

A Cross-National Analysis of the Causes and Consequences of Economic News*

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Abstract

Objective: Work on economic news argues that US coverage focuses primarily on changes rather than levels of future economic conditions; it also both affects and reflects public economic

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sentiment. Given that economic perceptions are related to policy preferences and government support, this is of consequence for politics. This paper explores the generalizability of these findings.

Methods: Using nearly 100,000 stories over 30 years in the US, UK, and Canada, we compare media tone, public opinion and economic conditions.

Result: Results demonstrate that media tone and public opinion follow future economic change in all three countries. Media and opinion are also related, but the effect mostly runs from the public to the media, not the other way around.

Conclusion: These results confirm the generalizability of prior findings, and the importance of considering more than a simple uni-directional link between media coverage and public economic sentiment.

Public perceptions of the state of the economy play an important role in politics, both in the United States and elsewhere. Yet relatively little is known about the sources of these attitudes. Economic sentiment cannot be based solely on the real national economy, since most individuals have direct experience with only a small part of it. At least part of what citizens know about the economy seems likely to come from the mass media, then; and there is a long-standing and growing body of work finding a connection between media coverage and public attitudes about the economy (e.g., Behr and Iyengar 1985; DeBoef and Kellstedt 2004; Goidel and Langley 1995; Ju 2008; Nadeau et al. 1999; Soroka 2006). The nature of coverage of economic news nevertheless remains underexplored, especially in the comparative context. In this paper, we aim to broaden our understanding of the causes and consequences of economic news coverage, and its relationship to public perceptions about the economy, in three countries: Canada, the UK, and the US.

We build specifically on our previous work (Soroka, Stecula and Wlezien 2015) that finds evidence that US media coverage of the economy tends to (a) focus on future rather than the current or past economic conditions, and (b) react mainly to changes in rather than levels of those conditions. This appears to be true not just for media coverage, but public economic sentiment as well, which both responds to and affects coverage. The possibility that media coverage is driven by public sentiment has received little attention in past work – the tendency is simply to regard media as a driver of public sentiment.¹ But there are good reasons to expect a reciprocal relationship. Journalists regularly report on the state of public sentiment, after all, as it is captured in poll reports, but also more generally in economic coverage. Indeed, media organizations have been responsible for many public opinion polls, and presumably for a reason. So it should not be surprising that we found strong evidence that public opinion matters to economic reporting, at least in the US.

The finding of a reciprocal connection between media coverage and public sentiment, alongside results suggesting the significance of prospective changes in conditions, are of some significance given the established importance of economic sentiment on policy and spending preferences (e.g., Durr 1993; Stevenson 2001; Wlezien 1995; Erikson, MacKuen, and Stimson 2002; Soroka and Wlezien 2010), as well as government approval and election outcomes (e.g., Hibbs 1987; Erikson 1989; Erikson and Wlezien 2012; Nadeau et al. 1999; Sanders, Marsh, and Ward 1993; for reviews see Lewis-Beck and Stegmaier 2000, 2007). The political significance of economic sentiment is by no means restricted to the US either – there is a vast body of work, across a wide range of countries,

¹ There are some exceptions in the agenda-setting literature, which has more actively entertained the possibility of bi-directional causality. See, e.g., Behr and Iyengar 1985; Soroka 2002; Uscinski 2009. This work is focused on issue salience, however, not on that content or tone of public sentiment and/or media coverage.

establishing connections between economic sentiment on political behavior (e.g., Nadeau et al. 2012; Duch and Stevenson 2008; van der Brug et al. 2007).

Whether prior findings regarding the nature of economic news coverage generalize beyond the US is nevertheless unclear. There is a small, but growing, body of work considering the nature of economic news outside the US (e.g., Kalogeropoulos et al. 2015; van Dalen et al 2015; de Vreese et al. 2001; Ju 2008). Rarely are there direct comparisons across countries, however. A small collection of research provides some hints about whether and when we should expect the nature of economic news to be different across countries. Lischka (2014) suggests that economic news content varies with the revenue incentives of news organizations, for instance, a domain-specific illustration of more general arguments about the differences between commercial and public broadcasters (e.g., Soroka et al. 2013).² Other research exploring role conceptions and practices amongst journalists suggests the possibility of both similarity and difference. On the one hand, the literature points to convergence across nations towards a global journalist culture rooted in similar notions of impartiality and critical reporting. On the other hand, work relying on surveys of journalists in particular serves to highlight some potentially important cross-national differences in approach.

² It may also be that media competition matters – a commercial media environment in which there is less competition for consumers may produce different news coverage, and thus different relationships between economic conditions, media content, and public sentiment. Consider the following possibility: an emphasis on prospective conditions may be greatest in more competitive media environments, while less competitive environments may facilitate a combination of prospective and retrospective reporting. This would be in line with work suggesting that the quality of journalism, and in particular the depth of reporting, suffers in highly commercialized environments (e.g., Croteau and Hoynes 2001.)

(The literature is considerable and growing, but see, e.g., Hallin and Mancini 2004; van Dalen et al. 2012; Hanitzch et al. 2011; Hanitzsch and Mellado 2011; Waheed et al. 2013).

