Emotion to forecast a recession: A bilingual lexical and sentiment analysis of the UN and IMF world economy reports for 2019

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Abstract

The present work carries out a discursive analysis of two 2019 institutional reports on the world's economy and their Spanish translations, and endeavours to determine the role that emotion plays in the way each text is lexically verbalized. A prior lexical analysis is carried out to obtain a 60-keyword list used to create a lexical taxonomy which may allow comparison of the proportion of –emotion-free– technolects and that of emotion-laden items conceptualizing the economic situation with a positive or negative polarity in either text. Subsequently, automatic processing is conducted with *Lingmotif* (Moreno-Ortiz, 2017), a Sentiment Analysis software to establish the positive and/or negative polarity and the degree of emotional intensity in the texts. The analysis reveals how there exist rhetorical-linguistic differences in the way emotion is deployed between the reports in line with the goals of each institution, and that these differences are mirrored in their Spanish translations.

Keywords: economic discourse, emotion, Sentiment Analysis, economic lexicon, English, Spanish.

Resumen

La emoción para pronosticar una recesión: análisis bilingüe léxico y de sentimiento de los informes económicos mundiales de la ONU y del FMI para el año 2019

Este trabajo lleva a cabo un análisis discursivo de dos informes institucionales de 2019 sobre la economía mundial y sus traducciones al español, y se propone

determinar el papel que desempeña la emoción en la forma en que cada texto está verbalizado léxicamente. Se ha realizado previamente un análisis del léxico que ha permitido obtener una lista de 60 palabras clave utilizadas para crear una taxonomía léxica capaz de permitir la comparación de la proporción de tecnicismos libres de emoción y la de elementos cargados de emoción que conceptualizan la situación económica con una polaridad positiva o negativa en cada texto. Posteriormente, se ha realizado un procesamiento automático con *Lingmotif* (Moreno-Ortiz, 2017), un software de análisis de sentimiento que establece la polaridad positiva y/o negativa y el grado de intensidad emocional de los textos. Dicho análisis revela la existencia de diferencias retórico-lingüísticas en la forma en que se emplea la emoción en cada uno de los informes que están relacionadas con los objetivos comunicativos de cada institución y que quedan reflejadas en sus traducciones al español.

Palabras clave: discurso económico, emoción, análisis de sentimiento, léxico económico, inglés, español.

1. Introduction

The world economy is, nowadays, a topic of global concern, particularly since the summer of 2008, the date marking the onset of the Global Systemic Crisis. During the years that have followed, economy has evolved from being a subject only for connoisseurs to becoming a topic of general interest, as the evolution of global finances is warily monitored by experts and followed by laypeople through traditional media and the social networks. Since the outbreak of the crisis, though, the factors that make economy a matter of general interest, and even of anxiety, seem to have become more sophisticated. Political and social events –such as the advent of the Trump administration in the USA, the Euro crisis and Brexit in Europe, the changing role of emerging economies and the increasing meteorological risks due to climatic change in the world at large– have an influence on global markets and their performance, and have been identified as "market sentiment indicators", these defined as "a combination of all investors' views, opinions and feelings"[1]. Consequently, trade policy controversies, financial instabilities and high debt levels constitute the focus of interest of both specialists and laypeople. In tune with this concern, as an aftermath of the previous crisis and at the threshold of a new 2020 mayhem, think tanks such as the IMF and the UN endeavour to warn the world at large, but mainly policymakers, of the potential dangers that loom in the future by means of recurrent reports on

the economic prospects for the years and months to come. A corpus of such reports constitutes the materials under scrutiny in the present work.

If emotions in language is a flourishing field in areas such as Appraisal Theory and Pragmatics (Foolen, 2012; Schwarz-Friesel, 2015; Mackenzie & Alba-Juez, 2019, just as a few examples), with the exception of some studies by social scientists and anthropologists (Berezin, 2005, 2009, among others) it is by no means usual to associate emotion and economy. In fact, economics has traditionally been regarded as a rational, regular science, and the antithesis of emotion and sentiment (Bandelj, 2009). And even if the technicalisation of the economic profession is ever increasing (Biel & Sosoni, 2017), which favours the coinage of new terms and the opacity of its discourse, the language of economics and finance is, nonetheless, quite close to human sentiment, plagued as it is with metaphors indicating a range of emotions such as fear and trust, where fear is connected to market anxiety and panic, and trust is connected to market confidence (Charteris-Black, 2004; Charteris-Black & Ennis, 2001; Herrera Soler & White, 2012). Hence, the present analysis is based upon the hypothesis that sentiment in economic language is expressed with items of emotion-laden value –words that indicate a process of assignment of sentiment on the part of the addresser of the text– which, in economics, take the shape of "discourse metaphors". Zinken defines discourse metaphors as "verbal expressions containing a construction that evokes an analogy negotiated in the discourse community" (2007: 445). Along these lines, for Musolff and Zinken (2009) and Zinken et al. (2008), metaphor is first a mode of argumentation, framing arguments and highlighting discursive developments. Hence, discourse metaphors shall be understood here as hackneyed metaphorical projections prototypical of some genres which present a lexicalized form with a relatively fixed meaning (Garrido, 2013).

It is, then, our hypothesis that the type of genre under analysis, the institutional economic report, is not only colonised by emotion-free technolects, the terms of art of the profession, but also by emotion-laden items, liable to generate the basic sentiments depicted in Plutchik's model (1980) –joy-sadness, anger-fear, trust-distrust and surprise-anticipation. These emotion-laden words and expressions have the potential to turn rational or, rather, emotion-free, concepts like the human body, objects, substances, as well as structure abstract concepts, into emotion-triggers. A plethora of studies within the realm of linguistics applied to professional languages are explanatory of diverse aspects of metaphoricity, and some

approach the subject of economic metaphors with heuristic explanations, endeavouring to explain how abstract conceptualizations of economy, growth, market, market movements, etc. are made more comprehensible through images (Silaški & Đurović, 2010; Skorczynska, 2010). But, conversely, other authors (Kövecses, 2003, 2010; Charteris-Black, 2014) demonstrate that, in economic language, metaphorical images are linked to the rhetorical concept of *pathos*, that is to say, the heightening of emotional impact. Specifically, a series of studies demonstrate how the economy is often portrayed as a human being who suffers maladies, describing economic problems as objects subject to breakdowns or erosion (Orts & Rojo, 2010; Schäffner, 2012; Arrese, 2015, just to mention some). In the course of our analysis we will see how "source concepts are organized into mininarratives or 'scenarios' that dominate the discourse manifestations of source domains", as defined and developed by Mussolf (2006: 23). We, then, seek to explicitly measure the expression of emotions in economic language with the systematic study of emotion-laden items and discourse metaphors, aiming to capture how economic problems and their solutions are described, where such lexical elements map the economic scenario with a positive or negative polarity.

