The Prominence of Weak Economies:
Factors and Trends in Global News Coverage
of Economic Crisis, 2009–2012

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This study investigates what makes a country newsworthy in economic news around the world. Employing Web-mining techniques on 35 leading news sites in the 10 most popular Internet languages, we calculated and tracked the relative prominence of countries in the world's economic news from 2009 to 2012, a time of economic recession. Our findings suggest that major changes in GDP, even in relatively small economies, are no less important than overall GDP in explaining countries' prominence in world economic news. Time-lag analysis of change in GDP and in news prominence identified three types of relation between news prominence and economic performance, reflecting the extent of world interest, press freedom, and the availability of reporting facilities. Network analysis of country co-mentions revealed three ripples when crisis hit noncore European countries, extending first to Europe's leading economies, then global leading economies, and finally global developing economies. We discuss our findings' implications for future research in the field.

Keywords: economic news, news-flow theory, Web mining, globalization, economic crisis, media effects

Media theorists hold that a primary function of news media is "surveillance"—scanning the environment for information that can help consumers navigate their everyday lives (Lasswell, 1948; McQuail, 1994, p. 78). It is therefore unsurprising that the newspaper originated in reports of distant economic information. As one historian recently noted, "the publication of 'prices current' marked the start of the modern newspaper" (Hochfelder, 2012, p. 103; also see McQuail, 1994, p. 13). These early commercial newsletters specialized in gathering and collating economic information from afar. After all,

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markets, however distant, were always known to affect each other. Foreign economic news was crucial to rational and successful operations in the daily business of buying, selling, and making ends meet, let alone making fortunes.

Descriptions from the early 19th century highlight the centrality of international economic news to markets' operation. Thus, for instance, when a semaphore telegraph established for the purpose in the environs of New York harbor signaled that the *Journal of Commerce*'s news schooner was in the offing with fresh commercial news from Europe, "business would be at once suspended to await her arrival" (Hudson, 1873, p. 365). The modernization of the newspaper in the penny press era made economic news from abroad a point of competition among prosperous new dailies. Uncounted thousands were spent to speed foreign market news to New York. These costly efforts were epitomized by a deal struck between the *New York Herald* and Daniel Craig, a news entrepreneur who specialized in speeding news via carrier pigeons from steamers arriving from abroad. For each hour Craig's fresh European news beat the competition and remained exclusive, the *Herald* was to pay Craig a bonus of $500, a sum equal to the proceeds of selling 50,000 newspapers at the going price of a penny apiece (Blondheim, 1994). This pattern remains intact in an era of globalized economies. Bloomberg terminals are reported to have more than 300,000 subscribers worldwide at a rate of $24,000 a year (Seward, 2013). The *Financial Times* alone claims to have a daily readership of more than 2 million people around the world ("The FT's Average," 2012), and its website has more than 4.5 million registered users.

Yet with all the historical and contemporary emphasis on the international context of the economic news market, scholarly research in the field of economic news is predominantly localized and country-specific. Studies on economic-related news (sometimes also named as "business news" or "financial news") focus mostly on its volume and sentiment in their relation to changes in the economic reality of a single country, most commonly the United States. More complex questions about how the confluence of world economic news is constructed, and how it is represented in different regions and countries of the world, have been largely ignored.

Indeed, neglect of these issues in the field of macroeconomics is long acknowledged: As George Stigler averred many years ago, the economics of information "occupies a slum dwelling in the town of economics" (Stigler, 1961). Journalism and media studies appear to mirror the problem: Information is their core, whereas economics is a marginalized field of research interest, at least compared with research into political, social, and cultural communications.

News-flow research seems an appropriate approach to studying the gathering and collating of international economic news and its reporting the world over. Recent advances in techniques for sampling and analyzing massive corpora of news flow have considerably invigorated this approach. Still, neither the news-flow approach nor advanced data-mining techniques have been extensively applied to the study of economic news. This article is intended to start rectifying that neglect. Focusing on the recession that has affected the entire world since 2009 (Gore, 2010; Reid et al., 2013), it applies news-flow theory and big-data methods to the news aspect of the economics of information.

News Flow and Newsworthy Countries

Countries that people recall in surveys—the "imagined world"—are mostly the same countries mentioned in the news outlets they consume (Segev & Hills, 2014). Mapping the shape of the world in international news sources thus seems a good way to trace perceptions of it. But what determines a country's prominence in international news? News-flow theory offers three different answers to this question. First, international news tends to mention countries with great economic or political power (*national traits*). Second, it favors countries that are relevant to the reporting country (*relatedness*). Third, it focuses on countries that are involved in conflicts or experiencing political or economic instabilities (*events*).