We thus do not yet have a good sense for whether we should expect cross-national differences but we have some preliminary interests. Building in part on the work cited above, we are interested in, for example, the possibility that more competitive media markets produce different – perhaps more critical, or sensationalistic – approaches to economic news, although we are aware that the three countries we examine here are all part of the same “liberal” media model in the Hallin and Mancini’s typology. We wonder whether institutional forces and varying journalistic norms will produce different approaches to leading or following public opinion. We also wonder whether the competitiveness of elections matters. We have argued that increased political competition may produce clearer signals about policy change (Soroka and Wlezien 2010), and the same may be true for the economy. Political systems that impede or enhance accountability may also give different weight to retrospective versus prospective economic evaluations, in media content and/or public opinion.

This is all just speculation, however. As this volume makes clear, there is very little directly comparable work in political communication. All we can reliably say at this point is that the existing literature does not point towards clear expectations where the change-oriented, prospective emphasis of news coverage, or the reciprocal (rather than uni-directional) relationship between news content and public sentiment are concerned. We thus take a first step down this path below, offering what we hope will be a preliminary, research-stimulating exploration of the degree to which these US findings are generalizable to two other Anglo-American countries: the UK and Canada. Our interest in these countries is both pragmatic and substantive. Pragmatically speaking, our use of automated content analysis to derive sentiment in news coverage depends on using English-speaking media; and a comparison of this content with public opinion depends on long-term trends

in public economic expectations. Substantively speaking, there are established literatures in each of these countries on both economic voting and media influence on political and economic attitudes. (On the UK, see, e.g., Clarke and Stewart 1995; Nadeau, Niemi, and Amato 1996; Price and Sanders 1993; Sanders et al. 1993; on Canada, see, e.g., Happy 1986; Belanger and Soroka 2012.) Just as for the US, then, we know that economic news coverage has significant political implications in the UK and Canada.

Given the paucity of work on the elements of economic news coverage investigated here, we have no strong expectations about whether prior findings will be reflected in the UK and Canada. There is some variation in both media competitiveness and journalistic cultures, even within this entirely Anglo-American set. Even within the developed world, however, what we have here is a study of more similar rather than different systems. Does economic news coverage exhibit the same systematic tendencies across all three countries? This is the focus of the analyses that follow, alongside diagnostic work comparing results across three different approaches to measuring sentiment in economic news coverage. In a concluding discussion, we reconsider our findings in light of the literatures on economic news and journalistic approaches in more broadly comparative contexts.

Methods

This paper builds on our previous work and follows much of the same methodological choices (Soroka, Stecula and Wlezien 2015). Our analyses rely on measures of (a) the economy, (b) the tone of economic news coverage, and (c) public economic sentiment. We use composite indicators as measures of the economy. The most straightforward measure is the Composite Leading Indicators

(CLI) series from the OECD, available for a wide range of countries.³ Previously we were able to compare models using past, coincident and leading indicators since we were dealing with the US alone (Soroka, Stecula and Wlezien 2015). Unfortunately, it is not possible to do so outside the US – there is no directly comparative lagging or coincident indicators series available for all three countries. Therefore, the “future” emphasis of media content cannot be tested across all three countries.⁴ That said, we can explore the extent to which media focus on changes rather than levels, and across multiple indicators. In doing so, we can speak also to the duration of the impact of economy on media tone. Put differently, we can explore the extent to which media tone shifts, quickly and/or over the longer term, to economic change. The top panels in Figure 1 show trends for the OECD Composite Leading Indicators (CLI) series in each country. (Note that some data is missing during 2008 in Canada.) Here we can see a lot of fluctuation over time, much of which is common across countries; indeed, the average bivariate correlation between the three series is 0.73.

³ These data and other economic data used here are readily available online through OECD.Stat. Note that we rely on the “amplitude adjusted” series here, but the other available series produce comparable results. Note also that OECD CLI series are provided by national statistical agencies, and thus vary in composition from one country to the next. This makes good sense – the economies of different countries should be best predicted by somewhat different factors.

⁴ It is possible to run our analysis with directly comparative measures for the harmonized unemployment rate (HUR) and inflation rate (CPI), also drawn from the OECD. Results suggest that media coverage responds little to the CPI, but responds to the HUR in a way that is very similar to what we see with the CPI below. We see HUR results as useful supporting evidence for what we show here; results are available upon request.

[Figure 1 about here]

Our measures of media content are based on a database of news coverage over a 30-year period in each of the US, UK and Canada. Articles are extracted from Lexis-Nexis, using the same search criteria we employed in previous work (Soroka Stecula and Wlezien 2015).⁵ Appendix Table 1 shows a breakdown of stories across each of 6 newspapers, annually. We chose two high-circulation, and widely considered to be influential, daily newspapers from each country that are available in the Lexis-Nexis archive: *New York Times* and *Washington Post* in the US, *The Times* and *The Guardian* in the UK, as well as *The Globe and Mail* and *Toronto Star* in Canada. Our dataset misses newspapers in two years for each of the UK and Canada – a result of the absence of topic coding in the Lexis-Nexis database. And because the *Times* and the *Toronto Star* come and go in two different years (1996-97, and 1990-91 respectively, we do not estimate models including article counts as either a dependent or independent variable, just article tone. Note that missing data is not the only reason for this