In a second stage, this study also aims to deploy Sentiment Analysis software in the attempt to capture the receiver of the message's attention with a mixture of technical data and emotional messages. Sentiment Analysis, or SA, constitutes the germ of extensive literature destined to the description of different software designs for computational linguistics and automatic analyses of texts (Taboada, 2016). In the area of economics, SA has provided new possibilities to unveil some of the complexities of financial markets, and as one of the instruments provided by AI (Artificial Intelligence), researchers have deployed its algorithms to analyse the trends of stock markets, aiding companies and investors in the fields of decision-making and risk management (Devitt & Ahmad, 2007; Ruiz-Martínez et al., 2012; Uhr et al., 2014, among others). Nevertheless, to our knowledge, in Applied Linguistics and, specifically, in Genre Analysis, this type of software has not been used to provide (as this study endeavours to evidence) interesting connections between words and the emotional subtext of a professional genre such as the institutional report. Hence, we are poised to demonstrate how the combination of quantitative and qualitative linguistic analyses is very useful to shed some light on how it is that sentiment on similar information contents (a financial account on the state of the world's

economy in 2019) is expressed differently, according to the role and scope of the organization behind it.

2. Materials and methods

The role that textual typology can play is very relevant when assessing the presence of potentially emotion-laden lexical items in economic discourse. As Loma-Osorio explains (2004), economic texts addressed both to expert and non-expert receivers perform informative and persuasive functions, constituting a channel to disseminate the technolects that strictly belong to the monosemic, expert-to-expert scope of communication, as well as innovative coinages of new discourse metaphors and neologisms. Specifically, the institutional financial reports currently submitted to analysis constitute a means to spread economic information while describing the global economic panorama emotionally enough to exert some kind of response from the readers (mainly policymakers and economic actors). Our parallel corpus consists of two 2019 reports on the state of the world economy in their original English versions and their Spanish translations. The first group of subcorpora is made up of two versions of the "World Economic Situation and Prospects 2019", issued by the UN in the course of the abovementioned year. The English version (henceforth, WESP) and its Spanish translation (hereafter, WESPES) are, indeed, a product of the United Nations Department of Economic and Social Affairs, working together with a group of UN Commissions specialized in the scrutiny of economic analysis and policy in several parts of the world. WESP is defined by the institution as "a flagship publication on the state of the world economy"[2], monitoring macroeconomic trends and strategies for a large number of economies worldwide. As its name suggests, apart from economic issues, the UN Department of Economic and Social Affairs not only aims to offer hard and fast economic information, but it monitors social and environmental dimensions of sustainability, seeking the implementation of the 2023 Agenda for Sustainable Development.

The second group of subcorpora is offered by the IMF. The IMF's World Economic Outlook Update for January (henceforth WEO in its English original)[3] is one of the reports that the organization issues yearly, whose official translation into Spanish, as offered by the institution, will be referred to as WEOES.

Contrary to WESP, WEO is mainly concerned with economic affairs worldwide, since the IMF's primary purpose is the vigilance of the international monetary system, supervising issues in the macroeconomic and financial scope that have an influence on the stability of global and financial aspects. In this sense, and in tune with the role of the IMF as a watchdog of international economy, the report will presumably concentrate upon macroeconomic affairs and emphasise technical information.

Table 1 summarizes the lexical structure of the different subcorpora after an examination with the *Lingmotif* software (Moreno-Ortiz, 2017):

Corpus	Sentences	Tokens	Types	T/T Ratio	Items	Lex. Words	Func. Words	Single words	Multi words
WESP	106	2623	915	34.88%	2524	1600	924	2389	92
WEO	137	3454	1044	30.22%	3375	2122	1253	3340	115
WESPES	106	3496	1057	30.23%	2524	1600	1614	3170	292
WEOES	137	4385	1203	27.43%	3375	2122	1970	4092	293

Table 1. Lexical structure of WESPES and WEOES, according to *Lingmotif* (Moreno-Ortiz, 2017).

In the table we can see how the Spanish subcorpora are longer than their English originals. This confirms what was stated by Vázquez Ayora (1977: 336) and Berg Selisson (2012: 120), that Spanish translations from English are systematically longer than their originals for a number of reasons, such as the fact that many one-word English constructions are translated into phrases of two or three words; English, in contrast, is a much more economical language, which translators usually tend to amplify when rendering their Spanish versions. Hence, WESPES consists of 3496 tokens, from 1057 types, structured in 106 sentences which contain 1600 lexical items and 1614 grammatical items functionally speaking, and, formally speaking, 3170 single words and 292 multiwords. On the other hand, WEOES (the IMF report in Spanish) is an even larger subcorpus, with 4385 words or tokens and 1203 forms or types. It should be noted that lexical richness is, comparatively, greater in the UN subcorpora than in the IMF ones, where there is a higher number of words repeated frequently. This can be seen in the 30.23% token/type ratio in WESPES and the 27.43% in WEOES. The number of sentences is lower in WESPES, which again indicates a higher sentence length in the IMF subcorpus.

The study, as we anticipated in our previous section, consists of two phases: the first is purely lexical and carries out automatic processing by means of

Antconc 3.5.8. (Anthony, 2019), a software for the extraction of data. Antconc 3.5.8. is a text analysis program that allows lists of words, their frequencies and corpus keywords to be collected from textual corpora, allowing comparisons between frequencies, placements, n-grams (*ergo*, more or less fixed verbal sequences) and large-scale concordances. The objective of this phase was to obtain a lexical classification of the four subcorpora with a list of keywords indicating the relevance and frequency of a) emotion-free economic technolects or b) emotion-laden discourse metaphors disclosing positive or negative feelings in the description of the global economic scenario. Lexical units were marked as metaphorical when the semantic tension created between the contextual meaning in which the unit is used and its basic meaning (as defined by our source of reference, in this case UNTERM, the United Nations Terminology Database[4]), can be explained in terms of cross-domain mapping (Steen, 2009: 36-37). For example, the word 'burden' generally refers to a serious or difficult obstacle. In economy, the term points to a second, metaphorical meaning: the responsibility to pay back an excessive amount of money. Likewise, the word 'hike' is "a long walk in the countryside", whereas its metaphorical meaning points to "a sudden increase in the amount or level of something".