National Traits. Several studies of international news coverage followed Wallerstein's (1974) world system theory in classifying countries as core, semiperipheral, and peripheral. The expectation was that core countries—usually large and powerful, economically or politically or both—would get more news attention than peripheral countries. And indeed, Chang (1998) found, core countries get much more news attention than semiperipheral and peripheral countries. In particular, a country's economic power was a strong indicator of its news prominence (Kim & Barnett, 1996; Robinson & Sparkes, 1976; Segev, 2014; Segev & Blondheim, 2013a; Wu, 2000, 2007). Military power is another important indicator of a country's news prominence (Kariel & Rosenvall, 1984; Shenhav, Rahat, & Sheafer, 2012), as is population size (Charles, Shore, & Todd, 1979; Dupree, 1971; Rosengren, 1977).

Relatedness. News outlets in one country may allot news attention to other countries based on their economic, political, and social relevance. For example, bilateral trade is a strong predictor of two countries' mutual newsworthiness (Charles et al., 1979; Kariel & Rosenvall, 1984; Rosengren, 1977, Segev, 2014; Sheafer, Ben Nun, Shenhav, & Segev, 2013; Wu, 2000, 2007).

Events. Finally, some countries may receive news attention because of a prominent event such as war, natural disaster, or social or economic crisis. Golan and Wanta (2001) showed that involvement in conflict increases news coverage for some countries. Chang, Shoemaker, and Brendlinger (1987), Shoemaker, Chang, and Brendlinger (1986), and Shoemaker, Danielian, and Brendlinger (1991) further stressed the importance of political, economic, and social occurrences in drawing international news attention. Recent uprisings in the Middle East, for example, demonstrated that smaller, less powerful countries such as Tunisia and Syria can draw considerable news attention worldwide, at least for a time, as sites of outstanding news events. "Disaster marathons" (Blondheim & Liebes, 2002), such as reporting on 9/11, the tsunami in Japan, or the earthquake in Haiti, underscore the same point. But although events can be significant in producing news, national traits and relatedness were stronger predictors of a country's news prominence (Segev, 2014; Segev & Blondheim, 2013a).

The case of a global economic crisis brings these three determinants of news prominence into alignment. The outbreak of an economic crisis and its subsequent twists and turns represent a highly newsworthy event, or chain of events, that is crucial to the surveillance of economic lifeworlds. But this event also strongly impacts important national traits such as GDP and other key economic indicators.

Indeed, in this case change in a country's GDP, a national trait, is itself the event. And in a globalizing, interdependent world economy, these two factors have a high degree of relatedness to the economic state of all other countries. Thus, in the case of a global recession, all three factors of prominence are in play and can be expected to affect each other.

Covering Economic Crisis

The global economic crisis began in the United States in 2007 and then hit most European countries and developing countries, particularly as of early 2009 (Gore, 2010; Reid et al., 2013; Stock & Watson, 2012). It brought the first decline in world GDP since the Great Depression, a decline experienced in all world economies except those of China and India, whose growth rates nevertheless plunged. Such an economic event provides an opportunity to comprehensively study the factors affecting prominence in international economic news-flow.

In the aftermath of the sharp decline in the United States, and even after its return to prerecession levels in 2011, the ripple effects in Europe continued. In the long course of the recession in Europe, Ireland, Greece, and the UK registered high government deficits as percentages of GDP (14.3%, 13.6%, and 11.4% respectively). Later on, Spain, Portugal, Ireland, and Greece were among the countries enduring the harshest economic recession of the recent crisis.

Naturally, many recent studies on economic news focused on this financial-economic event. Schifferes and Coulter (2012) demonstrated that online news played a significant part in the overall media coverage of the crisis. Following their lead, this article will focus on online news reporting of the worldwide crisis. Whereas the present study is quantitative, several qualitative projects have also looked into news coverage of the crisis. Palmer and Tanner (2012) conducted a content analysis of 357 broadcast news items to examine who was framed as responsible for causing and fixing the economic crisis (governments, businesses, individuals, and foreign entities). Other variables of their study included the volume and scope of economic news coverage and source attribution. Their findings revealed that reportage often presented corporations as causing the crisis, and governments as able to provide solutions to the economic crisis.

Quiring and Weber (2012) looked at coverage of the economic crisis in the European media, and its effect on German audiences. They found that during the financial crisis, economic news was a dominant source of information for the public and an influential factor in justifying economic policies. Hence, major events like economic crises are not only significantly reflected in economic news around the world, but in turn also influence investors and decision makers (see also Mutz, 1992).

This article offers a first attempt to apply news-flow theory to the sphere of economic news. In particular, it tracks the international scope and the patterns of coverage of the economic recession that lingered to 2012 in Europe, and its vicissitudes. We studied online news about the major economic changes covered the world over during the four-year period 2009–2012. Our three main research questions, inspired by the basic dimensions of news-flow theory, focused on events, national traits, and relatedness:

RQ1.   What countries were the most prominent and what countries gained the most prominence in world economic news since the onset of the recession?