⁵ Indeed, the US data used here are identical, with the exception that we do not include 2012 data since our comparative data are updated only to 2011. The search is based on a set of Lexis-Nexis subject categories which, based on manual testing, most reliably return results pertaining to the national economy. (For a comparison of these results with a broader text-based search, see Barbera et al. 2016.) The final search captured stories for which any of the following terms were listed as “Relevancy: Major Terms only”— under (a) “Economic Conditions”: Deflation, Economic Decline, Economic Depression, Economic Growth, and Economic Recovery, Inflation and Recession; under (b) “Economic Indicators”: Average Earnings, Consumer Credit, Consumer Prices, Consumer Spending, Employment Rates, Existing Home Sales, Money Supply, New Home Sales, Productivity, Retail Trade Figures, Unemployment Rates, Wholesale Prices.

decision, however: past work indicates a stronger link between the economy and newspaper sentiment than between the economy and simple article counts (Soroka Stecula and Wlezien 2015).

The second and third rows in Figure 1 depict our measures of sentiment in news content. The second row shows the first, “net tone” based on the Lexicoder Sentiment Dictionary (LSD). The LSD was designed as a general-purpose sentiment dictionary, and is described in some detail in Young and Soroka (2011). It is a relatively large sentiment dictionary, with roughly 3,000 negative and 3,000 positive words. The application of the dictionary here represents what typically is referred to as a “bag-of-words” approach – we count the number of words in an established dictionary. Note, however, that the creation and testing of the dictionary incorporates elements that sometimes are regarded as falling mainly under “supervised learning” approaches. To be clear, we do not rely here on a measure that is derived only by algorithms applied to the existing corpus. Rather, we rely on a dictionary built from a careful cross-tabulation of three very large existing dictionaries, in order to both expand coverage and remove potentially ambiguous words; and tested again both human coders, alongside eight other pre-existing dictionaries (Young and Soroka 2011). The results here thus depend on a good deal of prior testing. We rely here on a simple measure of net tone: $((\# \text{ positive words} - \# \text{ negative words}) / \text{total word count}) * 100$. The resulting measure captures both the direction and magnitude of article tone.

Although we have confidence in our LSD-based measure, we want to ensure that results are not dependent on the use of this dictionary. Our interest is motivated in part by recent work comparing the performance of both dictionary and supervised learning approaches – especially Barbera et al. (2016), who focus on the coding of sentiment in economic news. Note that the appendix to Soroka, Stecula and Wlezien (2015) includes tests with an R-word Index, and an Angst Index. We extend that work here, using results two other dictionaries, each of which was designed specifically for use with economic news content. The first of these was developed by De Boef and Kellstedt (2004). This

dictionary takes a somewhat different approach than the more broadly-aimed LSD – it is designed to count co-occurrences of economic keywords, e.g., unemployment, inflation, alongside directional and/or valence keywords, e.g., upward, downward, good, and bad. De Boef and Kellstedt (2004) use co-occurrences within the same paragraph; we narrow this to within-sentence co-occurrences. Otherwise, we implement the dictionary in the same way as De Boef and Kellstedt (2004): positive and negative mentions are counts of a specific, narrowly-focused set of within-sentence co-occurrences; and overall tone is measured by subtracting the total number of negative mentions from the total number of positive mentions.

We also produce a measure of sentiment in news coverage using a dictionary built by Loughran and McDonald (2011) to capture sentiment specifically in financial texts. This dictionary is, like the LSD, a simple word count; although it estimates negativity only, not positivity. For the sake of comparison, we also generate a comparable measure from the LSD focused just on negativity. For both the Loughran-McDonald (LM) and LSD versions of negativity, the measure is: $(\# \text{ negative words} / \text{total word count}) * 100$; that is, the percent of words in an article that are categorized as negative.

[Table 1 about here]

Measures of net tone are shown in the second row of Figure 1, while measures of negativity are shown in the third row. There clearly are links between the different operationalizations, and Table 1 shows basic bivariate correlations between all of them. For the US, we include correlations with the measure of net tone used in in our previous article as well. That measure is based on the same dictionary as the one used here, but word counts were estimated in an older version of Lexicoder,

the software we use for text analysis.⁶ These are correlated at 0.96. Correlations between net tone estimated using the LSD and the De Boef-Kellstedt dictionary are positive and statistically significant, but relatively low in magnitude – across the three countries, the mean correlation is 0.48. Correlations between LSD net tone and LSD negativity are of course relatively high, given that the negativity dictionary is one half of the LSD net tone measure; the mean across all three countries is -0.71. Correlations between net tone and the LM negativity measure are slightly lower, on average, -0.55. In sum, the various approaches to measuring the tone of economic news content produce measures that show both similarity and difference. Analyses below demonstrate whether and how the differences matter.

