by the determination of a gap in the literature on the decline of print media and the effects and implications associated with this latest change to the media landscape. An inspiration for this thesis, in scope and title, was *Post-broadcast Democracy* (2007), Markus Prior's seminal work that found the 24-hour media environment, including cable news and the Internet, resulted in an increase in the inequality of political involvement. This ambition of this project is to contribute empirical documentation of the effects on political information and political participation from the decline of daily newspapers as well as to do something more: to identify implications for the distribution of political power, something Prior accomplished so artfully.

Chapter 2: Newspaper decline – overview of industry trends and literary currents

A post-print democracy is becoming a reality. Newspapers are in precipitous decline, a cause for alarm among many scholars (Jones, 2009; McChesney & Nichols, 2010; Meyer, 2004a; Patterson, 2007; Sides, 2009; Starr, 2009). As research has shown, newspapers affect the political process through a variety of mechanisms including: political information/knowledge (McCombs & Shaw, 1972; Mondak, 1995; Tan & Weaver, 2009); political participation and electoral politics (Gentzkow et al., 2011; Robinson & Levy, 1996; Schulhofer-Wohl & Garrido, 2013); social capital and cohesion (Filla & Johnson, 2010; Moy, McCluskey, McCoy & Spratt, 2004; Park, 1929); and, their watchdog role checking corruption in government (Sides, 2009; Starr, 2009).

This chapter is most concerned with how newspaper failures affect the distribution of political information/knowledge, political participation and political power – three essential components in a democracy. As a starting point, before reviewing scholarly work in these areas, it is important to review the realities of the political and communications phenomenon of the decline of print media in our democracy.

Based on numbers from the *Editor and Publisher International Yearboo*k (E&P), Table 1 shows the five-year declines in numbers of newspapers and in newspaper circulation from 1950 to 2011, while Table 2 shows an annual breakdown for the period 1990 to 2011, when the decline was most severe.

Table 1 - U.S. Daily Newspapers, 1955-2011

Year	Number of Papers	% decrease in prior 5 yrs	Circulation (in millions)	% decrease in prior 5 yrs
1955	1760		56.15	
1960	1763	0.03%	53.83	-0.86%
1965	1751	-0.14%	56.15	0.83%
1970	1748	-0.03%	58.88	0.93%
1975	1762	0.16%	51.55	-2.84%
1980	1745	-0.19%	62.20	3.42%
1985	1676	-0.82%	62.77	0.18%
1990	1611	-0.81%	62.33	-0.14%
1995	1533	-1.02%	58.19	-1.42%
2000	1480	-0.72%	55.77	-0.87%
2005	1452	-0.39%	53.35	-0.91%
2011(1)	1382	-0.84%	44.42	-4.02%

Source: Editor & Publisher International Yearbook, various; Editor & Publisher International Databook 2012
(1) E&P did not publish annual figures for 2010 due to a two-year gap in publication of a yearbook following a change in ownership.

Table 1 shows that, on a percentage basis, the greatest drops in daily newspaper circulation were between 1) 1970 and 1975, 2) 2005 and 2011 and 3) 1990 and 1995, while the greatest drops in the number of daily newspapers were between 1) 1990 and 1995 and 2) 2005 and 2010. From 1955 to 1980, the number of daily newspapers held steady at around 1760, as did circulation at between 55 and 60 million. Then the decline began. As of 2011, there were 1,382 newspapers and a circulation of 44 million.

Table 2 details the drops in the last ten years while Figure 1 and Figure 2 illustrate the trends from 2000 to 2011 showing precipitous decline in the last five years, during which time the number of newspapers declined by about 1% annually and circulation declined between 2% and 5% annually.

Table 2 - U.S. Daily Newspapers, 2000-2011

Year	Number of papers	% decrease from prior year	Total Circulation	% decrease from prior year
2000	1480	0.20%	55.77	0.37%
2001	1468	0.82%	55.58	0.35%
2002	1457	0.75%	55.19	0.71%
2003	1456	0.07%	55.19	0.00%
2004	1457	-0.07%	54.63	1.02%
2005	1452	0.34%	53.35	2.40%
2006	1437	1.04%	52.33	1.94%
2007	1422	1.05%	50.74	3.13%
2008	1408	0.99%	48.60	4.40%
2009	1397	0.79%	46.28	5.01%
2011	1382	1.09%	44.42	4.19%

Source: Editor & Publisher International Yearbook, various; Editor & Publisher International Databook 2012

Figure 1 - Number of Papers, 2000-2011   Figure 2 - Circulation, 2000-2011
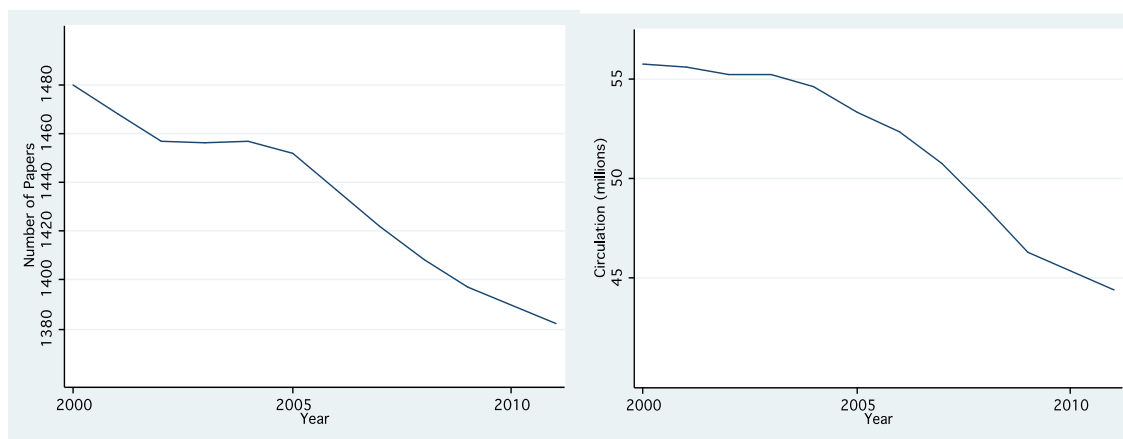
Source: Editor & Publisher International Yearbook, various; Editor & Publisher International Databook 2012

It should be noted that the decline of total number of newspapers is actually greatest from 1990 to 1995 due to factors including a number of mergers and consolidations in the industry (McChesney, 2008; Meyer, 2004b). However, even after the attrition in this decade, papers have continued to fold. With a more attenuated base,

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the marginal effect in terms of numbers of papers lost is greater: there are more counties now reducing from two to one daily newspaper or from one to no daily newspaper, as analyses in Chapter 3 using a survival model of newspapers will demonstrate.

This thesis contributes to the larger literature on changes in political behavior influenced by the media with a specific contribution to the literature on the effects of these patterns of precipitous newspaper decline. This literature on media and political behavior has historically considered effects from various types of media as they have evolved onto the communications landscape, starting with newspapers and moving on to television and the Internet. This thesis effectively circles back to an analysis of the original media form of newspapers – not because they are the new arrival onto the media landscape but because they have the dubious distinction of being the media suffering the most from new changes in the media industry.

While the medium most under study at any point in time has shifted, from newspapers to television to the Internet, the baseline questions being considered are generally the same. Many have asked, and still do ask, if indeed media have an effect on political processes at all: this is the yes/no debate about media effects. Others want to know the extent of the effect: these are matters of degree. Effects are measured in terms of the amount of political information available, the political knowledge gained from this information and the effects on political participation, as often measured by voter turnout. Another layer of studies ask, if there are effects, who feels them: these are matters of distribution. These matters lead to discussions of the consequences of inequality of political information and participation. More recently, studies ask about the effect of any one medium in the context of the set of overall available media: these lead to questions

about the "media environment." There is a large and growing set of literature associated with all of these questions. This dissertation will also contribute analysis to address each of these areas of inquiry.

Media Effects

The general literature on the effects of media on the political process has changed dramatically in the last six decades. Broadly speaking, early scholarship was often focused on the debate over whether there were effects from the media at all on the democratic process. Early voting studies in the Columbia school concluded there were no/ very minimal direct effects from the media because the opinions of groups and public opinion leaders were more important to forming predispositions and influencing voting behavior (Berelson, Lazarsfeld, & McPhee, 1954; Lazarsfeld, Berelson & Gaudet, 1944). The J.T. Klapper (1960) hypothesis of "minimal effects" became an influential one for decades; Klapper (1960) concluded that the U.S. public was quite immune to political persuasion, writing that "mass communication functions far more frequently as an agent of reinforcement than as an agent of change" (p. 15). Later, Bartels (1993) called Klapper's (1960) conclusion "one of the most notable embarrassments of modern social science" (p. 267).

Scholarship starting in the 1970s and 1980s began to conclude that the media did have effects on political behavior due to specific mechanisms including agenda-setting, (McCombs & Shaw, 1972) and priming and framing (Gamson & Modigliani, 1987; Iyengar & Kinder, 1987). Since then, there have been various analyses of the measurable

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effects of media on political knowledge and participation (e.g. Arnold, 2004; Gentzkow et al., 2011; Prior, 2007; Schulhofer-Wohl & Garrido, 2013; Tan & Weaver, 2009.) While studies of television and more recently the Internet have dominated studies of effects, newspapers have also been studied for their effects on democracy. The research on the effects of newspapers on democracy will be discussed under the following section headings:

- political information/knowledge (McCombs & Shaw, 1972; Mondak, 1995; Tan & Weaver, 2009),

- political participation and electoral politics (Robinson & Levy, 1996; Gentzkow et al., 2011; Schulhofer-Wohl & Garrido, 2013),

- their watchdog/"accountability journalism" role over corruption in government (Gentzkow, Glaeser & Goldin, 2006; Starr, 2009).

- print superiority (Chyi & Lasorsa, 2002; Clarke & Fredin, 1978; McLeod, Scheufele & Moy, 1999; Moy et al., 2004)

Political information/knowledge.

The availability of political information makes it easier to acquire political knowledge (Arnold, 2004; Mondak, 1995). Political information is essential to democracy because it enables citizens to monitor the actions of the state and may enhance political participation. In the rational choice model for voting, Anthony Downs (1957) indicates that voters make their decisions partially based on the information they have about the election. As a result, voter turnout is a function of factors including information costs, or the costs associated with obtaining political information.

Restrictions on the availability of information would increase those costs and decrease turnout.

Prevalent among studies of newspapers and political information are agenda-setting/ food-chain theories. These suggest that newspapers still drive and/or originate a large share of the news and the news agenda that may then appear in other media forms or outlets (Jones, 2009; Schaffner, 2006; Starr, 2009; Tan & Weaver, 2009).[1] As of 2011, 15 of the 25 news websites with the most unique visitors belonged to leading newspaper organizations (Pew, 2011) and, furthermore, newspaper web sites serve as a source of links for amalgamation and blog sites on the web. While food chain theories are a more recent theme, agenda-setting theories can trace their roots back almost one century to Walter Lippman (1922) who recognized the agenda-setting affects of newspapers to activate images and create public opinion: "every newspaper when it reaches the reader is the result of a whole series of selections as to what items shall be printed, in what position they shall be printed, how much space each shall occupy, what emphasis each shall have" (p. 237).

Studies have shown that newspapers are one source of information that produces measurable political knowledge. Arnold (2004) found that newspaper readers were more likely to be cognizant of candidates on the ticket for Congress based on an analysis of 67 local papers from 1993 to 1994 and an election survey. In a study of the temporary

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[1] Since then, several studies on agenda-setting effects from newspaper media have been conducted. McCombs and Shaw (1972) found a sample of uncommitted voters living in and around Chapel Hill, North Carolina identified the most pressing problems facing the nation in almost perfect correlation with the displays of prominence those issues were give in local and national newspapers and national news broadcasts. Tan and Weaver (2009) found a moderate positive relationship between the newspaper agenda and the public agenda in five U.S. states from 1984 to 1997 and a strong positive relationship in fifteen states from 1989 to 2006.

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closure from May 1992 to January 1993 of the Pittsburgh Press and Pittsburgh Post-Gazette papers, leaving the city without a newspaper during the election season, Mondak (1995) found that voters in the Pittsburgh area had diminished political knowledge of the election that took place in this period compared to voters in the city of Cleveland, Ohio where voters had a newspaper. Mondak (1995) found that political information lost when the local newspapers shut down had an impact on readers' knowledge of the local House races – but not of state and national races.

It is arguably more important to measure the effects of newspapers on providing political information on state, Congressional and other local races than the Presidential race. Newspapers have been cited in historical and contemporary studies as being the "superior" media delivery mechanism for information about state politics - over television and other media that do not cover state politics with the same depth. Information about national politics can be found more easily in other substitute media including television and the Internet that have national audiences. Wolfson (1985) calls state government the "hidden layer of government, the stepchild of American politics and the soft underbelly of journalism" (p. 137). Due to the federal structure of American politics, and increasingly so with devolution, identified as starting in the 1950s when state government and tax systems were restructured, the role of state government expanded (Wolfson, 1985). This intensified in the 1980s when the locus of much political activity was further shifted to the state level, and media coverage of the state level of government, as well as the local level that presides over a large amount of services from utilities to schools, became even more important (Carpini, Keeter & Kennamer, 1994).

Coverage of state and local government is uneven. As Carpini et al. (1994) note, state government is expensive to cover; state capitals are often located in small cities away from the state's population centers and as a result, state bureaus are understaffed (p. 444). A study from the *American Journalism Review* found a 32 percent decrease in the number of full-time reporters at local and state bureaus and at capitals from 2002 to 2008 (Dorrah, 2009; Hamilton, 2009). Scholars have noted that political knowledge of state politics is lacking compared to that of national politics due to the lack of media across all fifty states: unlike national politics, such information is not readily available in all areas but varies based on political coverage in each state capital, some of which are much more understaffed by news organizations than others (Carpini et al., 1994; Wolfson, 1985). For these reasons, this research considers the relative ability of newspapers to survive from 1955 to 2010, and from 2000 to 2010 in communities of all sizes and in state capitals.

Political participation.

When political knowledge declines from the closure of newspapers, political participation is weakened. Rational choice theory is again a relevant point of reference: Downs (1957) relates voter turnout to costs and benefits of voting. In addition to information costs, other costs of voting are taking time off work, enduring bad weather and paying for transportation. Among the benefits of voting are pay-offs from policy decisions of elected officials. Some scholars have added the benefit of civic duty to the calculus (Blais, 2000).

Despite the importance of measuring the effects of trends in the media industry and the availability of political information on political participation, there have been a few studies that have linked newspaper closures to decline in voter turnout. I have identified only two such studies in the literature (Gentzkow et al., 2011; Schulhofer-Wohl & Garrido, 2013). In a city/municipal-level study of effects of newspaper closure on voter turnout, Schulhofer-Wohl and Garrido (2013) studied voter turnout effects in the Cincinnati area where the Cincinnati Post closed in 2007 and the Cincinnati Enquirer remained open. Schulhofer-Wohl & Garrido (2013) found that the Cincinnati Post's closure reduced the number of voters between 8.4% and 22.5% - even in the presence of one remaining daily newspaper (and the one with the larger circulation at that) in the town. In a county-level, nationwide study on political participation that considers the full census of U.S. papers from 1869 to 2003, Gentzkow et al. (2011) looked at effects on Congressional and Presidential electoral turnout from entry and exit of daily newspapers. They found that the presence of one additional newspaper increased presidential and congressional turnout by about 0.3 percentage points, although this effect was diminished after the introduction of radio and television. The study in Chapter 4 of this thesis examines the effects on turnout from the pattern of newspaper decline affecting the near total population of daily newspapers in the more recent time period from 2006 to 2010 and includes additional explanatory variables including the effects of Senate and Governor races on turnout as well as unemployment which is particularly relevant for this time period due to the 2008 recession.

Newspaper's watchdog role.

The findings in this dissertation also have implications for the watchdog role on the democratic process that newspapers have historically played and continue to play. Newspapers hold a place as guardians of democracy. They have been linked with lower eras of corruption 1) historically, in the Gilded Age in the U.S. (Gentzkow et al., 2006); 2) globally, based on an analysis of over 100 countries in the world (Adsera, Boix & Payne, 2003) and from studies in individual countries such as Norway (Bruns & Himmler, 2011); and, 3)from recent appraisals of the U.S. newspaper industry, as well as recent local accounts from the U.S. (Casey, 2010, personal communication; Starr, 2009) [2]

Scholars are concerned with a decline in "accountability journalism," something Downie and Schudson (2009) discuss as developing in the second half of the twentieth century coming "out of beat coverage and target(ing) those who have power and influence in our lives – not only governmental bodies, but businesses and educational and cultural institutions" (p. 30). They lament that it is "particularly local accountability journalism. . .(that). . .is especially threatened by the economic troubles that have diminished so many newspapers" (p. 31). Because local newspapers uniquely cover local news that might not be found in nationwide media sources, it is particularly coverage of local politics that is imperiled. In the case that newspapers in state capitals disproportionately fail (as will be discussed in Chapter 3), it is coverage of state politics that is imperiled. This threatens to shift the power balance towards elites and away from

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[2] In Bell County, California, after the finding that local officials had drawn annual salaries as high $800,000, the corruption was linked to the loss of the watchdog role played by the local paper in the town, the Bell-Maywood-Cudahy Industrial Post. (Paula Casey, Executive Director, Arizona Newspapers Association, personal communication, August 27, 2010; Francke, 2010).

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citizens who become less aware of politics being conducted by the elites that are running the political processes.

Distribution of effects

This thesis measures differential effects of newspaper decline. If certain populations have less access to newspapers, they have one less source for knowledge, and this is potentially disempowering. There is a line of scholarship in accord with Bacon's premise that "knowledge is power." This includes research on the process of diffusion and its unequal effects (Budd, MacLean & Barnes, 1966; Deutschmann & Danielson, 1960; Rogers, 2003), research on the "knowledge gap" hypothesis originally set forth by Tichenor, Donohue and Olien (1970) and research on the digital divide, a subject of the work of multiple scholars and government institutions (e.g. Compaine, 2001; Hindman, 2000; Lawson, 2001; Mack, 2001; Mossberger, Tolbert & Franko, 2013; Mossberger, Tolbert & Stansbury, 2003; NTIA, 1995). These currents of literature exhibit a concern about the repercussions for democracy when the availability of media is not evenly distributed throughout society leaving some groups with less political power. What is evident from this literature is that from the beginning, researchers developed a scholarship about the uneven distribution of media and acquisition of political information and knowledge from those media. While theories of diffusion originated over fifty years ago and theories of the knowledge gap originated over forty years ago, diffusion and the knowledge gap are still the underpinnings of more contemporary research on unequal access to media, including the study of the digital divide and the project of this study which identifies an emerging "print divide."

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Diffusion.

Information is spread from the media outward to the population through a process of diffusion and as researchers of the phenomenon have found, socio-economic groups differ in the degree to which they receive information through this process. According to Rogers (2003), "diffusion is the process in which innovation is communicated through certain channels over time among the members of the social system" (p.5). As Lazarsfeld and Katz (1955) set forth, information is diffused through a two-step process whereby information is transmitted from a media source to a recipient and then exchanged from one member of the community to another. In early studies about diffusion, research focused on the spread of information of individual stories.[3] Even in early studies, researchers found evidence of a divide between socioeconomic groups in their ability to acquire political information. Larson and Hill (1954) found differences between socio-economic groups in kinds of first sources of information and time of learning. Budd, MacLean and Barnes (1966) found that those with a higher level of education learned of a news event faster. V.O. Key (1961) observed that a presidential campaign serves to increase differences in level of political information based on education because those with higher levels of education had higher rates of news exposure.

The knowledge gap hypothesis.

Research on diffusion from the1950s and 1960s was a forerunner to new schools of theory on the uneven effects from the spread of information, including the knowledge gap hypothesis (e.g. Rogers, 2003). Based on the evidence from various early studies on

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[3] For example, Miller (1945) researched the spread of news of the death of President Franklin Roosevelt and Larson and Hill (1954) researched the diffusion of the news of Senator Robert Taft's death in 1953.

diffusion of news stories, Tichenor et al. (1970) originated the "knowledge gap" hypothesis to depict the process, stating that "as the infusion of mass media information into a social system increases, segments of the population with the higher socioeconomic status tend to acquire this information at a faster rate than the lower status segments, so that the gap in knowledge between these segments tends to increase" (159-160). Katzman (1974) found that gaps in knowledge were associated with differences in level of education and financial resources enabling access of the technology.

The implications of a knowledge gap on the political process are immense, as observed by researchers from past and recent decades. Rogers (2003) notes that "when the issue of equality has been investigated it has been shown that diffusion of innovations often widens the socioeconomic gap between the higher and lower socioeconomic status segments" (p. 130). Tichenor et al. (1970) insist that "differentials in knowledge across society is itself a profound social effect, and may be a central factor in future social change" (p. 170). Citing the gap between the races, Tichenor et al. (1970) go on to say, "differentials in knowledge may lead to increased tension in the social system; one of the recognized disparities between black and white people, for example, is the relative difference in gaining awareness of new information" (p. 170). For Rogers (2003), diffusion leads to "social change," defined as "the process by which alteration occurs in the structure and function of a social system" whereby "new ideas are invented, defused, and adopted or rejected, leading to certain consequences (and) social change occurs" (p. 6). When people have unequal access to information, be it a local policy issue, a presidential election or some other kind of social change, their ability to be

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knowledgeable and participate equally in democracy is diminished and they have less power in the system.

The digital divide.

A close relative, perhaps a partial heir, to the knowledge gap hypothesis is the digital divide hypothesis. The emergence of the Internet promised a new source of political information, but it was not long before social scientists and government officials became aware that not all had equal access to this new font of knowledge. In its 1995 report, *Falling through the net: a survey of the 'have nots' in rural and urban America*, The National Telecommunications & Information Administration (NTIA) (1995) found rural areas trailed behind in access to telecommunications infrastructure, including telephones and fiber technology. The NTIA (1998) followed up that report with *Falling through the net II: new data on the digital divide*, finding there was still a significant digital divide based on race, income, rural/urban geography and other demographic characteristics for technologies that also included the Internet. The 1998 report concluded that while "all Americans are becoming increasingly connected . . .certain groups are growing far more rapidly (which) means that the 'haves' have only become more information-rich in 1998 while the 'have-nots' are lagging even further behind" (NTIA, 1998).

The digital divide provoked a great amount of alarm that it would further stratify society. Van Dijk (2005) was concerned that digital technology would exacerbate inequality and would further isolate segments of society, referring to Max Weber's theory of social exclusion as "efforts of the powerful to exclude the less powerful from

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particular benefits of a social relationship by keeping the relationship closed" (p. 18).

Mack (2001) declared that "we are rapidly approaching what might be considered a digital fork in the road where the "haves" and "have nots" will be so widely separated in terms of information technology skills that there will be no hope of ever reuniting these divergent paths" (p. xvii). However, while many were alarmed about the digital divide (and some dubbed them "cyberpessimists"), other scholars believed that the gap would narrow. Compaine (2001) concluded that "the initial period of adoption may therefore be expected to widen social inequalities but the normalization hypothesis suggests that this temporary gap will eventually close" (p. 30-31). Later, while the divide showed signs of narrowing, scholars began to address not only access but also the ability of individuals to effectively use the new technology. In his book on diffusion, Rogers (2003) discussed the digital divide as an example of a process of diffusion that produced a gap in the acquisition of the new media, and found that in addition to access, there was a "learning divide" (p. 469). Mossberger, Tolbert and Stansbury (2003) identified the need for people to improve their skills to take advantage of the technology.

Research on the digital divide concluded there were cleavages along lines of race, income education and rural/urban composition. Rural disadvantages in telecommunications, including telephone and fiber networks, had earlier been identified by scholars (Hudson & Parker, 1990) and by the government in its first *Falling through the net* report (NTIA, 1995). The NTIA's (1998) second *Falling through the net* report identified that rural disadvantages continued and extended to access to the Internet. The lower rates of access among rural communities led to a federal initiative to build rural broadband infrastructure. Not all believed a rural-focused approach to communications

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infrastructure improvement was best. Mossberger, Tolbert and Franko (2013) argue that the emphasis of federal policy on rural areas in its broadband infrastructure efforts have largely ignored inner cities which also trail behind in terms of access rates.   Mossberger et al. (2013) recognize that what is at stake is a balance of power. Just as with scholarship more than 60 years ago on diffusion and scholarship on the "knowledge gap" 40 years ago, research on the digital divide has also revealed evidence of unequal access to information and raised questions about implications and remedies.

Media effects, the media environment and print superiority

The loss of political information from newspapers cannot be considered in a media vacuum. From this perspective, newspapers are one of several media in the marketplace that must be considered, along with radio, TV and the Internet. If one considers the interplay of media, one must question whether there are equal and compensating sources for information among other available media when newspapers fail. Prior (2007) argues for a more central place for understanding media effects in terms of the "media environment," defined as "media available to people at a particular place and time and by the properties of these media" (p. 8). Prior finds that the advent of cable television and the Internet produce a "high choice-media environment" resulting in an increasing gap in political knowledge as some consumers opt out of outlets that produce political news and gravitate to media that reflect their non-political interests, including sports and entertainment.

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The decline of newspapers can be viewed as an effect of this high-choice media environment, as selective consumers opt for other media, but increasingly it may also be a cause. Given a media environment where newspapers are supplying less political information, media consumers may find that in some markets they lose a print alternative altogether or they find a print environment that is diminishing in editorial diversity and quality. In this case they are driven to other choices that may not have been their first choice but, by default, comprise the new balance of alternatives in the media environment. Their access to those other choices then becomes a necessary consideration of research into any primary choice medium of study. In short, no medium is an island.

Within the media environment, many scholars consider newspapers as unique or "superior." If this is true, the decline of newspapers means the substitutes in the media environment are inferior. According to McNeil (2003), newspapers are an important determinant of political participation relative to other forms of media:

> Although long tradition of research documents the demographic and psychological determinants of political participation, there is also evidence to suggest that changes in communication technology may play an important role in influencing electoral behavior. Researchers found that those who read about politics from newspapers learn more than those who watch television (p.86).

Peter Clarke and Eric Fredin (1978) found that the use of newspapers was correlated more positively with increased levels of political "reasoning" compared to television. From a survey of adults in the Seattle area, Moy et al. (2004) found that the use of local newspapers was more highly correlated with political participation than was the use of other media forms. Paek, Yoon and Shah (2005) found that newspaper readers have a higher level of political activity than non-newspaper readers. Tan and Weaver (2009)

found newspapers were more strongly associated with political knowledge. Various others studies comparing forms of media also find that readings newspapers has a stronger influence on civic engagement than consumption of other media including television (Becker & Dunwoody, 1982; Robinson & Levy, 1996).

Hamilton (2004), Kramer (2010) and Starr (2009) found that it was the format of newspapers that makes them superior in delivering political information. According to Kramer (2010), newspaper readers get their news in a "bundled," format and as a result editors deliver demand-driven news such as entertainment and sports alongside hard news. Readers who flip through pages in a newspaper may thus experience some exposure to hard news compared to users of television or the Internet who can go more directly to their channel or page of preference.

Newspapers have been appraised as superior to other media as purveyors of news on local and state politics in particular (Flowers, Haynes & Crespin, 2003; Goldenberg and Traugott, 1987; Mondak, 1995). Much of this research pertains to Congressional races. Newspaper readers have registered higher rates of recognition for both Congressional incumbents and challengers than television consumers (Goldenberg & Traugott, 1987). In his finding that residents of Pittsburg were more poorly informed about House races than national races when the local newspapers went on strike, Mondak (1995) attributed this to the fact that local television and radio sources were not adequate substitutes for the paper. Scholars have also found that local newspapers are the dominant news sources to cover U.S. House races due in part to the poor "fit" between congressional districts and television media markets (Campbell, Alford, & Henry, 1984; Clarke & Evans, 1983; Filla & Johnson, 2010; Schaffner & Sellers, 2003; Simmons,

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1987; Vermeer, 1987). Althaus and Trautman (2008) found that in the suburban Los Angeles area, voter turnout is negatively associated with market size, which they attributed to less information about local races for voters in large media markets that cover multiple races. Television market size is not necessarily linearly correlated with the amount of coverage of a local member of Congress. In fact, large metropolitan television markets which encompass multiple urban and suburban congressional districts can result in residents receiving less, if any, coverage of their individual member and lower ticket races while a rural media market may deliver more coverage of an individual member since it is more likely there will be fewer, or only one, congressional districts in the viewing area. On the other hand, residents in a rural area, where the media market could encompass an entire state, might not get coverage of mayoral and other lower-ticket races in their towns.