RQ2.   What was the relation between shifts in GDP growth of countries and their news prominence worldwide during that period?

RQ3.   What were the changes in the international alignment of prominent countries in economic news during that period?

Methods

This study employed quantitative techniques to measure the level of countries' prominence in the economic news sections of online news sites around the world. The analyzed data were collected from various news sites in 12 different countries and 10 different languages. Several considerations guided the selection of these countries. First, we chose countries with large numbers of online users, since such countries usually disseminate news to smaller countries in their region (Tunstall, 2008). In the case of the Internet, this factor reflected the popularity of the language used in the country. We ended up with the most popular online languages: English, Chinese, Spanish, Japanese, French, German, and Arabic (Danet & Herring, 2007).

Second, we chose economically leading countries with high GDPs, including Japan, China, Germany, the UK, the United States, and France. Since the Middle East is historically, politically, and economically linked to Europe (Segev & Blondheim, 2013b), we included news sites from three key Middle Eastern countries: Egypt, Israel, and Iran. Finally, addressing the recent economic recession required study of news outlets in countries to which it had varying degrees of relevance, spanning, for instance, the United States, the UK, Germany, and Spain.

For each country selected for analysis of its online news, three popular news sites were chosen for tracking. Two were online sites of well-established traditional news media such as *The New York Times* or the BBC. The third news site was the country's Google News, a news aggregator of several hundreds or sometimes thousands of popular country-specific news sources. For each source we looked at the "economic news" category.

We used three different news sites for each country, rather than one, to capture a more comprehensive picture of the world as reflected in the news. As an aggregator that automatically selects news items, Google News is especially important because it combines a great variety of news sources, whether dominant or marginal. However, our previous studies (Segev, 2014) found that a country's news sites generally portray the international scene similarly. In fact, a foreign country's prominence on any nation's Google News site correlated strongly with its prominence on other news sites of the same nation, and correlated only moderately with that country's prominence in the news sites of other nations. In other words, the international panorama Google News presents in any country is significantly similar to that on other news sites in the same country.

News items from the economic section of each chosen news site were collected in real time, based on its RSS feeds when available or by direct Web-mining of its text every other day, over the four years from February 1, 2009, to December 31, 2012, at 12:00 p.m. UTC. In total, about 600,000 news items from 35 news sites were collected and analyzed. Table 1 details the countries and news sites that were studied.

Table 1. Countries and News Sites Included in the Study.

Country	News sites
USA	Google News, CNN, NYTimes
UK	Google News, BBC, Guardian
Germany	Google News, Bild, Spiegel
France	Google News, Le Monde, Le Figaro
Spain	Google News, El Mundo, El Pais
Russia	Google News, Gazeta, Pravda
China	Google News, Sina, People Daily
Japan	Google News, NHK, Yomiuri, Yahoo
Arabic[a]	Google News, Al Jazeera
Egypt[a]	Al Ahram, Al Masry Alyoum
Israel	Google News, Ynet, Haaretz
Iran[a]	PressTV, Tabnak, Aftab

[a]Google News did not publish special Egyptian or Iranian editions in the course of this study, so its Arabic edition and Al Jazeera were used as more general, popular news sources in the Arab world.

To analyze these data, we programmed software that extracted each news item's date, its title and content, its news category, the countries it mentioned, and its source. We used the title of each news item and its content to automatically identify the countries mentioned in it. For this purpose, we built a database of 195 country names in all 10 languages of our news sources. For each language we employed several native-speaker research assistants to translate country names into their languages. For each country name, we asked the research assistants to provide all common names and alternatives (e.g., "United States," "USA," etc.) and then to omit all alternative country names that might be ambiguous (e.g., "U.S.") and therefore yield irrelevant search results.

Country Salience Index

The software enabled us to measure the quantity of news items mentioning each country on news sites of other countries. It also allowed us to focus on specific countries or news categories. For example, we could obtain the number of news items mentioning Spain in the "economic news" category on UK news sites. We designed a Salience Index (SI) to find how prominent a country was in the economic sections of other countries' news sites. A country's SI is defined as the percentage of news items that mentioned it (not including items from its own news sites) out of all items that mentioned country names (e.g., the

percentage of news items mentioning the United States on non-U.S. news sites). The SI ranges from 0 to 100, where 0 indicates that the country was not mentioned at all by news items of other countries, and 100 means that all news items of other countries mentioned it. Definition 1 provides a simple formula for calculating the SI of a country:

Definition 1. Salience Index
SI of i^* = (Number of news items mentioning a certain country) / (Number of all news items mentioning any country) x 100

*i is the country indicator. The SI of a country reflects only news items from other countries and not news items from its own news sites.