To obtain the keyword list, an *ad-hoc* reference corpus was built for each language, consisting of previous versions of the UN and IMF reports combined provided for 2017 and 2018, containing 179,450 tokens (in the English reference corpus) and 216,970 tokens (in the Spanish reference corpus). The usage of a similar reference corpus is in line with Garofalo's work (2017) and was aimed at underlining the differences in content and lexical choices between past editions of the reports and the ones subject to scrutiny, highlighting how singularly global market conditions are depicted by each of the think tanks in the present economic scenario.

In a second phase, SA processing was used through *Lingmotif* v.1.0 software (Moreno Ortiz, 2017). In this case, the purpose was to study the sentiment polarity (positive, negative or neutral) and the intensity of feeling (neutral to extremely intense) in each of the texts. Using the results of the first phase, a complementary plugin or lexicon (one in English, one in Spanish) was added to the software, consisting of a list of emotion-laden terms, mostly discourse metaphors, as the emotion-laden items in the corpus. With the aid of the plugin, the texts were processed again to observe the differences in emotional involvement of the different segments within each text.

According to the hypotheses here formulated, it is to be expected that there may be, in different measures in each subcorpus, a) both emotion-free technolects (the specialised terminology of the field) and emotion-laden items (terms with a sentiment value), and also b) different polarities of feeling in both texts, and different intensities of emotion, probably in tune with the social purpose that each institution wishes to accomplish.

3. Results

3.1. Phase one. The lexical study

The method followed for the use of this software rendering a description of the lexical map in the IMF and UN subcorpora in each language entailed the elaboration of a list of stopwords, or those with grammatical, but without lexical meaning. A stopword list was made in English and in Spanish to filter each subcorpus in turn, so as to eliminate the elements void of lexicality. On the other hand, so as to further restrict the framework of analysis, a list of lemmas was also incorporated in either language to cluster all the morphological variants of the different types.

Table 3 presents the results obtained by word keyness for either English subcorpus. Due to the length of the corpus overall and the space restrictions of this work, only the first 60 keywords were chosen, many of which will be discussed below. Table 2 shows, then, each term in order of keyness and their relative frequency, since the subcorpora were different in size.

WESP					WEO			
Order	Keyness	Relative frequency (f%)	Term		Order	Keyness	Relative frequency (f%)	Term
1	1,60	341.059	develop		1	1,30	191.648	**economy**
2	1,98	245.751	**economy**		2	0,41	122.378	tension
3	0,72	83.235	sustainable		3	0,43	111.664	**tariff**
4	0,80	80.591	risk		4	0,35	97.870	condition
5	0,34	70.420	prospect		5	0,29	66.395	develop
6	0,34	54.745	poverty		6	0,32	65.935	sentiment
7	0,99	53.122	global		7	0,75	64.557	**trade**
8	0,76	45.092	**trade**		8	0,26	62.725	concern
9	0,91	37.623	policy		9	0,49	55.339	risk
10	0,30	37.529	multilateral		10	0,26	52.639	tighten
11	0,19	36.561	dispute		11	1,36	50.617	growth
12	1,45	36.180	growth		12	0,55	47.090	**price**
13	0,23	36.084	agenda		13	0,72	44.538	global
14	0,15	35.914	escalate		14	0,14	43.706	escalate
15	0,15	35.914	tension		15	0,17	43.501	prospect
16	0,30	32.948	inequality		16	0,78	42.117	policy
17	0,95	32.087	country		17	0,69	41.323	**financial**
18	0,15	30.932	condition		18	0,29	41.113	weak
19	0,27	30.772	longer		19	0,23	39.785	projection
20	0,19	28.750	diversification		20	0,14	38.325	brexit
21	0,15	28.321	fundamental		21	0,23	35.112	fall
22	0,34	27.026	infrastructure		22	0,14	33.198	barrier
23	0,11	26.935	eradicating		23	0,38	30.152	oil
24	0,11	26.935	poses		24	0,26	28.371	uncertainty
25	0,11	26.935	steep		25	0,14	27.584	**spreads**
26	0,69	26.405	**financial**		26	0,17	27.073	**sovereign**
27	0,15	24.914	rural		27	0,69	26.360	**market**
28	0,23	24.388	vulnerability		28	0,09	26.224	dispute
29	0,15	23.661	vital		29	0,09	26.224	shutdown
30	0,23	21.129	environment		30	0,12	25.481	aversion
31	0,15	20.818	inclusive		31	0,12	25.481	resolve
32	0,27	20.376	social		32	0,38	23.909	projected
33	0,30	20.359	levels		33	0,29	23.272	forecast
34	0,11	20.250	resource		34	0,32	22.501	domestic
35	0,42	20.195	debt		35	0,09	21.751	softening
36	0,19	19.514	require		36	0,12	21.658	elevated
37	0,15	19.388	reach		37	0,12	21.658	regulatory
38	0,38	19.013	high		38	0,14	21.061	unchanged
39	0,19	18.772	progress		39	0,35	20.227	expected
40	0,30	18.742	rise		40	0,52	19.982	rate
41	0,30	18.742	significant		41	0,09	19.545	emission
42	0,11	18.685	institution		42	0,12	19.146	notably
43	0,30	18.592	large		43	0,35	18.409	lower
44	0,08	17.957	contagion		44	0,09	17.982	burden
45	0,08	17.957	delivering		45	0,14	17.655	revisions
46	0,08	17.957	disorderly		46	0,06	17.483	passthrough
47	0,08	17.957	fail		47	0,06	17.483	shadow
48	0,08	17.957	matched		48	0,06	17.483	spark
49	0,08	17.957	obligation		49	0,06	17.483	truce
50	0,08	17.957	power		50	0,14	17.309	slower
51	0,08	17.957	redressing		51	0,12	17.276	industrial
52	0,08	17.957	responsive		52	0,09	16.765	contraction
53	0,08	17.957	retaliation		53	0,09	16.765	hikes
54	0,08	17.957	transparency		54	0,12	16.746	momentum
55	0,15	17.657	target		55	0,14	16.049	slow
56	0,11	17.465	concern		56	0,09	15.766	weighed
57	0,11	17.465	fragility		57	0,12	15.356	announced
58	0,11	17.465	heightened		58	0,23	15.312	activity
59	0,11	17.465	severe		59	0,14	14.953	slowdown
60	1,60	17.465	**tariff**		60	1,30	14.947	range

Table 2. Keywords in WESP and WEO.