Generally, scholars have appraised newspapers as superior over other forms of media in their ability to reach communities outside the big city, including suburbs and lower-density communities, and provide "hyperlocal" coverage (Kaniss, 1991; Schaffner & Sellers, 2003). "Hyperlocal" is a term now used to describe business models and efforts by exurban newspapers and online providers (i.e. patch.com, everyblock.com) to provide local, custom level coverage of a community within a metro area down to a smaller unit of analysis, i.e., a suburb, a neighborhood or a block (Kramer, 2010; Palser, 2010). Hyperlocalism is a term first used in the early 1990s to capture a unique form of coverage that could be an asset to a media organization; at that time, television was trying to capture this market segment, just as newspapers continued to build on infrastructure

that already existed.[4] There are some signs that the promise of hyperlocal coverage from the Internet is not being fully delivered, however. For example, Patch.com, one of the largest networks of Internet sites to offer this local coverage with over 900 sites corresponding to local coverage areas, is facing problems with profitability (Beajon, 2013; Pew, 2014).

Political information, political participation and political power

This project considers baseline questions that have been debated for fifty years on media effects, more contemporary questions about distribution of effects debated over the last several decades and questions about effects from the interplay of various media in the media environment that have arisen in the last five to ten years. The contribution of this thesis is to a large literature on media effects but a much smaller literature on effects on newspapers in particular, and a still smaller literature that empirically documents effects on political information and political participation when print declines. Although since the time of Klapper's (1960) "minimal effects" thesis, the majority of scholars now share the opinion that there are effects from media on the political process, it cannot be taken for granted that there are effects on political information and political participation when newspapers close based on just the few studies we have. Thus, this thesis contributes research to help answer baseline questions with recent analysis of data on newspaper

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[4] Kannis (1991) refers to hyperlocalism with regard to suburban cable television and community newspapers, which she calls "the original hyperlocal medium." She writes: "the advantage of this suburban cable news is what has been called its hyperlocalism – the coverage of the small-scale events of suburban life that were once the province of only community newspapers" (p. 226).

closure, newspaper circulation decline and voter turnout in light of recent precipitous newspaper decline.

The research in the thesis is both longitudinal, stretching back over 55 years and providing a first survival analysis of newspapers through the television era and the Internet era, and contemporary and forward-looking as it identifies recent trends associated with decline and considers their implications for the media landscape. The plates of the media landscape are moving as newspapers shrink and their effects strike communities differentially while the availability and usage of alternative media sources is also shifting with differential effects. In addition to dealing with the baseline questions about effects on political information and political participation, the findings from the empirical analyses in this thesis allow for discussion into additional facets of newspaper decline, including two important ones that have received little treatment in the literature: the differential impact on counties which affects their relative political power and the ability of the media environment to mitigate impacts of newspaper closure. This thesis finds patterns of effects that require a discussion of the consequences for a redistribution of power when papers that have select features and that serve certain types of communities are more prone to fail or have circulation declines. Because of unequal distribution of broadband access, the effect of the Internet for some counties is shown to sometimes compound rather than compensate for deficits in political information and lower voting rates.

This research raises issues similar to those of the Internet's "digital divide:" just as the onset of a new medium affects populations differentially, so might the decline of a news medium. This dissertation finds that the loss of the print media is producing signs of

a print divide, reinforced by the rural-urban disparities of the digital divide, leaving rural counties, as well as state capitals with less access to political information, a democratic link to their government, as well as leading to further increases in voter decline in the presence of circulation decline for some counties including rural counties and counties with small cities. In the conclusion, this thesis will further probe into the implications of a print divide on political power in society.

Chapter 3: Newspaper survival and political information

The decline of newspapers results in a loss of political information from a daily media source in the community. It is inferred that there is information loss from the loss of a newspaper based upon the assumption that most general-interest U.S. daily newspapers over the last five decades provide some form of political information which could include reporting on elections, candidates and national and local political issues.

This analysis measures the decline of the newspaper industry through a study of the closures of daily newspapers from 1955 to 2010 among the over 2,200 newspapers in circulation during this period. The analysis allows for a first detailed assessment of the types of newspapers that fail and the characteristics of the communities they served in the U.S. over a long period of time. It is essential to analyze the anatomy of the newspaper market as it declines - the parts, as well as the whole.   By not only measuring decline but analyzing possible risk factors associated with newspaper failure over the last five decades - including circulation size, number of competitors, rural/urban distribution, AM/PM distribution, party affiliation and Internet access – we can get a picture of what kinds of newspapers fail and what kinds of communities and populations are affected.

No one source documents the closure of newspapers on a regular basis. From the annual compendium on the newspaper industry, the *Editor and Publisher International Data Book* (E&P Data) (2012), we know that the total number of daily newspapers has dropped from 1,760 in 1955 to 1,382 in 2010. However, this change does not differentiate between the number of failures and the number of new entrants leading to this deficit.

Nor does it systematically list the papers that have failed on an annual basis. News reports and studies from Pew (2010), social scientists (Dimmick, 2003; Hamilton, 2009), and journalist-run blogs (e.g., www.newspaperlayoffs.com) document some failures but again, not systematically.

Additionally, the E&P does not analyze the qualities of newspaper decline. Research analyzing risk of failure for different types of papers is not plentiful. In one analysis, Dimmick (2003) found that small daily papers in competitive settings with more than one paper decreased the most during the period from 1920 through 1980 owing to comparative disadvantages with economies of scale. Dimmick (2003) also says that while there have been examinations of mortality in the newspaper industry, it has been "largely descriptive and atheoretical" (p. 17). Dimmick's (2003) analysis represents a unique appraisal of newspaper failure based on characteristics of newspapers and highlights the need for a more comprehensive risk analysis among newspapers of different types and the different types of communities they serve.

This research presents results from the first comprehensive survival analysis conducted for U.S. newspapers. Using a Cox survival model, this analysis will produce risk quotients or "hazard ratios" for covariates associated with newspapers that fail for the fifty-five year period. Analysis is also conducted for the recent period from 2000 to 2010. The failure of a newspaper results in a loss of political information. There are consequences for a redistribution of power occurring in American democracy if newspaper closures hit the population unevenly.

Background - various approaches to the study of newspaper failure

The studies of entry and exit of new media can be organized under three approaches that have at times overlapped in the literature: economic, political-economic and media environment. The media economics literature evaluates a media organization operating to maximize its own utility function in a competitive environment (e.g., Bucklin, Caves & Lo, 1989; Dimmick, 2005; Doyle, 2002; Entman, 1985; Picard, 2004; Picard & Rimmer, 1999). The political economic approach emphasizes the context of state and corporate influences (e.g., Busterna & Picard, 1993; McChesney, 2008; McChesney & Nichols, 2010; Matin, 2008; Meyer, 2004a; Meyer, 2004b; Niebauer Jr., 1984; Schaffner & Sellers, 2003; Schudson, 2002; Weinhold, 2008). The media environment literature emphasizes the survivability of the media organization operating in a populated environment full of intermedia and intramedia competition (e.g., Dimmick, 2003; Doyle, 2002; McChesney, 2008; Picard & Rimmer, 1999; Picard, 2008; Prior, 2007). The media environment approach will be discussed more extensively in Chapter 5.

Economic approaches.

The decline of newspapers is often viewed through the lens of economic analysis. Economic forces have political outcomes and, likewise, discussion of political effects and policy remedies is affected and often circumscribed by economic factors. The reality is that many economic forces have been behind the contraction in newspapers, which is

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why so many communications and political science scholars include economic analysis in their scholarship on print decline.

On the demand-side there is a weakening demand for print products which scholars attribute to a generational change: young readers are failing to subscribe in the same numbers as older readers, who are a diminishing base (King, 2010; Meyer, 2004a). While the population increased 87.78% from 165.93 million in 1955 to 311.59 million in 2011, there was a 20.89% drop in circulation of daily newspapers of from 56.15 to 44.42 million (E&P, 1956; E&P Data, 2012; U.S. Census, 2014a).

On the supply side, the decline of newspapers is caused by a variety of economic pressures including a changing business model that emphasizes advertising over subscriber revenues and the influence of macroeconomic trends, including a recession. If the decline in newspapers were purely a demand-side issue, then the decline of newspapers would not produce negative effects on democracy but would rather be a symptom of decline in democracy (i.e., decline in political interest). However, communications and political science scholars have continued to focus on factors pressuring the supply of newspapers as well because a reduction in the availability of newspapers limits individual choices. An underlying dynamic behind newspaper competition is economies of scale in the industry. There are high fixed capital costs of production, and this leads to a competitive advantage for larger newspapers that can reduce their per-unit costs by spreading them over a broader readership as the marginal cost of producing additional papers declines (Knee, Greenwald & Seave, 2009). As a result of economies of scale, there is likely to be a reduction in smaller newspapers that cannot compete on a cost of production and distribution basis. Additionally, papers with

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larger economies of scale are in a better position to win advertiser dollars, since advertisers are looking for the largest audience of subscribers. Advertising sales account for an even larger share of newspaper revenue than subscriptions: they increased from 71% of newspaper income in 1956 to 82% by 2000 (Kaye & Quinn, 2010). It should also be noted that macroeconomic trends (i.e., the 2008 recession) and competition from other media sources in the media environment have reduced advertising revenue for newspapers (Picard and Rimmer, 1999; Rimmer, 2001). The Internet has become a "formidable, new rival" for newspapers seeking advertising revenue (Curran, 2011, p. 468). As the amount of revenue from subscriptions declines as consumer tastes shift, downward pressures on advertising revenue are all the more relevant to a newspapers' success.

As a result of the economic forces driving economies of scale, many scholars identify the tendency within the industry for newspaper markets to become monopoly markets where only one paper remains (Bucklin, Caves & Lo, 1989; Entman, 1985; Picard, 2004; Picard, 2008). In addition to economies of scale, Doyle (2002) attributes newspaper failures and successes to economies of scope – the degree to which the product is differentiated and/or overlapping from/with other products. Newspapers that are unique from others in the marketplace are often described as occupying a "niche" position (Dimmick, 2003). Media scholars trace this kind of product differentiation back to Harold Hotelling's (1929) work on spatial differentiation in products (Hamilton, 2004; Hotelling, 1929; Fico, Lacy & Riffe, 2008).

In an economic approach, variables of interest include the size of circulation, the number of competitors, the distribution schedule (AM/PM) and the party affiliation – the

first two of which apply to economies of scale and the latter two of which might differentiate the product and associate with economies of scope.

Political economic approaches.

There has also been an extensive literature in political economics looking at the effects on newspapers of market structures including the decrease of independent and family-owned newspapers and the growth of conglomerate and chain media companies that are more attentive to producing profits for shareholders than to providing quality journalism for the local community (Dunaway, 2008; McChesney, 2008; McChesney & Nichols, 2010; Meyer, 2004a; Meyer, 2004b; Schaffner & Sellers, 2003; Schudson, 2002; Weinhold, 2008). Dunaway (2008) argues that the quality of the information found in political news is influenced by media ownership and market contexts. The growth of newspaper chains in the last few decades has led corporations to shut down low-performing papers. However those papers that are shut down are not necessarily the smallest papers – which can be profitable when they occupy a niche. In 2008, newspaper companies that focused on smaller local markets maintained 20 percent margins while national and bigger newspapers often struggled to be profitable (Knee, Greenwald and Seave, 2009; Starr, 2009).

Political economy studies have also examined the effects of state structures on newspapers (Busterna & Picard, 1993; Matin, 2008; Niebauer Jr., 1984), including the effect of the 1970 Newspaper Preservation Act which allowed for Joint Operating Agreements (JOAs) between two newspapers operating in the same town, although critics

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have railed against the frequently observed and inefficient outcome of the stronger paper propping up the weaker (often afternoon) paper to survive beyond its natural life.[5]

Studies on newspaper decline from the political-economic approach take into account similar variables as the economic approach including size of market and number of competitors as well as ownership structure.

Survival models.

This research will use a survival model to examine risks of failure for daily papers over the last several decades. The survival study in this thesis incorporates many of the variables considered by the aforementioned approaches to newspaper decline. This survival study analyzes the role of market competition, market size, partisan affiliation and the implications of increasing risks to one and two newspaper counties.

Survival analysis, also referred to as event history analysis or duration analysis, looks at why events happen, or why there are failures. Survival analysis is designed to model "event history," which "entails a consideration of not only if something happens, but also when something happens" (Box-Steffensmeier & Jones, 2004, p.1). Survival analysis is beneficial when timing and change are important to hypotheses, i.e., when it is informative to know when newspapers fail and the characteristics of that failure at that point in time. By analyzing risk factors over time associated with failure, survival analysis helps answer theoretical questions related to many questions of social science

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[5] The state expressed its support for two-newspaper towns in the *Newspaper Preservation Act* of 1970, allowing for Joint Operating Agreements (JOAs) that sanctioned two newspapers in the same town to collude on subscription and advertising while remaining editorially separate as a means to preserving two-newspaper towns.

including the failures of political parties, ends to military conflicts and the length of political terms in office. As Box-Steffensmeier and Jones (2004) write, the concept of "risk" is inextricably linked to survival and essential to understanding the dynamics of failure associated with political and social processes: "as something persists – as it survives – what are the risks it will subsequently end?" (p. 3). This is why survival studies use measurements of risk as primary outputs for analysis and why this analysis will report, as is standard with survival studies, hazard ratios that measure risk of failure.

Survival analysis studies have a rich history in the fields of political science (Bennett & Stam III, 1996; Carpenter, 2002; Katz & Sal, 1996) and economics alike. With regard to the newspaper industry, survival studies have been conducted in other countries and parts of the U.S. (Carroll & Hannan, 1989). Studies have employed survival analysis models in the Netherlands (VanKranenburg, Palm & Pfann, 1998; VanKranenburg, Palm & Pfann, 2002**),** populations in US local areas (Carroll & Hannan, 1989), Argentina and Ireland (Carroll & Delacroix, 1982), California (Carroll & Huo, 1986) and Spain (Nunez-Nickel, Gutierrez & Carmona, 2006), among others. These studies are concerned with effects of various covariates in explaining exit and entry of newspapers, including circulation, population, party affiliation, regional/geographical variables, linguistic variables, age of the newspaper and in the case of Spain, type of government regime (democracy or dictatorship). No survival analysis has yet been conducted for the newspaper industry at-large in the U.S.

Data

This is the first survival analysis of general-subscriber-English-language daily newspapers for a significant historical period (55 years), allowing for an examination of the characteristics of newspapers that fail and the types of counties that are vulnerable to losing them. The data set for the survival study on newspapers was compiled from the *Editor and Publisher International Yearbook* (E&P), which has been published annually since 1920. The volumes for 1956 through 2010 of the E&P and the 2012 edition of the similar (slightly revamped by a new publisher) *Editor and Publisher International Newspaper Data Book* (E&P Data) were consulted pertaining to data collected for 1955 through 2010.[6] A sample page from 2010 is available in Appendix A. The E&P is the main source of listings for the industry and for scholars studying newspapers, circulations, staff and other features of daily and weekly newspapers in the U.S. over the last one hundred years. It compiles a comprehensive list of all the daily newspapers in circulation for each year. Circulation, number of papers per county and other data were obtained from this source. Newspapers in the directory are listed by city; they were assigned a county consistent with a prior study for the base year of 1956 (Gentzkow et al., 2011) and consistent with the county corresponding to the city's coverage area for new entrants since then.[7] The match between newspaper readership and county is not

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[6] It should be noted that the *E&P International Yearbook* published annually through 2010. After a change in ownership, the next volume containing a similar encyclopedia of newspaper data was the *Editor & Publisher Databook* in 2012, now under a new owner. Thus, the 2012 volume is used for 2011 data.

[7] In Gentzkow's analysis (2011), cities were matched to census places and census places were matched to the county containing the largest share of the population of the census place. In this analysis, for new entrants, cities were matched to the county based on E&P's county designation, which it publishes for each newspaper in the *Yearbook*, and by researching city and county boundaries. When a city spanned more than

exact, but the methodology employed is designed to assign newspapers to the county that has the largest share of readership.

For this research, a one-year lag is assumed. It was observed that, primarily because of the publication schedule, E&P volumes published data that reflected numbers from the previous year due to factors, including 1) when the papers collected data or commissioned their most recent circulation audit, 2) whether the paper reported updated information to E&P and 3) the month of publication of the E&P for that year. Sometimes data was more than one year old, but a one-year lag in data reporting was most frequently observed during the coding process.

1955 is a good year to begin since it represents what scholars associate as the beginning of the "TV" era because more than one-half of American households had televisions by the middle of the 1950s or about 1955 (Gentzkow et al., 2011; Prior, 2007). For purposes of considering television as a competitor in a intra-media environment with newspapers, this analysis takes place in an area where that competition had been established for most Americans. Gentzkow et al. (2011) also used 1955 as a year to bracket the beginning of a "TV era" period in their analysis examining the effects of newspaper entry and exit on voting.

In order to keep in line with the goals to utilize general-subscriber-English-language daily newspapers and also to analyze newspapers with content tied to the local community, these data differ just slightly from the E&P data because they exclude 1) three papers that did not have local sections (USA Today, Christian Science Monitor and

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one county or the paper served a multiple city (i.e. tri-city) area, the paper was assigned to the county in the coverage area that had the larger population share.

Wall Street Journal); 2) Spanish-language papers, 3) African American daily papers, 4) papers for which there is no subscription data, 5) papers found to be incorrectly classified by E&P as daily papers when in fact they publish less than four times a week and should have been classified as weekly papers.

Key descriptive data from E&P were reviewed and recorded for each of 2,275 newspapers in each of the 55 years the newspapers were in existence: state, city, county, name(s) of paper, PM/AM/allday, Republican/Democrat/Independent, circulation size and year established. There were over 91,000 total observations –one for each newspaper in each year of its existence in the study interval. Based on seven variables for each newspaper in each year of the study period, about 630,000 total data points were reviewed. The data for circulation, which was presented as a continuous value by E&P, were coded into six separate, dichotomous or dummy variables representing the following ranges: *Under5k, 5Kto10K, 10Kto25K, 25Kto50K, 50Kto100K, 100kplus*. It was determined that there would be sufficient precision in the data to accomplish the purpose of coding newspapers by circulation size as well as changes in circulation size by classifying them into circulation groups. It was not deemed necessary to treat circulation as a continuous variable and record small year-to-year changes in circulation to accomplish this purpose. Furthermore, by using dummy variables to reflect categories, it is not necessary to choose a functional form to model the relationship between chance of survival and circulation. This relationship most certainly violates the linearity assumption, i.e. unit changes will have smaller effects on risk of survival for papers with higher circulations than for papers with lower circulations, and thus, the relationship would warrant the choice of a functional form. The ranges that were chosen are

consistent with the ranges that the E&P uses for classifying newspapers into "circulation groups" reflecting different circulation sizes.

The characteristic representing number of papers in county was recorded into four separate dummy variables: *One Paper, Two Papers, Three Papers, Four or More Papers*. The variable, *Age of Paper in 1955*, was converted from the E&P's "Year Established" data. (*Age of Paper in 1955* = |1956-"Year Established"|; for papers founded after 1955, the variable takes the value of zero). Inconsistencies and omissions in the data set as found in E&P, as well as name changes of papers, were further investigated to preserve case records or correct apparent mistakes in the printed data.[8]

Other sources of data for the explanatory variables came from the U.S. government, including the U.S. Census and the U.S. Department of Agriculture. They include: *Percent Black* (U.S. Census, 2001a); *Median Income* (U.S. Census, 2001b); *College Graduates* (U.S. Census, 2001c); and, the Rural-Urban Continuum (*RUC1-RUC9*) Codes and the Urban Influence Codes (*UIC-UIC11*) released in 2003 (U.S. Department of Agriculture Economic Research Service, 2003; U.S. Department of Agriculture Economic Research Service, 2004a; U.S. Department of Agriculture Economic Research Service, 2004b; U.S. Department of Agriculture Economic Research Service, 2004c; U.S. Department of Agriculture Economic Research Service, 2008).

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[8] For example, a correction was made if for one year a circulation of 100,000 was reflected as 10,000 mistakenly (as investigation into the prior and subsequent E&P volumes confirmed). To confirm data, fill in missing data or to confirm that a name change reflected the same newspaper and no new entry was required, additional sources were consulted - principally the Library of Congress's online data resource Chronicling Newspapers (United States Library of Congress), the websites of the newspapers, web sites from state and local library archives and news reports. Phone calls were made to papers in some instances.

Methodology

1955-2010.

The Cox model is specified as follows where t goes from 0 to 55. (1955 to 2010):

$$H_i \, (t/x) = \exp(\beta_1 x_1 + \beta_2 x_2 + \beta_k x_k) H_0(t)$$

In this function, t represents the variable of time while x represents any given covariate, i.e. x_1, x_2, x_k since the hazard ratio is treated as having a dependency on time as well as covariates (Box-Steffensmeier & Jones, 2004). $H_i(t/x)$ is the hazard ratio for the *i*th subject where $H_0(t)$ is the baseline hazard function and $\beta_1 x_{1\ldots} \beta_k x_k$ represent the covariates that are defined in the text that follows in this section.

The hazard ratio is H_i / H_0, which indicates the hazard ratio of the subject as a result of a given covariate compared to the hazard ratio when all the covariates are set to zero. The hazard ratio is the exponentiated value of the coefficient and the one most often used to assess risks of failure using a logs-ratio interpretation. Broadly speaking, the hazard ratio measures the risk of failure associated with a given characteristic.

The basic data are as follows:

- 2,275 subjects
- 894 failures in single failure-per-subject data
- 91,362 total analysis time at risk, at risk from t = 0
- 8,585 observations
- earliest observed entry t = 0 (year = 1955)
- last observed exit t = 55 (year = 2010)

There are 2,275 distinct daily papers (subjects) recorded over the span of the dataset, the number of which will vary at any given year, i.e. 1,778 in 1970 and 1,177 in

2010. Over the span of 55 years, there are 894 failures. The analysis observes subjects over a total analysis time at risk of 91,362 (e.g., roughly 2,000 subjects per year for a duration of roughly 50 years each).   These subjects have a duration of between 0 and 55 years and may enter and exit the data set at any time from 1955 through 2010. The 8,585 observations represent the total number of new subjects (newspapers) plus the number of times there are changes to values of variables associated with those subjects. This is because survival models frequently incorporate "time varying coefficients" (TVCs). TVC's are associated with variables for any one subject (newspaper) that may change value during the course of the analysis. Each time a variable changes, such as a newspaper changing from PM to AM distribution, there is a new record or "observation."

The variables x_1 through x_k are included in the model for the observation period from 1955 to 2010. The variables $x_{1\ through}\ x_k$ are as follows:

- *One Paper in County* – Dummy
- *Two Papers in County* - Dummy
- *Three Papers in County* - Dummy
- *Republican* – Dummy
- *Democrat* - Dummy
- *PM* - Dummy
  circulation size:
- *Under 5k*
- *5k to 10k*
- *10k to 25k*
- *25k to 50k*
- *50k to 100k*
- *Age at 1955*
- *State Capital* - a dummy for whether the paper serves a state capital.

The omitted variable, or reference category, for number of papers in county is

Four or more papers in county. The omitted variable for political party affiliation is

Independent. The omitted variable for distribution time is AM and Allday.[9] The omitted variable for size of circulation is 100k plus.

With the exception of two variables – age at 1956 and state capital – all of these variables are time varying coefficients. The value of these variables can change at any time, or multiple times, within the observation period. For example, a paper can shift from PM to AM, or its circulation range can change. Additionally, at each time that a paper in a county fails, the number of competitors for each newspaper in the county at that point in time will also change.

2000-2010.

The second model delimits the study period to 2000 to 2010 where t goes from 45 to 55 (2000 to 2010).

$$H_i\,(t/x) = \exp(\beta_1 x_1 + \beta_2 x_2 + \ldots + \beta_k x_k)h_0(t)$$

The basic parameters are as follows:

- 2,339 obs. remaining, representing
- 1,485 subjects
- 100 failures in single failure-per-subject data
- 15,702 total analysis time at risk, at risk from $t = 0$
- earliest observed entry $t = 45$ (2000)

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[9] For any given year in the E&P, out of the 1,400 to 2,200 newspapers, 10 to 20 might be classified as having "all day" or "daily" subscription schedules. According to David Maddux, the Editor of E&P from 2000 to 2009, these papers published multiple additions throughout the day (D. Maddux, personal communication, September 5, 2012). Based on research of individual papers with these distributions and phone calls to newspapers with these classifications, it was additionally found that that some papers with this classification were actually morning papers exclusively (and were misclassified) and others distributed in the morning at a minimum with additional papers being distributed at later times for different delivery zones. Sometimes the paper might also be distributed on an undefined delivery schedule, i.e. some time in the later morning. For purposes of analysis, these papers are thus assumed to resemble AM papers more than PM papers and for this reason, the variable PM is included in analysis and AM papers, together with the small population of All Day/Daily papers are omitted variables, together making up the reference category.

- last observed exit t = 55 (2010)

There are 1,485 subjects, or daily papers that exist for some duration within the period 2000 to 2010 and a total of 100 failures. The N (2,339 observations) is still very large for this model but about 1/4 the size as the data set for the period beginning in 1955. The total analysis time at risk is likewise about 1/5 the size of the data set for the period 1955 to 2010 but still very large.

This model also includes variables that are available on a county-unit level from the 2000 U.S. Census and the U.S. Department of Agriculture. The government data are merged into the newspaper data using FIPS codes for counties. The availability of these data allows for additional analysis of the effects of population density, rural/urban characteristics and other demographic characteristics on newspaper closure for the period from 2000 to 2010. Additional rural/urban variables include points on the Department of Agriculture's 2003 Rural-Urban Continuum (RUC) scale (variables *RUC1-RUC9*) and 2003 Urban Influence Codes (UIC) scale (*variables UIC1-UIC11*). The RUC scale is a "classification scheme that distinguishes metropolitan counties by the population size of their metro area, and nonmetropolitan counties by degree of urbanization and adjacency to a metro area" (U.S. Department of Agriculture, 2013a). The RUC is a nine-point (1 to 9) scale that roughly spans population and density from high to low. The UIC barometer is a twelve-point (1 to 12) scale that also roughly spans population density from high to low but additionally takes into account adjacency to metro or urban areas. This allows for more analysis of suburban counties and additional distinctions including "micropolitan" to describe small cities and "noncore" to describe regions that are remote from an urban center and often rural. According to the U.S. Department of Agriculture,

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"Urban Influence Codes form a classification scheme that distinguishes metropolitan counties by population size of their metro area, and nonmetropolitan counties by size of the largest city or town and proximity to metro and micropolitan areas" (U.S. Department of Agriculture Economic Research Service, 2013b). The points on the UIC scale are not only considered as individual variables but are also transformed into broader rural/urban/suburban classifications to form the following variables for population centers inclusive of suburbs: *LargeMetroAndSuburbs*, *SmallMetroAndSuburbs, MicroAndSuburbs* and *NonCoreNotAdjacent*. Additional classifications were formed to classify rural-urban subgroups based on their relationship to the metro area: *Large Metro, Small Metro*, *MicroNotAdjacent*, *NonCoreNotAdjacent*, *MajorMetroSuburbs*, *SmallMetroSuburbs* and *MicroSuburbs*. Furthermore, some variables were created that group RUC categories when the number of counties in each RUC category was insufficient to allow analysis. RUC789 includes the counties in RUC7, RUC8 and RUC9. UIC67 includes the counties in UIC6 and UIC7. UIC1112 includes the counties in UIC11 and UIC12.

From the U.S. Census, the following variables are incorporated into the model: *MedianIncome, PercentBlack, PercentCollege and MedianAge*. The inclusion of these demographic variables allows us to analyze whether there are disparate patterns of access to newspapers associated with print decline among different socioeconomic groups, just as, for example, there were disparate patterns of access to the Internet with the onset of that technology.

These additional variables are all constant values for the duration of the study period:

- *RUC2* - Dummy for counties in metro areas of 250,000 to 1 million population
- *RUC3* - Counties in metro areas of fewer than 250,000 population
- *RUC4* - Dummy for Urban population of 20,000 or more, adjacent to a metro area
- *RUC5* - Urban population of 20,000 or more, not adjacent to a metro area
- *RUC6* - Urban population of 2,500 to 19,999, adjacent to a metro area
- *RUC7* - Urban population of 2,500 to 19,999, not adjacent to a metro area
- *RUC 8* - Completely rural or less than 2,500 urban population, adjacent to a metro area
- *RUC 9* - Completely rural or less than 2,500 urban population, not adjacent to a metro area
- *RUC789* – RUC7+RUC8+RUC9
- *UIC1* - Dummy for In large metro area of 1+ million residents
- *UIC2* - Dummy for In small metro area of less than 1 million residents
- *UIC3* - Dummy for Micropolitan area adjacent to large metro area
- *UIC4* - Dummy for Noncore adjacent to large metro area
- *UIC5* - Dummy for Micropolitan area adjacent to small metro area
- *UIC6* - Dummy for Noncore adjacent to small metro area and contains a town of at least 2,500 residents
- *UIC7* - Dummy for Noncore adjacent to small metro area and does not contain a town of at least 2,500 residents
- *UIC67* – UIC6 + UIC7
- *UIC8* - Dummy for Micropolitan area not adjacent to a metro area. Note: A micropolitan area contains an urban core of at least 10,000, but less than 50,000, population.
- *UIC9* - Dummy for Noncore adjacent to micro area and contains a town of at least 2,500 residents
- *UIC10* - Dummy for Noncore adjacent to micro area and does not contain a town of at least 2,500 residents
- *UIC11* - Dummy for Noncore not adjacent to metro or micro area and contains a town of at least 2,500 residents
- *UIC12* - Dummy for Noncore not adjacent to metro or micro area and does not contain a town of at least 2,500 residents
- *UIC1112* – UIC11 + UIC12
- *SmallMetroAndSuburbs* - Dummy for UIC2 + UIC5 +UIC 6
- *MicroAndSuburbs* = Dummy for UIC8 + UIC9 + UIC10
- *NonCoreNotAdjacent* = Dummy for UIC11+ UIC12
- *Small Metro* = Dummy for UIC2
- *MicroNotAdjacent* = Dummy for UIC8
- *MajorMetroSuburbs* = Dummy for UIC3 + UIC4
- *SmallMetroSuburbs* = Dummy for UIC5 + UIC6 + UIC7
- *MicroSuburbs* = Dummy for UIC9 + UIC10
- *Median Income*
- *PercentBlack (percent)*

- *PercentCollege (percent)*
- *Median Age*

The omitted variable, or reference category, for the RUC scale is: *RUC1,* the dummy for counties in metro areas of 1 million population or more. The omitted variable for population centers inclusive of suburbs is Large Metro and Suburbs, corresponding to UC1 + UC3 + UC4. The omitted variable for rural-urban subgroups based on relationship to the metro area is Large Metro, corresponding to UC1.