Salience Trends and PI

The salience index of countries helped identify the 10 most mentioned countries in the economic news sections of the sites we studied over the entire four-year period. In a second stage, we studied the monthly trends of each of these 10 countries' economic news prominence. The Peak Index (PI) of a country was developed to identify whether these trends were consistent or sporadic over time; that is, whether the news interest in a particular country held steady or peaked at certain junctures, as would be expected during economic crisis. It is defined as the ratio between the month with the highest news mentions of a country, and the mean salience of that country for the entire period.

Definition 2. Peak Index.
PI of i^* = SI of a country in the month with its maximum mentions / Mean SI of that country during the entire four-year period

*i is the country indicator.

Finally, and as mentioned above, the literature on news flow offers various explanations for a country's prominence in the news, the most significant being its economic power (Wu, 2000, 2007; Segev, 2014; Segev & Blondheim, 2013a). In economic news, changes in news mentions of a country can be expected to reflect changes in GDP. For each country we therefore examined the correlation between quarterly growth rates of its real GDP (Organisation for Economic Cooperation and Development [OECD], 2014) and its SI trends in economic news around the world.

Country Network Analysis

Network analysis provides a framework for displaying the complex web of relationships between countries, thus depicting the world map represented in online news. To this end we studied news items mentioning two or more countries. For example, the *New York Times* story "German Patience with Greece on the Euro Wears Thin" mentioned Germany and Greece in the same item (Kulish & Alderman, 2012). A cumulative international network emerges when countries are seen as nodes, and news items about them provide a descriptive map of the links between them (hereafter "news links"; see also Segev, 2010).

Depicting the cumulative relations between nodes as an international network may demonstrate both the extent to which countries are mutually engaged and the overall structure of the international network. Moreover, network analysis serves to identify countries that are central, dominant hubs in the network vis-à-vis less connected countries whose role is more marginal. It should be noted that the following analysis represents an international network as reflected by popular news sources rather than actual economic relations between countries.

Unlike the SI, which shows the relative frequency of the countries' appearance in the news, the network analysis focuses on the links between countries in news items. In economic news it charts the perceived intensity of economic bilateral relations between countries and the overall structure of the international economic network. It can show not only which countries appear more frequently, but also which other countries they frequently engage with, and what their position is in relation to other countries. Quite possibly, countries that were mentioned often (i.e., those with high SI scores) will also be at the center of the news-link network. However, some countries may have mostly been mentioned independently (i.e., are not linked to other countries) and therefore will be less central in the network analysis. In contrast, countries and entities that, lacking prominence as independent actors, tend to be related to other countries when they appear in the news will become more central in the network analysis (extreme examples would be the UN or the EU). Thus, with regard to the network of country co-mentions in the economic news, the analysis focuses on both regional and global economic relations in terms of a country's links with other countries as an aspect of its presence in news reporting worldwide.

To limit biases of self-reporting, our analysis included only news links that did not mention the country in which the news was posted. For example, we did not count news links between the UK and Spain from Spanish news outlets, but we did count news links between the UK and Spain reported on U.S. news sites. We used Visone software (Brandes & Wagner, 2004) to produce visual representations of networks of news links between countries and to demonstrate the relative centrality of nodes in the network.

Results

SI

Table 2 summarizes the SIs of the top 10 most prominent foreign countries in economic news sections worldwide, in response to RQ1's first part. It also provides their standard deviation and PI based on monthly data over the 2009–2012 period. It shows that out of all economic news items mentioning any country's name (N = 90,158), 15.37% mentioned the United States. Indeed, the United States was by far the most mentioned country in the economic sections of non-U.S. news sites from around the world. As it is the largest of the world's economies, the prominence of the United States is hardly surprising. Table 2 also summarizes the GDP in U.S. dollars and the ranking order of each of these top-10 countries (United Nations Statistical Commission, 2012). A country's SI in the world's economic news clearly corresponds closely to its GDP ($r = .895$, $p < .001$). In other words, about 80% of the variance of a country's prominence in economic news can be explained by the size of its economy.
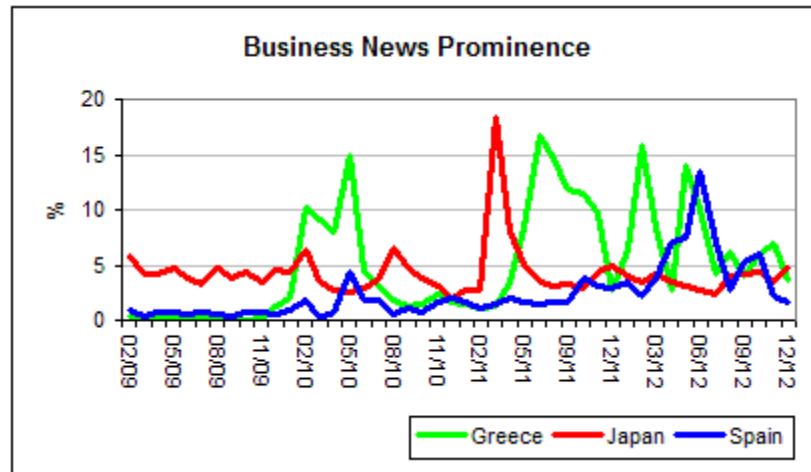
Other large economies receiving great economic news attention were China, Japan, Germany, France, the UK, and Russia. Spain and South Korea—also relatively large economies (ranked 13 and 15 respectively)—were mentioned in economic news more often than countries with economies larger than theirs (e.g., Brazil, Italy, and India). But most strikingly, Greece, which ranked only 40 in terms of GDP, was the third most frequently mentioned country in economic news, with 5.7% of all mentions. This suggests that the SI is as sensitive to economic change—reflected, for instance, in PI—as to a country's overall economic power.