The final row of Figure 1 shows our measures of sociotropic economic evaluations. We do not have measures of retrospective evaluations in all countries, so we focus only on prospective evaluations here. Note that our prospective measures differ somewhat across countries. In the US, the measure is from the University of Michigan’s Survey of Consumers, and we focus here on responses to the question, “And how about a year from now, do you expect that in the country as a whole, business conditions will be better, or worse than they are at present, or just about the same?” UK data are from Eurostat’s European Sentiment Indicator, based on the question, “How do you expect the general economic situation in this country to develop over the next 12 months?” Canadian data are from the Conference Board of Canada, based on the question, “How do you feel the job situation and overall employment will be in this community six months from now?” The final indicator in each case is the percentage saying “better” minus the percentage saying “worse.”

⁶ The newer version of Lexicoder (3.0) is redesigned to reduce processing time for large datasets, and to facilitate integration in R. Because it deals with word counts and suffixes in a slightly different way than the older version, we compare the new and old estimates here.

There are differences between these questions, to be sure, the most significant being the focus on jobs, on region rather than country, and on a six-month time horizon in the Canadian case. It thus is important not to compare levels across countries. Insofar as each series captures an element of prospective evaluations, however, we expect them to exhibit similar relationships with the economy and media content over time.

Appendix Table 2 includes unit root tests, specifically, Augmented Dickey-Fuller tests with both one and three lags, across all series used in the analyses.⁷ In no case do we fail to reject the null hypothesis of a unit root, though for leading economic indicators we come very close. This simplifies empirical analysis, since none of the variables are integrated, it means that cointegration is not a concern, and we can use more standard econometric approaches. This is true even when including leading economic indicators in our analysis, which are long-memoried, what are sometimes referred to as “near integrated” (DeBoef and Granato 1999). For those concerned that those economic indicators really are integrated despite our diagnostics, it is important to keep in mind that they are not dependent variables in any of our analyses and we use error correction models (ECM) to analyze their effects on media content and economic perceptions. There seemingly is little risk of spurious results (Banerjee, et al 1993; Sims, et al 1990).

⁷ This number of lags is based on empirical analysis of statistical significance of the lagged differences; in most cases, no more than one lag is significant, in most other cases no more than three lags are so, and only in a handful are additional lags significant, specifically, for leading economic indicators, and including them makes no difference to the time-serial diagnosis.

Results

Table 2 shows the basic ECMs relating different measures of media coverage and leading economic indicators. The first important finding is that *all* of the measures of media tone respond to economic indicators, in both changes and levels, and in expected ways: net tone is positively related to leading indicators, and negativity is appropriately negatively related to leading indicators. This is true in all three countries. Results also suggest that the LSD net measure performs better than all other measures, again in all countries. This interpretation is based on the model *R*-squareds, which suggest that the LSD produces a measure more in line with economic indicators than does the DeBoef-Kellstedt dictionary, and also that both net tone measures outperform the negativity-only measures.⁸ We take the improvement in model fit as an indication that including positive words is important to capturing the nature of economic news coverage. Even using negativity-only dictionaries, the LSD-based measure reflects conditions better than that produced using the Loughran-McDonald dictionary.

[Table 2 about here]

These comparisons across measures are of some significance for those interested in the accurate estimation of sentiment in economic news. One concern about the LSD is that it is a general-purpose dictionary, intended to apply across a wide range of topics. It thus includes words that may not be

⁸ It is worth noting that all six of the estimated models of media negativity – in the third and fourth columns of Table 2 – produce significantly autocorrelated errors. The same is true for one model of net tone, namely, that using the DeBoef-Kellstedt measure in Canada. In all of these cases, including the lagged difference of negativity removes the serial correlation and does not significantly change the results.

relevant, or may have a different meaning, in an economic context (e.g., “liability”). This concern – not about the LSD specially, but about general-purpose dictionaries generally – was part of the motivation behind the Loughran-McDonald dictionary. But the narrow dictionaries rely on smaller sets of words, and the narrower focus appears to miss relevant words in economic news coverage. Our supposition is that when journalists use the word “sad” in an economic news story, it tells us something about the economy, even though the word itself is not especially economic. As a result, the broader LSD produces a measure that follows the economy more closely than do the other measures, and likely offers a better indication of the “media signal” that readers get as well. All subsequent results thus focus just on LSD-estimated net tone (though note that our substantive findings are no different when using the other measures).

[Table 3 about here]

The test of dictionaries here is secondary to our interest in whether prior US results generalize to the UK and Canada. Table 3 provides that test. It shows the estimated short- and long-term impacts of the economy on media content, drawn from results in Table 2, comparing across the three countries. In line with previous work, the short-term impact always outweighs the long-term impact, and by a lot, in all three countries. In Canada, for instance, a one unit change in the CLI is associated with a short-term increase in net tone of 0.12 in the current month.⁹ The long-term impact, by contrast, is just under 0.05, and the error correction rate (-0.46) suggests that the remaining disequilibrium is corrected quite quickly, by about one half each month. In short, the immediate impact of the

⁹ Given that the standard deviations in CLI and net tone are 3.3 and 0.34 respectively, these estimates suggest, roughly speaking, that a one-third standard deviation shift in CLI produces a one-third standard deviation shift in net tone.

economy on media tone is substantial and mostly short-lived. Indeed, the Canadian case is the only one in which the long-run effects make up roughly one-third of the total impact – in both the US and UK, nearly 90% of the impact of economic conditions is immediate. And it is important to keep in mind that these multipliers actually overstate the true long-term effects of economic shocks, which technically are not permanent. Recall that our analysis of stationarity (see Appendix Table 2) indicates that while shocks diminish very slowly, they do not last indefinitely. Thus, an economic impulse will tend to decay, and this will have corresponding (decreasing) effects on media content.