It should be noted that when running the model for 2000 to 2010, not all variables from the first model can be used due to problems with collinearity. Variables that are barometers of population density in some form cannot be included together in the model. For example, a degree of collinearity exists between small circulation size and a rural classification from the Rural-Urban Continuum. Additionally, a degree of collinearity exists between variables from the Rural-Urban Continuum and the Urban Influence Codes.[10]

The period 2000-2010 is bracketed for analysis because it represents a period of decline of the newspaper within the media environment featuring some notable large newspaper failures, declining circulation and an overall sense that newspapers are "vanishing" (Meyer, 2004a). Furthermore, just as 1955 denotes the beginning of the television era when 50% of Americans had televisions, 2000 is widely cited as the year when 50% of the American public had access to the Internet and is thus an appropriate demarcation of the start of the Internet era (Pew, 2012). For purposes of considering the

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[10] Unfortunately, because the Department of Agriculture updates its classification system every ten years and the new classifications are not consistent with categories from prior systems, it is only possible to incorporate these variables into the time period starting in 2000.

Internet as a competitor in a intra-media environment with newspapers, this analysis takes place in an era where that competition had been established for most Americans.

Hypotheses

This research tests eight hypotheses, many of which derive from principles in the literature on media economic approaches presented earlier. The theory behind each hypothesis will precede the presentation of the hypothesis. Some of the hypotheses apply to the period of analysis between 1955 and 2010, some hypotheses apply only to the period 2000 to 2010 and some hypotheses address both periods. Hypotheses that apply only to the period from 2000 to 2010 do so because data is not available to test these claims for the period before 2000.

Based on principles from media economics, a firm operating to maximize its own utility function in a competitive environment will have a greater chance of success, as measured by staying in business, if it has less competition for subscriber and advertising revenue. Papers that are the only daily in their county will have an advantage by virtue of holding a monopoly position. Therefore the following hypothesis, H1, stands:

> H1) Newspapers in counties with fewer other newspapers will face a lower risk of failure. Papers that are the only one in their county will face the lowest risk of failure. This is hypothesized and tested for the periods 1955-2010 and 2000-2010.

Also based on principles from media economics, larger firms operating at a higher economy of scale (i.e., they are able to overcome high fixed costs and attract more advertisers) will have a greater chance of achieving positive returns and staying in business. Therefore the following hypothesis, H2, stands:

> H2) Newspapers that have smaller circulations will have higher risks of failure. This is hypothesized and tested for the periods 1955-2010 and 2000-2010.

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Afternoon papers have declined as a fraction of all papers in the last fifty-five years as a result of several factors. In *Death in the Afternoon*, Benjaminson (1984) attributes the decline to a shift in consumer taste: demand for afternoon papers fell as the proportion of industrial workers who went to work early and came home in the afternoon with a demand for the latest news fell relative to the number of service workers who favored morning news. Furthermore, Benjaminson (1984) claims that growing traffic congestion costs for afternoon deliveries also led to pressures on the bottom line of newspaper companies to supply papers at this hour. Additionally, there is the factor of intra-media competition from television evening news and, eventually, 24-hour television news and the Internet which update news throughout the day (Entman, 1985; Kalb & Kralev, 2000). As Kalb and Kralev (2000) write, "what readers used to find in their afternoon paper before, they can now get much faster and more easily on their computers; they can read the news just minutes – even seconds after it happens" (p. 3). Therefore the following hypothesis, H3, stands:

H3) Newspapers with PM circulation will face a higher risk of failure than newspapers with AM circulation. This is tested for the periods 1955-2010 and 2000-2010.

Since the early twentieth century, parties have weakened as individual candidates and their apparatuses have grown in strength: party-centered candidates have given way to candidate-centered politics in the modern era (Kornbluh, 2000; Milkis, 1993). It stands to reason that demand for partisan papers would decline in the twentieth century. Indeed, partisan newspapers, which were the norm from the early days of the American Republic, have been on the decline since the rise of the "penny press," in the mid-19th century (Schudson, 2008). In the early decades of the twentieth century, the progressive

movement with its belief in the need for an informed citizenry and appeal for less partisanship in politics also played a role in the decline of party-affiliated journalism (Schudson, 2008). According to Groeling and Baum (2013), partisan papers have shown further decline since 1950. Based on an historical analysis of partisan papers using E&P data from 1932 to 2004, Groeling and Baum (2013) find that partisan newspapers constituted a majority of American newspapers until the 1960s, but by 2004, only 5% of daily papers were declaring a partisan affiliation (p. 18). Furthermore, the partisan realignment in the 1960s (e.g., Mayhew, 1974) would cause papers aligned with a particular party to reconsider their affiliation and switch to the other major party or dealign and identify as independent. As a result, the following hypothesis, H4, stands:

> H4) Partisan newspapers (both Democratic and Republican) will face a higher risk of failure than Independent papers. The risks will be higher for the period 2000-2010 than 1955-2010.

As competition increased among newspapers and the number of daily papers declined, many papers that originated to cover state politics became vulnerable if they were a secondary paper in their town or due to competition from the nearest major metro daily. Some papers in state capitals may not be the primary paper for the community that caters to a general news readership, but rather a secondary paper focused on politics for a smaller readership. These papers would thus operate at lower economies of scale and have a harder time competing for advertising revenue. State capitals are also often not located in the largest city in the state. In these cases, papers in the largest cities in the state might also cover state politics and provide a replacement supply source of information on state politics. As a result, the following hypothesis, H6, stands:

H5) Newspapers in counties that contain a state capital will face a higher risk of newspaper failure than newspapers in counties that do not contain a state capital. This is hypothesized and tested for the periods 1955-2010 and 2000-2010.

In a market where newspapers are declining, populations associated with less disposable income are more likely to reduce their demand for newspapers. Furthermore, in this competitive market, advertisers are less likely to pay for advertisements for a declining readership that has less purchasing power. As a result, newspapers serving counties with less income, which also correlates with a higher percentage of African Americans and a lower level of education, would be more likely to fold. As a result the following hypothesis, H6, stands:

H6) Newspapers in counties with any of the following demographic characteristics are at a higher risk of failure: lower median income, lower percentage of college graduates and higher percentage of African Americans. This is tested for the period from 2000-2010.

Newspaper readership has declined in recent decades for younger populations more than for older readers (King, 2010; Meyer, 2004). As a result those counties where the median age of residents is older should have a higher demand for newspapers. This results in additional subscription revenue for newspaper owners that should favorably impact their ability to stay in business. As a result the following hypothesis, H7, stands.

H7) Newspapers in counties with a higher median age of residents are at a lower risk of failure. This is hypothesized and tested for the period from 2000-2010.

Similar to the reasoning behind hypothesis H2, newspapers operating in rural counties and counties with smaller population centers operate at a lower economy of scale and therefore have less chance of achieving positive returns and staying in business. This hypothesis is tested for the period 2000-2010 when available rural-urban classifications for counties are available. (Earlier rural-urban classifications used a

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different system of rural-urban categories that are not directly comparable). Therefore the following hypothesis, H8, stands:

H8) Newspapers in counties that are rural and in smaller population centers will face a higher risk of failure. This is tested for the period from 2000-2010.

This analysis covers the full population of newspapers from 1955 to 2010 (with a very small number of omissions as noted) rather than a selection or sample of daily newspapers in this period. As a result, there is virtually no sampling variance. Thus, T-statistics and other measures that would assess the difference between the sample mean and the universal mean are not relevant to this analysis and not displayed.

Results

1955-2010.

The following are the results of the Cox function showing hazard ratios associated with different variables for the period 1956 to 2010, during which 40% of newspapers failed and there were 894 total failures. The hazard ratio indicates the risk of failure associated with the covariate compared to the risk of failure if the covariate was set to zero. Hazard ratios are subject to logs-ratio interpretation. A hazard ratio greater than 1 means there are greater odds of failure associated with the covariate, while a hazard ratio of less than 1 means there are less odds of failure associated with the covariate. The omitted reference variables in the analysis are: Four or More Papers in County, AM and All Day/Daily, Independent and Over100k. Table 3 summarizes results for the Cox regression:

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Table 3 - Hazard Ratios for Newspapers, Survival Analysis, 1955-2010

_t	Hazard Ratio
TwoPapers	3.96
ThreePapers	4.95
ThreePlusPapers	5.76
PM	0.81
Republican	0.80
Democrat	0.80
Ageat1955	0.99
StateCapital	1.69
Under5k	4.17
5kto10k	1.78
10kto25k	1.20
25kto50k	1.04
50kto100k	0.71

Note: 8,628 observations, representing 2,272 subjects. 887 failures in single failure-per-subject data. 91,341 total analysis time at risk, at risk from t =0. Breslow method of ties.

H1 is supported. Newspapers that are the only paper in the county are safer for the period 1955 to 2010. The variable *Two Papers* has a hazard ratio of 3.96, indicating that newspapers that are one of two papers in a county are almost four times as likely to fail as newspapers in counties with one paper, the reference category. As the number of newspapers in the county increases, papers have higher risks of failure. The statistical results yield the interpretation that papers fare better when there are not so many newspapers in the marketplace and especially when they occupy the monopoly position of being the only paper in the county.

H2 is supported. Newspapers with smaller circulations are at a greater risk for failure for the period 1955 to 2010. Papers with a circulation of fewer than 5,000 have a hazard ratio of 4.17, or are about four times more likely than papers with circulations of 100,000 and above to fail. Papers with circulations that are 5,000 to 10,000 are also at greater risk of failing than papers with circulations of 100,000 plus with a hazard ratio of

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1.78. As circulations get higher, the hazard ratios get closer to one and then less than one in the case of papers in the 50k to 100k, where the hazard ratio is 0.71. This suggests that papers in the medium range of circulation sizes may fare better. They may be big enough to benefit from economies of scale but small enough to be outside the major metropolitan areas where papers are failing in a more crowded and competitive field.

H3 is not supported. The hazard ratio for PM papers is 0.81, indicating they are safer than AM and all day/daily papers, the reference categories. This was an unexpected result that initially seemed counterintuitive since after the advent of television and the evening news, many PM papers began to close. However, under a revised interpretation and taking into account the properties of a survival model, the result makes sense if one considers that owners calculate risk associated with characteristics of their papers and may change characteristics associated with risk in advance of failure. By this logic, owners of PM papers that are losing subscribers switch to AM circulation in advance of failure because it is perceived that AM papers are safer or compete more favorably in the intramedia marketplace. Thus, if and when a failure occurs it does so when the paper is AM, leading AM ratios to seemingly be perversely at higher risk.

H4 is also not supported but an explanation similar to that of H$_3$ applies. Republican and Democrat papers also show hazard ratios of less than 1 (0.80 for both) indicating that they are safer than Independent papers. While this could be true because readers demand papers that reflect their views, the mechanism whereby owners of failing papers calculate risk and change their party's affiliation to Independent because it is deemed safer in advance of failure, may also partially be at work.

H5 is affirmed. The hazard ratio of state capitals is 1.69, indicating that papers in counties with state capitals are almost two times as likely to fail as papers in counties that do not contain state capitals. Of the 894 failures from 1955 to 2000, 49 have occurred in state capitals. The majority of these failures have been in papers with circulations in the 25 to 50k range (17 failures). Appendix B lists these papers and their characteristics. Table 4 provides a summary of the characteristics of these papers.

Table 4 - Newspaper Failures in State Capitals, 1955-2010

Total Number of Closures	49
PM papers	33
AM papers	16
1 paper in county	1
2 papers in county	24
3 papers in county	18
4+ papers in county	6
Circulation <5k	3
Circulation 5k-10k	5
Circulation 10k-25k	6
Circulation 25k-50k	17
Circulation 50k-100k	9
Circulation 100k+	10
RUC 1 – 2003	28
RUC 2 – 2003	19
RUC 5 – 2003	1
RUC 8 – 2003	1

There are multiple risk factors associated with newspapers that fail in state capitals. Many (18) of the papers in counties with state capitals that failed were in competitive environments with three or more newspapers in the county. However, the largest number (24) of newspaper failures in counties with state capitals was in two-paper counties, leaving these state capitals with only one paper.

Of the 49 papers, 47 were located in counties classified by the categories RUC1 (counties in metro areas of 1 million population or more) and RUC2 (counties in metro areas of 250,000 to 1 million population). State capitals are in populous areas, though it is still the case that they may not be most populous metro areas in the state while still classifying as RUC1 or RUC2. For example, Sacramento County has a population of 1.46 million while Leon County, Florida (home to Tallahassee) has a population of 282,000 (U.S. Census, 2014b). These counties are in the RUC1 and RUC2 categories, respectively, but they are not the most populous counties in their states.

While the papers that fail have RUC1 and RUC2 designations, they are most often in the circulation range of 25,000 to 50,000, not in the larger ranges of 50,000 to 100,000 or 100,000 plus that might be expected to reflect circulation for the general-news primary paper serving RUC1 and RUC2 counties. The circulation range 25,000 to 50,000 has a hazard ratio of 2.17 compared to 0.49 for papers in the circulation range of 50,000 to 100,000 based on additional analysis with interaction variables.[11] It is possible that the papers that failed are secondary papers in these counties that focused on politics rather than general news. As a result, the paper may not have been able to compete with a primary paper in the same market with a larger readership, or a primary paper in the nearest large metro market which also covered state news.

Table 4 also indicates that two-thirds of the papers that failed in state capitals were PM papers, and this could be an important explanatory finding. It is possible that many papers in state capitals that have failed are victim to preferences shifting away from

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[11] The model was also run including the interaction variable, StateCapital25to50K, which produced a hazard ratio of 13.54 indicating a significantly higher risk for papers of this circulation range in state capitals and suggesting that it is the failure of papers in this range that contributes to the variable State Capital (globally representing all circulation ranges) having a hazard ratio of greater than 1.

PM papers in the presence of all-day news alternatives. Whether or not this is more or less the case for counties with state capitals compared to other counties is a subject of further inquiry.

The findings on risk of papers in state capitals should be further researched because as scholars have noted, state politics is increasingly an important locus of political activity in the United States as many government functions have devolved, and there is a need for the press to serve a watchdog role (Caprini et al., 1994; Starr, 2009; Wolfson, 1985). The subset is small enough to allow for an analysis of individual case studies.

2000-2010.

Table 5 analyzes the same covariate pattern for 2000 to 2010 as for 1955 to 2010. The exception is the model also includes variables from 2000 reflecting median age, median income, percentage black and percentage with a college education in counties.[12] The 2000 to 2010 data set is a subset of the larger data set but still allows for comparison of the two periods, though it should be noted that the longer period includes the trends of the subset. When comparing risks across the two periods, the bases are different. Each base has different set of "subjects," or newspapers. But because each base, or census, of newspapers has the same categories, we still can draw meaningful conclusions. Furthermore, because the longer period includes the trends of the shorter period, the contrast between the two periods may actually be understated.

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[12] It was not possible to apply values from earlier Censuses (i.e. 1960, 1970, 1980 and 1990) because the county codes change with each Census and the values cannot be correctly applied across counties and newspapers.

Table 5 - Hazard Ratios for Daily Newspapers, Survival Analysis, 2000-2010

_t	Hazard Ratio
TwoPapers	2.59
ThreePapers	2.43
ThreePlusPapers	2.33
PM	1.61
Republican	1.38
Democrat	1.43
Ageat1955	0.99
StateCapital	1.79
Under5k	5.05
5kto10k	1.33
10kto25k	1.42
25kto50k	2.17
50kto100k	0.49
MedianAge	0.99
MedianIncome	1.00
PercentBlack	1.03
PercentCollege	1.04

Note: 2,339 observations, representing 1,485 subjects.100 failures in single failure-per-subject data. 15,702 total analysis time at risk, at risk from t = 0. Breslow method for ties.

For the period 2000 to 2010, H1 is supported. Just as for the period 1955 to 2010, papers in one-paper counties show lower risk for failure than papers in counties with more papers in the marketplace. However, the risk of failure for a newspaper in multiple-paper counties is lower from 2000 to 2010 than from 1955 to 2010 compared to newspapers in counties with one paper in their respective time periods. Another way of saying that is the relative safety of one-paper counties is slightly diminished, though still safer than papers in multiple-paper markets. For example, whereas from 1955 to 2010, a newspaper that is one of two papers in the county was 3.96 times as like to fail compared to a newspaper in a county with one paper, from 2000 to 2010, a newspaper that is one of two papers is 2.59 times as likely to fail compared to a newspaper that is the only one in its county. Furthermore, from 2000 to 2010, newspapers in two-paper markets were

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shown to be at greater risk (HR=2.59) than newspapers in three-paper counties (2.43) and three-plus paper counties (HR=2.33). This is a reversal of the pattern from 1955 to 2010 when newspapers in two-paper markets were shown to be at lower risk (HR=3.96) than newspapers in three-paper counties (4.95) and three-plus paper counties (HR=5.76).

The findings demonstrate that the risk of failure for papers in one-newspaper towns was higher in the period 2000 to 2010 than in the period 1955 to 2010. This higher risk is of concern because the loss of the last remaining daily in a town reduces the availability of political information in the community. For towns that lose their last daily paper, the remaining alternatives become weekly newspapers, television, the Internet and radio. Theories on print superiority and hyperlocalism suggest that newspapers cover local politics better (e.g., Flowers, Haynes & Crespin, 2003; Mondak, 1995). These findings heighten concerns raised by scholars about the watchdog or accountability role of journalism (Gentzkow et al., 2006; Downie & Schudson, 2009; Starr, 2009). Increasingly, counties are left with just one set of eyes from daily newspapers that perform the important role of checking the democratic processes of elites in setting and implementing policy of local government. The performance of newspapers in serving this function reduces with less competition.

The findings suggest that the relative greater safety that papers in two-newspaper counties had in losing a paper, relative to newspapers in three-paper and three-plus-paper counties, diminished in the period 2000 to 2010. This shows the effects of attrition, as counties with weak demand for papers lose their papers and as weaker papers fail due to competition. This also reflects the entrance of profit-driven chain and corporate

newspapers into the marketplace that have consolidated and closed many papers as well as existing patterns of newspaper subscriber decline (McChesney & Nichols, 2010).

The state has in the past supported two-newspaper towns as demonstrated by the Newspaper Preservation Act allowing for Joint Operating Agreements. Scholars (e.g., Kalb & Krevlin, 2000) have also observed that a second newspaper gave readers editorial diversity, choice and character. As Kalb and Krevlin (2000) write, while other media can help fill the gap from one failed paper, "it will be difficult even for the most advanced Web sites. . .to fill another void that second newspapers create when they die – the choice that readers have when picking up a local newspaper and the forum they feel they can use to share a thought, an opinion, or a concern" (p. 6). Competition increases the incentive of newspapers to invest resources in the highest quality of coverage in order to stay at pace with other dailies as well as to reduce bias (Gentzkow & Shapiro, 2008; Gentzkow, Shapiro & Sinkinson, 2013). According to Gentzkow and Shapiro (2008), competition "drive(s) firms to invest in providing timely and accurate coverage. . .there are robust reasons to expect competition to be effective in disciplining supply-side bias" (p. 134).

From 2000 to 2010, papers in counties with two papers were at a greatest risk of failure than papers in counties with one paper, three papers and more than three papers. The finding that papers in two-paper counties are most at risk should be of concern because one-paper towns will feature less political content and diversity. While every case is different, it can be argued that the loss of one paper in a multi-paper market (i.e. 4+) should represent a smaller marginal loss of political information for the community because there are more replacement sources of information available from the balance of daily print alternatives and other media. This is why the majority of the studies on

newspaper bias and the implications of the loss of a newspaper are on two-newspaper markets that have become monopoly newspaper towns (e.g., Entman, 1985; Gentzkow & Shapiro, 2008; McCombs, 1987; Wood, 2008).

H2 is affirmed for the period 2000 to 2010. The smallest daily papers with a circulation size of less than 5,000, are at a higher risk of failure – 5.05 times as high as papers with a circulation of over 100,000. Papers in the circulation ranges under 50,000 (5k to 10k, 10k to 25k and 25k to 50k) all have a higher risk of failure than papers with circulation rates of over 100,000, as demonstrated by their hazard ratios which are greater than 1. However, the expected linear trend – that newspapers have a higher risk of failure as their circulation increases, is not observed across the spectrum. Table 6 illustrates the trends for hazard ratios for circulation groups for the two time periods.

Table 6 - Hazard Ratios for Newspapers Based on Circulation Size

	1955 – 2010	**2000 – 2010**
Under 5k	4.18	5.05
5kto10k	1.78	1.33
10kto25k	1.20	1.42
25kto50k	1.04	2.17
50kto100k	0.71	0.49
reference category 100k+	1.00	1.00

As Table 6 demonstrates, papers in circulation groups under 50k are prone to a greater risk of failure for the period 1955 to 2010 and the period from 2000 to 2010 than the reference category for that time period. However, there are two deviations to a linear trend. In the periods 1955 to 2000 and 2000 to 2010, papers in the circulation group 50k to 100k have a lower risk of failure (HR=0.71 and 0.49, respectively) than papers in the 100k+ group. Another deviation from the linear trend is papers in the 25k to 50k group

have a higher risk of failure (HR=2.17) than papers in the 10k to 25k group (HR=1.42) for the period 2000-2010.

The finding that the risk of newspaper survival does not follow a linear trend is one that merits further research. There is support in the economics literature for the finding that smaller papers are at risk due to lower economies of scale and larger papers are at risk due to increased competition for limited revenue sources. However, the lower risk of papers in the medium-sized 50k to 100k circulation range is worthy of further research. It may be that they occupy a "sweet spot" because they have sufficient economies of scale coupled with an insufficient number of competitors, and this dynamic helps keep them in business. There is some documentation suggesting this: Downie and Schudson (2009) note that many of the papers that have fared well during the economic downturn are in "smaller cities and towns" where there is less media competition and they have been able to protect their advertising (although not all these papers fit in the 50k to 100k range); they cite as examples Albuquerque, New Mexico, Bend, Oregon, Lawrence, Kansas, Little Rock, Arkansas and Newport, Rhode Island (p. 18). Meanwhile, a closer analysis of the failures in the 25k-50k group for the period 2000 to 2010 is also merited to determine why this circulation size is particularly vulnerable to failure.

Unlike for the longer period of 1955 to 2010, H3 and H4 are confirmed for the period 2000 to 2010. PM and partisan papers are shown to be at greater risk of failure than Independent and AM or all day/daily papers for the period 2000 to 2010. Whereas historically afternoon papers folded with the advent of television and cable television and papers became less partisan, those papers that remain PM and partisan are holdouts beyond these historical trends. Indeed a lot of communities continue to have a tradition

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of afternoon papers: there were 931 AM and 451 PM papers as of February 1, 2012 (E&P 2012). However, from 2006 to 2010, PM papers were shown to be more likely to fail. Likewise, partisan papers were shown to be more likely to fail.

It is reasonable to conclude that the greater risk for failure of PM papers from 2000 to 2010 (Hazard Ratio, or HR=1.61)was inevitable given shifting consumer tastes and new competitive media technologies providing afternoon/evening and all-day news coverage. If indeed there are other media now available throughout the day as provided by 24 hour television and the Internet that offer substitute information, they may mitigate the loss of political information from the demise of PM papers. As Kalb and Kralevy (2000) point out, there are some exceptions as in Hawaii, where the afternoon paper serves an important function due to the time difference and is the best product to deliver updated information for the day. However, it is important to note that afternoon papers provide an additional voice so their decline signals a diminished choice of papers now available to the community, and a decline in competition may reduce the quality of journalism (Gentzkow & Shapiro, 2008).

As for partisan papers, further research should be done to analyze just why decline began in the 1950s and 1960s, as found by Groeling and Baum (2013), and also what are the specific partisan patterns of that decline. As observed while conducting this analysis, many newspapers in the Northeast switched from Republican to Independent affiliations, while papers from the South switched to Independent over the period under observation. It would be worthy to research if there were motivating moments and movements including civil rights and party realignment that influenced papers to declassify as partisan, signaling they no longer wanted to be associated strongly with an

ideology. These motivating forces would be in additional reasons beyond a business calculation: as discussed earlier, it is theorized that many papers may have switched to independent (as well as to PM) in advance of failure as a "calculation of risk" since independent papers were becoming a safer, more prevalent product with the decline of party and partisan newspapers.

H5 is affirmed. The hazard ratio of state capitals is 1.79, slightly higher than the ratio of 1.69 for the period 1955 to 2010. As discussed with reference to the period 1955 to 2010, the higher risk of failure for newspapers in counties with state capitals should be further researched due to implications for decreased coverage of state politics which has become more important in recent decades as much of the federal government's functions have devolved to the state level.

Based on the result presented in Table 5, the test of H6 is inconclusive. Table 5 shows there is minimal evidence that newspaper failure has varied measurably with respect to income, percent black, or percent college education. The hazard ratios associated with these demographic variables are all close to 1. The hazard ratio for *MedianIncome* is 1.00, the hazard ratio for *PercentBlack* is 1.02 and the hazard ratio for *PercentCollege* is 1.03. This indicates that there is a 2% increase risk of failure associated with newspapers in counties that have a 1% greater black population, in line with expectations, though the order of magnitude of effect is small. But the other hypotheses are rejected. Higher median income does not lower risk and the percent of college graduates actually is associated with a higher risk of failure, rather than lower as hypothesized. There are various possible interpretations of these finding. In many areas, such as large cities, there is a diversity of racial, income and education demographics so

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that if there is decreased consumption from certain demographic strata in the population, it is offset within the county by members of the population from other groups or at the other range of the demographic strata. Additionally, it seems quite likely that any change in subscription revenue associated with these demographic variables would be insufficient to influence newspaper survival, especially since subscriber revenue is of declining importance relative to advertising revenue. Additional research could be done to provide further interpretation of this finding. Based on this finding in this analysis, however, it is not a racial or income divide so much as it is a rural-urban/ and small-town/big town divide that is evident in the patterns in the decrease of daily newspapers.

Based on the result in Table 5, there is also insufficient support to affirm H7. The hazard ratio of 0.99 is too close to 1 to conclude that a median age significantly affects risk of failure.

Survival analysis with rural-urban variables

This section displays the results of the survival model for the period 2000 to 2010 incorporating additional rural/urban and other demographic variables. Because there are very few cases in the RUC8 and RUC9 categories, they are grouped together with the RUC7 category, as represented by the variable RUC789. Table 7 shows the hazard ratios associated with rural/urban and other variables.

Table 7 - Hazard Ratios for Newspapers on the Rural-Urban Continuum, 2000-2010

_t	Hazard Ratio
TwoPapers	2.86
ThreePapers	2.19
ThreePlusPapers	1.78
PM	2.16
Republican	1.54
Democrat	1.44
Ageat1955	0.99
StateCapital	1.43
MedianAge	0.99
MedianIncome	1.00
PercentBlack	1.02
PercentCollege	1.01
RUC2	0.72
RUC3	0.54
RUC4	0.37
RUC5	0.19
RUC6	0.51
RUC789	1.34

Note: 2,339 observations , representing1,485 subjects.100 failures in single failure-per-subject data. 15,702 total analysis time at risk, at risk from t = 0. Breslow method for ties.

The results from Table 7 demonstrate some support for H8 that counties in rural counties and smaller population centers are more at risk for losing a paper. The variable *RUC789* has a higher rate of failure (HR=1.34) than the most urban counties – the omitted category, RUC1. As is evident from the values of less than 1 for the hazard ratios of all the RUC categories except RUC789, it is metropolitan counties with one million or more people in the RUC1 category that have newspapers with the highest risk of failure, which may be the result of economic competition in more crowded media environments. As economists have noted, the forces of economies of scale and limited revenue sources can winnow down competition and result in monopoly newspaper markets. Among the RUC categories, counties with the variables *RUC2* (HR=0.72) and *RUC3* (HR=0.54)

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have risk levels below but nearest to the risk level of the most urban counties (*RU1*). This suggests that metropolitan areas are vulnerable to newspaper closures that may be the result of increased competition in larger population centers.