In the table some of the words have been highlighted in bold (those indicating economic technolects, or terms with a standardized, specific usage in economics, according to UNTERM), red (the emotion-laden items with a metaphorical value), green (those lexical items labelled 'social terms', expressing or verbalizing social involvement) and blue, marking intensifiers or softeners. If we take either subcorpus at hand, we can see that among the first 60 keywords in WESP only 4 are technolects ('economy', 'trade', 'financial' and 'tariff'). WEO, in contrast, duplicates that number, with 8 terms of art: 'price', 'economy', 'tariff', 'trade', 'financial', 'spread', 'market' and 'sovereign'. Words of a social character were found in WESP, such as 'sustainable', 'environment' and 'social', which an Antconc 3.5.8. search rendered as having a positive polarity (as in 'sustainable growth/development/finance' or 'social protection/goals/services'). In WEO, no term with a clear social orientation was found, which seems to be symptomatic of greater narrowness of topic.

Once the technolects had been identified, we proceeded to analyse the sentiment items in the list. The selection was undertaken searching for their collocations and concordances in text with the aid of Antconc 3.5.8. (Anthony, 2019) to spot the potentially emotional lexical elements in context. Finally, Excel allowed a new numerical compilation of the different semantic values of positive and negative evaluation, this time taking into account their grammatical function. Our Antconc search unveiled 30 items in WESP: 9 positive terms ('develop', 'multilateral', 'growth', 'diversification', 'eradicating', 'resource', 'progress' and 'transparency') and 14 negative ('risk', 'poverty', 'dispute', 'escalate', 'tension', 'inequality', 'vulnerability', 'debt', 'contagion', 'disorderly', 'fail', 'retaliation', 'concern' and 'fragility'), to which emotion-laden value intensifiers and softeners used to express positive (2) and negative (5) polarities were added. Specifically, the intensifiers 'steep', 'severe', 'high', 'significant', 'large' and 'heightened' were found in negative contexts (as in 'steep reductions/number of disputes', 'severe disruptions', 'significant vulnerabilities/slowdown/damage', 'large imbalances/risk/repercussions' and 'heightened stress/volatility/tensions'), whereas 'fundamental' and 'vital' were found always in a positive context (as in 'fundamental shift/transformation', or in 'vital economic transformation').

As far as WEO is concerned, 28 emotion-laden items were uncovered, and the difference in polarity is even more abrupt (23 negative, against 5 positive items): 18 negative nouns were found ('tension', 'concern', 'risk', 'tighten', 'escalate', 'weak', 'Brexit', 'fall', 'barrier', 'uncertainty', 'dispute', 'shutdown',

'aversion', 'burden', 'shadow', 'contraction', 'slowdown' and 'hike'), plus 5 intensifiers with a negative value ('elevated', 'unchanged', 'slower/ slow' and 'softening', as in 'elevated debt burdens/geopolitical risks', 'unchanged yields', 'slow global growth/demand' or 'softening momentum'), and, finally, 5 positive sentiment words ('growth', 'resolve', 'truce', 'momentum' and 'sentiment').

Table 3 shows these results more explicitly:

Lexical taxonomy in WESP		Lexical taxonomy in WEO	
Technolects (4)	Social words (3)	Technolects (8)	Social words (0)
ECONOMY, TRADE, FINANCIAL, TARIFF	SUSTAINABLE, ENVIRONMENT, SOCIAL	ECONOMY, TARIFF, TRADE, FINANCIAL, SPREAD, MARKET, SOVEREIGN	——
Negative sentiment words (19)		Negative sentiment words (13)	
Emotion-laden items	Intensifiers and softeners	Emotion-laden items	Intensifiers and softeners
POVERTY, INEQUALITY, TENSION, DISPUTE, RETALIATION, RISK, ESCALATE, DISORDERLY VULNERABILITY, CONTAGION, FRAGILITY, FAIL, DEBT, CONCERN	STEEP SEVERE HIGH SIGNIFICANT LARGE HEIGHTENED	TENSION, CONCERN, RISK TIGHTEN, ESCALATE, WEAK, BREXIT, FALL, BARRIER, UNCERTAINTY, DISPUTE, SHUTDOWN, AVERSION, BURDEN, SHADOW, CONTRACTION SLOWDOWN, HIKE	ELEVATED UNCHANGED SLOWER/ SLOW SOFTENING
Positive sentiment words (11)		Positive sentiment words (5)	
Emotion-laden items	Intensifiers and softeners	Emotion-laden items	Intensifiers and softeners
DEVELOP, MULTILATERAL, GROWTH, DIVERSIFICATION, RESOURCE, PROGRESS RESPONSIVE, TRANSPARENCY	FUNDAMENTAL VITAL	GROWTH, RESOLVE, TRUCE, MOMENTUM, SENTIMENT	——

Table 3. Lexical taxonomies in WESP and WEO.

As we suggested at the beginning of the study, our search for concordances and collocations led to the conclusion that positive and negative items seem to be constelled as discourse metaphors triggering positive or negative responses. Hence, of the negative words found in WESP, 'dispute', 'retaliation', 'risk', 'escalate', 'tension' and 'disorderly' correspond to the framing of economy as a conflict where economic problems ('poverty', 'inequality') are enemies, as in:

(1) Eradicating **poverty** by 2030 will require both double-digit growth in Africa and steep reductions in income **inequality**.