[Table 4 about here]

Findings in Tables 2 and 3 make clear that the media focus on current change in prospective conditions is not exclusive to the US. But, are there differences in the relationship between media coverage and public expectations? We want to know whether public evaluations reflect media coverage and also whether that coverage reflects economic evaluations. To begin with, the top panel of Table 4 incorporates economic evaluations into the models of media content. Specifically, it includes the current (time t) changes in evaluations as well as their lagged ($t-1$) levels, the latter of which are of special importance to us given that they presumably are exogenous. (While the current changes in evaluations may be endogeneous to current changes in media coverage, this is not true for lagged levels.) And there is evidence in Table 4 that media respond in part to public sentiment. Most importantly, the effect of lagged evaluations is positive and significant in each country, though especially the US and, to a lesser extent, the UK. The coefficients in the three countries are quite similar – between 0.03 and 0.05 – and this is of real consequence given that the standard deviation

in those evaluations (and media tone) also are quite similar.¹⁰ On average, a one-standard-deviation change in lagged economic prospections produces a 0.13-standard deviation change in media tone, controlling for both leading economic indicators and current changes in prospections.

In all three countries, then, results suggest that media content responds to public sentiment above and beyond the impact of the economy itself. This is an important finding particularly given that most research assumes that the causality runs in the other direction. (The literature exploring the uni-directional impact of media coverage on public sentiment is extensive, but consider, e.g., De Boef and Kellstedt 2004; Goidel and Langley 1995; Hester and Gibson 2003; Nadeau et al. 1999; Soroka 2006.) Now, let us consider the effect of media coverage on public evaluations.

The bottom panel of Table 4 shows results from estimating an error correction model of prospective evaluations in the three countries. Here we can see that the public's economic expectations do follow leading economic indicators, though most of the effects are short-lived, particularly in the UK. Results further suggest that evaluations also may respond to changes in media tone – though the strongest evidence of this is in Canada, the only country for which lagged levels of media tone are a significant predictor of evaluations.¹¹ This also is an important finding. While there may be a reciprocal relationship between media content and public sentiment, the effect appears to run

¹⁰ Specifically, standard deviations in prospective evaluations (media tone) range from 13.35 (0.37) in Canada to 11.10 (0.47) in the UK and 12.80 (0.36) in the US.

¹¹ The effect of lagged tone in Canada is less reliable ($b = 0.189$, $s.e. = 0.073$) when including the lagged difference in prospections, which accounts for serially correlated errors. This is the only model in Table 4 for which this is necessary.

primarily from the latter to the former, especially in the US and UK.¹² This has important implications for the way in which we interpret the substance of media coverage, as we discuss further, below.

Discussion

This paper offers a first comparative exploration of the relationships between the economy, news coverage, and public sentiment in three Anglo-American democracies. Results suggest remarkable similarities across the countries. In each case, media coverage follows economic conditions; it focuses more on change in the economy than on levels; and the impact of change appears to be primarily current, that is, the effect of economic change is reflected mainly in current media tone, and dissipates relatively quickly thereafter.

The reactivity of media coverage to change in economic conditions is illustrated in Figure 2, which replicates a figure from Soroka, Stecula and Wlezien (2015) across all three countries, focusing on the period surrounding the Great Recession. The top left panel shows US net tone and *levels* of the

¹² Note that this finding is in line with Soroka, Stecula and Wlezien (2015), where Granger causality tests indicated a stronger impact running from prospective evaluations to media tone than the reverse. This was not the case for retrospective evaluations, which showed stronger bi-directional causality; but we cannot test retrospective evaluations cross-nationally here. Note also that Granger tests using these data produce findings similar to those in previous work, though across three countries: while public evaluations Granger-cause media tone in all three countries, the reverse is not true. That said, we do not focus on these Granger results, since they are not ideal indications of causality – they are simple bivariate tests in what we know is a multivariate environment.

CLI; net tone is plotted alongside *changes* in CLI on the right. The first panel shows what appears to be a relatively weak correspondence between the two series; the second illustrates a powerful concurrent relationship. Indeed, the correlation between media tone and levels of the CLI in the US over this period is -0.02 ($p=.88$), while the correlation between tone and changes in the CLI is 0.61 ($p<.01$). This is as we have seen in prior work (albeit with a new CLI measure here), and highlights the degree to which economic news coverage responds primarily to change.

[Figure 2 about here]

Preceding results suggest a similar dynamic in the UK and Canada, so the second and third rows of Figure 2 illustrate the same quantities for these other countries. Results are strikingly similar. Changing from levels to changes in the CLI shifts the correlation with media tone in the UK from 0.20 ($p=.11$) to 0.66 ($p<.01$). In Canada, the change is more muted, from 0.29 ($p=.02$) to 0.47 ($p<.01$). The differences in correlations, across both levels and changes, may well tell us something about differences in economic reporting from one country to the next, though we do not wish to read too much into these differences without further investigation. For the time being, we take these as evidence that mass media coverage of the economy in all three countries focuses primarily on change.

