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**BBVA** Research

# Monitoring NAFTA with Big Data

Research Data Science

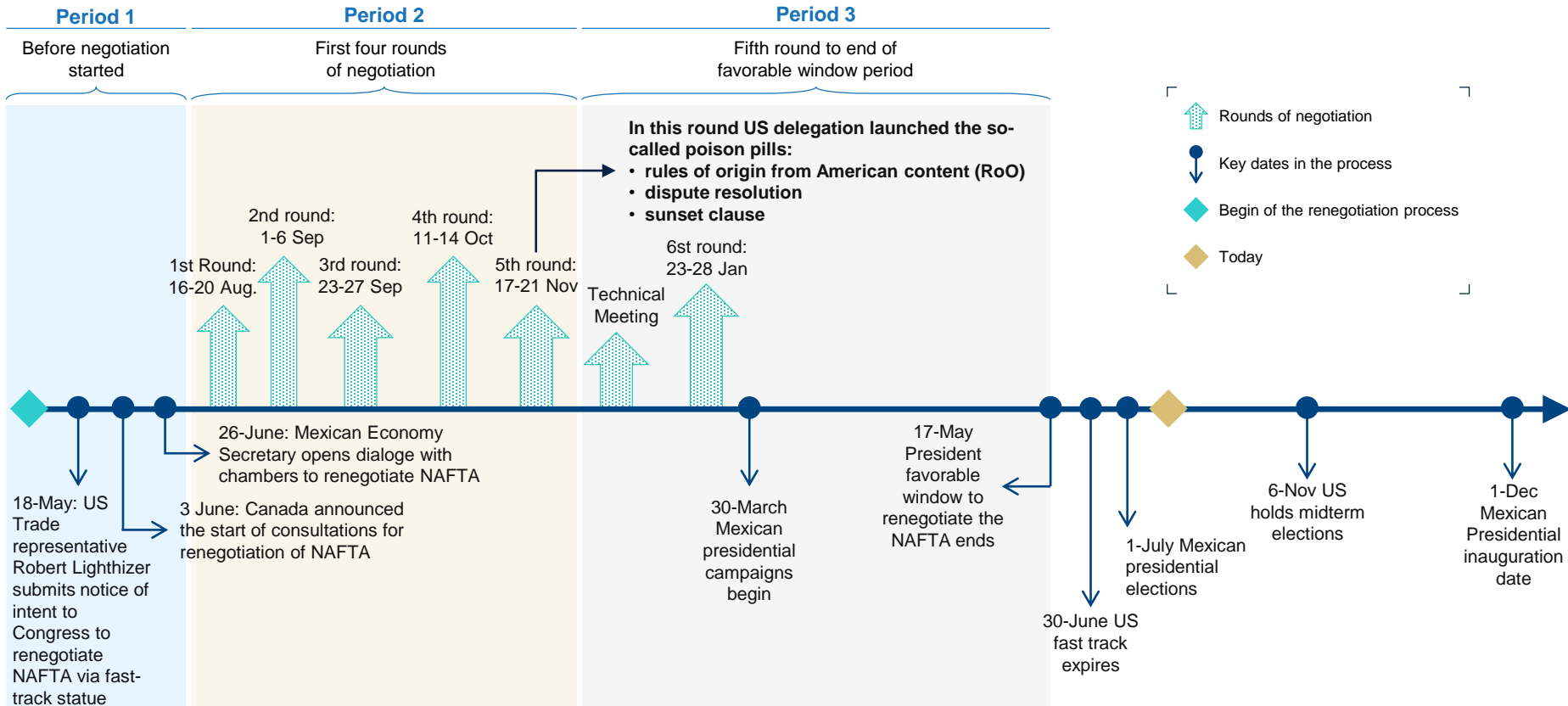
July 2018

Creating Opportunities

# Main takeaways

- By means of the **media data (GDELT)**, we can **monitor** both the **coverage and tone of NAFTA** considering the main sources of information by country (US, Canada and Mexico)
- **Media coverage increased at key moments** during the NAFTA renegotiation process since President Trump's victory. Negotiation rounds have drawn special interest. In general, **media sentiment has been negative**. Positive values were observed in April 2018 when expectations to reach an agreement were higher than ever
- Media **related topics regarding NAFTA have increased over time**, highlighting topics such as the "Poisson pills", specially "the sunset clause" and the changes to the rules of origin in the automotive sector
- **Uncertainty regarding NAFTA will remain** and negotiations could be in standby until US midterm elections. Big data analysis is a tool that provides a framework with which to analyze this process.

# Roadmap NAFTA: Main takeaways



## Data description

### Global Database on Events Location and Tone

Open database of human society from every corner of the globe dating back to 1979 ...