The following analysis shows relationships with the Urban Influence Codes (UIC). The UIC takes into account the degree of "urban influence" within a county and includes more precise measures of whether a community is "micropolitan" as well as "noncore," or remote from an urban area. The UIC defines "micropolitan" as a micropolitan area contains an urban core of at least 10,000, but less than 50,000. (However, RUC4 and RUC5, which classify counties as having urban populations of between 20,000 and 100,000, are also considered as micropolitan in this analysis since they are the closest counterpart on the RUC scale to the micropolitan UIC classification). Because there are few cases in the UIC7 and UIC 12 categories, they are grouped together with other variables with similar characteristics in the analysis. UIC67 represents the variable associated with counties with the codes UIC6 and UIC7, while UIC1112 represents the variable associated with counties with the codes UIC 11 and UIC12. UIC 10 is excluded from the analysis because there are no counties with newspapers in this category. Table 8 displays the hazard ratios for newspapers with the addition of the UIC categories.

Table 8 - Hazard Ratios for Newspapers on the UIC Scale, 2000-2010

_t	Hazard Ratio
TwoPapers	3.36
ThreePapers	2.51
ThreePlusPapers	2.03
PM	2.24
Republican	1.24
Democrat	1.39
Ageat1955	0.99
StateCapital	1.53
MedianAge	0.97
MedianIncome	1.00
PercentBlack	1.02
PercentCollege	0.99
UIC2	0.66
UIC3	0.63
UIC4	1.79
UIC5	0.21
UIC67	1.32
UIC8	0.43
UIC9	2.77
UIC1112	2.64

Note: 2,339 observations representing 1,485 subjects.100 failures in single failure-per-subject data. 15,702 total analysis time at risk, at risk from t = 0. Breslow method for ties.

As Table 8 shows, there is support for H8. The overall pattern demonstrates that counties that are "noncore" have higher risks of failure. "Noncore" counties tend to be smaller population and rural areas. The hazard ratios are higher than 1 for the following categories of "noncore" counties: noncore areas adjacent to large metro areas (HR UIC4=1.79), noncore areas adjacent to micro areas (HR UIC9=2.77) and noncore areas not adjacent to metro or micro areas (HR UIC1112=2.64). Newspapers in micropolitan areas, conversely, show a notably lower risk for failure, compared to counties in large metro areas with population of greater than 1 million residents. This is true for newspapers in all categories of micropolitan areas: micropolitan areas adjacent to large

metro areas (HR UIC3=0.63); micropolitan areas adjacent to small metro areas (HR UIC5=0.21); and, micropolitan areas not adjacent to a metro area (HR UIC8=0.43). This suggests that newspapers in micropolitan counties in suburbs (UIC3 and UIC5) as well as newspapers in micropolitan counties with small cities not adjacent to metro areas (UIC8) have a lower risk for losing a paper than newspapers in the most urban counties.

The following analysis groups these 11 points on the urban influence (UIC) scale into four categories in order to ascertain broader patterns associated with newspaper failure according to size of population center inclusive of its surrounding suburbs. The variable representing LargeMetroAndSuburbs (UIC1+UIC3+UIC4 where UIC1 represents the large metro and UIC3 and UIC4 represent areas adjacent to large metros) was omitted. Table 9 displays the hazard ratios for newspapers with the addition of the rural-urban subgroups based on population centers inclusive of suburbs.

Table 9 - Hazard Ratios for Newspapers in Rural-Urban Subgroups Based on Population Centers Inclusive of Suburbs

_t	Hazard Ratio
TwoPapers	3.16
ThreePapers	2.45
ThreePlusPapers	2.03
PM	2.13
Republican	1.36
Democrat	1.55
Ageat1955	0.99
StateCapital	1.57
MedianAge	0.99
MedianIncome	1.00
PercentBlack	1.02
PercentCollege	1.01
SmallMetroAndSuburbs	0.62
MicroAndSuburbs	0.79
NonCoreNotAdjacent	2.57

Note: 2,339 observations representing1,485 subjects.100 failures in single failure-per-subject data. 15,702 total analysis time at risk, at risk from t = 0.
Note: *SmallMetroAndSuburbs* - Dummy for UIC2 + UIC5 +UIC 6

MicroAndSuburbs = Dummy for UIC8 + UIC 9 + UIC10
NonCoreNotAdjacent = Dummy for UIC11+ UIC12

Table 9 shows support for H8. Papers in counties that are noncore and not adjacent to an urban area are more likely to fail (HR *NoncoreNonAdjacent* = 2.57). Additionally, papers in small metro areas and their suburbs are less likely to fail (HR *SmallMetroAndSuburbs* = 0.62) as are papers in micropolitan areas and their suburbs (HR *MicroAndSuburbs* = 0.79) in comparison to papers in the most populous counties (*LargeMetro*, or UIC1).

In order to capture patterns associated with distance from metro center, in particular the patterns of suburbs, the following analysis shows a different set of groupings that illustrate 1) size of independent metro/population center (small metro/micropolitan not adjacent/non core non adjacent) and 2) size of suburbs associated with different sizes of metro counties (large metro suburbs, small metro suburbs and micropolitan suburbs). The variable representing the most populous counties, UIC1, was omitted. Table 10 displays the hazard ratios for newspapers with the addition of the rural-urban subgroups based on their relationship to the metro area.

Table 10 - Hazard Ratios for Newspapers in Rural-Urban Subgroups Based on Relationship to Metro Area

_t	Hazard Ratio
TwoPapers	3.20
ThreePapers	2.37
ThreePlusPapers	1.93
PM	2.24
Republican	1.36
Democrat	1.45
Ageat1955	0.99
StateCapital	1.53
MedianIncome	1.00
PercentBlack	1.02
PercentCollege	1.00
MedianAge	0.98
SmallMetro	0.64
MicroNotAdjacent	0.39
NonCoreNotAdjacent	2.27
MajorMetroSuburbs	0.66
SmallMetroSuburbs	0.37
MicroSuburbs	2.43

Note: 2,339 observations remaining, representing 1,485 subjects. 100 failures in single failure-per-subject data. 15,702 total analysis time at risk, at risk from t = 0. Breslow method for ties.
Note:
Small Metro = UIC2
MicroNotAdjacent = UIC8
NonCoreNotAdjacent = UIC11+UIC12
MajorMetroSuburbs = UIC3 + UIC4
SmallMetroSuburbs = UIC5 + UIC6 + UIC7
MicroSuburbs = UIC9 + UIC10

The results from Table 10 allow for a more nuanced analysis of risks of paper according to urban/suburban/rural geographic patterns. Newspapers in counties classified as *NonCoreNotAdjacent* show a hazard ratio of 2.27, supporting H8. Also of note, newspapers in *SmallMetroSuburbs* and *MicroNotAdjacent* counties have the lowest risks of failure with hazard ratios of 0.37 and 0.39, respectively. The finding that papers in micropolitan counties not adjacent to metro areas have a risk of failure that is 39% the risk of failure in the most populous counties provides some evidence to confirm Downie

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and Schudson's (2009) claim that papers that have fared better in the last decade are in smaller cities and towns with less media competition where they have been able to hold on to advertising revenue. Table 10 also shows that papers in the suburbs of major metros and small metros hold on to papers better than their metro centers. The higher hazard ratio for *MicroSuburbs* suggests that they may face the problems of rural counties with small populations and lower economies of scale that make it difficult to financially support a paper.

As models of newspaper survival and rural-urban barometers demonstrate in four analyses (Table 7, Table 8, Table 9 and Table 10), newspapers in the most rural and remote areas are at the greatest risk of failure. The finding that rural counties are more at risk for losing a paper is in line with economic explanations that papers in smaller population centers with smaller circulations are more likely to suffer from low economies of scale that make it harder to overcome the high fixed costs of production and generate sufficient subscriber and advertising revenue.

Research suggests the repercussions of losing a newspaper are greater for smaller communities based on the "print superiority" associated with papers as sources of news at the local level and the more limited options in the media environment. Not only are newspapers said to be superior for delivering local and hyperlocal content (Flowers, Haynes & Crespin, 2003; Kaniss, 1991; Mondak, 1995; Schaffner & Sellers, 2003), they have been shown to be favored by small media markets as sources for news (Althaus, Cizmar & Gimpel, 2009). According to Althaus, Cizmar, et al.(2009), citizens in smaller markets prefer newspapers as sources of news while larger markets tend to favor local television news, online news and talk radio for sources of news.

The results from this analysis reveal additional findings about suburban population centers and small cities. Newspapers in "micropolitan" median-sized counties and suburbs are at a lower risk for failure. There is evidence that newspapers in suburbs and micropolitan environments (small towns) may also occupy "sweet spots" in the newspaper market just as the survival of newspapers in counties with a circulation of 50k to100k seems to be a sweet spot in the newspaper market. There is sufficient demand and revenue enabling their higher risk of survival. This is an area that should be further explored.

Conclusion

The intent of this chapter is to provide baseline data that will help better understand and disaggregate patterns of newspaper decline. This chapter produces findings that suggest that different segments of the population are at greater risk for losing a paper. This suggests that there is evidence of a print divide when it comes to who is losing more daily newspapers. Papers in more rural counties and with lower circulations are at a higher risk of failure – even more than papers in the most populous urban centers that face multiple competitors. The effect is not linear: the hypothesis that the smallest and more rural counties are prone to greater risk of failure is validated but increasingly, as shown from 2000 to 2010, medium-sized cities, micropolitan counties and suburbs are more likely to hold on to papers than the most populous counties. When some segments of the population have more access to political information then others, they are advantaged.

There are multiple other areas of research that this analysis of survivability of the total census of daily newspapers over 55 years has identified. For example, the analysis shows that newspapers in two-newspaper counties are also increasingly at risk. This raises questions of the implications of monopoly papers in urban environments, suggesting the need for continuing research into possible effects of increasing newspaper bias, as well as loss of political information, when only one of two major newspapers is increasingly a feature of the print landscape (Gentzkow & Shapiro, 2009; Gentzkow et al., 2013). As Gentzkow et al. (2013) write, "competition policy toward media has long been shaped the perceived importance of. . .political externalities" viewed as positive arising from multiple newspapers publishing in the same town (p. 2). However, not all studies have found that the presence of a second paper increased diversity of content. McCombs (1987) found in Cleveland, Montreal and Winnipeg that, first, newspapers did not differ significantly in their content in a two-paper market, and second, after one of the two papers had folded, the surviving paper did not alter its content significantly, concluding that there "is little evidence of the beneficial effects of competition" (p. 744).

Additionally, the analyses show that newspapers in capital cities are imperiled to a greater degree than newspapers not in capital cities (hazard ratios of 1.69 and 1.79 for the two periods). This could have implications for the quantity and quality of coverage of politics at the state level, although this finding is subject to further research. Of note, the largest number of papers that failed in state capitals were in counties with two papers, indicating that the capital city would now be served with only one newspaper. This likely means less reporting, including investigative reporting. This also could present a

narrower range of viewpoints on state politics and raises questions of biased coverage of state politics that cannot be balanced by a competing paper.

This analysis identifies further areas for research into the patterns of loss of political information from newspapers, the effects of that loss including bias, reduction of quality and an impact on state and local political coverage. Research can be conducted into these areas with large-N studies as well as case studies. This analysis has identified multiple areas for scholarly work and will help the future selection of case studies by researchers choosing to further investigate vulnerable newspapers and vulnerable populations that might lose those newspapers.

Chapter 4: Newspaper decline (a large-N study) and effects on political participation

Does a loss of political information from newspaper closure, as discussed in Chapter 3 have an effect on democratic participation? This chapter seeks to answer that question with a large-N study that measures effects on voter turnout from the Congressional elections of 2006 and 2010 associated with newspaper closures and changes in circulation in the near universe (45 states) of U.S. counties that had daily papers during that time period.   This chapter also provides a new analysis of effects associated with newspaper closure and declines in circulation for metro, suburban and rural counties and for counties with varying demographic compositions. Chapter 3 revealed that some rural and non-metropolitan counties have higher hazard ratios, illustrating a greater risk for failure and a greater loss of political information. This chapter tests to see if counties that have a deficit of political information also have lower turnout. This study focuses on results in turnout from the midterm elections in 2006 and 2010 to reduce the influence of the Presidential election that draws more voters to the polls. The fixed effects model employed in this analysis allows for a comparison in changes in voter turnout in counties associated with newspaper closures and changes in circulation between the 2006 and 2010 midterm elections.

Studies have found that when political knowledge declines from the closure of newspapers, political participation is weakened. Gentzkow et al. (2011) found in a large-N study that newspaper closures are associated with a decline in voter turnout. In a

county-level, nationwide study on political participation that considered the full census of U.S. papers from 1869 to 2003, Gentzkow et al. (2011) looked at effects on Congressional and Presidential electoral turnout from entry and exit of daily newspapers. They found that the presence of one additional newspaper increased presidential and congressional turnout by about 0.3 percentage points, although this effect was diminished after the introduction of radio and television. Schulhofer-Wohl & Garrido (2013) found that the closure of one newspaper in a two-newspaper town reduced voter turnout.

Data

There are four principle sources of data for this research pertaining to the dependent variable and explanatory variables of most interest. In order to provide data for the dependent variable, change in voter turnout, two principle sources of data were consulted: state elections offices for voter registration data by county and Dave Leip's *Atlas of U.S. Presidential Elections* (2013) for votes in Congressional elections by county. The unit of analysis for newspapers is county because this is the smallest unit for which congressional vote data and newspaper data, as well as federal urban and rural designations, are available for purposes of analysis. In order to provide data for the key explanatory variable of interest, share of newspaper circulation by households in county, the E&P was used for data on circulation, and the U.S. Census was used for data on population and household size by county.

The dependent variable, voter turnout by county, is computed as the ratio of total votes for member of Congress in the general election (measured across all Congressional

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races in that county) to total voter registration for the date nearest the general election for each county. For the number of votes for representative of Congress by county, Dave Leip's Atlas, the only known source of aggregation of data for vote at the county level for member of Congress, was used. There may be more than one member of Congress per county, but the data used in this analysis aggregate votes to the county level not the Congressional district. In their study examining the effect of newspaper entry and exit on turnout from the full census of U.S. daily papers, Gentzkow et al. (2011) interpolated voter turnout over their longitudinal study, based on the number of eligible voters using census demographic data. In contrast, the research presented in this paper is based on the collection of the real data on registration and vote totals for 2006 and 2010 to compute turnout.

For the number of registered voters, the individual states provided the source data through their secretary of state election divisions or their state election boards.[13] See Appendix J for a list of the sources within the 45 states (as well as the sources within the five states not included in the final data set which were also contacted). States tabulate registered voters at the time of the general election, at the time of the primary election, at the beginning of each month, the beginning of each quarter or on another basis. The data recorded by the state at the time closest to November the election was used. Usually, voter registration data were available for a date within a month of the election.

In order to provide data for the explanatory variables of most interest, the circulation share of daily newspapers, an industry-standard directory of newspapers was obtained together with U.S. Census data in order to compute the share of circulation

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[13] For states where data were not available on web sites, data was sent to the author by email.

within households in a county. Circulation for daily newspapers reflects average Monday to Friday daily circulation figures as obtained from data records from the *Editor and Publisher's International Yearbook* (E&P) 87th edition for 2007 and the *Editor and Publisher International Newspaper Data Book* for 2012 (since there was no E&P Yearbook or Data Book edition for 2011). This data set includes those papers in circulation for 2006 through 2010. As in Chapter 3, this data set excludes national papers, Spanish-language papers, African American daily papers, papers for which there is no circulation data, papers found to be incorrectly classified by E&P as daily papers and papers in four counties for which voter turnout data was found to be incorrect in the primary source – either the state election board or Dave Leip's U.S Atlas of Presidential Elections.

In order to determine the influence of the paper within the county, the shares of circulation of the paper among households in the county for 2006 and 2010 were computed using data from the U.S. Census.   Since the total households and household size by county is available from the U.S. Census for 2010 but not for 2006, the figures for total number of households in 2006 and 2010 were computed. The total number of households by county in 2006 was computed by dividing the total population by county for 2006 by the five-year estimate of household size by county for 2006 to 2010 (U.S. Census 2010a, U.S. Census 2010b). The total number of households by county in 2010 was computed by dividing the total population by county for 2010 by the five-year estimate of household size by county for 2006 to 2010 (U.S. Census 2010a, U.S. Census 2010b).

There are a total of 1,074 counties with daily newspapers representing 45 states in this data set, or the total number of U.S. states for which turnout data was available. Counties without daily newspapers are not included in the data set. The 1,074 counties that do have daily newspapers together had a total of 1,288 papers in 2007 and 1,259 papers in 2011 (pertaining to figures for 2006 and 2010, assuming a one-year lag) (E&P, 2007, E&P Data, 2012). Thus, the newspapers in this data set for 2006 and 2010 represent 90% and 89% of the total daily papers in all 50 states as listed by E&P for 2007 and 2012 (1,437 and 1,382, respectively and pertaining to figures for 2006 and 2010, assuming a one-year lag).

All the daily newspapers listed in the 2007 E&P and 2012 E&P Data Book were reviewed, and other than a few exceptions as previously noted, data from all the entries were entered into the database. The following five states and the District of Columbia are not included: Alaska, Louisiana, Mississippi, North Dakota, and Wisconsin. Alaska, North Dakota and Wisconsin are not included because they do not keep registration data by county. Louisiana is not included because their change in voter registration and turnout from 2006 to 2010 is radically affected by shifts in population and voter registration due to Hurricane Katrina. Mississippi is not included because they do not have registration data by county for 2006.

Of the 1,288 papers in 1,074 counties, there were 28 papers that failed between the 2006 and 2010 elections. The majority of the papers that folded were in metropolitan counties. Table 11 sorts failed papers from 2006 to 2010 by population density from the most urban counties to the most rural counties based on Department of Agriculture codes. Many of the closures of daily papers reflect conversions to weekly papers (publishing

less than four times a week) or mergers with other papers, as is the case with some of the PM papers. Each of these failures is a worthy candidate for further case study research that is beyond the scope of this project. In Table 11, the estimated failure year is based on news reports and announcements of closure when available or, when not available (as in the case of many small papers), a lag of one year from the first E&P edition in which the paper was not listed.

Table 11 - Daily Newspaper Failures, 2006-2010

State	County	Newspaper	Papers in County 2006	2010	2006 Circula-tion	RUC Code	UIC Code	Estimated Failure Year
AZ	Maricopa	East Valley Tribune/ Mesa Tribune	3	2	82601	1	1	2009
CA	Riverside	The Record-Gazette	3	2	4368	1	1	2006
CO	Denver	The Rocky Mountain News	2	1	255675	1	1	2009
KS	Johnson	The Olathe News	2	1	4542	1	2	2009
KS	Wyandotte	The Kansan	1	0	8000	1	1	2008
KY	Kenton	The Kentucky Post & Star	1	1	28167	1	1	2007
NC	Cabarrus	Concord Independent Tribune/ Tribune	1	0	17221	1	1	2009
WA	King	South County Journal /King County Journal	4	2	25001	1	1	2007
WA	King	Seattle Post-Intelligencer	4	2		1	1	2009
AZ	Pima	Tucson Citizen	3	2	26213	2	1	2009
CA	San Joaquin	Tracy Press	3	2	7743	2	2	2006
FL	Volusia	The New Smyrna Beach Observer	2	1	1981	2	2	2006
HI	Honolulu	The Advertiser	2	1	139312	2	2	2010
KS	Sedgwick	The Daily Reporter	2	1	1500	2	2	2009
MI	Washtenaw	The Ann Arbor News	1	0	47321	2	2	2009
NC	Rockingham	Eden Daily News	2	1	3819	2	2	2010
GA	Houston	The Houston Home Journal	1	1	10160	3	2	2007
IL	Ford	The Record	1	1	2150	3	2	2008
MD	Washington	The Mail	2	1	12363	3	2	2007
WV	Wood	The Sentinel (PM paper)	2	1	4922	3	2	2009
NY	Cattaraugus	The Republican-Press	2	1	1957	4	2	2009
OK	Payne	The Citizen	2	1	1645	4	3	2007
NE	Otoe	The News-Press	1	0	4879	6	6	2006
CO	Prowers	The News/Tri-State News	1	0	2353	7	6	2007
ID	Minidoka	The South Idaho Press	1	0	3388	7	8	2008
IL	Clay	Flora Advocate-Press/The News Record	1	0	3166	7	2	2006
KS	Sherman	Goodland News	1	0	2004	7	8	2007

The classifications from the U.S. Department of Agriculture's 2003 Rural-Urban

Continuum (RUC) nine-point scale and the U.S. Department of Agriculture's 2003 Urban

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Influence Codes (UIC) eleven-point scale are used as explanatory variables in this analysis. For more background on the scales, see Chapter 3. Of the 28 papers that failed in 27 counties between 2006 and 2010, nine papers were in counties with RUC1 classifications, seven were RUC2, five were RUC3, two were RUC4, one was RUC6 and four were RUC7. According to the Office of Management and Budget, codes RUC1 to RUC3 are classified as "metro" codes, while RUC4 to RUC9 are classified as "non-metro" codes. Using the OMB metro/nonmetro scale, sixteen failures were from metro areas and seven were from non-metro areas. Under the OMB metro/nonmetro classification system for UIC codes, UIC1 to UIC3 are metro and UIC4 to UIC11 are non-metro. By this measure, there were 15 newspapers failures in metro counties and eight in non-metro counties. Clearly, the majority of newspapers failing are metro, but as the slightly different classifications of the RUC and UIC illustrate (providing for a lower total and different combination of non-metro counties with failed papers) there are metro counties that are fringe-urban and could be classified as urban or rural. There is no strict, clean binary for metropolitan/urban and non-metropolitan/ rural counties as the government's own different designations show.

Methodology

The basic model for analyzing the relationship between Congressional turnout and newspaper failure and circulation decline employs a fixed effects model, or a first differences model.[14]

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[14] For a model with two time periods, the first differences model is the same as a fixed effects model that applies to time-series data.

$$Y_{it} - Y_{i(t-1)} = \rho(A_{it} - A_{i(t-1)}) + \beta(B_{it} - B_{i(t-1)}) + \alpha(C_{it} - C_{i(t-1)}) + \tau(D_{it} - D_{i(t-1)} + \phi(E_{it} - E_{i(t1)})$$
$$+ \lambda(F_{it} - F_{i(t-1)}) + \delta(Z_i - Z_i) + \epsilon_{it} - \epsilon_{i(t-1)}$$

Dependent Variable Y = *Turnout Rate*

Explanatory Variables of Interest -

A= *Circulation Share*
B= *Number Newspapers in County*

Explanatory Control Variables -

C = *Margin of victory*
D = *Senate Race*
E = *Governor Race*
F= *Unemployment rate*

Fixed Effects Variable –

Z = *Time-invariant attributes*

ϵ = Error Term

Additional Explanatory Variables of Interest -

RUC1-RUC9, UIC1-UIC12 and rural/urban subgroups

A first differences model assumes that variables that change independent of turnout across districts and across the four-year time period are accounted for in the model (Wooldridge, 2003). These are so-called time-invariant variables, as represented by Z. When the model is differenced over two periods, Z drops out. What is incumbent in preserving the integrity of the model is including variables that may in fact change differentially with respect to observation and time (i.e. unemployment, presence of governor or senator races on the ticket.)

The transformed model below illustrates the differenced variables that will be the subject of our analysis.

$$TurnoutDifference = \rho CirculationShareDifference + \beta NumpapersDifference + \alpha MarginDifference + \tau SenatorDifference + \phi GovernorDifference + \lambda UnemploymentDifference + Error$$

where:

$TurnoutDifference$ = TurnoutRate$_{i2010}$ - TurnoutRate$_{i2006}$
$CirculationShareDifference$ = CirculationShare$_{i2010}$- CirculationShare$_{i2006}$
$NumpapersDifference$ = Number Newspapers in County$_{i2010}$-Number of Newspapers in County$_{i2006}$
$MarginDifference$ = Margin of Victory $_{i2010}$-Margin of Victory$_{i2006}$
$SenatorDifference$= SenateRace$_{i2010}$-Senate Race $_{i2006}$
$GovernorDifference$= Governor Race$_{i2010}$-Governor Race$_{i2006}$
$UnemploymentDifference$= Unemployment Rate $_{i2010}$-UnemploymentRate$_{i2006}$
Error = €$_{i2010}$-€$_{i2006}$

Additional Variables – RUC1–RUC9, UIC1-UIC12 and rural/urban/suburban groups

The main explanatory variables of interest for analysis are

CirculationShareDifference and *NumpapersDifference.* The variable

CirculationShareDifference reflects the change in the share of daily newspaper

circulation across households in a county. By taking a measure of circulation share that

measures circulation as a proportion of the household base for that year instead of taking

a difference in absolute circulation, the degree to which the newspaper circulates

throughout the county is properly adjusted for shifts in the population. Because there is a

lag in the E&P, reflecting circulation figures from the prior year, circulation figures for

2006 are obtained from the E&P Yearbook for 2007, and circulation figures for

November 2010 are obtained from the E&P Yearbook for 2012 since E&P did not

publish a 2011 edition. *NumpapersDifference* reflects the change in the number of the

papers in the county from 2006 to 2010. This is the variable that captures the number of failed papers.[15]

The control variable *MarginDifference* measures the change in the closeness of the races in 2006 and 2010 by taking the difference of the margins between Republican and Democratic votes in 2006 and 2010 by county. It is a proxy for competitiveness of the race. Research has repeatedly shown that the closeness of a race affects turnout in various elections, including Congressional elections (Cox & Munger, 1989; Crain, Leavens & Abbot, 1987; Silberman & Durden, 1975). The data for the margin of difference variable are from Dave Leip's Atlas. The data reflect the measure of the closeness of the aggregate votes in a county associated with all of the votes for Congressional races in that county. (It should be noted that this can obscure the closeness of races in individual districts in the county that would not show up in an aggregate measure).

MarginDifference is considered an ex-post measure of the closeness of a race because it uses data available after the outcome. In contrast, ex-ante studies use measures from before the election such as previous election results, news reports and opinion polls (Gey, 2006). While other sources such as Charlie Cook's political thermometer or Congressional Quarterly's polling updates provide ex-ante estimates of closeness of each individual Congressional race, they cannot provide a breakdown of the closeness of the collection of races that face voters in a particular county.

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[15] When papers were not recorded in 2012 and had been recorded in 2010, indicating they closed in the interim, I called each of these newspapers to determine the date the paper ceased daily publication, and I coded for a newspaper closure in the variable *NumpapersDifference* only if closure was before November, 2010.

It is possible that the margin of difference among races in the county is itself affected by the closeness of the races as perceived by voters and that causality is therefore not wholly one-directional. However, the measure of the outcome of the race(s) in the county closely tracks a measure of polls from the day before. For example over the last four presidential elections, Gallup's polls have been show to accurately predict the outcome by an average error margin of 2% (Gallup). It is worthwhile to include the measure of margin of difference because this provides a meaningful relationship to the measure of closeness of the race. It is a measure that other scholars have used due its merit even when they have been aware of debate over utilizing an ex-ante variable (i.e., due to the "causal ordering of empirical measures on closeness," (Jackson, 1997, p. 526). In this case, the use is merited because it is an accurate reflector of closeness, there are no other countywide measures and because it would be a greater folly not to include it and suffer from omitted variable bias.

The variables *SenatorDifference and GovernorDifference* are included because the presence of a statewide office on the ballot has been demonstrated to influence turnout. Dawson and Zinser (1976) showed that turnout in a Congressional election was positively related to the presence of a Senate race on the ticket. Boyd (1989) found that concurrent gubernatorial races led to an increase in voting on the presidential ticket. Gilliam (1985) found that less competitive governor races could inhibit voter turnout in Congressional races.

The variable *UnemploymentDifference* controls for the differential effects of the economic recession on counties. In the transformed model, the variable reflects the difference in unemployment rates from 2006 to 2010 for each county. There is a wealth

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of scholarship on the effects of the economy on turnout although there are mixed results about whether economic conditions, especially applied at the individual-level, affect turnout and if they do, whether they stimulate or depress it. Some literature suggests that economic discontent is a mobilizer to vote as set forth by Schlozman and Verba (1979). Rosenstone (1982) elaborates that "people under economic strain blame the government for their situation and vote, organize, lobby, protest, and so on to redress their grievances" (p. 25). Other scholars suggest that a bad economy causes those under duress to withdraw from the political process, reducing turnout (Sniderman & Brody, 1977). Still other scholars find no or only minimal effects. For example, Fiorina (1978) found the economy had an effect on Congressional elections only some of the time.