Table 2. SI, PI, Standard Deviation and GDP of the 10 Most Prominent Countries in Economic News, 2009–2012.

Country	SI (%)	PI	Standard Deviation	GDP, Millions of U.S.$ (rank)
USA	15.37	1.23	2.14	16,244,600 (1)
China	6.45	1.54	1.98	8,358,400 (2)
Greece	5.7	3.28	4.93	248,941 (40)
Germany	3.63	1.80	1.40	3,425,956 (4)
Japan	3.41	4.30	2.39	5,960,180 (3)
France	3.09	2.13	1.45	2,611,221 (5)
UK	2.88	1.46	1.00	2,417,600 (6)
Spain	2.7	5.69	2.49	1,322,126 (13)
Russia	2.38	1.63	0.62	2,029,812 (8)
South Korea	2.2	2.93	1.00	1,129,598 (15)

In terms of PI, Table 2 shows that Spain had the highest ratio between the months with maximum news coverage and the coverage overall (PI = 5.69). Other countries experiencing dramatic increase in economic news coverage during the study period included Japan (PI = 4.3) and Greece (PI = 3.63). Though Greece ranked third in terms of its PI, it was also the country with the highest standard deviation (4.93). To make sense of those differences, Figure 1 presents the monthly changes in economic news coverage in these three countries.

Figure 1. SI trends of Spain, Greece, and Japan.

For Greece, Figure 1 shows at least four spikes representing four waves of world news coverage of its economic crisis. During those spikes Greece received more than 15% of news attention—as much as the United States. This explains the very high standard deviation of Greece's news prominence. For Spain, on the other hand, only one prominent spike appeared, in June 2012. Since this was the only major spike, and Spain generally attracts little economic news attention (SI = 2.7), its PI was the highest. Similarly, in Japan, which attracts a relatively high overall level of news attention (SI = 3.41), the single spike in news attention during the Fukushima nuclear disaster in March 2011 was responsible for its very high PI.

The spikes in economic news attention to Greece and Spain clearly demonstrate the overall conclusion emerging from the analysis: World attention to these countries increased in parallel to the unfolding of their economic crises. Thus, in response to RQ1, our findings most generally show that the prominence of countries in economic news reflects a combination of their overall economic power and sharp changes—in this case decline and crisis—in their economies, as occurred in the cases of Greece, Spain, and Japan during the period studied here.

SI Correlation with GDP Changes

Table 3 shows the results of a Pearson correlation between SI trends and changes in GDP for the 10 most prominent countries in economic news around the world over the research period. Our software could measure news trends in units of months or even days, but the greatest granulation of GDP changes available is in annual quarters (OECD, 2012). Thus, the table presents the correlation values of the quarterly growth rates of real GDP in each country and the country's quarterly SI trends in the economic news of the world (n = 16 annual quarters). We performed three different correlations between SI and GDP: In the first SI and GDP were measured for the same quarter; in the second quarterly GDP growth preceded the SI measure by one quarter; and in the third the SI measure preceded GDP growth by one quarter. The results of these tests appear in Table 3, with bold figures representing the strongest correlation value among the three tests for each country.

Table 3. Pearson Correlation Between SI Trends and Changes in GDP, 2009–2014.