... including over 300 events around the world and more than 30000 themes...

... georeferenced across the entire planet...

...and collecting emotions using some of the most sophisticated algorithms

To monitor NAFTA media sentiment and coverage considering national sources of information:

120

United States sources

52

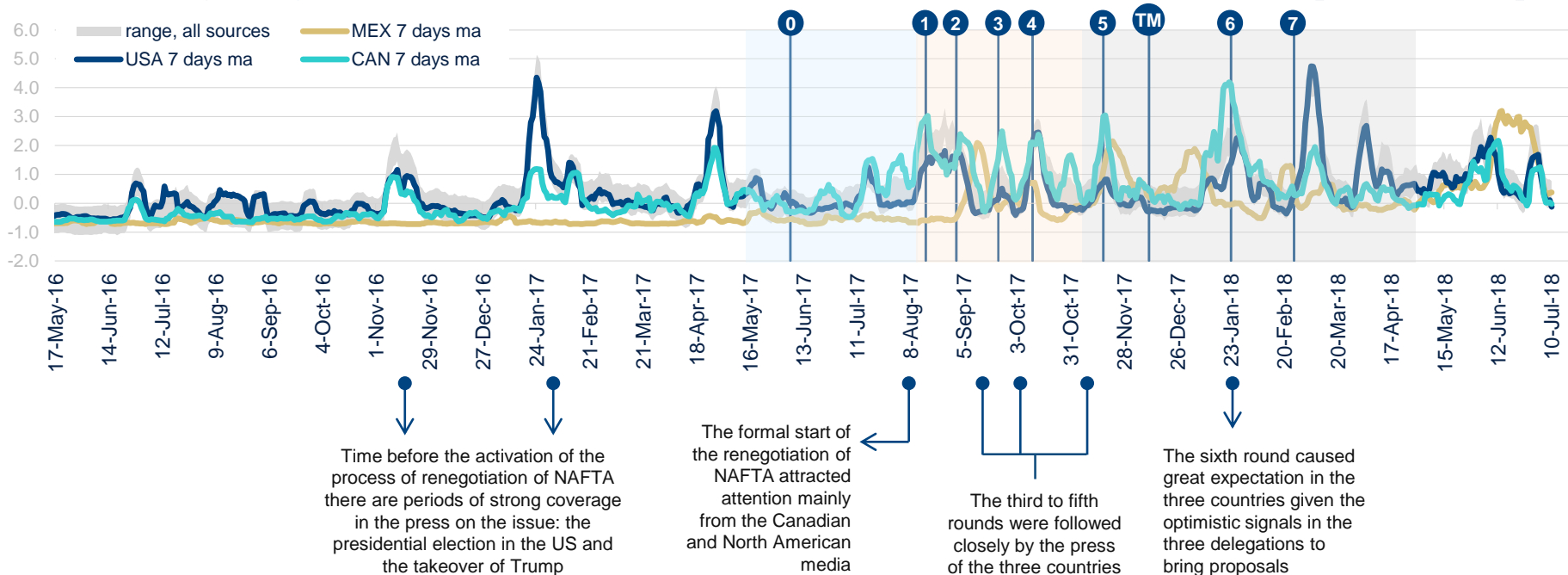
Canadian sources

30

Mexican sources

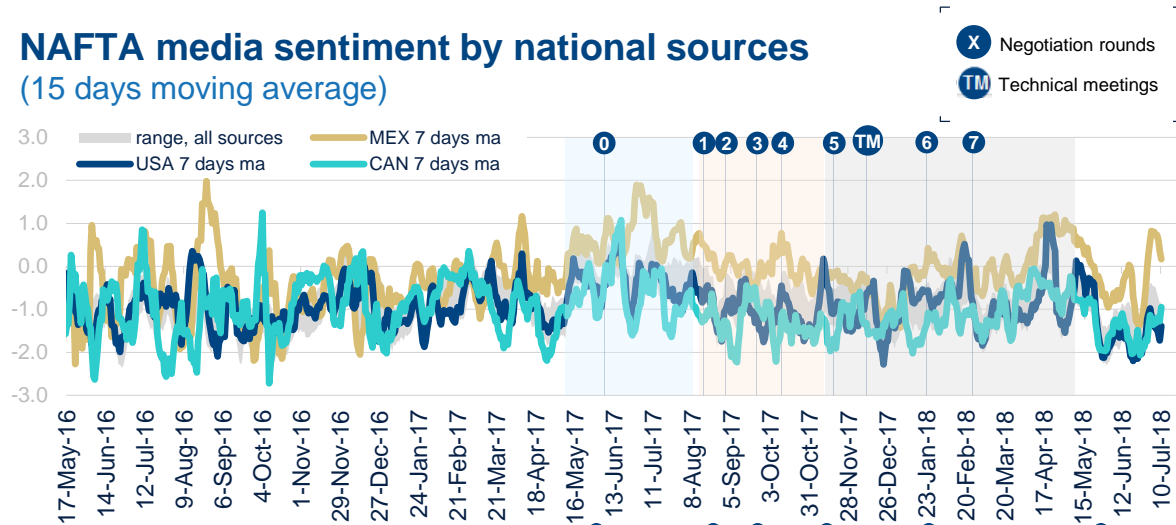
# The media closely followed most of the negotiation rounds and previous key moments such as the US election