When it comes to studies on unemployment as a barometer of the effects of the economy on voter turnout, results are mixed. Various scholars found that unemployment can lead to less likelihood of voting (Rosenstone, 1982; Rosenstone & Hansen, 1993; Schur, 2003; Southwell, 1988). Arcelus and Meltzer (1975) found that changes in unemployment had no significant effect on participation. While many studies focus on the effect of the economy on presidential elections, a number (Kinder & Kiewiet, 1981; Rosenstone & Hansen, 1993; Southwell, 1988) also focus on the effect of the economy on midterm elections, which are the elections under scrutiny in this research. Of these, Rosenstone and Hansen (1989) found that unemployment has a greater depressive effect on turnout in Congressional elections than Presidential elections.

However, more recent research based on data from the 2008 recession, when unemployment was high in many parts of the country, has shown that high employment can entice voters to the polls (Burden & Wichowsky, 2012; Incantalupo, 2012). This has

been linked to the "prospect theory" that supposes that people weigh losses more heavily than gains (Burden & Wichowsky, 2012, p. 4). In any event, although the direction and degree of effect is a subject of debate, the economy is an important variable to incorporate in the model in particular given the economic recession affecting the country between 2006 and 2010.

Additional variables are also included to analyze the role of place in relation to circulation decline and voting. This analysis utilizes the Department of Agriculture Rural-Urban Continuum (RUC) and Urban Influence Codes (UIC) categories to identify turnout changes when circulation declines in counties of varying rural-urban composition. As a result, variables representing points on the Rural-Urban Continuum (RUC1 to RUC9) and Urban Influence Codes (UIC1 to UIC12) as well as groups created to classify types of counties, i.e. urban, rural, suburban are also included as independent variables and also as interaction variables with *CirculationShare* in order to isolate affects on turnout decline associated with circulation decline for these geographic classifications.

Turnout is also affected by immeasurable variables like campaign spending which are not constant over time and are therefore not handled by the differencing technique. The ordinary least square estimate of ρ, and β in the model would be biased if changes in other factors that appear in the error term are correlated with circulation or newspaper closure. However, there is no reason to believe that these omitted variables will appear as a bias on the effects on circulation share or newspaper closure rather than as an increase in the error term. There is no reason to assume for example that campaign spending is related to changes in newspaper circulation although it may have an effect on

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turnout, which would then translate to an increase in the error term rather than on the coefficient on number of papers or circulation. Furthermore, because the unit of analysis in this model is county, measures that are available at the level of a particular Congressional race, such as campaign spending, are not directly transferrable to a county-level analysis.

Describing the data

Table 12 summarizes the baseline data on voter turnout, newspaper circulation, numbers of newspapers, margin of victory in Congressional contests, governor and senate races and unemployment rates in 2006 and 2010. It illustrates the summary statistics for these variables for 2006 and 2010 as well as the differenced variables (2010-2006) that show the change in the two time periods. Turnout increased an average of 1.2% from 2006 to 2010, while circulation decreased 7.9%. The net change in number of papers was a decrease of 23, owing to the failure of 28 papers and 5 new entrants. Races were generally as close in 2010 as they were in 2006 on average, with a mean difference of 1.6% in the margin. There were more counties with senate races in 2010 than in 2006 though counties had a comparable amount of governor races. With the 2007 recession, the unemployment rate grew 4.6 points from an average of 4.8 to 9.4%.

Table 12 - Summary Statistics (N = 1,074 counties)

Variable	Mean	Std. Dev.	Min	Max
Turnout2006	0.486	0.108	0.141	0.783
Turnout2010	0.491	0.098	0.230	0.820
TurnoutDifference	0.012	0.261	-2.185	7.337
CircShare2006	0.515	0.330	0.000	4.626
CircShare2010	0.436	0.291	0.000	3.733
CircDifference	-0.079	0.117	-0.970	0.655
Numpapers2006	1.194	0.532	1.000	4.000
Numpapers2010	1.173	0.518	0.000	4.000
NumpapersDifference	-0.042	0.716	-23.000	0.000
Margin2006	0.292	0.216	0.000	1.000
Margin2010	0.308	0.213	0.001	1.000
MarginDifference	0.016	0.256	-0.985	0.825
Senator2006	0.630	0.483	0.000	1.000
Senator2010	0.802	0.485	0.000	2.000
SenatorDifference	0.171	0.785	-1.000	1.000
Governor2006	0.768	0.422	0.000	1.000
Governor2010	0.734	0.442	0.000	1.000
GovernorDifference	-0.034	0.202	-1.000	1.000
Unemploy2006	4.829	1.413	2.100	15.400
Unemploy2010	9.422	2.743	3.300	29.900
UnemployDifference	4.593	1.923	-1.400	14.500

Figure 3 displays the turnout rates for Congressional elections in 45 states in 2006 and

2010 while Figure 4 displays the change in the turnout rate – a slight uptick, or a 1.2%

increase.

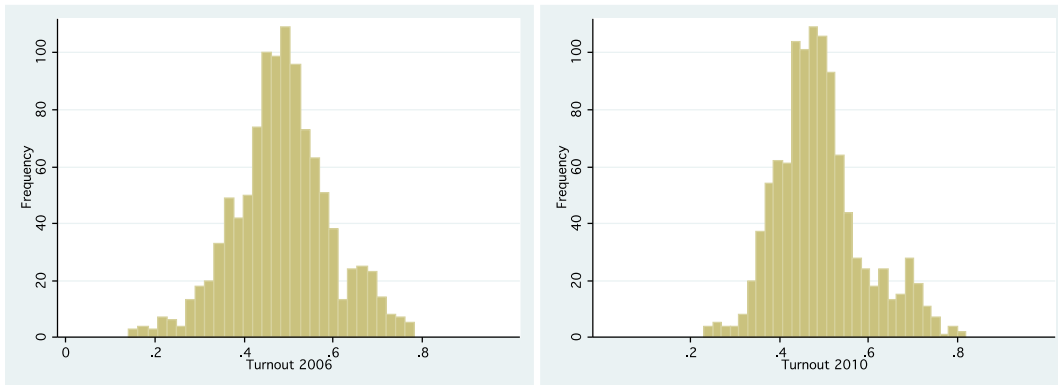**Figure 3 - Voter Turnout, 2006 and 2010**

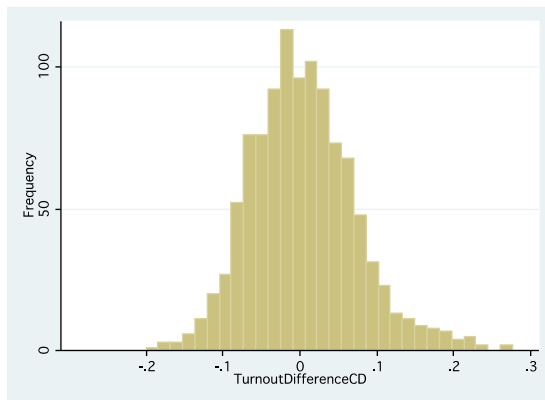**Figure 4 - Turnout Difference, 2006-2010**

Figure 5 displays the shares of daily newspaper circulation in counties for 2006 and 2010 while Figure 6 displays the difference in share of circulation between the two time periods. According to these statistics, which measure share of circulation by county, the average circulation share was 51.5% in 2010 and 43.6% in 2006.[16] As the Figures

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[16] The shares of daily newspaper circulation by household in this county-level 45 state data set are slightly higher than figures computed nationwide, using E&P figures and Census household population figures. In 2006, based on a 114.24 million household population and total circulation of 44.42, the share of households with a newspaper computes to 44.4% while in 2010 based on the same five-year 2006-2010 number of households and a circulation of 44.42 million, the share of households with a newspaper computes to 38.89%. The difference in circulation share by this measure is 5.6%. The difference is explainable by the unit of measurement – a larger number of counties may have higher mean shares of circulation in this data set than the population average. Furthermore some newspapers have a share greater than 1 per household in the county because their circulation range extends beyond one county.

reflect, while the majority of counties have a share of circulation between 0 and 1, there are a few counties where share of circulation by household in the county is greater than 1 because the circulation area of daily newspapers extends beyond one county. However, just as Gentzkow et al. (2011) chose to designate one county per paper based on the county where the share of the newspaper's circulation was judged to be highest, this analysis chooses to retain these papers in the data set rather than exclude them.
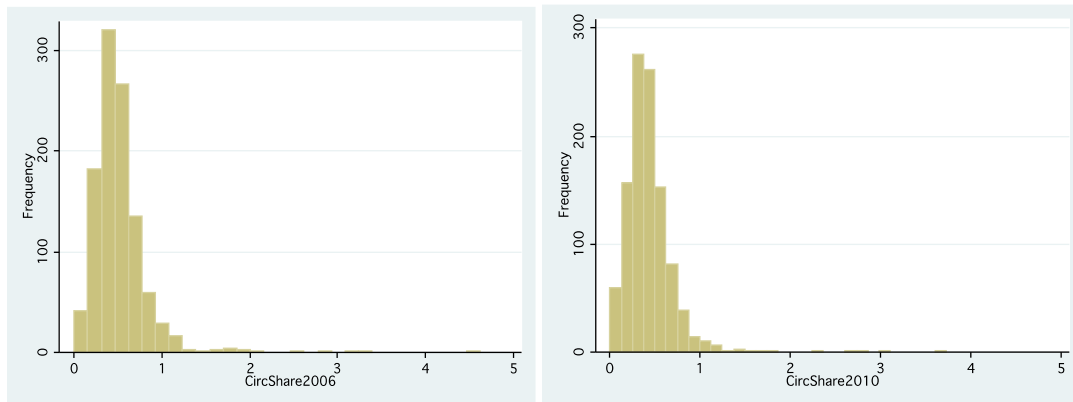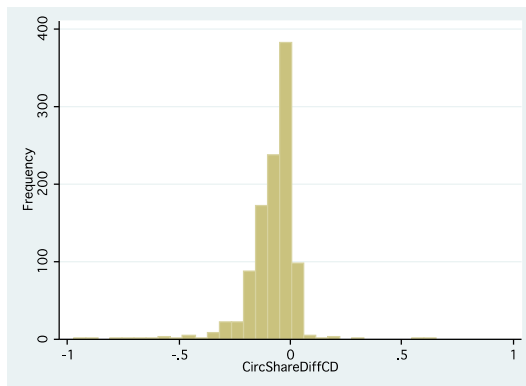
Figure 5 - Circulation Shares by County, 2006 and 2010

Figure 6 - Difference in Circulation Shares, 2006 and 2010

Hypotheses

Three main hypotheses are tested in this analysis. The theory behind each hypothesis will precede the presentation of each hypothesis:

Previous studies show that decreased availability of political information that occurs from newspaper closure makes the voter base less aware of electoral contests (Mondak, 1995) and is associated with a decline in voting (Gentzkow et al., 2011; Schulhofer-Wohl & Garrido, 2013). While it could be argued that declining political interest reduces newspaper consumption as well as voting, researchers have also found that newspapers can spur political interest (e.g., Boulianne, 2011). Just as other studies test for the effects of media on the vote, this study also tests for the effect of declining supply of papers, based on the assumption that while political interest may affect newspaper consumption, it is not a mediating variable that is fully responsible for a decline in circulation and turnout. As a result, the following hypothesis, H1, stands:

H1) Turnout will be higher (lower) when the number of daily newspapers increases (decreases) in the county.

It is assumed that just as newspaper closures have been found to result in decreased political knowledge and lower voter turnout, decreases in newspaper circulation – another barometer of newspaper availability – will yield similar findings. As a result, the following hypothesis, H2, stands:

H2) Turnout will be higher (lower) when the circulation share of daily newspapers increases (decreases) in the county.

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Because less populous and rural counties are in smaller markets with fewer other newspapers and media alternatives, the effect of circulation decline and newspaper closure on voter turnout is likely to be greater for these counties since information is one factor in the decision to vote (Downs, 1957). As a result, the following hypothesis, H3, stands:

> H3) There will be a higher decline in turnout associated with counties that experience a decrease in newspaper circulation share and are in more rural settings with a higher classification on the Rural-Urban Continuum (RUC) scale and the Urban Influence Codes (UIC) scale.

This analysis covers the universal population of counties with daily newspapers for which data were available. The 45 states represent the universe of counties in states with turnout data rather than a sample of these counties in these states. As a result, there is virtually no sampling variance. Thus, T-statistics and other measures that would assess the difference between the sample mean and the universal mean are not relevant to this analysis and not displayed.[17]

Results

Model for all counties in 45 states with daily newspapers.

Table 13 displays the changes in turnout associated with a change in circulation share and change in number of newspapers by county from 2006 to 2010. A positive coefficient indicates that the covariate moves in the same direction as the dependent

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[17] While spatial dependency, or the co-variation of counties within geographic space, is a likely feature in this analysis, because the near-universe of counties in the U.S. is part of the data set, the spatial dependency that might be a problem in a population sample does not distort our analysis.

variable, i.e. as circulation share decreases/increases, turnout decreases/increases/ as number of papers decreases/increases, voter turnout decreases/increases.

Table 13 – Voter Turnout in Counties by Number and Circulation of Newspapers, 2006-2010

TurnoutDifference	Coefficient
CircShareDiff	0.003
NumpapersDiff	-0.018
MarginDiff	0.068
SenatorDiff	0.023
GovernorDiff	0.064
UnemployDiff	0.006
_cons	-0.026

N = 1,074

H1 does not hold. In the model, *TurnoutDifference* changes in the opposite direction as *NumpapersDifference*.   A net decrease in the number of newspapers in the county from 2006 to 2010 is associated with an increase in turnout of 1.8%. This finding, prima facie, would suggest that a decline in newspapers between 2006 and 2010 does not lead to a decrease in political participation and that the print divide in information, as found in Chapter 3, does not have harmful consequences when it comes to unequal participation.   However, this data set measures only the decline in newspapers from 2006 to 2010, a period in which there were 28 newspaper failures in 27 counties. Therefore, it is believed that this finding of a small positive impact of newspaper failure associated with vote decline does not apply to the longer period from 1955 to 2010, a period in which there were 894 failures.

Furthermore, circulation is the better measure to correspond to the number of voters affected by circulation decline, since newspaper closures do not reflect the

circulation size/number of potential voters affected. Finally, while over a longer period (1955 to 2010 or 2000 to 2010), the number of papers may serve as a representative barometer of newspaper decline, a fall in circulation may be the better measure of newspaper decline from 2006 to 2010. During this period, circulation decline was much more pronounced than newspaper failure on a percentage basis. Circulation declined 14.4% from 2.2 million to 44.4 million from 2006 to 2010, while there was a 1.7% reduction, or a net loss of 23, in the number of newspapers that failed in this period. For these reasons, *CircShareDiff* is the variable that interacts with rural-urban variables in this analysis when it comes to measuring effects from newspaper decline on participation for the period 2006 to 2010.

There is support for H2. A decrease in circulation share of 1% in the county from 2006 to 2010 is associated with a decrease in turnout for Congressional elections of 0.3%. This effect is similar in order of magnitude to the effect identified in the longitudinal study by Gentzkow et al. (2011) who found a 0.3 percentage point change in turnout in Congressional and Presidential races; their longer-term analysis utilized the change in the number of newspapers as the measure of decline of the newspaper industry. Additionally, with the inclusion of different control variables in models displayed later in this chapter, the decrease in turnout is associated with a change in circulation share of between 0.3% and 1.3%.

It should also be noted that the signs on the control variables are also in line with expectations regarding voting behavior. The coefficient on *MarginDifference* is -0.068, suggesting that close races are associated with higher turnout: a 1 point increase in margin of the race results in a decline in turnout of 6.8%. As measured by the

coefficients on the variables S*enatorDifference* and *GovernorDifference*, having a senator on the ticket is associated with 2.3% higher turnout and having a governor on the ticket is associated with 6.4% higher turnout. As reflected in the variable *UnemploymentDifference*, a one-percentage increase in unemployment is associated with a increase in vote of 0.6%, revealing some evidence for a propensity for a economically distressed person to come to the polls to register a protest vote and support for Burden and Wichowsky's (2012) "prospect theory" that supposes that people weigh losses more heavily than gains.

Model for all counties in 45 states with daily newspapers, rural-urban analysis.

Based on the hypothesis H3, that low-information counties may be affected more by newspaper decline because their media environment is more information-poor, this analysis utilizes the Department of Agriculture Rural-Urban Continuum (RUC) categories to identify turnout changes when circulation share declines in counties of varying rural-urban composition. The interaction variables *RUC1circ* through *RUC9circ* interact rural-urban designation and circulation to illustrate the effect on turnout when circulation share declines in counties of that composition. In the analysis, the omitted variable, or reference category, is *RUC1circ* - the category with the largest number of observations. *RUCcirc* variables that show a positive coefficient indicate that those counties experience more voter turnout decline associated with decreases in circulation share than the largest counties (RUC1). Table 14 displays the number of cases by RUC category. As is evident from Table 14, there are few cases in the RUC8 and RUC9 categories and thus they are grouped together with the RUC7 category, as represented by the variable RUC789. Thus, from Table 14, RUC789 has 140 counties.

Table 14 - Frequency of Counties by RUC Category

RUC	Freq.	Percent
1	189	17.60%
2	167	15.5105%
3	186	17.32%
4	157	14.62%
5	87	8.10%
6	148	13.78%
7	136	12.66%
8	2	0.19%
9	2	0.19%
Total	**1,074**	**100%**

Table 15 shows the results of the analysis.

Table 15 – Voter Turnout by Newspaper Circulation and Rural-Urban Indices, 2006-2010

TurnoutDifference	Coef.
CircShareDiff	0.011
NumpapersDiff	-0.017
MarginDiff	-0.066
SenatorDiff	0.024
GovernorDiff	0.063
UnemployDiff	0.006
RUC2	-0.029
RUC3	-0.018
RUC4	-0.013
RUC5	-0.009
RUC6	-0.023
RUC789	-0.013
RUC2circ	-0.087
RUC3circ	-0.026
RUC4circ	0.062
RUC5circ	0.068
RUC6circ	0.005
RUC789circ	0.021
_cons	-0.010

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N = 1,074

H2 continues to be supported. A change in circulation share of newspapers varies in the same direction as a change in turnout. Compared to the models without the rural-urban variables, the effect now appears greater on circulation share, though smaller on newspaper closures. A decrease in circulation share of 1% is associated with a decrease in turnout of 1.1%.

H3 is supported. Based on the results, rural counties represented by RUC789, as well as micropolitan counties represented by RUC4 and RUC5 (adjacent and not adjacent to a metro area, respectively) are most associated with a decrease in voter turnout when circulation share declines. As an analysis of the interaction terms in Table 15 shows, the variables *RUC4circ, RUC5circ, RUC6circ and RUC789circ* have a positive correlation with change in voter turnout associated with a change in circulation share[18]. What is unexpected, however, is that counties with small urban centers are associated with greater drops in turnout when circulation share declines than less populous and rural counties.

The measurement of the effects of this interaction is the difference between the base category (*CircShareDiff*) and the category in question (*RUC2circ* through RUC789*Circ*) since the rural-urban variables, *RUC2* through *RUC789* are dummy variables. For example, with respect to the category representing the most rural areas, *RUC789circ*, there will be an effect of 2.1% on turnout associated with a the rural-urban designation RUC789 and above the -1.1% effect we see on *CircShareDiff*. Hence, compared to the reference category of counties of RUC1, counties with the RUC789 designation are associated with a decline in voter turnout of 3.3% (0.021 +0.011).

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[18] The classification of "micropolitan" is used to describe categories RUC4 and RUC5 that include non-metro counties with urban populations of more than 20,000.

Likewise, the counties with the designation RUC4 (Urban population of 20,000 or more, adjacent to a metro area) and RUC5 (Urban population of 20,000 or more, not adjacent to a metro area) are associated with a 7.3% and 7.9% drop in turnout associated with a 1% drop in circulation.

The finding that small urban counties may have a lower turnout indicates that daily papers may serve a unique function in counties with medium-sized urban centers, especially if a major metro daily does not serve these counties in terms of distribution area or in terms of content. In the case of the urban counties adjacent to a metro area (RUC4), which could be classified as small suburbs, there is some support in the literature for the finding that they may have a lower voter turnout as circulation share declines. Scholars have discussed how there could be "print superiority" when it comes to coverage of Congressional races for suburban voters due to the "incongruence between a media market and a congressional district" (Campbell, Alford and Henry, 1984; Vermeer, 1987, p.78) and inadequate coverage of local issues by urban papers (e.g., Althaus, Cizmar et al., 2009). For example, a television media market in a major metropolitan area cannot devote time to cover all the members of Congress that represent this densely populated region. It is likely to focus on one that has the highest profile and might come from the urban center rather than the suburb. Additionally, another alternate media source – major metro daily papers – often cover members of Congress from the city center more than the members from the suburbs and exurbs. Thus, the decline of suburban daily newspapers represents an information loss that may not be offset by the metropolitan daily or television source. In the case of micropolitan counties, or counties with small cities not adjacent to an urban area (RUC5), there is not as much literature as

there is on suburbs, but microurban areas may share some of the same characteristics in the media environment as suburbs.

It is also worth further investigating through further empirical research and individual case studies whether these micropolitan counties where voter turnout declines associated with circulation share correspond to counties with state capital cities, many of which tend to be located in small or medium-sized cities. As the findings in Chapter 3 illustrate, newspapers in counties with state capitals have been at greater risk of failure. An association between micropolitan counties and state capitals could mean that an effect on voter participation, as measured by an effect on Congressional voting, could correspond with an effect on voter participation that also impacts state races.

H3 postulated that the counties with the most rural and least populous compositions, including RUC6 and RUC789, would have greater declines in voter turnout associated with declines in circulation share than the most populous counties, based on a smaller presence of information alternatives in the media environment. The effects of print media on voters in more rural communities have been less studied but some reports pertaining to community weeklies that serve rural, less populous areas identify a negative effect on political knowledge and participation when local papers close (Paula Casey 2010, personal communication, October 27, 2010; Cotters, 2009).

Analysis incorporating the UIC categories that are more tailored to capture the dynamics of proximity to metro counties may further elucidate understanding of patterns of turnout associated with declines in circulation share in counties of varying population and rural-urban composition. Table 16 displays the number of cases by RUC category. As is evident from Table 16, there are few cases in the UIC4, UIC7, UIC10 and UIC 12

categories and thus they are grouped together with other variables with similar
characteristics in the analysis. UIC467 represents the variable associated with counties
with the codes UIC4, UIC6 and UIC7, and UIC1112 represents the variable associated
with counties with the codes UIC 11 and UIC12. UIC 10 is excluded from the analysis
because there are no counties with newspapers in this category.

Table 16 - Frequency of County by UIC Category

UIC	Frequency	Percent
1	189	17.60%
2	353	32.87%
3	60	5.59%
4	11	1.02%
5	186	17.32%
6	47	4.38%
7	2	0.19%
8	151	14.06%
9	36	3.35%
11	38	3.54%
12	1	0.09%
Total	**1,074**	**100%**

The results displayed in Table 17 illustrate a similar trend of greater association of
decline in turnout associated with decline in circulation share for counties that have lower
UIC ratings, though again the effect is not linear.

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Table 17 – Voter Turnout by Newspaper Circulation and Urban Influence Indicators, 2006-2010

TurnoutDifference	Coef.
CircShareDiff	0.013
NumpapersDiff	-0.016
MarginDiff	-0.065
SenatorDiff	0.024
GovernorDiff	0.062
UnemployDiff	0.006
UIC2	-0.024
UIC3	-0.014
UIC5	-0.018
UIC467	-0.032
UIC8	-0.007
UIC9	-0.037
UIC1112	0.139
UIC2circ	-0.058
UIC3circ	0.004
UIC5circ	-0.026
UIC467circ	0.138
UIC8circ	0.082
UIC9circ	-0.030
UIC1112circ	-0.142
_cons	-0.009

N=1,074

Table 17 shows support for H3. Rural and noncore counties, represented by UIC467, and micropolitan counties, represented by UIC8, showed the greatest voter decline associated with a decline in circulation share compared with the reference category of counties with large metro areas of 1 million+ residents. The declines in turnout associated with a 1% change in circulation share when including the base category *CircShareDiff* in the computation of effects are 15.1% for UIC467 (noncore counties adjacent to large metro and small metro) and 9.5% for UIC8 (micropolitan area not adjacent to a metro area). Contrary to the expected hypothesis, the counties that are

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most rural – the noncore counties that are not adjacent to a metro or micro area

(UIC1112) - did not show a decrease in voting with lower circulation share. (In the RUC

analysis, rural counties, as represented by RUC789, did show a decrease in voting

associated with lower circulation share).

Table 18 analyzes turnout decline for rural-urban subgroups based on population

centers inclusive of suburbs associated with a 1% decline in circulation share.

Table 18 - Voter Turnout and Rural-Urban Subgroups Based on Population Centers Inclusive of Suburbs, 2006-2010

TurnoutDifference	Coef.
CircShareDiff	0.002
NumpapersDiff	-0.016
MarginDiff	-0.067
SenatorDiff	0.024
GovernorDiff	0.063
UnemployDiff	0.006
SmallMetroAndSuburbs	-0.016
MicroAndSuburbs	-0.009
NonCoreNotAdjacent	0.008
SmallMetroAndSuburbsCirc	-0.020
MicroAndSuburbsCirc	0.049
NonCoreNotAdjacentCirc	0.023
_cons	-0.016

N = 1,074
Additional Note:
LargeMetroAndSuburbs = UIC1 + UIC3 + UIC4
SmallMetroAndSuburbs - Dummy for UIC2 + UIC5 +UIC 6
MicroAndSuburbs = Dummy for UIC8 + UIC 9 + UIC10
NonCoreNotAdjacent = Dummy for UIC11+ UIC12

The results of Table 18 show support for H3. Counties in noncore counties experience a

decline in turnout of 2.5% from 2006 to 2010 associated with a 1% decline in circulation

relative to large metro counties, inclusive of suburbs. Consistent with the findings in

Table 15 and Table 17, micropolitan counties experience the larger decline in turnout

associated with a decline in circulation share of 5.1%.

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Table 19 allows for a more nuanced analysis of voter turnout associated with changes in circulation for counties based on their relationship to the metro area and, in particular, allows for an analysis of trends related to suburbs.

Table 19 - Voter Turnout in Rural-Urban Subgroups Based on Relationship to Metro Area, 2006-2010

TurnoutDifference	Coef.
CircShareDiff	0.011
NumpapersDiff	-0.017
MarginDiff	-0.066
SenatorDiff	0.024
GovernorDiff	0.064
UnemployDiff	0.006
SmallMetro	-0.024
MicroNotAdjacent	-0.007
NonCoreNotAdjacent	0.002
MajorMetroSuburbs	-0.017
SmallMetroSuburbs	-0.019
MicroSuburbs	-0.036
SmallMetroCirc	-0.056
MicroNotAdjacentCirc	0.083
NonCoreNotAdjacentCirc	0.015
MajorMetroSuburbsCirc	0.005
SmallMetroSuburbsCirc	0.029
MicroSuburbsCirc	-0.027
_cons	-0.010

N=1,074
Note:
Large Metro = UIC1
Small Metro = UIC2
MicroNotAdjacent = UIC8
NonCoreNotAdjacent = UIC11+UIC12
MajorMetroSuburbs = UIC3 + UIC4
SmallMetroSuburbs = UIC5 + UIC6 + UIC7
MicroSuburbs = UIC9 + UIC10

Table 19 shows some support for H3. The results of Table 19 indicate that counties in noncore counties experience a decline in turnout of 2.6% from 2006 to 2010 associated with a 1% decline in circulation share, a result similar to the one found in

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Table 18.   However the voter turnout in counties with small cities not adjacent to metro areas (*MicroNotAdjacentCirc*) and small suburban counties (*SmallMetroSuburbsCirc*) are associated with the greatest sensitivity to changes in circulation share. Small cities not adjacent to metro areas are associated with a decline in turnout of 9.4% and small suburban counties are associated with a decline in turnout of 4.0% related to a 1% decline in circulation share.

The finding that micropolitan counties are found to be associated with a greater decline in turnout on par or higher than rural counties by many measures when circulation share drops deserves further analysis. It could be that in addition to other sources in the media environment, voters in rural counties may have more knowledge of their members of Congress through other means including: personal contact with the member; personal contact with the district office; and, information gained from public opinion leaders in the community via a two-step flow of communication (Fenno, 1978; Lazarsfeld & Katz, 1955). In this case, information provided outside of media channels might help mitigate the loss of political information. It is possible that voters in small cities may suffer from a deficit in both the media environment relative to the greater availability of media in metro areas, including possibly television coverage of their member, and also relative to the degree of contact with the local member of Congress through means outside media channels. This is an area of further research that broadens questions about availability of information alternatives beyond the "media environment" to the larger information environment.

Conclusion

This chapter provides some support for the hypothesis that a decline in political information from newspapers decreases political participation with findings that suggest this is true in the aggregate and even more consistently for certain kinds of counties. The effect on Congressional turnout across 45 states in 2006 and 2010 associated with circulation share decline shows a small drop in five analyses utilizing different control variables, indicating that circulation decline is likely associated with a small, aggregate decline in voter turnout. Results from five models showed a positive coefficient (0.003, 0.011, 0.013, 0.002, 0.011) suggesting that a decline in daily newspaper circulation share of 1% with that county is associated with a decline in turnout of between 0.2% and 1.3% in that county for the 2006 to 2010 midterm elections.