	USA	UK	Japan	Korea	China	Russia	Germany	France	Spain
GDP Growth–News	**−0.539***	**−0.505***	**−0.391**	**−0.386**	−0.158	−0.088	−0.072	−0.117	−0.069
GDP Growth Precedes	−0.365	−0.338	−0.259	−0.311	**0.766****	**−0.400**	−0.083	0.186	0.018
News Precedes	0.153	−0.392	0.079	−0.162	0.494	0.142	**−0.439**	**−0.414**	**−0.312**

Note. * *p* < .05, ** *p* < .01. Bold figures represent the strongest negative correlation among the three tests for each country. The OECD did not publish the quarterly growth rates of real GDP in Greece. Different sources apply different composite measurements. Rather than combine statistics from varied sources, we preferred using one reliable, comprehensive source, and therefore omitted Greece.

Despite the relatively small number of time points, Table 3 shows a consistent negative correlation between the salience of a country and its GDP growth. The lower the GDP growth of a country, the higher is its SI in the economic news. This implies that economic news tends to reflect economic recession and crisis rather than economic growth for all countries.

But beyond this conclusive trend, the results point to striking differences between three groups of countries in the temporal relation between GDP change—an economic measure—and changes in SI, a media measure. The United States, the UK, Japan, and Korea showed the strongest negative correlation when GDP change and the SI were calculated for the same quarter. In contrast, for China and Russia the strongest negative correlation was found when GDP growth preceded the SI by one quarter. This suggests that world news took longer to reflect the economic changes taking place in China and Russia. Finally, in the case of Germany, France, and Spain, we found the strongest negative correlation when the SI preceded GDP growth by one quarter. In these European countries, increased news reporting of the economic conditions preceded negative developments in GDP. Thus, in response to RQ2, GDP changes and SI trends are significantly correlated for all county mentions. Yet a time-lag analysis reveals different types of correlation for different countries.

Network Analysis

Figure 2 shows the results of a network analysis based on the economic sections of news sites of all the countries we studied. Given the significantly high PI observed for Spain, Greece, and Japan, we looked at all news items that mentioned them with other countries. Then we constructed two networks for each of the three: one for economic news in 2009 before the crisis (top of the figure) and another for the year of the crisis (2011 or 2012, bottom of the figure). As Figure 1 demonstrates, for Spain and Greece the peaks in economic news mentions intensify toward 2012, while Japan's major spike was in 2011 following the Fukushima disaster.
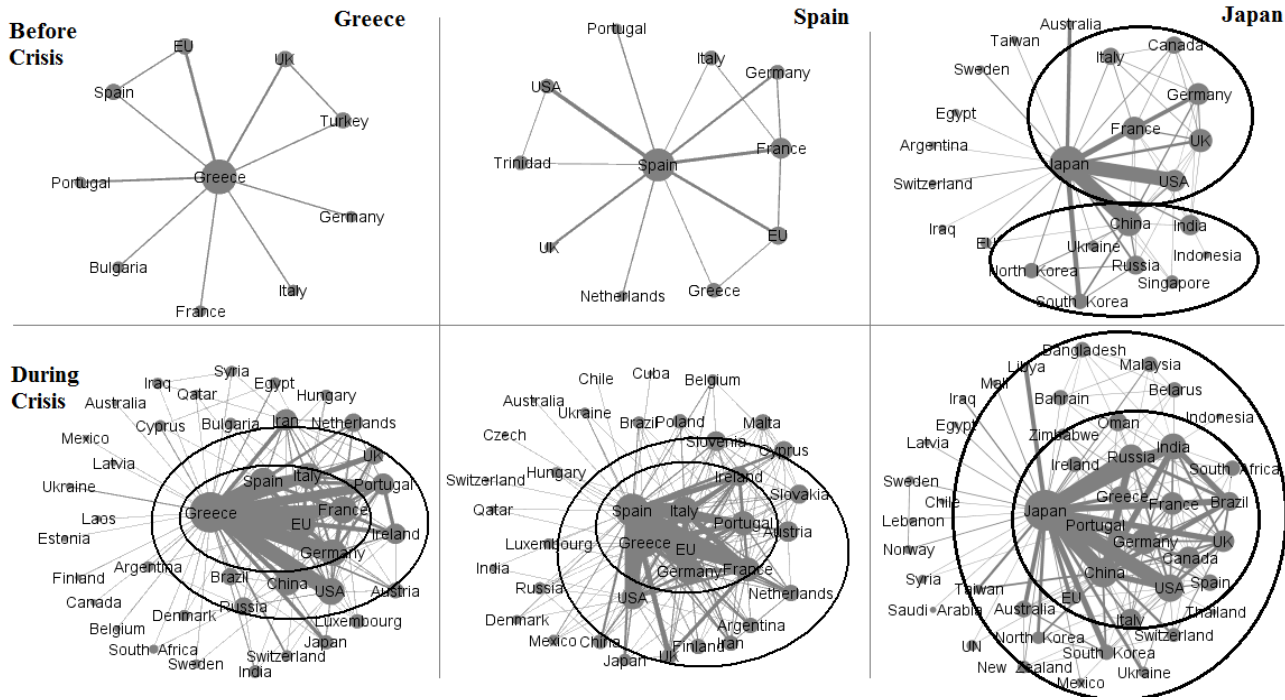
For all countries, economic news links during the year of the crisis, produced much richer, denser networks than those of 2009. There seem to be, however, several differences between the networks mentioning Spain and Greece and those mentioning Japan in economic news. In 2009 both Greece and Spain were mainly mentioned among other large European players—France, Germany, and Italy. In both