## NAFTA media coverage by national sources (15 days moving average, normalized)



# Media sentiment reflected the initial optimism and eventually the lack of agreement derived from the systematic protectionist stance in the US

## NAFTA media sentiment by national sources (15 days moving average)



Sugar Deal ("Round zero") was the first negotiation round between both US-MEX delegations

The first two rounds took place in a tense environment with constant signs of breaking the agreement by the US

The third round concluded with advances in telecommunications, digital commerce competition policies and better customs practices. Tensions remained on issues of labor standards proposed by Canada and seasonal limits on Mexican exports, proposed by the US

Rounds 4 and 5 passed without agreements on the most crucial issues. The US maintained its pressure to break the agreement, which was reflected in a more negative media tone.

Tone improved as the possibility of reaching an agreement increased

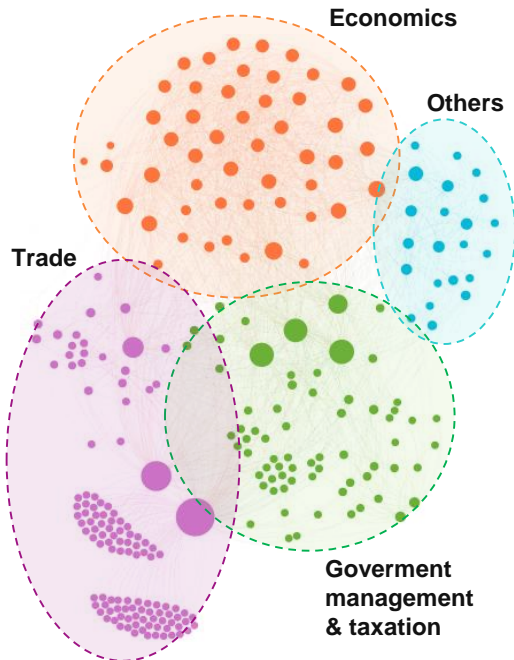
After exhausting the time for a favorable negotiation and not reaching an agreement, the tone in the three countries reached the minimum observed level

- The tone regarding NAFTA has been generally negative, except for specific periods where a satisfactory outcome of the negotiation seemed to be close, such as during April 2018 where everything seemed to indicate that a good agreement would be reached soon
- The lack of agreement after May 17 was reflected in a sharp fall of the media sentiment

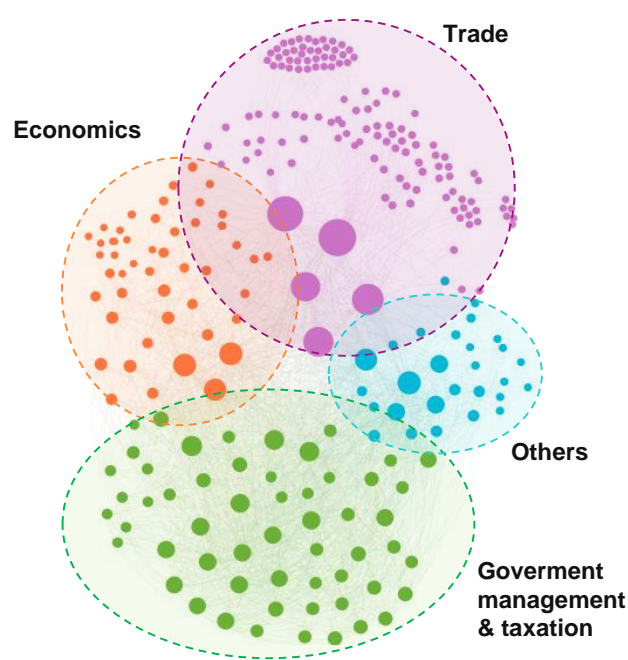
**Media coverage of related topics with NAFTA has increased over time. Trade, economics and government management & taxation are the most relevant ones**