In addition to showing an association of circulation decline with voter turnout for Congressional elections across counties in 45 states, the series of analyses in this chapter show differential effects of circulation decline associated with place: whether the county is rural, urban, micropolitan or suburban. Using the interaction of geographic variables with circulation share, the analysis shows that voter turnout is more sensitive to changes in circulation share in counties with micropolitan (RUC4, RUC5, UIC8) and rural/less populous classifications (RUC789, UIC467) than it is in the most urban counties with a RUC1/UIC1 classification. The categories measuring counties based on population center found that *MicroAndSuburbs* and *NonCoreNotAdjacent* also showed that voter turnout rates were more sensitive to changes in circulation than the reference group, LargeMetroandSuburbs, while the categories of counties based on rural-urban subgroups based on relationships to the metro area showed that *MicroNotAdjacent*,

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SmallMetroSuburbs and *NonCoreNotAdjacent* groups of counties displayed higher rates of decline in voter turnout associated with circulation decline than the control group, Large Metro.

While Chapter 3 showed support for a print divide in political information, whereby rural counties and counties with state capitals experienced more newspaper failures than other types of counties, this chapter shows support for a print divide in political participation, whereby rural and micropolitan counties experienced a greater decline in voter turnout associated with a decline in newspaper circulation than other types of counties. Newspaper failures are the explanatory variable of interest in Chapter 3 as they have been in other longitudinal studies (Gentzkow, et al, 2011) while circulation decline is the explanatory variable of interest that interacts with rural-urban variables in this chapter since it was judged to better reflect the number of households/voters affected by newspaper decline since newspaper closures do not take into account the size of the circulation of the paper that folds and also to better measure the extent of decline in the industry over a four-year period with a smaller number of newspaper failures. However, it is clear that both newspaper failure and circulation decline are barometers of newspaper decline: as a result, there is some support that a print divide in political information resulting from newspaper decline, as found in Chapter 3, is leading to a print divide in political participation in the case of rural counties, as found in this chapter. A study measuring the effects of a greater number of newspaper closures over a longer period of time with a greater number of cases of newspaper closure might allow for a more

statistically reliable test of the effect of newspaper closures, and not just changes in circulation, on political participation.[19]

Given that urban, suburban, exurban and rural areas have their own partisan voting patterns, any influence on voter turnout, such as a decline in newspapers, can shift political outcomes as the literature on political geography discusses (Bishop & Gallardo, 2012; Gimpel & Karnes, 2006; Gimpel & Schuknecht, 2002; McKee, 2008; Teixeira, 2006). For example, the analysis in Chapter 3 shows that rural counties face an increasing risk for newspaper failure, one that is greater from 2000 to 2010 than from 1955 to 2010. Given this trend of failing newspapers, we can expect a turnout decline, as found in this chapter to be associated with circulation decline, to continue in rural counties. A drop in rural vote, associated with newspaper decline, has repercussions for many reasons. The rural vote is already showing signs of dropping more than the national vote and the vote in urban areas in recent elections. Using voter turnout data and applying it to urban areas, small cities and rural areas, Bishop and Gallardo (2012) found that the drop in the rural voter turnout was twice the national average from the 2008 election to the 2012 election. Classifying counties based on the same Urban Influence Codes grouped into metro, micropolitan and noncore areas for urban, small cities, and rural areas respectively, they found the following: urban areas dropped 4.6%, small cities dropped 8.4% and rural areas dropped 12.3%.[20] Since newspapers in rural areas are shown to be at greater risk for failure than in newspapers in non-rural areas in the past ten

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[19] Gentzkow et al (2011) conducted a lengthier study of the effect of newspaper closures on voter turnout, but they used data on eligible voters by county and did not collect real data on voter turnout and registration for each county for each election nor include some of the other variables such as governor and senator races and unemployment in their analysis.

[20] In this particular election, they found that the drop in the number of rural voters was concentrated among Democrats, but the numbers still reflect a disproportionate drop-off in rural areas relative to nationwide and other areas, partisan affiliation notwithstanding.

years, a trend in voter decline, associated with a loss of newspaper circulation as found in the analysis in this chapter, could continue. Influences affecting the rural vote also are of interest due to recent voting patterns. Rural voters participate in high numbers and with electoral consequences. Rural voters outpace voters nationwide and in urban areas and small cities when it comes to turnout: rural voter turnout was 67.2% compared to 57.9% nationwide turnout for in 2012 and 54.9% compared to 52.5% nationwide turnout in 2012. Scholars denote the growing importance of the rural vote (McKee, 2008) especially as it rose in the elections of 2004 and 2008 and voted more decisively for the Republican presidential candidate than ever before. If newspaper decline in rural areas leads to greater declines in voter turnout in rural areas, this could have the effect of closing the gap between rural and urban voter turnout. However, if this might seem a worthy goal in terms of equalizing participation, it would be better achieved by increasing turnout in urban and suburban areas as a drop in participation in a democratic society is not a preferable leveling mechanism.

This study produced some interesting findings with respect to the effect of closeness of a race, simultaneous statewide races and unemployment on Congressional voting. This study confirms the findings of much research on the effect of closeness of a race. As Cox and Munger (1989) write, "students of elections have repeatedly found that the closeness of an election is modestly correlated with turnout," which may be a result of voters making instrumental calculations that their ballots matter more in a close contest or, as they add, because mobilization efforts increase when a race is close (p. 217).

This study adds to research on the effect of coterminous statewide elections on elections and in particular Congressional elections. These results confirm the positive

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relation between voter turnout and the presence of a Senate seat on a Congressional election (Dawson & Zinser, 1976) as well as between voter turnout and the presence of a governor's race on ticket (Boyd, 1989; Gilliam, 1985). This is the first analysis I have found with results that compare the relative effects of the presence of Senate and Governor races on voter turnout. Variables for both are included in the model unlike many studies that focus on either the Senator or Governor race. The analysis from the model reveals that the presence of a Governor race had a slightly larger association with higher turnout (7.5%) than the presence of a Senator's race on the ticket in 2006 and 2010.

This analysis showed that the economy has a minimal effect on political participation. This effect adds to studies that show the economy can have an effect on political participation using the measure of unemployment (Burden & Wichowsky, 2012; Incantalupo, 2012) and provides some support, that could be further investigated with additional research, for Rosenstone and Hansen's (1993) finding that unemployment does reduce voter turnout.

This analysis suggests more need for investigation into the interaction of newspaper decline, place and voting. Both large-N data studies and individual case studies of counties with different geographical features would help advance knowledge of the findings in this chapter.

Chapter 5: Newspaper decline and the Internet

This chapter explores whether the Internet can help mitigate losses in political information and decreases in political participation associated with newspaper decline. This research supplements the findings of Chapter 3 to assess patterns of risk of newspaper failure in counties with varying degrees of broadband access. In doing so, it helps assess whether those counties at risk of losing papers are also those with lower rates of Internet access that would indicate they suffer a deficit of information not just from newspapers but from the Internet as well. If that is the case, rather than mitigating the loss of political information, lower rates of broadband access would mean the information deficit in the media environment is enhanced for counties at greater risk for losing daily newspapers. Additionally, this chapter examines the association of vote decline between 2006 and 2010 for counties with varying rates of broadband access when circulation declines. If voter turnout in counties with lower broadband access rates is more sensitive to drops in circulation decline, it can be interpreted that political participation in counties is negatively effected by a dual deficit of print and online information.

These two analyses will be presented sequentially in this chapter as model one and model two. The models are built using the foundation of the models in Chapter 3 and Chapter 4. The additional analysis in the chapter provides for the inclusion of broadband variables into these models and an interpretation of these findings and their implications. Prior to introducing the models, the following section provides some background on the

effects of newspapers and the Internet on political information and political participation. This section will contain more discussion of political information and political participation with respect to the Internet because discussion of political information and political participation with respect to newspapers is more heavily featured in Chapter 2. Furthermore, the focus of the section is on research that compares the two media.

Background – newspapers, the Internet and superiority

Information can be conveyed by multiple means including through direct contact from public officials (Fenno, 1978) and information from public opinion leaders in the community (Lazarsfeld & Katz, 1955). For purposes of studying the effects of media on political information and behavior, this analysis focuses on substitutes from other media outlets. This is consistent with a "media environment" approach that assesses the newspaper market based on competition from not just other newspapers but from other kinds of media (Bimber, 2003; Hindman, 2009; Prior, 2007; Starr, 2004; Sunstein, 2001). As Picard (2008) writes, starting in the second half of the century and continuing into the 21st century, "audiences began facing multiple choices among their newspapers and television stations, radio stations, magazines, weekly and alternatives newspapers, Internet and other types of content offerings" (p. 705).

In the 21st century media environment, no other media source has experienced a greater increase in users than the Internet. The relationship between newspapers and the Internet has been inverse in many ways: while newspapers have lost readers and advertising revenue, the Internet has gained them. Accordingly, the Internet has been

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characterized by many scholars as having the effect of downsizing newspaper audiences (Bimber, 2003; Curran, 2010; Kaye & Quinn, 2010; King, 2010; Prior, 2007; Sunstein, 2001). More households now have an Internet connection than a newspaper subscription (Boulianne, 2011). In 2013, 82% of Americans said they got news on a desktop or laptop computer, 35% of them "frequently" (Pew, 2014). Data from E&P Data (2012) show that 39% of households subscribed to a daily paper in 2011. (Recent analysis indicates that online news consumption has overtaken newspaper consumption: the portion of Americans who read a newspaper "yesterday" fell from 34% to 29% between 2008 and 2012 while the percentage who accessed news online "yesterday" rose from 29% to 39% in this period (Pew, 2012)). While some studies show that online news sources complement rather than replace traditional sources, especially among educated and motivated consumers, other studies find that for people of some demographics, i.e., the young, the Internet may displace the old media (Chyi & Lasorsa, 2002).

Numerous scholars identify the potential of the Internet to improve democratic processes, provide political information, and increase participation. Chadwick (2006) writes that much of the research on the democratic contributions of the Internet is driven by Jurgen Habermas's (1963/1989) work on information and democracy which expresses the importance for citizens to have a political voice and engage in direct discussions with other citizens in a public sphere. The Internet is interpreted as a vehicle to help facilitate this discussion. Mossberger, Tolbert and Franko (2013) identify the importance of the Internet in promoting "digital citizenship," which by their definition includes getting political information (p. 73-74). The Internet has also been cited as an important source to specifically offset information loss from newspaper decline (e.g., Hindman, 2000).

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Numerous studies point to the Internet's influence on increasing political participation including voting and other acts of engagement, such as donations, contacting candidates and attending meetings (Amadeo, 2007; Johnson & Kaye, 2003; Krueger, 2006; Tolbert & McNeal, 2003). However, many researchers have not found that the Internet has meaningful effects on political participation (Bimber, 1998; Kenski & Stroud, 2006), or they have found that those effects were indirect (Shah, McLeod & Yoon, 2001) or attributable to consumers already engaged in the political process (Norris, 2000; Prior, 2007; Xenos & Moy, 2007).

While this analysis assumes that access to the Internet indicates that some information lost from newspaper decline might be provided from an online source, it is important to analyze the degree to which the Internet is a substitute for newspapers. The Internet and newspapers are different in many ways that bear upon the relative effectiveness of the media in conveying political information as well as affecting political participation. Unlike the decades-old school of literature on "print superiority" that judges newspapers as superior over television in delivering political information, the literature comparing newspaper and the Internet contrasts the two media on many fronts but does not have a similar tradition of making such overall appraisals.

Newspapers and the Internet: access, content and credibility.

Many scholars describe the free and boundless qualities of the Internet as an advantage of the medium over other alternatives. The free and plentiful availability of online news makes it easier for citizens to access a wider range of political information (Bimber, 1998; Neuman, 2001; Weber, Loumakis & Bergman, 2003). The Internet is

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free (aside from the fixed costs of owning or finding a platform to use) compared to subscription costs associated with most daily newspapers. Thus, the information costs associated with participation are reduced, which should lead to enhanced voting (Downs, 1957). According to Johnson and Kaye (2003), this is because "the Web provides a theoretically limitless news hole of up-to-date, mostly raw information that is available whenever the user wants it" (p. 12). From this vantage point, the Internet could more than supplement the loss of information from a daily newspaper.

However, some scholars continue to believe that the Internet cannot replace newspapers in terms of some levels of political and other news content, especially at the state and local level, despite the efforts of "hyperlocal" ventures that have so far fallen short (Kaye, 2010; Starr, 2009). Scholars also argue that the increased choice of online news reduces exposure and recall of public affairs news (Althaus & Tewksbury, 2002; Eveland et al., 2002; Dalrymple & Scheufele, 2007). Also, newspapers have been judged to play an important role in setting the agenda for other media and the public about stories deemed to be of major general news interest (e.g., McCombs, 1972; Tan & Weaver, 2009). As McCombs (2005) discusses in the revisitation of his classic work on agenda-setting (McCombs & Shaw, 1972), the Internet introduces a more numerous and diverse set of agendas. The Internet may be less effective than newspapers in imparting an agenda and issue salience (McCombs, 2005).

There are mixed findings about the credibility of news from the Internet compared to newspapers. Some studies argue online news is more credible than television and radio but less so than newspapers (Flanigan & Metzger, 2000; Kiousis, 2006), while another cites a survey of US news consumers who rated online news as highest in credibility

(Abdulla, Garrison, Driscoll & Casey, 2005). It is important to note that often times, the news products from the Internet and the newspaper are not mutually exclusive. A majority of the top visited sites on the Internet were recently found to be from newspapers themselves (Pew, 2011). Other sites feature content-sharing as well; agglomeration sites regularly link to newspaper articles. According to some studies, consumers find traditional media sites, affiliated with a television or Internet more credible than independent online sites (Flanigan & Metzger, 2007; Pew, 2008).

Newspapers and the Internet: causal or reinforcing agents?

There are mixed findings about whether the effect of newspapers and the Internet is to generate political interest or to reinforce pre-existing interest. In what has been called a "mobilization" (Norris, 2001) or "stimulation" model (Boulianne, 2011), researchers treat the media as having a causal role in mobilizing both political interest and behavior (e.g., Mossberger, Tolbert, & McNeal, 2008). In what has been called a "reinforcement" model (Boulianne, 2011) or a "selective exposure" model (Zillman & Bryant, 2013), political interest is a mediating variable and consumers may seek out news that conforms to preexisting interests (Bimber & Davis, 2003; Lazarsfeld et al., 1944; Mutz, 2006; Sunstein, 2001). Scholars in the tradition of selective exposure often claim that outcomes from this mechanism include a lower level of general knowledge about politics as well as politically polarized views because consumers seek out news that conforms to their partisan position (Prior, 2007; Sunstein, 2001).

In assessing whether the Internet plays a role in stimulating or reinforcing political knowledge and participation, many scholars discuss the particular qualities of

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the medium. Boulianne (2011) finds that the Internet requires a lower degree of effort to access than the newspaper and is presumably therefore a gateway for more news consumers. Additionally, some scholars point out that the Internet is free and more likely to lend itself to "incidental" encounters with news for those with lower level of interest and motivation (Tewksbury et al., 2001). Based on studies that identify the Internet as a self-directed medium (Kaye and Johnson, 2002; Shah, Kwak & Holbert, 2001), Boulianne (2011) also finds the Internet is similar to newspapers in the degree of attention required to acquire information from the medium. Scholars claim that the Internet, like newspapers, is a high-demand medium because it requires attention and active involvement to click, scroll and search just as newspapers require the flipping of pages – compared to television which is a more passive medium (Katz et al.; Norris, 2000; Bouliane, 2011). Bouliane's (2011) study concludes that newspapers and the Internet are both media that can spur interest as well as be a product of interest, compared to television.

The technological features of the Internet have also been studied for their role in influencing political participation. Based on a "psychological" approach that they attribute to Bimber (2003), Xenos and Moy (2007) find that a focus on interactions between the technology itself and the characteristics of users can facilitate political engagement when it comes to the Internet. This is consistent with the findings of Shah et al. (2007) who found that "media effects were largely indirect, channeled through political discussion and messaging," qualities facilitated by the web through its blog and interactive format more than by traditional media like newspapers (p. 696). Xenos and Moy (2007) found that Internet users displayed a greater degree of political interest in

"demanding and purposeful acts" such as joining a group or volunteering for a campaign organization (p. 714). Many researchers have warned that access to online participation facilitates participation among those who already have political interest (Bimber & Davis, 2003; Norris, 2000; Prior, 2007).

Some scholars suggest that the "bundled" format of newspapers is more effective at conveying general news than the more selective or "high-choice" (Prior, 2007) format of the Internet (Hamilton, 2004; Kramer, 2010; Prior, 2007; Starr (2009). According to Kramer (2010), newspaper readers get their news in a "bundled," format and as a result editors deliver a package of news, including entertainment and sports, along with hard news. As a result, readers who flip through pages in a newspaper experience some exposure to general news content compared to television and Internet users who can more directly switch to their news channel or web page of choice. In his analysis, Prior (2007) comes to the conclusion that the advent of cable television and the Internet produce a "high choice media environment" resulting in an increasing gap in political knowledge as some consumers opt out of outlets that produce political news and gravitate to media that reflect their non-political interests, including sports and entertainment. Some scholars discount this finding: Flannigan and Metzger (2007) find that motivated consumers seek out a particular subject matter on the Internet just as they would on the newspaper and with comparable disregard for other news topics.

An additional effect that scholars identify as associated with Internet, as well as cable television news, is political polarization (Graber, 2006; Prior, 2007; Starr, 2009). Cable television and the Internet offer media outlets that are more partisan, or expressly partisan, compared to most daily newspapers that are Independent or while being partisan

affiliated, may still offer general news from a more nonpartisan point of view or from nonpartisan sources such as newswires. According to Graber (2006), the possibility of this polarization has "raised fears of political balkanization and break-down of the national political consensus" (p. 376). Starr (2009) attests that the loss of general-interest daily newspapers may "add to the tendencies that Prior has identified" whereby users seek out specialized or more partisan news (p. 32).

The findings from the literature comparing newspapers and the Internet are mixed and still developing. What is clear is that the media are different in several ways, that the Internet and newspapers are not perfect substitutes and that there are various arguments on both sides over which is the superior medium for conveying political information and encouraging political participation.   All this is to be considered as we compare access to the Internet with access to newspapers. In the end, even if those counties that have been at a higher risk of newspapers in the last ten years, as found in Chapter 3, have high rates of broadband access, use of the Internet may or may not fully mitigate newspaper failures. Still, access to the Internet represents the availability of a news outlet that could help mitigate the loss. Additionally, the chapter analyzes the dual impact on voter turnout associated with the availability of newspapers and the Internet.

Internet access and place

Regardless of its stand-alone and comparative merits, the ability of the Internet to promote digital citizenship - to help keep the media environment replete and voters informed when newspapers fail - is limited by its reach. This research analyzes the risks

of newspaper failures in counties from 2000 to 2010 in order to understand the degree to which the Internet is an information alternative for counties that lose papers. This research also uses rates of broadband access to analyze the degree to which counties that have both declines in share of household daily newspaper circulation from 2006 to 2010 and low rates of broadband access are associated with declines in voter turnout to assess whether a low rate of Internet access compounds a negative effect on voter turnout from circulation decline.

Access to broadband is a barometer that has been used to measure access to community news, including political news. It is available from the government by county and it also has been shown to correlate with use of the Internet to read political news. Mossberger et al. (2013) note that those with broadband access have higher rates of getting local or community news, reading national and international news tapping into e-government (state, local or federal government web sites). For example, while 80% of those with broadband access at home use the Internet to get local or community news, only 55% of Americans who have no Internet access or slow access from home do (Mossberger, 2013, p. 74).

Based on available statistics, and as will be borne out by findings from the data in this analysis, low rates of broadband access often are a characteristic of rural areas. As a result, findings associating broadband access rates with newspaper decline apply to rural counties, and the findings necessitate a discussion of the role of place when it comes to a print divide in information and/or a divide in participation associated with a decline of newspaper availability. Table 20 summarizes the results of a 2009 FCC Survey of 5,005 households in a nationwide sample, as compiled by Mossberger, Tolbert & Franko (2013)

showing that lower rates of broadband access are higher in rural counties. (In the early years following the introduction of the Internet, central cities were shown to lag in access as well as rural counties (FCC, 1998; Servon, 2008)).

Table 20 – Broadband Access Rates for Central Cities, Suburban and Rural Areas

	National (All)	Central Cities	Suburbs	Rural
Broadband Access at Home (High-speed)	54%	56%	59%	40%
Connection to Internet at Home (Slow speed)	62.5%	62%	67%	53%
Use Internet at Any Location	71%	70%	74%	64%

Source: Mossberger, Tolbert & Franko (2013)
N=5,005

The data show that rural households have rates for high-speed broadband access at home of 40% compared to the national average of 54% that is exceeded by households in the central cities (56%) and suburbs (59%). In this survey, rural households also had lower rates of connection to Internet and use of the Internet at any location. There are further demographic inequities. Low-income minority members of the rural population have the lowest rates of broadband adoption, according to the U.S. Department of Commerce (2011). In their survey, they found that home broadband adoption rates and computer adoption rates for rural households headed by a Black household without a high school degree were 16% and 27%, respectively (Department of Commerce, 2011, p.4). Furthermore, they found that affordability, including the cost of computer equipment, Internet service installation and ongoing costs including monthly subscription fees, played a large role in a household's decision not to acquire a broadband connection. However, when not specifying income and race, rural non-adopters were less likely than urban and suburban non-adopters to cite affordability as a barrier (Department of Commerce, 2011). This analysis will supplement this data to provide another measure of

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rates of broadband access by type of geographic community through analysis of broadband access rates for the 1,074 counties in this data set that had a daily newspaper between 2006 and 2010.

Model one: newspaper survival, the Internet and political information

This analysis employs a survival model similar to the one in Chapter 3 but with the inclusion of variables measuring broadband access rates. For more information on this survival model, methodology, background on the variables and the application of such models in past studies of newspaper failure, see Chapter 3.

Data.

The broadband access data utilized in this analysis is available from the U.S. Federal Communications Commission (FCC) that has been surveying Internet access and broadband access dating back to its study of the "digital divide," starting with reports including *Falling Through the Net* (FCC, 1995; FCC, 1998). Based on early findings that rural counties were underserved, the drive to collect information about access rates has run parallel to a funded campaign to extend broadband access around the country and to reach more remote, lower access corners. Broadband access is used to measure political information from the Internet because it is the best variable available from the FCC on a county-wide basis and has been shown to correlate with consumption of news via the Internet (Mossberger et al., 2013).

The broadband data used here is a five-point scale organized into quintiles, representing the percentage of the county that has broadband access as of December 31,

2011 (FCC, 2013). The five-point scale classifies counties into percentage of households with access falling into one of the following five categories: 0 to 20%, 20% to 40%, 40% to 60%, 60% to 80% and 80% to 100%. The FCC utilizes FIPS codes to classify the counties. This allows this data to be merged for analysis into the survival study model.

The remaining data is the same as that used in Chapter 3 for the survival model for 2000 to 2010. However, it should be noted that not all variables from the model can be used due to problems with collinearity. A degree of collinearity exists between broadband access rates and the Rural-Urban Continuum and the Urban Influence Codes.

Methodology.

The Cox survival model is specified as follows where t goes from 2000 to 2010:

$$\mathbf{H}_i\,(t/x) = \exp(\beta_1 x_1 + \beta_2 x_2 + \ldots + \beta_k x_k)h_0(t)$$

In this function, t represents the variable of time while x represents any given covariate, i.e. $\mathbf{x_1,\ x_2,\ x_k}$ since the hazard ratio is treated as having a dependency on time as well as covariates (Box-Steffensmeier & Jones, 2004). $H_i\,(t/x)$ is the hazard ratio for the ith subject where $H_0(t)$ is the baseline hazard function and $\beta_1 x_1 \ldots \beta_k x_k$ represent the covariates that are defined in the text that follows. The hazard ratio is $H_i/\,H_0$, which indicates the hazard ratio of the subject as a result of a given covariate compared to the hazard ratio when all the covariates are set to zero. The hazard ratio is the exponentiated value of the coefficient and the one most often used to assess risks of failure using a logs-ratio interpretation. Broadly speaking, the hazard ratio measures the risk of failure associated with a given characteristic.

The basic data are as follows:

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- 2,339 obs. remaining, representing
- 1,485 subjects
- 100 failures in single failure-per-subject data
- 15,702 total analysis time at risk, at risk from t = 0
- earliest observed entry t = 45 (2000)
- last observed exit t = 55 (2010)

There are 1,485 subjects, or daily papers that exist for some duration within the period 2000 to 2010 and a total of 100 failures. The variables β_1 through β_k are included in the model for the observation period from 2000 to 2010. The variables β_1 through β_k are as follows:

- *One Paper in County* – Dummy
- *Two Papers in County* - Dummy
- *Three Papers in County* - Dummy
- *Republican* – Dummy
- *Democrat* - Dummy
- *PM* - Dummy
  circulation size:
- *Under 5k*
- *5k to 10k*
- *10k to 25k*
- *25k to 50k*
- *50k to 100k*
- *Age at 1956*
- *State Capital* - a dummy for whether the paper serves a state capital.
- *Median Income*
- *PercentBlack (percent)*
- *PercentCollege (percent)*
- *Median Age*
- *BBUpto20* – broadband access for up to 20% of the county
- *BB20to40* – broadband access for between 20% and 40% of the county
- *BB40to60* – broadband access for between 40% and 60% of the county
- *BB60to80* – broadband access for between 60% and 80% of the county
- *BBUpto40* – BBUpto20 + BBUpto40

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The variables on the five-point FCC scale are included in the survival model as three dummy variables: *BB60to80*, *BB40to60* and the third, *BBUpto40*, created to represent the first two quintiles. The omitted variable for broadband access for a county is BB80to100 representing broadband access for between 80% and 100% of the county.

Hypotheses.

Counties with lower rates of broadband access suffer from a deficit of information relative to counties with higher rates of broadband access. According to theories of diffusion and the knowledge gap hypothesis, this suggests these counties contain more disadvantaged socioeconomic groups that are the last to benefit from the spread of information (e.g., Larson & Hill, 1954; Rogers, 2003; Tichenor et al., 1970). These disadvantaged groups have included minorities, the poor and rural populations in the case of the Internet (e.g., NTIA, 1998). It is hypothesized that similar disadvantages that lead to counties having less access to the Internet will also make them more vulnerable to losing papers, including: less household income to spend on newspaper subscriptions; less purchasing power to attract advertisers; and higher distribution costs due to population density or infrastructure. However, it is noteworthy to consider that the absence of broadband could suggest that papers might benefit from having fewer competitors from Internet news sources for subscriber revenue and advertising revenue. If this were true, then lower rates of broadband access could be causal in increasing the chance of survival of a newspaper. However, it is presumed that the disadvantages associated with being in counties with lower rates of broadband access outweigh the

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benefits from having fewer competitors from online media sources. Therefore, the following hypothesis stands.

H1) Newspapers in counties that have lower rates of broadband access will face a higher risk of failure. This applies to the period 2000-2010.

This analysis covers the full population of newspapers from 2000 to 2010 (with a very small number of omissions as noted) rather than a selection or sample of daily newspapers in this period. As a result, there is virtually no sampling variance. Thus, T-statistics and other measures that would assess the difference between the sample mean and the universal mean are not relevant to this analysis and not displayed.

Results.

The following analysis shows the results of the survival model for the period 2000 to 2010 incorporating variables measuring the percentage of broadband access by county. There are very few cases in the first quintile, *BBUpto20*, representing counties that have up to 20% broadband access. As a result, the first two quintiles are joined and the variable *BBUpto40*, representing the sum of counties with up to 20% access and counties with between 20% and 40%, is used for analysis. Table 21 displays the hazard ratios for newspapers based on various variables with the addition of the broadband access quintiles.

**Table 21 - Hazard Ratios for Newspapers in Counties and Broadband Access,
Survival Analysis, 2000-2010**

_t	Hazard Ratio
TwoPapers	2.86
ThreePapers	2.45
ThreePlusPapers	2.32
PM	2.09
Republican	1.52
Democrat	1.59
Ageat1955	0.99
StateCapital	1.45
MedianIncome	1.00
PercentBlack	1.02
PercentCollege	1.04
MedianAge	1.00
BB60to80	1.52
BB40to60	1.75
BBUpto40	5.66

As Table 21 shows, counties that have lower broadband access rates – between
0% and 40% – face a higher risk of losing newspapers. There is support for H9. The
hazard ratio for counties with broadband access rates of 0% to 40% is 5.66, indicating
that papers in these counties are more than five times as likely to fail compared with
papers in counties with broadband access rates in the reference group of between 80%
and 100%. Counties in higher quintiles – access rates between 40% and 60% and
between 60% and 80% - also have higher risks of newspaper failure relative to the
reference group of counties with between 80% and 100% broadband access. The analysis
shows that the risk of failure is 1.75 for counties with broadband access rates between
40% and 60% and 1.52 for counties with broadband access rates between 60% and 80%
compared to 1.0 for counties with between 80% and 100% broadband access rates.