Recall that in each case media coverage also reflects public sentiment itself; as the public becomes more optimistic or pessimistic about the future, economic news follows. The reverse is not consistently true, however, since media content reliably influences the public's economic expectations only in Canada. To be clear: while a considerable body of work finds evidence of media effects on public economic sentiment, we find that media coverage is more likely to reflect the nature of public sentiment than it is to affect it. This finding challenges conventional characterizations of the media-public relationship, which clearly is not a one-way street. It highlights potential consequences as well, particularly to the degree perceptions and economic reality do not

match. The nature of media coverage might reflect tendencies in the way in which publics think about the economy. Most importantly, public perceptions may have a potentially distorting effect on media content, which has implications for understanding media coverage in the time of hyper-partisan politics.

We do not, as of yet, have clear expectations for a more broadly comparative study. Our sense from these analyses is that while some past work points towards cross-national differences in the tone of coverage, or the emphasis on one indicator or another, or the political-ideological bias in economic news coverage, the emphasis on change in economic conditions may be broadly generalizable. The priority given to news that is both new, and salient to news consumers' political and economic decision-making, would seem to make change in prospective conditions especially relevant across most, if not all, contexts. This should be true regardless of whether media, or the public, are leading. Of course, there may also be differences in the direction of the media-public relationship, both across countries and over time. Furthermore, whether these results generalize to other popular news mediums, such as television, or the Internet, remains to be seen. For example, social media – including news from traditional producers designed for distribution through social media like Twitter or Facebook – may behave differently than newspapers or broadcast news. We cannot explore the many possibilities with the limited dataset used here. But results above clearly highlight the importance of considering more than a simple uni-directional link between media coverage and public economic sentiment.

Future work on this subject might also focus on the broader implications of the nature of economic news. There is already work on some of the political consequences of that coverage, particularly for government support and electoral outcomes. The relationship between economic news and other political and policy preferences has been barely addressed, however. So too has the impact that economic news may have on the economy itself. In short, these potentially broadly generalizable

findings may be of real significance to a host of political and economic phenomena. Exploring these relationships in a context that looks beyond the United States is therefore an important goal for future research.