In WEO, in contrast, the array of negative words pictures different metaphorical scenarios. Economy as a conflict is also present, with words like 'tension', 'escalate', 'risk' and 'dispute', most also existent in WESP, but the economy is mainly conceptualized as a journey full of obstacles (as with words like 'Brexit', 'barrier', 'fall', 'burden', 'slowdown' and 'hike' –always in reference to interest rates and/or tariffs, and with a negative value), sometimes a problem zone where global economies are humans that suffer ('concern', 'uncertainty', 'aversion', 'weak'). See, for instance:

> (2) Multiple factors weigh on the region's outlook, including **weak** oil output growth, which offsets an expected pickup in non-oil activity.

Problems are also seen as objects that break (as in 'tighten', 'shutdown' and 'contraction'). Even a word like 'development', potentially positive, is used in negative contexts, as in:

> (3) But these **developments** occurred against a backdrop of **weakening** financial market sentiment, trade policy **uncertainty**, and **concerns** about China's outlook.

Regarding positive scenarios, in WESP there is a conceptualization of economy as a living organism ('develop', 'growth', 'responsive'), or as a journey ('progress') where economic systems are seen as objects or buildings ('multilateral', 'diversification', 'transparency') whose design can be improved, as in:

> (4) This also requires progress towards a more inclusive, flexible and responsive **multilateral** system.

In WEO the human organism conceptualization seems to be stronger ('growth', 'resolve', 'sentiment') while framing economy as a conflict scenario ('truce') or a journey ('momentum') show some, if scarcer, examples.

Table 4 below exhibits the findings for the Spanish subcorpora, WESPES and WEOES.

WESPES				WEOES			
Order	Keyness	Relative frequency (f%)	Term	Order	Keyness	Relative frequency (f%)	Term
1	1,60	210.707	**economía**	1	1,09	156.933	**economía**
2	1,14	96.249	desarrollo	2	0,34	134.603	tensión
3	0,51	90.774	**financiero**	3	0,55	133.463	**comercial**
4	0,83	88.567	política	4	0,68	126.398	**financiero**
5	0,57	86.720	riesgo	5	0,27	107.682	**arancel**
6	0,60	72.461	**comercio**	6	0,34	107.239	emergente
7	0,86	69.733	país	7	0,30	101.281	condición
8	0,31	65.206	perspectiva	8	0,25	87.591	actitud
9	0,20	64.517	tensión	9	0,32	84.536	perspectiva
10	0,26	62.880	pobreza	10	0,57	78.832	**mercado**
11	0,92	58.381	mundial	11	0,43	73.910	**precio**
12	0,46	57.238	gran	12	0,39	65.055	riesgo
13	0,20	52.360	básico	13	0,27	64.896	desaceleración
14	1,14	44.240	crecimiento	14	0,57	64.518	política
15	0,49	41.760	sostenible	15	1,07	54.429	crecimiento
16	0,23	39.992	desigualdad	16	0,16	53.325	preocupación
17	0,17	38.785	agenda	17	0,23	52.802	factor
18	0,11	36.867	desequilibrio	18	0,21	51.289	prevé
19	0,14	35.559	condición	19	0,41	47.974	informe
20	0,20	35.230	multilateral	20	0,14	44.889	moderación
21	0,14	33.798	diversificación	21	0,11	44.868	aversión
22	0,29	33.041	clima	22	0,21	43.908	proyecta
23	0,29	32.800	mundo	23	0,14	42.452	restrictivas
24	0,11	31.883	**financiación**	24	0,16	42.268	proyección
25	0,49	29.971	nivel	25	0,25	40.825	previsto
26	0,17	29.839	objetivos	26	0,25	40.141	petróleo
27	0,11	29.269	escalada	27	0,21	39.305	materia
28	0,17	29.239	servicio	28	0,14	37.341	**soberanos**
29	0,09	27.650	**arancel**	29	0,62	36.893	mundial
30	0,09	27.650	controversia	30	0,11	36.537	brexit
31	0,09	27.650	obstáculo	31	0,11	36.537	ímpetu
32	0,11	27.366	graves	32	0,14	36.055	expectativa
33	0,14	27.189	eficaz	33	0,18	32.063	pronóstico
34	0,11	25.857	formulación	34	0,14	29.723	endurecimiento
35	0,11	24.602	amenaza	35	0,14	29.053	deterioro
36	0,11	24.602	logro	36	0,09	28.301	cierre
37	0,26	24.266	podría	37	0,09	28.301	próximos
38	0,23	23.949	infraestructura	38	0,21	28.180	incertidumbre
39	0,09	23.172	erradicar	39	0,25	26.981	medida
40	0,17	22.474	ritmo	40	0,07	26.921	disputa
41	0,14	21.048	deben	41	0,09	26.401	vehículos
42	0,11	20.999	tecnología	42	0,11	25.242	barreras
43	0,26	20.973	medida	43	0,11	25.242	nuevos
44	0,09	20.960	percepción	44	0,09	24.894	levemente
45	0,09	20.960	produjo	45	0,14	24.360	revisiones
46	0,11	20.316	fundamental	46	0,09	23.642	subida
47	0,17	19.972	social	47	0,25	22.945	baja
48	0,09	19.393	apoyar	48	0,07	22.444	modere
49	0,09	19.393	correcciones	49	0,07	22.444	**títulos**
50	0,09	19.393	desencadenar	50	0,14	21.101	ritmo
51	0,09	19.393	riqueza	51	0,16	20.564	**banco**
52	0,14	18.573	vulnerabilidad	52	0,07	20.236	obedece
53	0,20	18.505	reducir	53	0,11	19.491	**diferenciales**
54	0,06	18.433	afectaría	54	0,09	19.369	finales
55	0,06	18.433	imperativo	55	0,11	19.112	semestre
56	0,06	18.433	obligaciones	56	0,07	18.671	**arancelarias**
57	0,06	18.433	proporcionar	57	0,07	18.671	flojo
58	0,06	18.433	receptivo	58	0,07	18.671	sufrido
59	0,06	18.433	rurales	59	0,09	18.171	pasado
60	1,60	18.433	transparencia	60	1,09	17.947	tregua

Table 4. Keywords in WESPES and WEOES.