the Greek and Spanish networks, the EU, a relatively large hub, is central to the regional economy. In 2012, however, their networks include many more countries that were mentioned together with Greece and Spain, apparently reflecting the regional and global impact of the European economic crisis. The EU is mentioned together with Greece and Spain most frequently, and then Italy, Germany, and France.

A second circle of countries includes large economies such as the United States and China as well as smaller European countries. Finally, a third circle includes other Asian, South American, and Middle Eastern countries affected by the crisis. In the Greek network, for example, Iran emerges as an important connection. And for both Spain and Greece, India emerges as players with news links to other core countries. Put differently, the economic news links of Greece and Spain in 2012 display three circles of influence—the first includes larger European countries; the second, other leading economies such as the United States and China; and the third, more peripheral European countries as well as other economic centers around the world.

Japan's network of economic news contrasts somewhat with Spain's and Greece's. Japan, as a more significant economic player regionally and globally, had a more developed network before the Fukushima disaster in 2011. Two clusters of influence stand out: one containing western countries, and another holding some dominant Asian countries. These clusters are generally separate from each other, apart from some mutual links between the western cluster and China and India.

As could be expected, during the crisis the density of Japan's network grows dramatically, and the two clusters are no longer separate from each other. Instead, three spheres of influence are discernible: one including the five biggest economies and some European countries, another holding more regional economies in Asia and the Middle East, and a third of more peripheral countries from around the world.

Figure 2. Networks of economic news links with Greece, Spain, and Japan .

Note. The size of a node indicates its "degree centrality," namely, the number of countries with which it has news links. The width of links is an indication of their strength, as measured by the number of news items that mention the two countries together. We show here countries that were co-mentioned in at least two news items.

Thus our RQ3 seems to be answered conclusively: the international environment in which countries such as Greece and Spain are relevant expanded dramatically in parallel to the unfolding of their particularly severe economic crises, as unmistakably demonstrated graphically in Figure 2.

Discussion

This article has examined the international flow of economic news over the four-year period following the onset of the European economic crisis in 2009. Using Web-mining software on a large corpus of popular news sites in the 10 leading Internet languages, we identified the most prominent countries in the economic news of the world, and traced their monthly trends over time. We also explored the relations between news prominence and GDP change, and analyzed the network of economic interactions between

countries as reflected by online news from around the world. Our findings supported the general premises of news flow theory, but because the investigation focused on economic news flow, which was not previously studied in any depth, the findings seem to expand and productively complicate the news-flow approach in at least three dimensions.

Economic News Prominence Is About Both Economic Power and Economic Change

In line with observations of previous studies focused on world news in general (Kim & Barnett, 1996; Robinson & Sparkes, 1976; Segev, 2014; Segev & Blondheim, 2013a; Wu, 2000, 2007), our findings clearly, and unsurprisingly, showed that GDP was a significant factor in determining a country's news prominence in the economic news section as well. In fact, economic power could explain about 80% of the variance of country prominence in economic news. Thus, the world's leading economies, such as those of the United States, China, and the UK, were among the 10 most prominent countries in the economic news between 2009 and 2012, demonstrating that overall GDP is a very good predictor for country mentions in the economic news.

But beyond the size of a country's economy, a major factor determining its prominence in economic news is change per se. Alongside the largest economies, we found Greece and Spain among the top 10 most prominent countries in the world's economic news between 2009 and 2012. This suggests that overall GDP is only a partial explanation for country mentions in the news that must be combined with measures of change in GDP to complete the picture. The PI appears to be an effective measurement of change, and the exceptionally high PI that we found for Spain, like the high standard deviation of Greece, appears to buttress this proposition. The vast growth of the network of news links with both countries as their economic crises spiraled provides further empirical support.

Whereas the news prominence of leading economies is related to the "national trait" element of news-flow theory, change in GDP corresponds to the theory's "event" element (Chang et al., 1987; Shoemaker et al., 1986, 1991). Crucially, however, not all events of similar magnitude around the world will receive the same news attention. As previous observations showed (Chang et al., 1987; Chang, Lau, & Hao, 2000; Chang & Lee, 1992; Segev, 2010, 2014; Segev & Blondheim; 2013a), some countries can be said to be "more equal than others." Spain and Greece are close to core countries and part of a core region. The economic changes they experienced therefore attracted inordinate economic news attention around the world during the period under study.