### NAFTA related topics network: Evolution over time

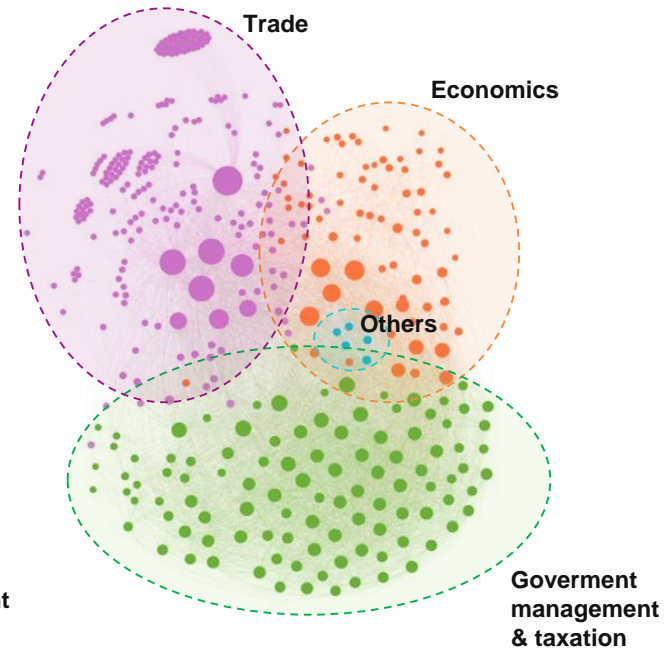
**Period 1** (14 May-15 Aug 2017)



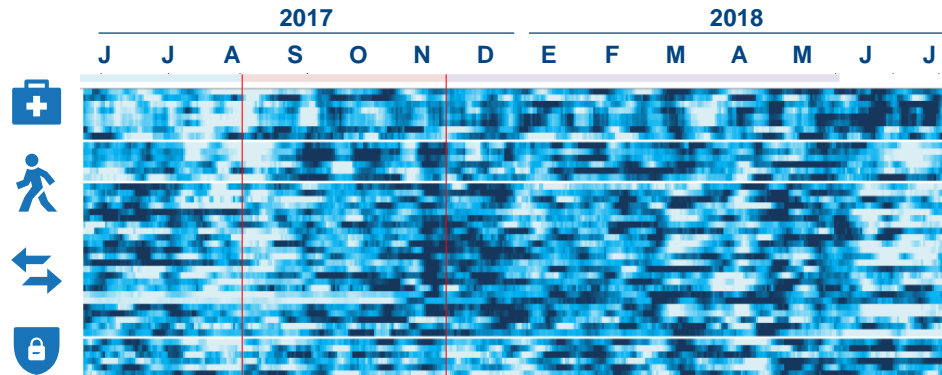
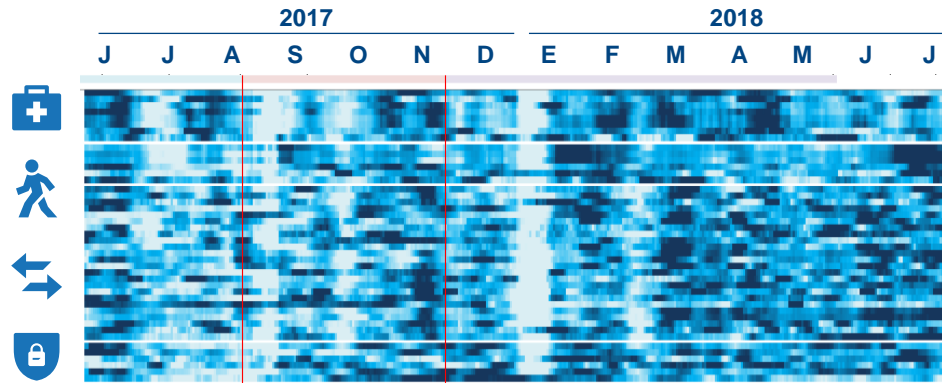
**Period 2** (16 Aug-17 Nov 2017)



**Period 3** (18 Nov-17 May 2018)



# Media sentiment and coverage evolution of the most related topics with NAFTA



## Coverage in media\*

Darker blue refers to more mentions

- Attention on trade issues grew when the poison pills were proposed and from there on in subsequent rounds
- Impasse in the Christmas period
- Once the favorable period to reach the agreement (July) ended, attention has been focused on other issues such as migration