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Model two: circulation decline, the Internet and political participation

This model analyzes the association between voter turnout, changes in newspaper circulation and the availability of the Internet. This analysis utilizes data on broadband access to test whether counties without equal access to substitute information from the Internet may be affected more by newspaper decline. The analysis employs a fixed differences model similar to the one in Chapter 4 but with the inclusion of variables measuring broadband access rates. For more information on this model, methodology and background on the variables, see Chapter 4.

Data.

This analysis utilizes the broadband access data from the FCC (2013) that was employed in model one. For more background on these broadband variables, see the discussion earlier in this chapter for model one. The remaining data is the same as that used in Chapter 4 for the fixed effects model measuring the effect of circulation decline and other variables on the vote in the Congressional midterm elections in 2006 and 2010. For more detail on these variables and their data sources, see Chapter 4. However, it should be noted that not all variables from the model in Chapter 4 can be used due to problems with collinearity. A degree of collinearity exists between broadband access rates and the Rural-Urban Continuum and Urban Influence Codes. There are 1,074 counties in 45 states in this data set. The 1,074 counties have a total of 1,423 daily newspapers.

Methodology.

The transformed model below illustrates the differenced variables that will be the subject of our analysis.

$$\textit{TurnoutDifference} = \rho\textit{CirculationShareDifference} + \beta\textit{NumpapersDifference} + \alpha\textit{MarginDifference} + \tau\textit{SenatorDifference} + \phi\textit{GovernorDifference} + \lambda\textit{UnemploymentDifference} + \kappa\textit{BB60to80} + \varphi\textit{BB40to60} + \sigma\textit{BBUpto40}$$
$$\Omega\textit{Broadband60to80CirculationDifference} +$$
$$\omega\textit{Broadband40to60CirculationDifference} +$$
$$\Omega\textit{BroadbandUpto40CirculationDifference} + \textit{Error}$$

In the above model, the interaction variables *BroadbandUpto40CirculationDifference*, *Broadband40to60CirculationDifference* and *Broadband60to80CirculationDifference* are created to show the association of a 1% change in turnout with a 1% change in circulation for a county with a particular broadband access level (Broadband60to80, Broadband40to60 or BroadbandUpto40). Broadband80to100CirculationDifference is the omitted, reference variable.

Hypotheses.

Voter turnout in counties where newspaper circulation share decreases and voters have access to less substitute information from the Internet will decrease more as a result of the combined loss of political information. Availability of the Internet is measured by access to broadband. As a result, the following hypothesis, H2, stands:

H2) There will be a higher decline in turnout associated with counties that experience decrease in newspaper circulation share and have lower rates of broadband access, relative to counties that have a higher rate of broadband access.

This data allows for an additional measurement, in addition to the FCC survey of 5,005

households, of the extent to which low rates of broadband access are concentrated in rural

counties. The data tests for broadband access rates across 1,074 counties. Consistent with

findings in the FCC sample data, the following hypothesis, H3, stands:

> H3) The analysis will show that the 1,074 counties with daily newspapers from 2006
> to 2010 that have lower rates of broadband access are predominantly less populous
> and rural counties.

Results.

In this analysis, the interaction variables *Broadband60to80circ,*

Broadband40to60circ and BroadbandUpto40Circ illustrate the effect on voter turnout

when circulation share declines in counties with those ranges of broadband access. Table

22 illustrates the results.

Table 22 - Voter Turnout and Broadband Access Rates, 2006-2010

TurnoutDifference	Coef.
CircShareDiff	-0.031
NumpapersDiff	-0.017
MarginDiff	-0.067
SenatorDiff	0.023
GovernorDiff	0.064
UnemployDiff	0.006
BB60To80	-0.001
BB40to60	0.000
BBUpTo40	-0.001
BB60To80circ	0.007
BB40to60circ	0.055
BBUpTo40circ	0.086
_cons	-0.025

N=1,074

Table 22 shows support for H2. Counties with the lowest broadband rate (0% to 40% access) were associated with a decline in turnout when circulation share declines. The coefficients that reflect this interaction are the difference between the base category (*CircShareDiff*) and the category in question (*BB60to80circ*, *BB40to60circ* and *BBUpTo40Circ*) since the broadband variables, *BB60to80*, *BB40to60* and *BBUpto40* are dummy variables. For example, with respect to *BBUpto40*, there will be an effect of 8.6% on turnout associated with a broadband rate of 0 to 40% over and above the -3.1% effect we see on *CircShareDiff*. Hence, compared to the reference category of counties with broadband rates of 80% or higher, counties with the lowest broadband category (0% to 40%) are associated with a decline in voter turnout of 5.5% (0.086 -0.031) while counties in the broadband category of 40 to 60% are associated with a decline in voter turnout of 2.4% (0.055 - 0.031) when circulation share declines 1%. Counties with a broadband rate of 60% to 80% are not associated with a circulation decline compared to the reference category of counties with a broadband access rate of 80% to 100% when circulation share declines 1%. The pattern shows that counties with higher rates of access to broadband demonstrate a smaller decline in turnout associated with a decrease in circulation share than counties with the lowest rates of broadband access (0% to 40%).

In order to test H3 and analyze the rural-urban composition of the newspapers in these counties in the data set and broadband access, Table 23 was assembled to display a matrix of broadband access quintiles and their distribution across RUC codes, which run from a urban (RUC1) to rural (RUC9) spectrum. This matrix represents the counties in this data set of counties with daily newspapers from 2000 to 2010.

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Table 23 - RUC Codes and Broadband Access Rates, Counties with Newspapers, 2006-2010

BB	RUC									Total
	1	2	3	4	5	6	7	8	9	
0 to 20				1	1	2	3			7
20 to 40	8	9	21	32	5	76	47			197
40 to 60	57	71	106	99	56	57	667	1	1	514
60 to 80	102	81	51	23	17	12	14	1		301
80 to 100	22	6	8	2	8	3	5		1	55
Total	189	167	186	157	87	148	136	2	2	1074

Figure 7 displays graphs representing the distribution of RUC codes in the BB groups in the analysis (0 to 40%, 40 to 60%, 60 to 80% and 80% to 100%).

Figure 7 - Broadband Access Rates in Counties with Newspapers by Access Quintile, 2000-2010
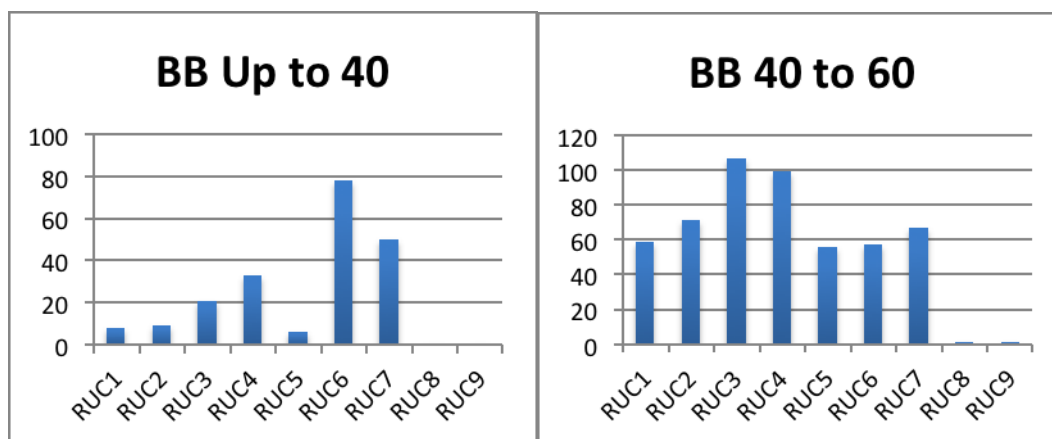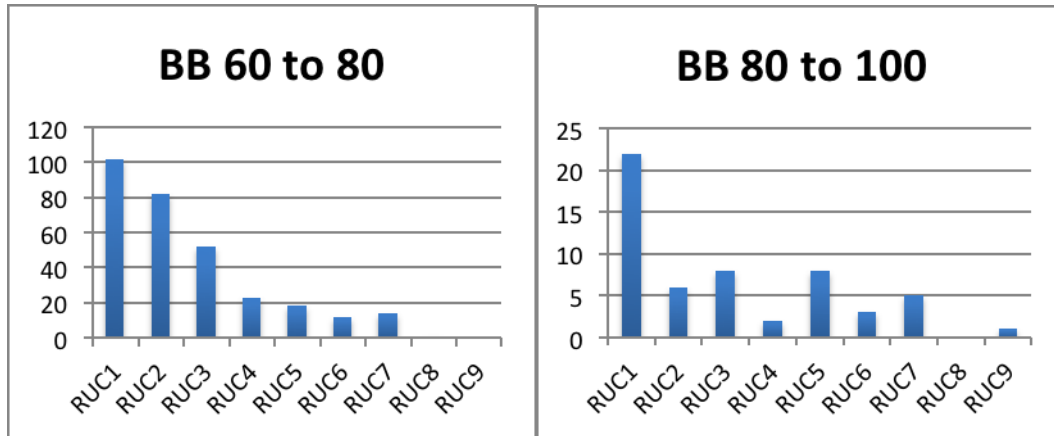
Table 23 and Figure 7 show support for H3. The higher the range of broadband access, the more urban and populous counties (i.e., RUC1, RUC2) are represented. For the bracket representing counties with 0% to 40% of broadband access, the majority of the newspapers are in the RUC6 and RUC7 categories, representing counties with urban populations between 2,500 and 19,999. Thus, the finding from this data set of counties with daily newspapers from 2006 to 2010 is consistent with the FCC sample of 5,005 households, indicating rural counties have lower broadband access rates than non-rural areas, a finding that is generally consistent with other studies although central cities were also shown to trail in access to the Internet in the early days of the digital divide (FCC, 1998).

According to Hindman (2000), rural residents connected to the Internet can compensate for the lack of daily newspapers with an online version of metropolitan newspapers. But given the findings that rural counties trail behind more populous counties in terms of Internet access rates, rural residents are lagging behind in the ability to access online newspapers and other online sources and obtain full "digital citizenship" (Mossberger et al., 2013).

Conclusion

Just as newspapers have been the medium suffering the most decline over the last several years, the Internet has been the most ascendant source of news. If the Internet were a perfect substitute for newspapers when it comes to political information, there would be nothing to worry about. It would be a zero-sum game.

The findings in this chapter demonstrate that the effects of the loss of political information from the decline of newspapers could not be mitigated by the Internet for some counties even if it the Internet delivered a perfect source of substitute information lost from newspapers. Counties with lower broadband access rates also have higher hazard ratios for newspaper failure from 2000 to 2010. Thus, there are indications of a reinforcing pattern. Concern about the distribution of power in democracy is partially concerned with the availability of political information. Those counties that are doubly hit by lower broadband access rates and the failure of a daily paper have less information which affects the ability of individuals in those counties to learn about politics, vote and thus have equal share in the power distribution in our democracy.

Based on the analysis in this chapter from model one, counties with the lowest rates of broadband access are at higher risk of losing newspapers, suffering a double deficit in print and online news compared to counties in the most populous urban centers. For example, newspapers in counties with a broadband access rate of between 0% and 40% have been five times as likely to fail from 2000 to 2010 as papers in counties with a broadband access rate of between 80% and 100%. The findings in this chapter from model two show that turnout is lower when low rates of broadband access are combined

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with declining circulation. For example, counties with broadband access rates of between 0% and 40% are associated with a decline in voter turnout of 5.5% when circulation drops 1% compared with counties with broadband access rates of 80% to 100%.

Furthermore, the scholarship comparing newspapers and the Internet casts meaningful doubt on the premise that the Internet is a perfect substitute. In particular, selective exposure approaches indicate that while one can theoretically find much of the political content that is in newspapers on the Internet, readers of the newspaper are more likely to gain exposure to general news due to its bundled format than consumers of television or the Internet who will switch or surf to their topic of interest. There is also meaningful doubt cast by scholars that the Internet is yet able to provide substitute information to compensate for content lost from newspaper decline for local political issues, including Congressional races.

Analysis of this data set of 1,074 counties with daily newspapers finds that higher rates of broadband access are associated with more dense, populous counties. As a result, interpretations about the particular situation of rural counties that experience a higher risk of losing newspapers and also a lower rate of broadband access, is warranted. The results of this chapter provide support for the finding that rural counties, demonstrated to be on the losing side of the information divide in Chapter 3, also have lower levels of voter participation associated with newspaper decline and lower Internet access rates. Scholars have identified a "rural penalty" associated with greater geographical isolation that has repercussions for retail choices, education, jobs - as well as information sources (Hindman, 2000; Hudson and Parker, 1990). The findings in this chapter support the conclusion that rural counties are suffering a "rural penalty" when it comes to

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information for both print and digital media, or what could be generalized and called a

"print-digital divide."

Chapter 6 – Conclusion – political information, political participation and political power

The decline of newspapers raises questions about the contemporary importance of a print medium that has historically been a key part of American democracy, with roots in the distribution of political pamphlets that helped spawn a revolution and the flourishing agrarian and urban papers that helped inform early citizens and build parties. Newspapers may no longer be as important with the advent of other communications technology. They now share the information landscape with other media, including radio, television and the Internet. The arrival of each of these media has supplemented the place of newspapers, with the Internet being the newest player. Yet despite the media arrivals, many still view newspapers as the superior source of political information for the local community. The decline of newspapers is not without impact, nor is there reason to be assured that new media sources are compensating for that loss or indeed can ever fill the void.

Newspapers play a unique role in informing the local community and, through that role, enabling more enlightened political participation. Newspapers excel because of their depth, breadth and scale. They employ more journalists and produce more stories than other media, dominate the online media platform by hosting some of the most visited web sites and generate original journalism that feeds reporting in other media. They continue to be superior at covering local issues even in the presence of hyperlocal attempts on the part of online media ventures.

This thesis provides some important empirical findings of the measurable role that newspapers play generally in providing political information and affecting political participation. It also has findings with regard to the uneven distribution of effects on political information and political participation. Democracy suffers with the decline of newspapers, and furthermore some are impacted more than others, shifting the share of political power among citizens.

Findings and implications

While newspaper decline is partially explained by shifting consumer tastes that reduce the demand for newspapers and the production of subscription revenues, newspaper companies are more often forced to close due to new economic realities rendering the former business model, based on revenue from subscribers and advertisers, outdated. Newspapers are now challenged with developing new sources of revenue as the result of declining subscribers, an advertising base that is shrinking due to competition from other media (the Internet, including news sites and Craig's list), macroeconomic recessionary trends and demands of shareholders at increasingly corporate-owned newspapers. There is a search for a "new business model."

As a result of economic forces and new technologies, notably the Internet that competes for advertising revenue, newspapers tend toward monopoly markets and toward larger newspapers with bigger economies of scale that can capture larger number of readers and more advertisers. The findings from Chapter 3, the first survival study of daily U.S. newspapers undertaken over a fifty-five year period, bear this out: papers in

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markets where there are a lot of competitors are more prone to fail, and papers that service small communities are prone to fail. As for papers in intermediate ranges, with two to three papers and medium-circulation sizes, the story is more mixed and deserves further analysis: the findings suggest that there is a sweet spot for suburban papers and some medium-sized papers that helps them survive. Scholars have identified papers that fit this trend (Downie & Schudson, 2009). Another finding for concern is that papers are failing at a higher rate in state capitals, threatening news coverage of this level of government.

What was quite salient and showed up consistently in the findings in Chapter 3 was the greater hazard of failure for the smallest papers and also the growing threat to counties with just one paper and to counties with just two papers. (Although newspapers that are the only one in their county are still safest, their risk of failure is still higher from 2000 to 2010 than in the longer period from 1955 to 2010, while newspapers that are one of two in their county faced the highest risk of failure from 2000 to 2010). The marginal effects from the loss of information for counties with one or two papers are greater because of the smaller supply of substitutes in the newspaper market and overall media environment (television, Internet, etc.) and, in the case of a two-newspaper county, the loss of diversity and quality when a paper loses its lone daily print competitor. As Schudson (2010) writes, "until the past several decades, when a changing economy and society reduced most leading American cities from two or more newspapers to one surviving monopoly newspaper with very high profits, the American scene was dominated, city-by-city by a competitive, thriving, metropolitan press with high readership, good profits, and occasionally high performance in terms of aggressive,

brave, and probing local journalism" (p. 95). The effects of the transition to one-newspaper markets on news quantity and quality in towns like Seattle, Denver and Tucson that have lost their second major paper in the last ten years are still not fully known and should be studied. With newspapers losing competitors, the need for research into the implications of one-newspaper counties on the quality and diversity of political coverage is underscored.

The findings from Chapter 4 address the implications of the loss of political information from newspapers by analyzing the effects on voter decline associated with circulation decline in counties between the midterm elections of 2006 and 2010. The analysis identifies an overall decline in voter turnout of between 0.2% and 1.3% associated with a 1% decline in circulation share. Additional findings in Chapter 4 illustrate that rural counties and micropolitan counties that lose political information from declining newspaper circulation demonstrated lower rates of voter turnout from 2006 to 2010. If newspaper circulation continues to decline, as it has over the past decade, it could be associated with lower voter turnout moving forward generally and especially for counties with certain characteristics, including rural composition.

Thus, Chapters 3 and 4 show evidence of a print divide through the contours of that divide are slightly different in the two analyses. Rural counties have experienced both a higher risk of failure from 2000 to 2010 and also greater effects of turnout decline from 2006 to 2010 associated with circulation decline compared to the most populous, urban counties. But some types of counties that have been at a higher risk of losing newspapers have not shown turnout decline associated with circulation decline. Suburban counties have been at a higher risk of losing a paper than urban counties but do not show

effects of turnout decline associated with circulation decline. Perhaps this is because of the greater availability of other sources in the media environment. As FCC data show, suburban households have the highest rates of broadband access at home, compared to urban and rural areas (Mossberger et al., 2013). On the other hand, some types of counties that show more sensitivity towards voter decline when newspapers fail are holding onto papers quite well: micropolitan counties showed the highest rate of turnout decline when circulation declined between 2006 and 2010 but papers in these counties had lower rates of failure than urban counties and rural counties from 2000 to 2010. With respect to the findings on micropolitan counties, it can be interpreted that newspapers may hold importance in terms of providing political information that informs voters, and thus it is salutary that papers in these counties are at a lower risk of failure. These papers may play an important role in informing voters in micropolitan counties, a finding that would benefit from further research about the role of papers in these counties and the availability of alternatives in the media environment.

Newspaper decline does not take place in a vacuum, and one of the most salient characteristics of the media environment present over the past several years is the force of the Internet that by some measures has surpassed newspapers as the most frequent go-to medium for news consumers on a daily basis (Pew, 2013). But the promise of the Internet to deliver news with political content is limited first and foremost by its reach. These analyses reveal that place matters. The findings from Chapter 5 illustrate that counties with lower rates of broadband access are at higher risk of having newspapers fail. As a result, for some counties the role that the Internet might play in replacing information lost when newspapers fail is beyond the reach of a large share of their

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residents who do not have broadband access, which has been associated with the use of the Internet for news. The analysis in Chapter 5 also shows that lower rates of broadband access in counties are associated with lower rates of voter turnout when newspaper circulation declines.

The implications of a loss of political information and political participation are manifold. They have been discussed within the chapters of this thesis, and a few will be reprised here. The loss of political information in the form of decreased local coverage of communities, including rural and small towns, threatens the watchdog role over small government, leading to greater likelihood of decreased government efficiency and more government corruption (Adsera et al., 2003; Bruns & Himmler, 2011; Gentzkow, Glaseser and Goldin, 2006; Starr, 2009). Schudson (2008) views the watchdog role of the press as largely a negative one designed to foil tyranny rather than advance new policy and goes on to quote de Tocqueville, who was an admirer of the American press. De Tocqueville (1835/1969) said, "I love (freedom of the press in America) more for considering the evils it prevents than on account of the good it does" (p. 50). The finding that papers in state capitals are at greater risk goes to the heart of Paul Starr's (2009) concern that "the watchdog role of the regional press is even more critical at the state level, where no one else is likely to step in when newspapers cut back" (p. 31). Additionally, the finding that papers with smaller circulations and those in rural counties are at greater risk heightens concern for less oversight of local government in small towns. The role that the media play in controlling corruption in state and local government is often one that is not seen when it is successful, but with the decline of

newspapers and their watchdog function, government will be more prone to abuses that will then become apparent.

There are "trickle-down effects" and secondary effects from the shutdown of newspapers as well. Newspapers are often the first in the food chain – as they shut down, the quantity and quality of stories supplied by other mediums is also decreased. Newspapers set the agenda for television, radio and Internet news. Furthermore, with the loss of newspapers is a loss of a "bundled" news format that uniquely has the ability to deliver general news – and not just, specialized news to a "high-choice" audience (Prior, 2007). As Starr discusses, newspaper readers learn news about local, state, national and foreign news from a scan of the front page even before they open the paper to what may be their preferred section, e.g. the sports page.

Political participation in the form of voting is the fuel of a representative democracy. The findings that voter turnout in some counties is more affected by declining newspaper circulation and lower rates of broadband access means there is a pattern of selective disenfranchisement that is at least partially associated with uneven distribution of the availability of newspapers and the Internet. When citizens lose knowledge of how they are governed and their voice at the ballot box is weakened, the political power they exercise is diminished.

The digital divide and the print divide

There has been a dearth of studies of newspaper decline that have probed into questions about the distribution of decline and the effects of that decline on political

information and participation in counties. As a result, there is also a deficiency of analysis about the implications of uneven distribution of effects of newspaper decline. But analysis of uneven distribution of media effects, with respect to a change in the media landscape, can draw upon the extensive and recent analysis of distribution of effects of the Internet. This section will discuss the "digital divide," or uneven distribution of access to the Internet and its relationship to the indications of a print divide found in this research. The print divide has implications for political information, political participation and political power in the democratic process.

Divides, whether they are in print or digital media, are often signs of an underlying structure of inequality in society that becomes exacerbated by inequality of media access. Van Dijk writes about the problem of inequality that he claims has been intensified by the Internet, but also precedes it: "divides *are* byproducts of old inequalities, digital technology *is* intensifying inequalities, and new inequalities are appearing" (p.6). Divides can lead to "durable inequality " when there are underlying forces (Tilly, 1998). Tilly (1998) identifies "opportunity hoarding" as the mechanism by which "members of the categorically bounded network acquire access to resources valuable, renewable, subject to monopoly, supportive of network activities, and enhanced by the network's modus operandi" (p.10). Opportunity hoarding is a political economic mechanism that is directly applicable to media access and ownership patterns for newspapers. The political economic structure of the media industry is leading to survival advantages for some types of newspapers over others, especially papers with more revenue from subscribers and advertisers, including big papers in more populated markets and corporate-owned papers that can weather an economic setback more than

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independently owned papers. Just as society often seeks to protect the "little guy," (i.e. against tyranny of the majority) there are concerns for the "little paper" that is faced with demand-side forces from declining subscribers and supply-side constraints from higher distribution costs and lower advertising revenue.

With the digital divide, urban, educated and white populations were found to lead in access and usage of the Internet while the rural, central city, elderly and minority populations trailed. With the print divide, there are signs that rural counties trail, as well as signs that papers in counties with state capitals fail more than papers in counties without state capitals. When it comes to political participation, newspaper decline has a greater effect on rural and micropolitan counties. When certain members of a categorically bound network – by status, place, income, or other demographic advantage – have favored access to a network of information, they are in a position of greater power. One of the ingredients of political power is access to information that builds knowledge, as Bacon proclaimed (1597).

Diffusion and contraction.

The digital divide was spread as the result of a diffusion process, whereby populations already structurally located in a privileged position demarcated by race, income, education or urban location had greater access to the Internet, especially in the early years. Pippa Norris (2001) discusses the outcomes of diffusion, the mechanism most cited by which inequities in society are produced or exacerbated with the spread of new technologies. Norris (2001) cites the sociologist Gabriel Tarde who "described the diffusion process as analogous to a stone dropping into a pond triggering rippling waves

that spread in concentric circles, advancing slowly among core elites in the beginning, followed by rapid acceleration spreading through advanced societies" (p. 240). Norris (2001) views the implications of media diffusion as ominous to equality in a society:

> It is even more important that we seek to understand the underlying reasons for patterns of Internet access and use at this stage in the diffusion process, even imperfectly, before the initial inequalities rigidify into a virtual Berlin Wall dividing the information-rich and poor, within and between societies (p. 240).

A print divide is occurring but this time through the mechanism of contraction rather than diffusion. Just as is in diffusion, the disadvantaged and outlying communities gained access to the Internet last, with contraction, outlying communities are losing daily newspapers first. While a whole literature relates the process of diffusion to implications for political and social inequity, I have found no discussion of this reverse process of contraction in the literature on diffusion.

The process of contraction differs from the process of diffusion because the "normalization hypothesis," whereby those who initially lack access will gain it, does not apply (Compaine, 2001). The process of diffusion of the Internet creates first losers who are assumed by many scholars, and have been borne out by many statistics, to catch up, as the gap closes (e.g., Compaine, 2001). Yet given current market forces, there is no indication that daily papers in rural counties will resurrect. The process of contraction may be self-perpetuating when it comes to widening the gap in the short term or even in the long term. More research should be done on the process of contraction as it relates to declining media. This research might analyze first losers in other declining industries and the eventual outcomes for those first losers, as well as private and public sector remedies that have been proposed or employed to mitigate their loss. The research might also

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investigate if, and when, contraction will spread to other areas as well, which would indicate that the uneven pattern of decline in newspapers might eventually become more leveled, although this would not mitigate short-term impacts for first losers.

Contraction and compensation.

As newspapers contract, some scholars claim other media can help fill the void. Many point to hyperlocal Internet sites as holding the potential to cover communities at the same scale as newspapers. The premise behind some of the hyperlocal sites was that they would occupy a "niche" and gain a local, loyal readership and that they could be sustained by low-cost advertising to small businesses and individuals in the community. But the results have been mixed. Many of the hyperlocal sites, including Backfence and the Washington Posts' "Loundon Extra" web site, have failed to be profitable and have shut down, while other sites like patch.com have struggled (Kaye, 2010; Starr, 2009). AOL's network of Patch employed fewer than 100 reporters and editors in early 2014, compared to 1,000 at its height (Pew, 2014.) Some sites that cover state government have also been launched, with the premise that there would be a dedicated, interested readership that might even support a paywall to provide revenue for the venture. For example, *Capital Alert*, serving Sacramento, California, began as a site charging $499 a year, targeted toward lobbyists and political insiders but by the end of the year had converted to a free, advertising supported model (Kaye, 2010). Research should continue to assess the ability of hyperlocal sites to effectively cover the community and the ability of state capital-focused media ventures to replace lost newspaper coverage of state politics.

Furthermore, the Internet is effective as a substitute only to the extent that the community has access to it. As a test of the availability of substitute information from the Internet for counties with papers, this research found that Internet use is not compensating for all citizens: in fact, broadband access, a measure of use of the Internet for news consumption, was lower in many of the counties at higher risk for losing a paper. The distinction of having both higher risk of newspaper failure and also lower broadband access belonged to rural counties alone. As the findings in Chapter 5 show, counties with lower rates of broadband access also are associated with having lower voter turnout when circulation declines.

Many view the move by print newspapers to a digital online or mobile news format as an inevitable outcome of the new business model that renders the high fixed costs and distribution costs of print newspapers, combined with declining subscribers, untenable. As Kaye (2010) says, some analysts are asking whether newspapers should produce online-only editions, shut down their printing facilities and sell their distribution arms. (However, even the business model for an online only newspaper platform is challenging, as online sites also struggle earning sufficient revenue as advertising is "decoupled" from news and moving to advertising-only online sites like Craigslist and Ebay (Curran, 2010)). Yet a move to an online newspaper platform presents questions of quality of news, as well as of access. Regarding quality of news from an online newspaper platform, Kaye writes:

> (C)oncern about the commercial viability of news organizations is about much more than a business dilemma, of course. The deeper issues involves the impact a shrinking news industry will have on journalism's vital social role of acting as the fourth estate. Citizens need quality new media to help them make decisions. . .people who read newspapers vote in all forms of elections more often than non-

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readers. . .for now, newspapers, along with other traditional news providers such as broadcasters and wire services, are the main source of serious, credible newsgathering and production (p. 8).

Furthermore, regarding access to online news, some counties, including rural counties do not have equal access to digital media content. In the case of those rural counties that are both losing papers faster and trailing in broadband Internet access, current trends could lead to a "print-digital" divide.

One more likely source of compensation for the loss of daily papers is community or weekly papers (that by definition publish less than four times a week). Many of the community papers are conversions from former daily papers. The verdict on prospects for the future of community papers is mixed. Some say that community papers are faring well, which some attribute to their "hyperlocal" advantages (Jones, 2009; Meyer, 2009). According to Meyer (2004a), it is hyperlocalism that will save community papers, who can do a better job holding onto readers than metropolitan papers, and that in smaller communities, trust in their papers is higher. Ecological approaches incorporate a "theory of the niche" to explain how small papers excel despite smaller economies of scale because they fill a niche (Dimmick, 2003).