Economic News May Reflect or Affect Economic Change

Looking at the monthly trends of country mentions in economic news, we found that news prominence is closely aligned with real economic change. Most significantly, we found a negative correlation between GDP growth and news mentions—that is, the more troubled a country's economy was, the more world news mentioned it. This finding may not be major news: It is in line with both the consensual observation of the reflective power of economic news (Behr & Iyengar, 1985), and the consistent finding of a preference for negative news in news reporting (Bennett 1988; Harrington, 1989; Nadeau, Niemi, Fan, & Amato, 1999; Shah, Watts, Domke, Fan, & Fibison, 1999; Wu & Day, 2005).

However, our study identified other suggestive trends not previously uncovered. For instance, we found that for one group of countries—the United States, the UK, Japan, and South Korea—change in GDP was temporally aligned with changes in news prominence. But for China and Russia, change in GDP preceded changes in news mentions. Finally, for most European countries—Germany, France and Spain—change in news mentions preceded changes in GDP.

This clustering of countries into three groups does not seem random. The first group consists of leading economies with relatively free and open information and media environments. The second group holds leading economies in states that are not necessarily committed to press and information freedom (see, e.g., Freedom House, 2012 for those countries' low rankings). Our finding appears to show that for countries where news reporting is less open and free, the economic news of the world reports economic change after a certain delay.

But perhaps the most intriguing and possibly most applicable finding in this vein is that almost all European countries demonstrated a measurable "media effect": Increased news mentions preceded decreased GDP growth. Taking into account Soroka's (2006) observation that negative economic news has a stronger impact on people's attitudes, our findings seem to suggest that the reporting of bad news, mainly in the context of economic crisis, indeed affected the economic reality of some European countries—fashionable "limited effects" trends in media studies notwithstanding.

The Complex Web of International Dependencies is Reflected in Economic News During Crisis

In response to our third research question, a news-link analysis provided the international context of the reporting of the European crisis. As noted, countries and international organizations co-mentioned with Greece, Spain, and Japan increased steeply during the crisis compared to a reference year before the crisis. This thickening network reflects the major regional and global players in the economic crisis. Of course this does not mean that countries do not interact economically during stable periods—global networks are always there. However, news reports in "normal" times usually ignore them, failing to mention or frame their global context. In times of crisis, all this changes: "Surveillance" calls for "correlation," the crucial bilateral economic ties surface, and the global web of dependencies is exposed.

Our network analysis of co-mentions in economic news revealed three ripples: the region, core countries, and semiperipheries. In the networks of crisis-ridden Spain and Greece we found the regional context to be most prominent. A dense network of the strongest European economies emerged, including Germany, France, and Italy, with many news links between them. In line with Wallerstein's (1974) world system theory, other core countries such as the United States and China, along with other, smaller European countries made up a second circle with links to the first circle. This order was reversed for Japan, a significant player in the global economy. Its first circle included the world's strongest economies, whereas its second had a more regional focus. The third circle in Japan's network of all countries reflected the broader economic impact of the crisis, featuring growing economies along with other semiperipheral players.

Hence, economic news during crisis can serve as an excellent map of the crisis's regional and global effects. The heightened news attention given to certain countries such as Greece, Spain, and Japan in the context of crisis might scare off potential investors and further harm their relative economic standing. On the other hand, world attention in itself, whether good or bad, is also known to provide leverage, offering a possible window for change. In other words, foreign media's prominent mention of a country excites world interest and provides that country with opportunity to enhance its eminence, emphasize positive actions, and recruit help to overcome its crisis.

It is important to note, however, that the current analysis may bear some limitations. First, it relies on automatic Web mining of a large corpus, so its strength is mainly in revealing the macro picture portrayed by economic news around the world. Further qualitative content analyses are needed to deepen understanding of the contexts in which countries and mentioned and linked to other countries, and the different ways global audiences perceive them. Second, although GDP was identified as the most significant determinant of economic news prominence, it is limited when it comes to time-lag analysis. Like many other macroeconomic variables, it is generated at a relatively low frequency (typically every three months). Still, the advantage of GDP is that it is measured systematically in all countries and thus allows a good cross-national comparison.

Notwithstanding these limitations, in this study our goal was mainly to quantitatively outline the international map of economic change reflected by world news, as it developed in a relatively short range of four years. While also testing news-flow theory in the economic context and confirming previous observations, we found the highly significant role of economic news prominence to be a factor reflecting, and possibly also affecting, the economic state of countries during crisis. We also showed that economic news during crisis could be particularly informative about global economic patterns. We hope these findings will encourage further studies in the field.

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