## Tone in media\*

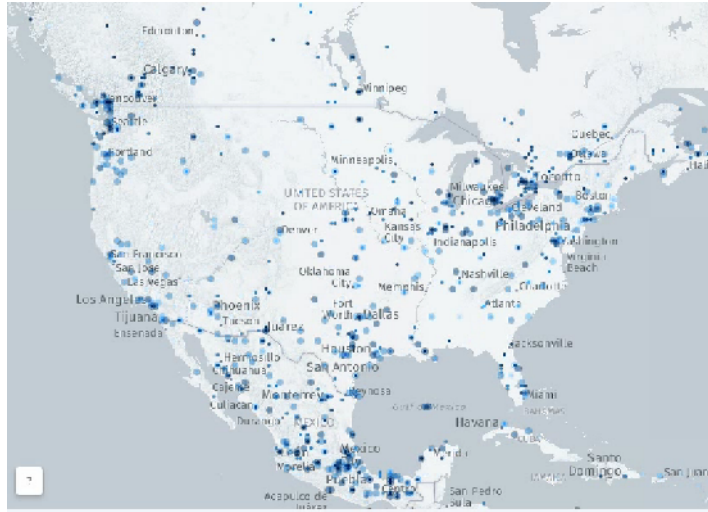
Darker blue means more positive tone

- The tone on trade issues was better overall near the fifth round
- Good signs were also observed in May that it seemed that the signing of the treaty was imminent
- Pessimistic tones at the beginning of the negotiation and in July



# Media coverage and sentiment evolution across regions

## NAFTA media coverage over time 2017-2018\*



May 2017 Number of observations by geography over time

AD Source: not a map?

31K SELECTED



## NAFTA media sentiment over time 2017-2018\*



Apr 2017 Number of observations by geography over time

AD Source: not a map?

31K SELECTED

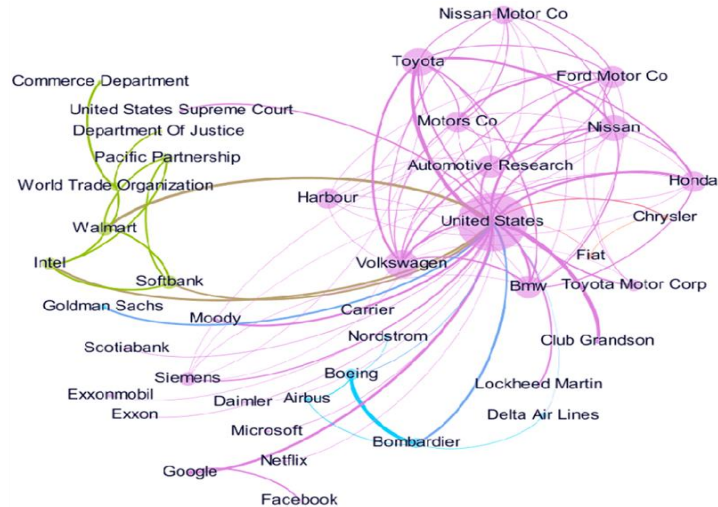


\* To see the maps in a dynamic way, please download the presentation and open it on a pdf reader program

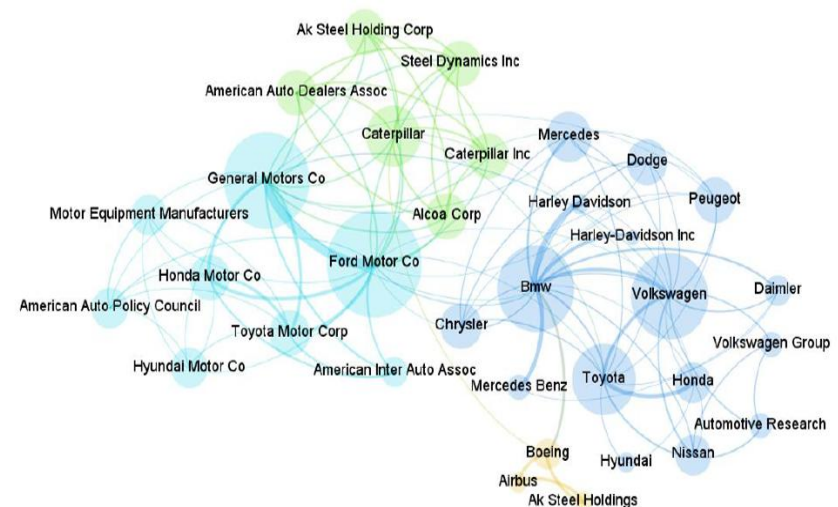
Media coverage has been particularly high across Mexican regions and Eastern US.  
Negative media sentiment has been predominant over time and across regions

## Media focused its attention on companies from different sectors, especially on those that could be affected by the RoO clause