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Figure 1. Time Series

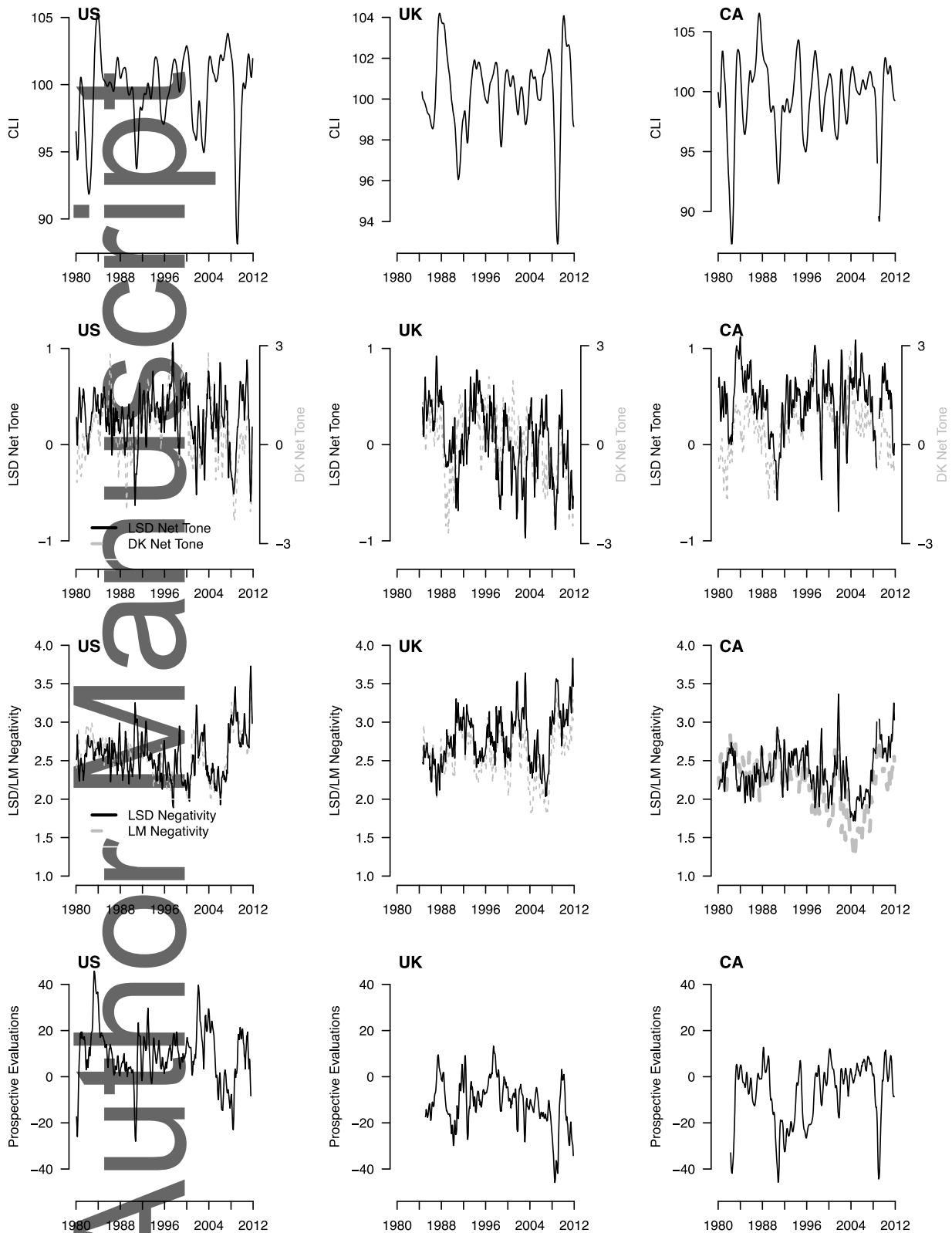


Figure 2. Leading Indicators and Media Tone, 2007-2011

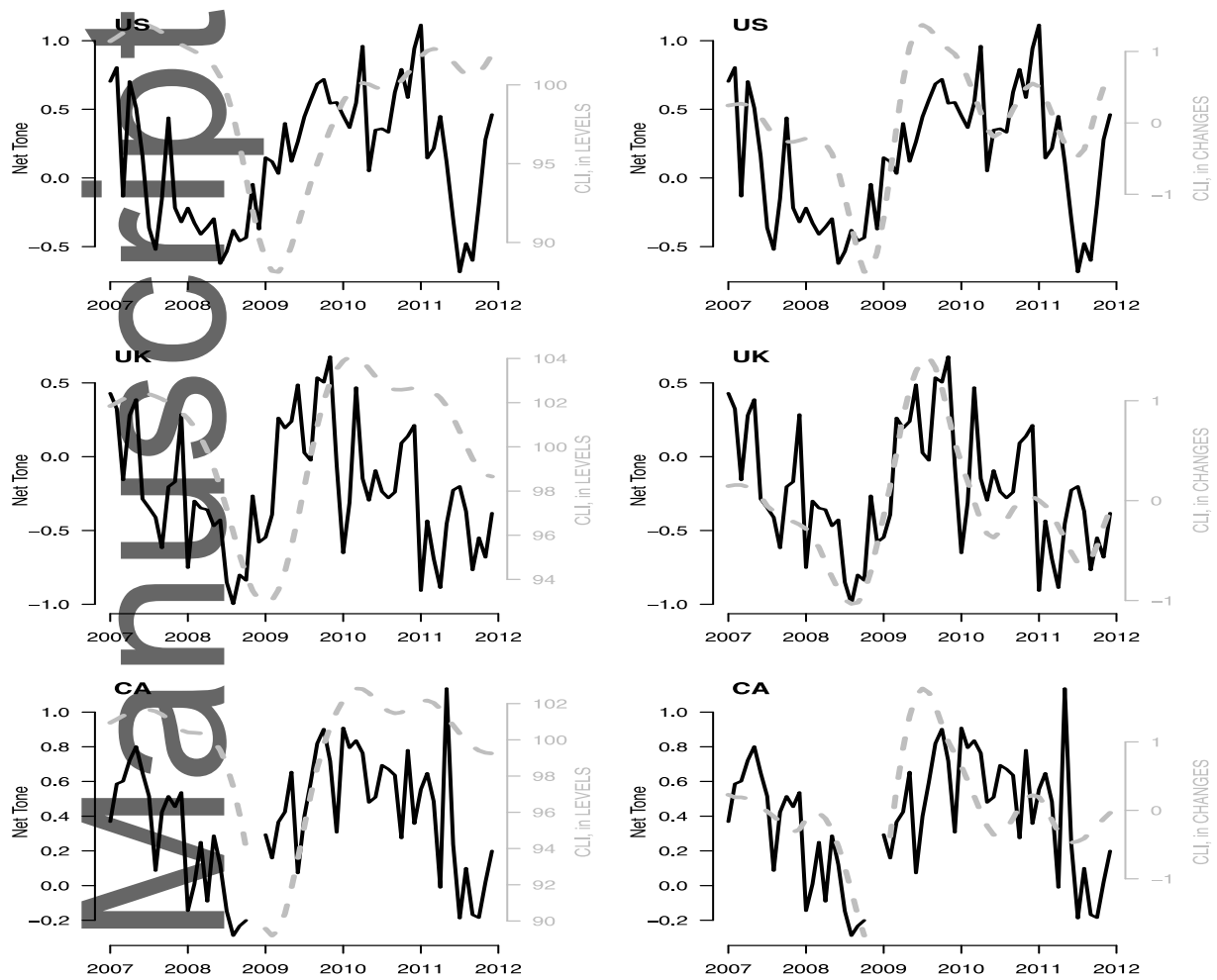


Table 1. Correlations between Measures of Sentiment

US	AJPS Net Tone	LSD Net Tone	DK Net Tone	LSD Negativity
LSD Net Tone	0.96			
DK Net Tone	0.56	0.56		
LSD Negativity	-0.71	-0.71	-0.45	
LM Negativity	-0.61	-0.59	-0.48	0.78

UK	LSD Net Tone	DK Net Tone	LSD Negativity
DK Net Tone	0.40		
LSD Negativity	-0.75	-0.22	
LM Negativity	-0.55	-0.07	0.78

CA	LSD Net Tone	DK Net Tone	LSD Negativity
DK Net Tone	0.49		
LSD Negativity	-0.66	-0.43	
LM Negativity	-0.50	-0.42	0.75

Cells contains Pearson's correlation coefficients. All correlations are significant at $p < .05$.