Among the 60 items on the list, WESPES shows 5 technical terms (*economía, financiero, comercio, financiación, arancel*), as opposed to 11 in WEOES (*economía, comercial, financiero, arancel, mercado, precio, soberanos, títulos, diferenciales, banco* and *arancelarias*). The Spanish version of the IMF report shows, then, more technical terms than any other subcorpus. In contrast, three words of a social character (*sostenible, clima, social*) were found in the UN subcorpus, but as it happened with WEO, no word of this kind is in WEOES's list of most frequent words. Regarding sentiment items, WESPES shows 24: 11 positive words and intensifiers, 13 negative (12 emotion-laden nouns and verbs –*riesgo, tensión, pobreza, desigualdad, desequilibrio, escalada, controversia, obstáculo, amenaza, desencadenar, vulnerabilidad, obligación*– plus an intensifier used only in negative contexts: *grande*). WEOES, in turn, shows 22 emotion-laden words: 14 negative terms, plus 3 negative intensifiers, and like its English version, 5 positive terms, no positive intensifiers.

We can also see these taxonomies in Table 5 below:

Lexical taxonomy in WESPES		Lexical taxonomy in WEOES	
Technolects (5)	**Social words (3)**	**Technolects (11)**	**Social words (0)**
ECONOMÍA, FINANCIERO, COMERCIO, FINANCIACIÓN, ARANCEL	SOSTENIBLE, CLIMA, SOCIAL	ECONOMÍA, COMERCIAL, FINANCIERO, ARANCEL, MERCADO, PRECIO, SOBERANOS, TÍTULOS, DIFERENCIALES, BANCO, ARANCELARIAS.	——
Negative sentiment words (13)		**Negative sentiment words (17)**	
Emotion-laden items	**Intensifiers and softeners**	**Emotion-laden items**	**Intensifiers and softeners**
RIESGO, TENSIÓN, POBREZA, DESIGUALDAD, DESEQUILIBRIO, ESCALADA, CONTROVERSIA, OBSTÁCULO, AMENAZA, DESENCADENAR, VULNERABILIDAD, OBLIGACIÓN	GRANDE	TENSIÓN, RIESGO, DESACELERACIÓN, PREOCUPACIÓN, AVERSIÓN, BREXIT, ENDURECIMIENTO, DETERIORO, CIERRE, INCERTIDUMBRE, DISPUTA, BARRERAS, SUBIDA	FLOJO, LEVEMENTE, (A LA) BAJA
Positive sentiment words (11)		**Positive sentiment words (5)**	
Emotion-laden items	**Intensifiers and softeners**	**Emotion-laden items**	**Intensifiers and softeners**
DESARROLLO, CRECIMIENTO, MULTILATERAL, DIVERSIFICACIÓN, EFICAZ, LOGRO, APOYAR, RECEPTIVO, TRANSPARENCIA	FUNDAMENTAL, IMPERATIVO	CRECIMIENTO, MODERACIÓN, ÍMPETU, TREGUA, ACTITUD	——

Table 5. Lexical taxonomies in WESPES and WEOES.

As regards discourse metaphors, most of the words in WESPES belong to the war/conflict conceptualization, since they are deployed to identify threats, to present the UN as a battling/healing force and to establish itself as a defender against negative elements of the global economy, with words like *controversia* ('controversy'), *amenaza* ('threat'), *riesgo* ('risk'), *escalada* ('escalation'), *tension* ('tension'); as in WESP, economic problems are enemies, as with *pobreza* ('poverty'), *desigualdad* ('inequality'), *desequilibrio* ('imbalance'), *vulnerabilidad* ('vulnerability') and *desencadenar* ('unchain'). See, for example, 5:

> (5) *Estos* **desequilibrios alejan aún más** *el logro de los objetivos de erradicar la pobreza y crear empleos decentes para todos.* ("These **imbalances push** the targets of eradicating poverty and creating decent jobs for all **further** from reach", in the English version).

Other conceptualizations present positive words in a scenario where economy is a living/human organism with words like *desarrollo* ('development'), *crecimiento* ('growth'), *logro* ('achievement') and economic systems and structures are objects and buildings to be repaired, as in *multilateral*, *diversificación* ('diversification'), *apoyar* ('support'), *transparencia* ('transparency'):

> (6) *La* **diversificación reforzará** *la resiliencia y, en muchos casos, es también una necesidad ambiental.* ("**Diversification will strengthen** resilience, and in many cases is also an environmental necessity").

In WEOES economy as a conflict is also present, with words like *tensión, riesgo, disputa, restrictive*; also, economic problems are objects that experiment breakdowns, with *endurecimiento* ('tightening'), *deterioro* ('deterioration') and *cierre* ('shutdown'). Let us see an example:

> (7) *[..] otros factores que agudizan el* **riesgo** *a la baja son la incertidumbre acerca del programa de políticas de los nuevos gobiernos, un* **cierre** *prolongado del gobierno federal en Estados Unidos, y* **tensiones** *geopolíticas en Oriente Medio y Asia oriental.* ("[..] other factors adding downside **risk** include uncertainty about the policy agenda of new administrations, a protracted US federal government **shutdown**, as well as geopolitical **tensions** in the Middle East and East Asia").

The economy as a journey is, as in its English version, present in sentences containing words such as *desaceleración* ('slowdown'), *barreras* ('barriers'),

Brexit, and *subida*, translated from 'high' or 'higher,' frequently used in the context of interest rates and tariffs*:*

> (8) A pesar del estímulo fiscal que neutraliza en parte el impacto de la **subida** de los aranceles de Estados Unidos, la economía de *China* se desacelerará. ("Despite fiscal stimulus that offsets some of the impact of **higher** US tariffs, China's economy will slow down").

Lastly, country economies and markets in WEOES show a human element, both in negative and in positive sentiment words –*preocupación* (concern), *aversión* ('aversion'), *incertidumbre* ('uncertainty'), *actitud* ('sentiment'), *crecimiento* ('growth') and *moderación* ('moderation'). Our final example shows this:

> (9) [..] *si la **actitud** del mercado se recupera, una mayor confianza y condiciones financieras más favorables podrían reforzarse mutuamente y elevar el **crecimiento** por encima del pronóstico de base.* ("If [..] market **sentiment** recovers, then improved confidence and easier financial conditions could reinforce each other to lift **growth** above the baseline forecast").