### Network of companies related to NAFTA



### Network of companies network related to NAFTA and RoO

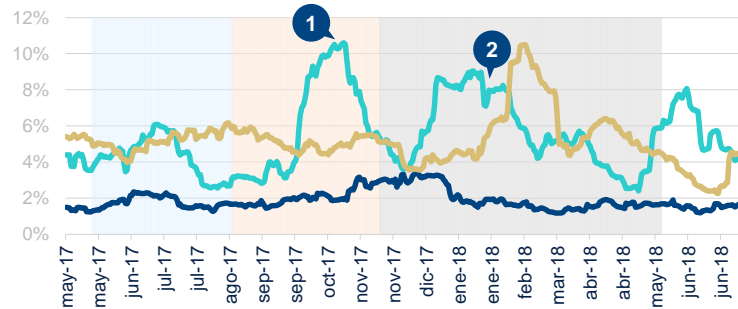


Organizations with higher media attention are closely related to the US economy. The most relevant and interconnected belong to the automotive industry. Other important firms come from financial services and energy sectors, as well as public and international organizations

According to the media, the RoO clause could impact three clusters of companies closely interconnected: those related to steel and aluminum (green on top), European and Japanese car manufacturers (blue on the right) and American automakers (blue on the left), especially the two largest

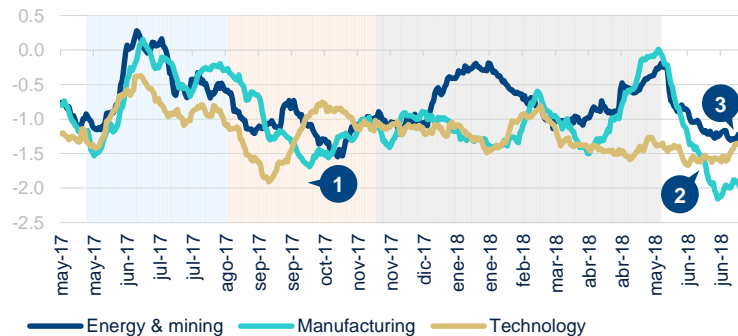
# Higher media coverage of NAFTA related companies operating in Mexico belong to the energy, manufacturing and technology sectors

## Coverage



- Peaked in two periods for the Manufacturing and Technology sectors:
  1. October 2017: when the US put on the table the three poison pills
  2. From December 2017 to March 2018: as the 6th round approach, the expectation of a successful negotiation regarding Auto Content Rules increased. However, no agreement was reached.
- Remained relatively stable for companies from the Energy and Mining sector during the whole period

## Sentiment

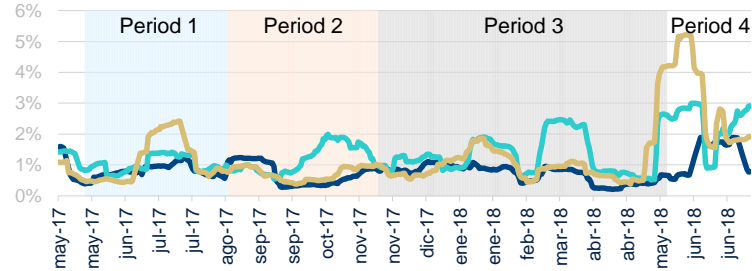


- Mostly negative during the whole period, but especially worsened in October 2017 (1) and right before the Mexican presidential elections (2)
- As the Mexican elections passed, sentiment appeared to show a rebound (3), since the possibility of reaching an agreement has been opened again

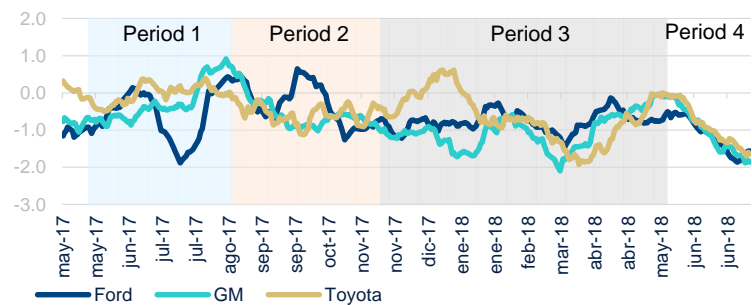
# Higher coverage, worse sentiment and more dependence between automakers as the RoO clause remained an unresolved issue