Table 2. Responsiveness of Media to Leading Indicators

US	DV: Δ in...			
	LSD Tone	DK Tone	LM Neg	LSD Neg
DV _{t-1}	-0.574*** (0.045)	-0.563*** (0.046)	-0.351*** (0.039)	-0.450*** (0.043)
Δ LEI _t	0.194*** (0.031)	0.535*** (0.104)	-0.077*** (0.023)	-0.105*** (0.028)

LEI _{t-1}	0.014*** (0.005)	0.046*** (0.017)	-0.014*** (0.004)	-0.014*** (0.005)
Constant	-1.198** (0.511)	-4.280** (1.725)	2.307*** (0.469)	2.506*** (0.535)
N	383	383	383	383
Rsqr	0.311	0.286	0.188	0.237

UK	DV: Δ in...			
	LSD Tone	DK Tone	LM Neg	LSD Neg
DV _{t-1}	-0.634*** (0.051)	-0.555*** (0.050)	-0.458*** (0.047)	-0.510*** (0.048)
Δ LEI _t	0.398*** (0.069)	0.678*** (0.183)	-0.159*** (0.048)	-0.185*** (0.054)
LEI _{t-1}	0.030*** (0.011)	-0.042 (0.029)	-0.032*** (0.009)	-0.034*** (0.010)
Constant	-2.970*** (1.146)	4.266 (2.946)	4.435*** (0.959)	4.827*** (1.045)
N	329	329	329	329
Rsqr	0.324	0.281	0.236	0.259

CA	DV: Δ in...			
	LSD Tone	DK Tone	LM Neg	LSD Neg
DV _{t-1}	-0.462*** (0.043)	-0.427*** (0.042)	-0.244*** (0.034)	-0.353*** (0.040)
Δ LEI _t	0.116***	0.337***	-0.044**	-0.057***

	(0.025)	(0.068)	(0.020)	(0.021)
LEI _{t-1}	0.021***	0.021*	-0.013***	-0.014***
	(0.005)	(0.012)	(0.004)	(0.004)
Constant	-1.875***	-1.812	1.838***	2.207***
	(0.472)	(1.187)	(0.418)	(0.442)
N	380	380	380	380
Rsq	0.248	0.225	0.137	0.187

* $p < .10$; ** $p < .05$; *** $p < .01$. Cells contain OLS coefficients with standard errors in parentheses.

Table 3. The Short- and Long-Term Impacts of the Economy on Media Tone

	US	UK	CA
Rate of Error correction (Φ)	-0.574	-0.634	-0.462
Short-term effect (β_0)	0.194	0.398	0.116
Long-run multiplier (γ)	0.024	0.047	0.045

Based on models for LSD Tone in Table 4.

Table 4. Responsiveness of Media Tone to Prospective Economic Evaluations (and the Economy), and Vice Versa

	DV: Δ in LSD Tone		
	US	UK	CA
DV _{t-1}	-0.601***	-0.657***	-0.482***
	(0.047)	(0.052)	(0.045)
Δ LEI _t	0.151***	0.321***	0.104***
	(0.033)	(0.076)	(0.030)

LEI _{t-1}	0.014*** (0.005)	0.022* (0.013)	0.014** (0.007)
Δ Pros Evals _t	0.008*** (0.002)	0.009** (0.004)	0.014*** (0.005)
Pros Evals _{t-1}	0.004*** (0.001)	0.005** (0.003)	0.003* (0.002)
Constant	-1.290** (0.508)	-2.136* (1.273)	-1.193* (0.652)
N	380	323	354
Rsq	0.334	0.344	0.268

DV: Δ Prospective Evaluations

	US	UK	CA
DV _{t-1}	-0.192*** (0.028)	-0.209*** (0.033)	-0.072*** (0.018)
Δ LEI _t	2.995*** (0.730)	5.406*** (1.033)	2.632*** (0.318)
LEI _{t-1}	-0.201* (0.115)	0.127 (0.173)	0.178** (0.073)
Δ LSD Tone _t	3.814*** (1.137)	1.665** (0.765)	1.734*** (0.598)
LSD Tone _{t-1}	1.940	1.272	1.950***

	(1.247)	(0.876)	(0.578)
Constant	21.278*	-15.199	-19.108***
	(11.375)	(17.523)	(7.327)
<hr/>			
N	380	323	354
Rsq	0.174	0.179	0.296
<hr/>			

* p < .10; ** p < .05; *** p < .01. Cells contain OLS coefficients with standard errors in parentheses.

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