3.2. Phase two. Deploying Sentiment Analysis

As Garofalo (2017: 57) points out, Sentiment Analysis endows discourse analysis with useful empirical data for the researcher, offering computational and objectifiable keys to strengthen the merely qualitative study of observable phenomena. As noted above, this paper uses the *Lingmotif* software (Moreno-Ortiz, 2017) to find out the polarity and intensity of feeling in the two sets of reports under study. Specifically, the difference between *Lingmotif* –developed by the Tecnolengua group of the University of Málaga– and other opinion mining methods lies in the fact that the system admits the processing of extensive texts, and not just mini-texts in the style of tweets. Additionally, it includes an internal lexicon with words and phrases with emotional weight which are detected in the process of analysis. *Lingmotif* evaluates the text under analysis on a scale from 0 to 100 from "extremely negative" to "extremely positive", based on a semantic sentiment orientation in the text (Text Sentiment Score, or TSS). It also offers a rating scale of sentiment intensity (Text Sentiment Intensity, or TSI), calculated as an average between emotion-ridden and emotion-free ones, assigning ratings on a scale from -5 to +5, where 0 is an expression of neutrality. It is important to note at this point that, on the one hand, the software not only detects simple units, but also localizes syntagmatic units, so that, for example, the positive term 'buoyant' becomes

negative when added the modifier 'less' and the negative term 'corruption' acquires a positive value when the verbal form 'reducing' is added (both in WESP). This is possible due to the existence of context rules (of inversion, intensification and attenuation) in the system, to accommodate possible sentiment modifiers (Moreno-Ortiz, 2017: 133). These context rules (CVS or 'contextual valence shifters') are *Lingmotif*'s mechanism to detect words or phrases that may appear in the immediate vicinity of the identified value unit, modifying its valence and increasing, neutralizing or giving it an opposite value to that originally given (Fernández-Cruz & Baixauli-Pérez, 2018: 45).

Figures 1 to 4 show the overall results provided by the software:
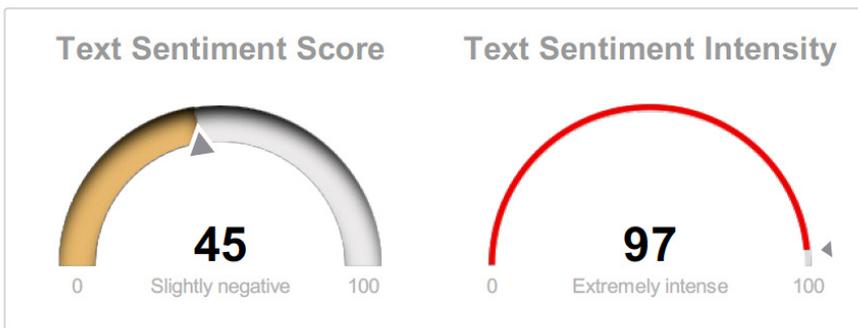
TSS	TSI	CVS segments	Positive items	Negative items	Neutral items	Positive Score	Negative Score
45	97	43	154	175	1271	291	360

Figure 1. WESP Sentiment Score and Intensity values.
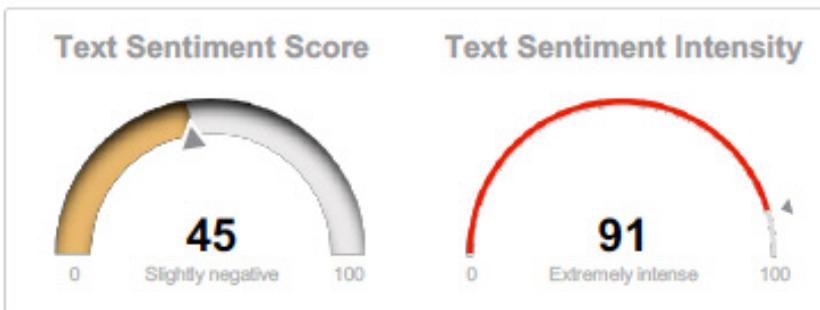
TSS	TSI	CVS segments	Positive items	Negative items	Neutral items	Positive Score	Negative Score
45	91	37	167	197	1443	302	389

Figure 2. WESPES Sentiment Score and Intensity values.

Initially, the results seem to, somehow, contradict our initial diagnosis as to the –comparatively– more negative character of the IMF reports, compared to the UN ones. From Figures 1 and 2 above, it is clear that the values of the UN report in the English original and its translation seem similar, with identical TSSs, weighing the scores of positive, negative and neutral lexical items. These two figures show how they are both slightly (and identically) negative and somewhat different in their TSIs: 97 for WESP and 91 for WESPES (both extremely intense).

TSS	TSI	CVS segments	Positive items	Negative items	Neutral items	Positive Score	Negative Score
42	74	45	123	187	1813	231	375
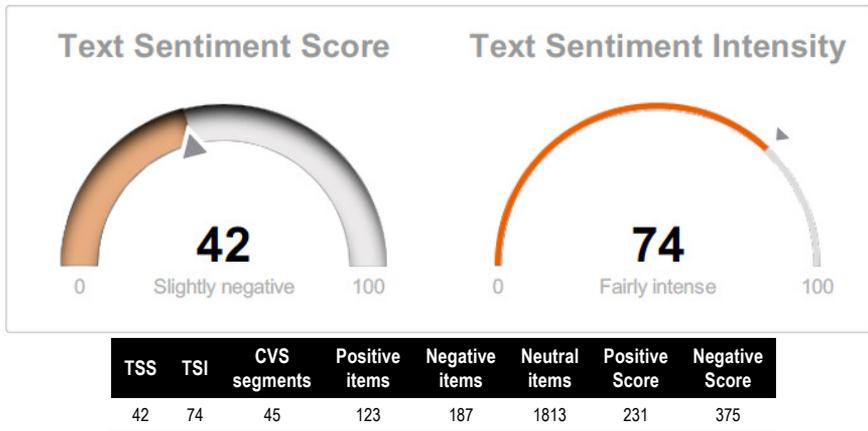
Figure 3. WEO Sentiment Score and Intensity values.