## Media coverage and sentiment evolution of automakers and NAFTA

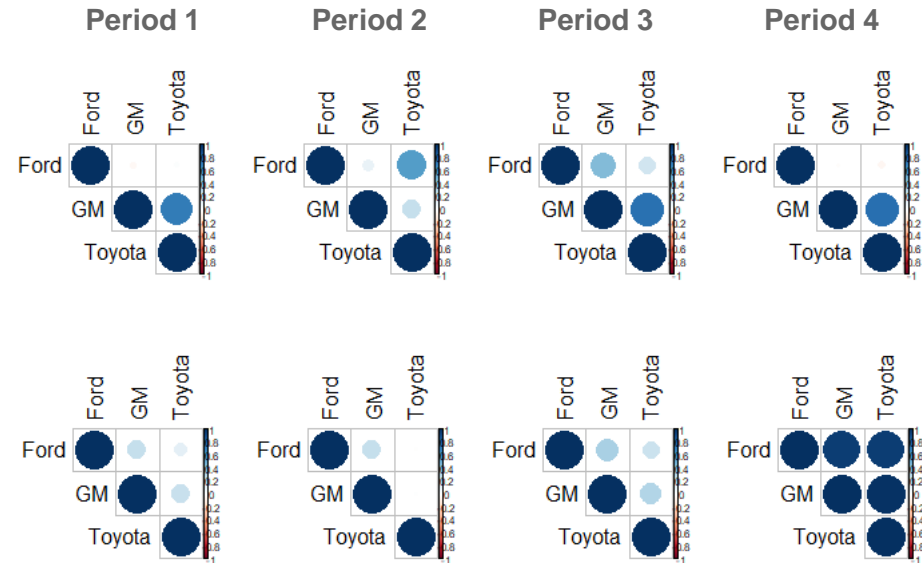
### Coverage



### Tone



## Correlation coefficients of media coverage and sentiment of automakers and NAFTA



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# Annex

# Media sources for each country



## Canada

cbc.ca, globalnews.ca, castanet.net, lapresse.ca, theglobeandmail.com, timescolonist.com, infotel.ca, newstalk770.com, brandonsun.com, ici.radio-canada.ca, cknw.com, 640toronto.com, cjob.com, journaldequebec.com, 680news.com, 900chml.com, calgaryherald.com, inews880.com, thestar.com, montrealgazette.com, theguardian.pe.ca, theprovince.com, ctvnews.ca, vancouvernews.com, rusforum.ca, ottawacitizen.com, winnipegfreepress.com, thewesternstar.com, 1310news.com, ngnews.ca, bclocalnews.com, tbnewswatch.com, 660news.com, journalpioneer.com, 630ched.com, pr-inside.com, thechronicleherald.ca, torontosun.com, ledevoir.com, cnfol.com, thestarphoenix.com, tvnouvelles.ca, cadillacnews.com, calgarysun.com, leaderpost.com, ottawasun.com, news957.com, quebec.huffingtonpost.ca, mideasttime.com, mywebtimes.com, tsn.ca, edmontonjournal.com.



## Mexico

zocalo.com.mx, eluniversal.com.mx, debate.com.mx, informador.com.mx, pulsoslp.com.mx, jornada.unam.mx, elsiglodetorreón.com.mx, elperiodicodemexico.com, eldiariodechihuahua.mx, eldiariodecoahuila.com.mx, milenio.com, elsiglodedurango.com.mx, lineadirectaportal.com, vanguardia.com.mx, yucatan.com.mx, excelsior.com.mx, el-mexicano.com.mx, heraldo.es, veracruzanos.info, hoytamaulipas.net, lasillarota.com, razon.com.mx, radioformula.com.mx, economista.com.mx, elmanana.com.mx, siete24.mx, sdpnoticias.com, quadrafin.com.mx, elsoldepuebla.com.mx, noroeste.com.mx.