While daily papers declined from a total of 1,437 with a circulation of 52.2 million, as of the 2007 E&P, to 1,382 with a 44.4 million circulation, as of the 2012 E&P Data Book, community papers held much more steady. They declined from a total of 6,394 with a combined paid and free circulation of 47.7 million to 5,901 with a combined and free circulation of 47.0 million.[21] Thus, the total circulation of weekly papers has

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[21] From the *E&P International Yearbook* (2007), assumed to reflect 2006 values based on a one-year lag, there were: 4,307 paid weeklies with a paid circulation of 16.3 million and 0.1 million free circulation; 1,085 free weeklies with a free circulation of 22.6 million and a paid circulation of 0.1 million; and, 1,002

held relatively constant the last five-year period (E&P Yearbook, 2007; E&P Data, 2012).

Yet other scholars, like Weinhold (2008), conversely set the "continued decline of community newspapers" as a backdrop for their research (p. 476). Community papers tend to have smaller staffs than daily papers – they are often created in the downsizing from a daily paper to a weekly paper – and there is a need for studies assessing whether weekly papers can provide the same breadth and depth of coverage of local and state government as daily papers.

The information market, public goods and proposed remedies

In the case of the Internet, the failure of broadband access in rural communities has been identified as an outcome of the market which fails to provide goods to all those who demand it due to the cost structure (Hindman, 2000; Servon, 2008). Hindman (2000) found that high-speed profit-driven Internet access providers would prefer to invest in dense, urban areas where they could receive a higher return on their investment. Writing before the advent of the Internet, Hudson and Parker (1990) concluded that rural needs with regard to telecommunications had become more complex: "what is needed is 'universal information service' – affordable access to a wide variety of telecommunications services (p. 205). Hudson and Parker (1990) found that owing to

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"combined weeklies" with a paid circulation of 4.3 million and a free circulation of 4.3 million. From the *E&P Data Book* (2012), assumed to reflect 2010 values based on a one year-lag since there was no 2011 edition, there were: 3,809 paid weeklies with a paid circulation of 14.2 million and a free circulation of 0.1 million; 1,072 free weeklies with a free circulation of 22.9 million and a paid circulation of 0.1 million; and, 1,020 combined weeklies with a paid circulation of 4.3 million and a free circulation of 5.4 million. A paid community newspaper has more than 95% of the total circulation as paid, a free circulation has more than 95% of the total population as free and a "combined weekly" has a distribution that is anywhere in the middle of these ranges.

their greater geographical distance from market centers of commerce and information, telecommunications infrastructure is important in helping them bridge that gap, and that "there is likely to be a surplus of benefits over costs to the (rural) customers of a telecommunications system" (p 196). However market forces have hindered rural markets to gaining access to telecommunications infrastructure, resulting in rural-urban gaps. Servon (2008) assessed that the Internet's failure to serve all communities warranted the state to take action, writing "although it may be unprofitable to invest in the infrastructure of low-income areas, failure to serve these other areas creates an inequitable situation that warrants government intervention" (p. 9).

With respect to newspapers, the market may also be failing to allocate newspapers across all geographic areas due in part to costs of supply. Just as in the case of the Internet, the high distribution costs of delivering newspapers longer distances to rural readers and the lower purchasing power and advertising appeal of the less dense region may make service to these communities unprofitable (Knee, Greenwald & Seave, 2009).

Support for the delivery of information across the citizenry when market forces may inhibit this outcome is often premised upon an assumption that news is a public good. Many scholars accept the notion that news is a public good (Cowan & Westphal, 2010; Downie & Schudson, 2009; Starr, 2009; Hamilton, 2009). Starr (2009) believes that "news is a public good in two respects," – because it helps hold government accountable and because, in the economic sense, it cannot be "consumed," and especially in the age of the Internet, is a free medium available to those who do not pay for it (p. 33). McChesney and Nichols (2010) write: "journalism is something society requires but that the market cannot produce in sufficient quality or quantity"(p. xxv). As Cowan and

Westphal (2010) write, "American government doesn't work if citizens don't have a robust supply of reliable news and information" (p. 13). Downie and Schudson (2009) cite the many aspects of society where the state intervenes in the market because they contribute to "the public good," including education, health care, scientific advancement and cultural preservation – and argue that American society must likewise take some "collective responsibility for supporting independent news reporting" (p. 90, 76). According to Starr (2009), previously ample advertising provided for a "cross-subsidy" that supplied the public good in sufficient quantity, but now market incentives are no longer creating conditions that allow for private news providers to finance it in many markets.

Various scholars have identified the value of public information and sometimes specifically information supplied by newspapers as essential ingredients for a democracy including the founding fathers, Jurgen Habermas, John Dewey, Alexis de Tocqueville, and Walter Lippman, among others. The founding fathers, as well as early political parties, are cited for recognizing the importance of the press from their support of urban and agrarian papers and their early subsidies of the press through means including reduced postage rates and printing contracts. De Tocqueville (1835/196) was impressed when he saw the large spread of papers in early 19th century America and gave credit to the Post Office system (McChesney & Nichols, p. 126). McChesney and Nichols (2010) and Schudson (2008) reference Jurgen Habermas's (1963/1989) argument that a public sphere where citizens can debate politics free of government interference is essential to democracy and conclude that the media creates such a public sphere. Schudson (2008)

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places both John Dewey and James Carey in the lineage of Habermas as proponents of the importance of "conversation," which the media facilitates, in society (p. 94).

If news is a public good that is being threatened, then questions become raised about the role of government to intervene in the market so that the production of the good is preserved through remedies such as subsidies, tax-exempt nonprofit status or private funding. These are the types of responses of the government in the provision of other services deemed public goods such as a clean environment or quality education.

The government has a long history of supporting the media, including newspapers, but that support has declined. The Postal Act of 1792 highly subsidized newspapers and also placed a maximum rate on delivery (of one and one half cent per newspaper between 1792 and 1845). Supporters of a cap held that postal rate policy should ensure that local communities with distribution of longer distances should also be able to receive papers "to prevent newspaper publishing from becoming dominated by printers in the largest cities" (McChesney & Nichols, p. 124). As of 1970, the government was subsidizing news delivery at a rate of 75%. But after a financial crisis at the Post Office, under the newly formed Postal Regulatory Commission, subsidies were drastically reduced, and as of 2010, newspaper delivery was subsidized at a level of only 11% (Cowan & Westpahl, 2010). The cut in subsidy has had a negative impact on many publications. Other decreases of government support include a current move to transfer the publication of government legal and other public notices from newspapers to the Internet, threatening a revenue source of newspapers. Additionally the government, principally at the state level, is decreasing tax breaks to newspapers and magazines for print-related production expenses (Cowan & Westphal, 2010). The government has

provided support to other media, including radio and television through public broadcasting support. In the area of the Internet, the government has also provided substantial investment in its initial development in the technology, and later through infrastructure outlays including the extension of broadband access to underserved communities, including rural ones. As the analysis on broadband access rates in counties with daily newspapers from 2006 to 2010 shows, there continues to be a rural-urban divide, suggesting continued efforts to extend broadband access to outlying areas are needed if the goal is to close the gap.

The government has shown it values journalism through various investments since the beginning of the republic. With newspapers in decline, proponents of assistance to the newspaper industry advocate a range of options (Cowan & Westphal, 2010; Downie & Schudson, 2009; McChesney & Nichols, 2010). Some emphasize a need for philanthropic foundations and community foundations to increase their support for newspapers (Cowan & Westphal, 2010; Starr, 2009). For example, philanthropists and foundations, such as the Knight foundation have helped fund nonprofit news start-ups and individual reporting projects (Cowan & Westphal, 2010). Starr (2009) favors a private philanthropic role to avoid political influence. But, there is also a push for an active government role.

Proposals for government assistance for newspapers are various including: allowing more newspapers to receive tax-exempt status (as a few media organizations like ProPublic and *VoiceofSanDiego.org* have received); tax credits for consumers who subscribe to newspapers; relaxing anti-trust laws to allow for more cost-saving collaboration; and, stemming recent and current trends that are putting a crunch on

newspapers including the reduction of revenue from public notices and the reduction of subsidy of postage rates. Downie and Schudson (2009) propose a National Fund for Local News that would provide grants for advances in local news reporting in both commercial and not-for profit media organizations – funded with money the FCC currently collects or could collect from telecom users, television and radio broadcast licensees or Internet service providers. In 2009, U.S. Representative Ben Carlin introduced the *Newspaper Revitalization Act* that would allow newspapers to become tax-exempt organizations as a means to assist the faltering industry (Cardin, 2009). However, this bill received little support as have other proposals that provide support through government policies for the newspaper industry (Schudson, 2010). The U.S. does not have the same commitment to investment in journalism as other countries including Sweden, Norway, Denmark, Finland and France who provide subsidies to newspapers, journalists themselves or even consumers of newspapers (Schudson, 2010).

Those who claim newspapers are a public good and who cite their overall decline generally prescribe remedies to support the newspaper market at-large, as evidenced from the intervention mechanisms they prescribe. This research identifies two areas that may be particularly underserved based on higher risks for failure. To that end, without offering specific policy prescriptions, this research suggests that efforts to appeal to private sources or to the state for assistance to support newspapers might first target those communities that are suffering most from decline, i.e. local funds for news production should focus on rural communities and state capitals. Furthermore, the analysis showing that voter turnout in micropolitan counties is sensitive to circulation decline to a greater degree than any other kind of county suggests that policy targeted toward certain kinds of

newspapers bear in mind the important role that these findings suggest newspapers play in micropolitan counties.

Post-print democracy and the exercise of power

Based on declining numbers of newspapers and declining circulation, we are moving in the direction of a "post-print democracy" – an era in which newspapers are not the core media source of information about our society. The causes for this include economics, technology and shifting consumer tastes, and these may be self-perpetuating. But the forces are moving in a direction that increasingly indicates that, while all may be losing the benefits of a public good to a degree, some are more than others. Just as the arrival of the Internet, through a process of diffusion, created a divide that disenfranchised some populations including minorities and rural residents more than others, the decline of newspapers, through a process of contraction, is also disenfranchising some segments of the population more than others. Consumers of newspapers in rural counties are losing newspapers relative to consumers of newspapers in urban counties. Consumers of newspapers in state capitals also are seeing their daily newspapers decline at a faster rate. There are also disproportionate effects on participation: voters in micropolitan counties and rural counties are more sensitive to circulation decline than urban voters.

Levy and Nielsen (2010) compare the transformation of the media landscape, including the changing place of newspapers, as an example of Joseph Schumpeter's "creative destruction" (p. 4). Many view the process of a transformation of newspapers

as part of a necessary evolution of the business model for daily newspapers in the presence of changing consumer tastes and a declining advertising base. But in light of the findings in this thesis, what do some of the most frequently pitched re-creations of the business model mean for consumers of print media? In the new business model, if daily papers publish fewer editions a week or move to an online format, will the reduced staff infrastructure continue to produce the same quality for readers and will trained journalists (and not citizen sites, blogger sites and journalist-citizen collaborative "pro-am" sites) continue to supply the product? (Schudson, 2010; Siles & Boczkowski, 2012). Will newspapers be able to as effectively perform their "watchdog" role over government? (This research doesn't even focus on the role of significant cutbacks in newspaper staff that affect quality and output). In this new business model, will papers in rural areas, papers with lower circulations and independent papers find the resources to launch online sites that can serve their populations if they are forced to close? In this new business model, as newspapers move from a print format to an increasingly digital format (with proposals including pay-for-service and new mobile technologies) access to the Internet will be paramount. But this thesis shows that some of the counties where newspapers are at a higher risk of failure do not have the same access to news from the Internet, as measured by their lower broadband access rate, a proxy for use of the Web for news (Nielson & Levie, 2010).

A reconstruction of the business model is needed to preserve, in a general sense, the ability of newspapers to hold government accountable and inform their local citizens in the superior fashion print has steadfastly been able to do. But the reconstruction must also preserve an equality of access to information that is shown to also relate to

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participation. This means that more attention must be paid to the patterns of newspaper closure and, as this thesis has identified, signs of a print divide that is occurring because of the differential effects of newspaper decline on political information and political participation. Findings also suggest the Internet is not closing that divide for rural counties. It is a worthwhile endeavor to shape the contours of post-print democracy so that although newspapers decline, the exercise of power as enabled by information and expressed in participation is not diminished or divided on inequitable terms.

Appendix A - Editor and Publisher International Yearbook sample page, 2010

ALABAMA

ALEXANDER CITY
Tallapoosa County
'00 U.S. Census 15,008; E&P '09 Est. 14,311

The Alexander City Outlook
(m-tues to sat)
Alexander City Outlook, 548 Cherokee Rd ; PO Box 999, Alexander City, AL 35011; gen tel (256) 234-4281; gen fax (256) 234-6550; gen email editor@alexcityoutlook.com; web site http://www.alexcityoutlook.com.
Group: Boone Newspapers, Inc.
Circulation: 5,300(m); 5,300(m-sat); 5,300(S); Sworn Sept. 30, 2001.
Price: $0.50(d); $0.50(sat); $1.25(S). $7.00/mo; $138.00/yr.
Advertising: Open inch rate $13.90(m); $13.90(m sat), $13.90(S).
Representatives: London Media Group.
Politics: Independent. Established: 1892.
Not Published: Christmas.
Special Editions: Home Town Business (Jan); Parade (Feb); Spring Fashion (Mar); Bridal (Apr); Graduation, Wind Creek State Park (May), FYI, South's Best Kept Secret (Jul); Back-to-School (Aug); Fall Fashion, Football (Sept); Gift Guide, Holiday Cookbook (Nov); Christmas Greetings (Dec).
Special Weekly Sections: Automotive, Best Food Day, Business, Real Estate (Wed); Education (Thur); Lake Martin Fish Wrapper, Religion (Fri).
Magazines: Parade (S); American Profile (Weekly).

CORP. MGMT./GEN. MGMT.
Pub.	Kenneth Boone
Bus. Mgr.	Darlene Yates

ADVERTISING SALES MGMT.
Gen. Mgr.	Roger Steele
Acct. Exec.	Mary Ann Foy
Acct. Exec.	Doug Patterson

CIRCULATION MGMT.
Circ. Mgr.	Fran Cassiano

PRODN./OPNS.
Prodn. Mgr.	Lee Champion

Market Information: TMC.
Mechanical available: Offset; Black and 3 ROP colors; insert accepted - preprinted; page cut-offs - 22 3/4".
Mechanical specifications: Type page 13" x 21 1/2"; E - 6 cols, 2 1/16", 1/8" between; A - 6 cols, 2 1/16", 1/8" between; C - 9 cols, 2 1/16", 1/8" between.
Commodity consumption: Newsprint 240 short tons; widths 13 3/4", 27 1/2"; single pages printed 3,696; average pages per issue 12(d); single plates used 2,000.
Equipment: PRODUCTION: Typesetters — 2-APP/Mac LaserWriter; Photomechanical plate exposure units — Nu; Production cameras — CL.
PRESSROOM: Line 1 — 5-KP/News King. MAILROOM: Counter stackers — BG/Count-O-Veyor 104A; Bundle tying machines — 1-Ca.

ANDALUSIA
Covington County
'00 U.S. Census 8,794; E&P '09 Est. 8,269

The Andalusia Star-News
(m-tues to fri; m-sat)
Andalusia Star-News; 207 Dunson St., Andalusia, AL 36420-0403; gen tel (334) 222-2402; gen fax (334) 222-6597; ed email

editor@andalusiastarnews.com; web site http://www.andalusiastarnews.com.
Group: Boone Newspapers, Inc.
Circulation: 3,395(m); 3,600(m-sat); Sworn Mar. 31, 2007.

Price: $0.50(d); $0.50(sat); $8.00/mo; $88.00/yr.
Advertising: Open inch rate $9.80(m); $9.80(m-sat).
News Services: NEA.
Politics: Independent. Established: 1939.
Not Published: New year; Christmas.
Special Editions: Chamber Guide (Jan); Progress (Feb); Home Improvement, Spring Fashion (Mar); Baseball (Apr); Graduation (May); Pride In America (Jun); Football (Aug); Fall Fashion, Home Improvement (Sept).
Special Weekly Sections: Education (Tues); Agri-culture, Best Food Day (Wed); Business/Finan-cial Page (Thur); Health Page (Fri); Lifestyle, Religion, TV (Sat).
Magazines: American Profile (Weekly).

CORP. MGMT./GEN. MGMT.
Pub.	Michele Gerlach

ADVERTISING SALES MGMT.
Adv. Mgr.	Ruck Ashworth

CIRCULATION MGMT.
Circ. Dir.	Jeff Moore

NEWS EXECUTIVES
News Ed.	Stephanie Nelson

PRODN./OPNS.
Prodn. Mgr.	Chris Love

Market Information: TMC; ADS; Electronic edition.
Mechanical available: Offset; Black and 3 ROP colors; insert accepted - preprinted, by request; page cutoffs - 22 7/8".
Mechanical specifications: Type page 13" x 21 1/2"; E - 6 cols, 2 1/16", 1/8" between; A - 6 cols, 2 1/16", 1/8" between; C - 9 cols, 1 3/8", 1/8" between.
Commodity consumption: Newsprint 600 short tons; widths 27 1/2"; black ink 20,000 pounds; color ink 500 pounds; average pages per issue 12(d); single plates used 7,500.
Equipment: EDITORIAL: Front-end software — Microsoft/Word, QPS/QuarkXPress 4.0, Adobe/Photoshop 3.0.5. CLASSIFIED: Front-end software — Baseview/Class Manager Plus. DISPLAY: Ad make-up applications — QPS/QuarkXPress 4.0, Adobe/Acrobat 2.1. PRODUCTION: Pagination software — QPS/QuarkXPress 4.0; Optical character recog-nition software — Caere/OmniPage Professional 5.0; Typesetters — 2-V/3990; Digital platesetting (CTP) — Nu/Flip Top; Photomechanical plate exposure units — 0-240 seconds; Plate processors — Nat/Universal 33 Subtractive; Electronic picture desk —

Adobe/Photoshop: Scanners - 2-HP/ScanJet Ilcx, 1-Lff/Leafscan 35, 1-Polaroid/Sprintscan 35ES; Production cameras — Horizon-tal/Clyesoale; Automatic film processors — LE/Lins 25.
PRESSROOM: Line 1 — 10-KP/News King single width; Press Drives — Cutter-Hammer/Responder Drive; Folders — KP/KJ 6; Reels and Stands — 6-Stands; Press registration system — Compensators/Lateral Register. MAILROOM: Counter stackers — BG/Count-O-Veyor; Inserters and stuffers — KAN/460; Bundle tying machines — Wilton; Addressing machine — 2-Dispensa-Matic/16.

ANNISTON
Calhoun County
'00 U.S. Census 24,276; E&P '09 Est. 24,802
ABC-CZ(00): 69,687 (HH 28,744)
ABC-RTZ(00): 94,092 (HH 36,849)

The Anniston Star
(m-mon to sat; S)
The Anniston Star, 4305 McClellan Blvd ; PO Box 189, Anniston, AL 36202; gen tel (256) 236-1551; gen fax (256) 241-1991; adv fax (256) 241-1984; gen email news@annistonstar.com; web site http://www.annistonstar.com.
Group: Consolidated Publishing Co.
Circulation: 27,045(m); 22,045(m-sat); 23,221(S); ABC Sept. 30, 2009.
Price: $0.50(d); $0.50(sat); $1.25(S). $12.75/mo; $141.00/yr.
Advertising: Open inch rate $40.00(m); $40.00(m-sat); $40.00(S)
News Services: AP, NYT. Established: 1883.
Advertising not accepted: Alcoholic beverages; Vending machine copy.
Special Editions: Coupon Book (Monthly).
Special Weekly Sections: TV Star (Fri); Star Homes (S).
Magazines: Parade (S).

CORP. MGMT./GEN. MGMT.
Chrmn./Pub.	H. Brandt Ayers
Pres.	Phillip A. Sanguinetti
Vice Pres., News	Chris Waddle
Vice Pres., Opns.	Ed Fowler
HR Mgr.	Elaine Estes

ADVERTISING SALES MGMT.
Adv. Dir.	Ken Warran
Adv. Mgr., Nat'l	Patricia Fowler

CIRCULATION MGMT.
Circ. Dir.	Dennis Dunn
Circ. Mgr.	Donnie Brown

NEWS EXECUTIVES
Ed.	Bob Davis
Mng. Ed.	Anthony Cook
Ed. at Large	John Fleming

EDITORIAL MGMT.
Action Line Ed.	Sue Vondracek
Columnist	George Smith
Commentary Ed.	Bruce Lowry
Features Ed.	Lisa Davis
Graphics Ed./Art Dir.	David Bone
Metro Ed.	Ben Cunningham
News Ed.	Philip Tutor
Photo Ed.	Trent Penny
Features Copy Ed.	Bill Edwards
Science/Technology Ed.	Matthew Korade
Sports Ed.	Brian Strickland
Asst. Sports Ed.	Christa Turner
Travel Ed.	Catherine Downing
Weekend Ed.	Kathryn Sesser
Multimedia Dir.	Justin Thurman
Online Mgr.	Gary W. Lewis
Online News Ed.	Brandon Wynn

PRODN./OPNS.
Prodn. Mgr.	Ben Gilreath
Prodn. Mgr., Distr.	Tom LaPlant
Prodn. Foreman, Pressroom	Jimmy Box

Market Information: TMC; Split run; Electronic edition.

Appendix B – Daily Newspaper Closures in State Capitals, 1955-2010

Newspaper	ST	City	UIC	RUC	Est. Closure (1)	# Papers	PM	AM	<5k	5k-10k	10-25k	25-50k	50-100k	100k+
The Post	MA	Boston	1	1	1956	3	0	1	0	0	0	0	0	1
The Ohio State Journal	OH	Columbus	1	1	1959	3	0	1	0	0	0	0	1	0
The American	MA	Boston	1	1	1961	3	1	0	0	0	0	0	0	1
The Arizona Journal	AZ	Phoenix	1	1	1963	4	0	1	0	0	0	1	0	0
Times	GA	Atlanta	1	1	1965	3	0	1	0	0	0	0	1	1
The Times	IN	Indianapolis	1	1	1965	3	1	0	0	0	0	0	1	0
The Traveler	MA	Boston	1	1	1967	3	1	0	0	0	0	0	0	1
American	AZ	Phoenix	1	1	1968	4	0	1	0	0	0	1	0	0
The World	GA	Atlanta	1	1	1969	3	0	1	0	0	0	1	0	0
The World	GA	Atlanta	1	1	1969	4	0	1	0	0	0	1	0	0
The World	GA	Atlanta	1	1	1969	3	0	1	0	0	0	1	0	0
The Record/The Record American	MA	Boston	1	1	1972	3	0	1	0	0	0	0	0	1
The Hartford Times	CT	Hartford	1	1	1976	4	1	0	0	0	0	0	1	0
The Globe PM	MA	Boston	1	1	1978	3	1	0	0	0	0	0	0	1
Oklahoma Journal	OK	Oklahoma City	1	1	1980	3	0	1	0	0	0	1	0	0
The American Statesman PM/Statesman	TX	Austin	1	1	1980	3	1	0	0	0	0	1	0	0

Newspaper	ST	City	UIC	RUC	Est. Closure (1)	# Papers	PM	AM	<5k	5k-10k	10k-25k	25k-50k	50k-100k	100k+
Citizen	TX	Austin	1	1	1981	3	1	0	0	0	1	0	0	0
The Citizen/The Citizen-Journal	OH	Columbus	1	1	1984	2	0	1	0	0	0	0	0	1
The Dispatch	MN	St. Paul	1	1	1986	2	1	0	0	0	0	0	1	0
The Bulletin	RI	Providence	1	1	1990	3	1	0	0	0	0	0	0	1
The News-Leader	VA	Richmond	1	1	1992	2	1	0	0	0	0	0	0	1
The Union	CA	Sacramento	1	1	1993	2	0	1	0	0	0	1	0	0
The Phoenix Gazette	AZ	Phoenix	1	1	1997	4	1	0	0	0	0	0	1	0
The Banner	TN	Nashville	1	1	1997	2	1	0	0	0	0	1	0	0
The Journal	GA	Atlanta	1	1	2001	3	1	0	0	0	0	0	1	0
The News	IN	Indianapolis	1	1	2001	2	1	0	0	0	0	1	0	0
The Birmingham Post Herald	AL	Birmingham	1	1	2005	2	1	0	0	1	0	0	0	0
The Rocky Mountain News	CO	Denver	1	1	2009	2	0	1	0	0	0	0	0	1
The State Times	MI	Jackson	2	2	1961	3	1	0	0	0	1	0	0	0
The Statesman PM	ID	Boise	2	2	1970	2	1	0	0	1	0	0	0	0
The Capital Journal	OR	Salem	2	2	1980	2	1	0	0	0	1	0	0	0
Madison Press Connection	WI	Madison	2	2	1980	3	0	1	0	0	1	0	0	0
The Hawaii Times	HI	Honolulu	2	2	1981	4	1	0	0	0	1	0	0	0
The Tribune	IA	Des Moines	2	2	1982	2	1	0	0	0	0	0	1	0
The Hawaii Hochi	HI	Honolulu	2	2	1985	3	1	0	0	1	0	0	0	0

Newspaper	ST	City	UIC	RUC	Est. Closure (1)	# Papers	PM	AM	<5k	5k-10k	10k-25k	25k-50k	50k-100k	100k+
The Knickerbocker News	NY	Albany	2	2	1988	2	1	0	0	0	0	1	0	0
The Record	SC	Columbia	2	2	1988	2	1	0	0	0	0	1	0	0
The News	MS	Jackson	2	2	1989	2	1	0	0	0	0	1	0	0
The Times	NC	Raleigh	2	2	1989	2	1	0	0	0	0	1	0	0
The State Times	LA	Baton Rouge	2	2	1991	2	1	0	0	0	0	1	0	0
The News	PA	Harrisburg	2	2	1996	2	1	0	0	0	0	1	0	0
Patriot-News/ The Patriot	PA	Harrisburg	2	2	2010	2	0	1	0	0	0	0	1	0
The Pioneer	ND	Bismarck-Mandan	2	3	1963	2	1	0	1	0	0	0	0	0
The State Journal	KS	Topeka	2	3	1980	2	1	0	0	0	0	1	0	0
State Journal-Register PM/The Illinois State Register	IL	Springfield	2	3	1986	1	1	0	0	1	0	0	0	0
The Wyoming State Tribune	WY	Cheyenne	2	3	1993	2	1	0	0	1	0	0	0	0
The Post-Tribune	MO	Jefferson City	2	3	2010	2	1	0	0	0	1	0	0	0
The Argus	VT	Montpelier	5	4	1959	2	1	0	1	0	0	0	0	0
The State News	SD	Pierre	8	7	1971	2	0	1	1	0	0	0	0	0

(1) Note – Estimated Closure is based on the last edition of the E&P in which the newspaper appears. For example, if the newspaper appeared in the 1960 edition but not the 1961 addition, it was assumed the paper failed in 1960. Exact dates of closure need to be researched and verified.

Appendix C– Sources of Voter Registration Data for 2006 and 2010

Office of the Secretary of State of Alabama Elections Division
Arizona Secretary of State Election Services
Arkansas Secretary of State Elections Division
California Secretary of State
Colorado Secretary of State Elections & Voting
Connecticut Secretary of the State Legislation and Elections Administration Division
State of Delaware Department of Elections
Florida Department of State Division of Elections
Georgia Secretary of State Elections Division
State of Hawaii Office of Elections
Idaho Secretary of State
Illinois State Board of Elections*
Indiana Secretary of State Election Division
Iowa Secretary of State
Kansas Secretary of State Elections and Legislative Division
Kentucky State Board of Elections
Maine Department of the Secretary of State Bureau of Corporations, Elections, and Commissions
Maryland State Board of Elections
Massachusetts Secretary of the Commonwealth. Elections Division*
Michigan Department of State Bureau of Elections
Minnesota Office of the Secretary of State Elections
Missouri Office of the Secretary of State Elections
Montana Secretary of State Elections
Nebraska Secretary of State
Nevada Secretary of State Elections Division
New Hampshire Department of State Election Division
New Jersey Division of Elections
New York State Board of Elections
North Carolina State Board of Elections
North Dakota Secretary of State Elections
Ohio Secretary of State Election Services
Oklahoma State Election Board
Oregon Secretary of State Elections Division
Pennsylvania Department of State Bureau of Commissions, Elections and Legislation
Rhode Island Board of Elections
South Carolina State Election Commission
South Dakota Secretary of State
Tennessee Secretary of State Division of Elections
Texas Secretary of State Elections Division
Utah Lieutenant Governor Elections Office

Vermont Office of the Secretary of State Elections Division
Virginia State Board of Elections
Washington Secretary of State Elections
West Virginia Secretary of State Elections Division
Wyoming Secretary of State Election Administration

In all cases except those marked with an asterisk(*), the information was obtained from

the Internet. In those cases marked with an asterisk(*), the data were obtained in an

email attachment sent from the office to this author.

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