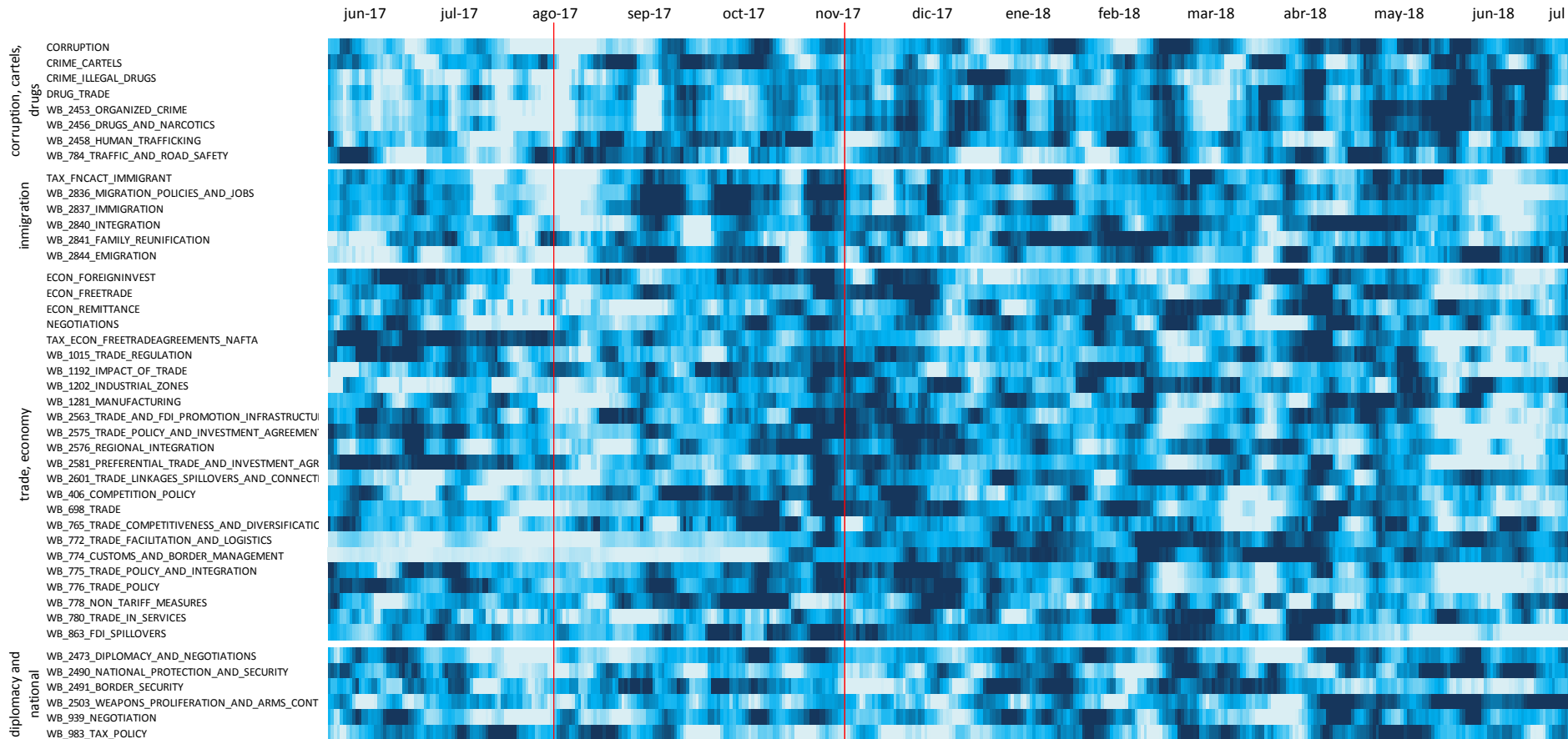
## United States

yahoo.com, ap.org, reuters.com, 4-traders.com, washingtontimes.com, marketwatch.com, washingtonpost.com, dailyprogress.com, huffingtonpost.com, foxnews.com, chicagotribune.com, nytimes.com, nwtimes.com, wickedlocal.com, cbslocal.com, sfgate.com, mysanantonio.com, chron.com, siouxcityjournal.com, newsok.com, freerepublic.com, stltoday.com, muscatinejournal.com, missoulian.com, tucson.com, rapidcityjournal.com, startribune.com, wenxuecity.com, wn.com, qctimes.com, ifeng.com, pafoa.org, wafa.ps, sina.com.tw, kaixian.tv, eastmoney.com, ziarelive.ro, contacto-latino.com, udn.com, sina.com.cn, aleqtisady.com, dagenstv.com, wcfcourier.com, lacrossetribune.com, elghad.co, journalstar.com, sputniknews.com, elmonzar.net, msn.com, source-7.com, fremonttribune.com, mtstandard.com, entornointeligente.com, lakelandtimes.com, madison.com, business-standard.com, trib.com, finanznachrichten.de, magicvalley.com, ctpost.com, asianuniverse.net, wgmd.com, military-technologies.net, helenair.com, scout.com, nbcnews.com, news.dahe.cn, go.com, patch.com, herald-review.com, greensboro.com, nasdaq.com, newsviewsnreviews.com, pantagraph.com, seattletimes.com, fredericksburg.com, thetandd.com, beatricedailysun.com, greenwichtime.com, tmcnet.com, focus-news.net, journaltimes.com, newstimes.com, miamiherald.com, elkodaily.com, tdn.com, stamfordadvocate.com, catholicssentinel.org, bgdailynews.com, washingtonexaminer.com, therepublic.com, alghad.com, terra.com, bostonglobe.com, thesouthern.com, inquisitr.com, omaha.com, sltrib.com, almjrhnews.com, targetednews.com, ziar.com, ntdtv.com, thehour.com, themalaymailonline.com, winonadailynews.com, news-sentinel.com, rivernews online.com, tribunnews.com, bismarcktribune.com, thehill.com, forbes.com, couriermail.com.au, huanqiu.com, latimes.com, columbustelegram.com, tampabay.com, usatoday.com, cnn.com





# Media Sentiment by topic



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