TSS	TSI	CVS segments	Positive items	Negative items	Neutral items	Positive Score	Negative Score
41	71	39	134	216	2001	229	415
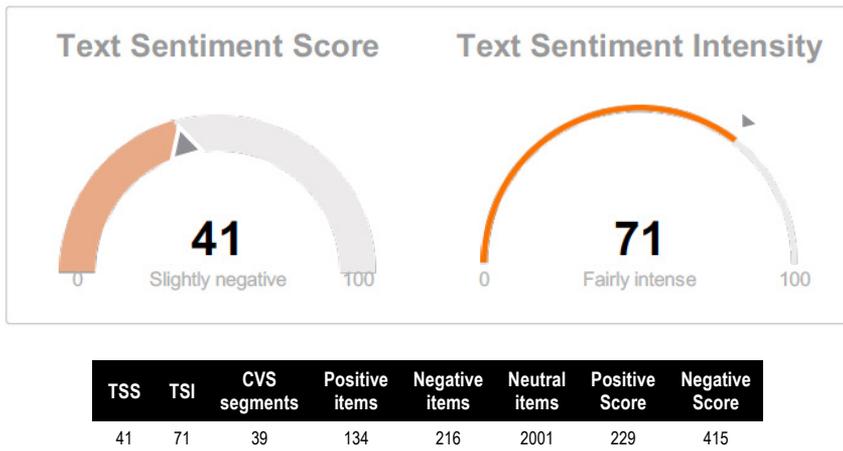
Figure 4. WEOES Sentiment Score and Intensity values.

In turn, the results for the IMF reports show that both sentiment score and intensity are marginally weaker in the Spanish translation but that, still, both WEO and WEOES are slightly negative and fairly intense.

If, on the other hand, we take the two sets of reports, the UN's and the IMF's, an important difference in intensity –they are evaluated as 'extremely' and 'fairly' intense, respectively– is observable between them. TSI is calculated as the proportion of sentiment (positive or negative) vs neutral scores. Besides, lower intensity values in the IMF reports as compared to the UN's ones are directly related to two variables, length and lexical richness. As far as length is concerned, since intensity is calculated in the software as an absolute measure and categorized by text length, the longer the text (in this case, WEO and WEOES), the more improbable for its words to be emotion-laden than in the shorter ones (WESP and WESPES). Lexical richness is also relevant: WESP was by far the most lexically rich text, which accounts for its higher intensity, and, at the other side of the scale, WEOES was the longest and least lexically rich text, and also the text with the lowest intensity. TSS, on the other hand, is calculated weighing positive and negative items in proportion to neutral scores. In the light of our lexical reports, we predicted that WEO and WEOES would be more negative than WESP and WESPES, but in fact the software shows that the contrary is true. However, the lesser negative polarity in the IMF's reports may be explained because of the substantially lower number of neutral items in WESP and WESPES as compared to WEO and WEOES. However, *Lingmotif*'s findings regarding the number of positive and negative items somehow confirm our results in the lexical part of the study. Even if the four texts seem to be equally negative, and disregarding the presence of neutral items, it is verifiable that WEO and WEOES do have more negative items and higher negative scores (187 and 216, respectively) than WESP and WESPES (175 and 197, respectively).

Subsequently, and upon the basis of the lexical study in the previous subsection, a plugin or reference dictionary was prepared for each subcorpus to refine the results of the analysis and provide value units linking to the conceptual framework of each of the reports. Because sentiment is very closely connected to topic, this additional wordlist was prepared to complement the central lexicon *Lingmotif* provides and takes into account the sentiment in our taxonomy. In the procedure followed, the words in context, and their collocations and n-grams were scrutinized to generate a set of value units selected for their representativeness and were assigned a negative or positive value in accordance with their metaphorical meaning in the text. The wildcard ALL was used to match all parts of speech:

<aversion>,ALL,-5	<a_la_baja>,ALL,-3
<barrier>,ALL,-5	<actitud>,ALL,2
<brexit>,ALL,-5	<amenaza>,ALL,-3
<burden>,ALL,-5	<aversión>,ALL,-5
<concern>,ALL,-3	<barrera>,ALL,-5
<contagion>,ALL,-5	<brexit>,ALL,-5
<contraction>,ALL,-5	<cierre>,ALL,-5
<develop>,ALL,3	<controversia>,ALL,-3
<disorderly>,ALL,-5	<crecimiento>,ALL,3
<dispute>,ALL,-5	<desaceleración>,ALL,-5
<diversification>,ALL,3	<desarrollo>,ALL,3
<elevated>,ALL,-3	<desencadenar>,ALL,-2
<escalate>,ALL,-5	<desequilibrio>,ALL,-3
<fail>,ALL,-5	<desigualdad>,ALL,-5
<fragility>,ALL,-5	<deterioro>,ALL,-3
<fundamental>,ALL,3	<disputa>,ALL,-5
<growth>,ALL,3	<diversificación>,ALL,3
<heightened>,ALL,-3	<eficaz>,ALL,3
<hike>,ALL,-3	<endurecimiento>,ALL,-5
<inequality>,ALL,-5	<escalada>,ALL,-3
<large>,ALL,-3	<flojo>,ALL,-3
<momentum>,ALL,5	<fundamental>,ALL,3
<multilateral>,ALL,3	<imperativo>,ALL,-3
<poverty>,ALL,-5	<ímpetu>,ALL,-5
<progress>,ALL,5	<incertidumbre>,ALL,-5
<resolve>,ALL,2	<levemente>,ALL,-3
<resource>,ALL,3	<logro>,ALL,5
<responsive>,ALL,3	<moderación>,ALL,3
<retaliation>,ALL,-5	<multilateral>,ALL,3
<risk>,ALL,-5	<obligación>,ALL,-3
<sentiment>,ALL,2	<obstáculo>,ALL,-5
<severe>,ALL,-3	<pobreza>,ALL,-5
<shadow>,ALL,-5	<preocupación>,ALL,-3
<significant>,ALL,-3	<restrictiva>,ALL,-5
<shutdown>,ALL,-5	<receptivo>,ALL,3
<slow>,ALL,-3	<riesgo>,ALL,-5
<slowdown>,ALL,-5	<sostenible>,ALL,5
<softening>,ALL,-3	<subida>,ALL,-3
<sustainable>,ALL,5	<tensión>,ALL,-5
<steep>,ALL,-3	<transparencia>,ALL,5
<tension>,ALL,-5	<tregua>,ALL,5
<tighten>,ALL,-5	<vulnerabilidad>,ALL,-3
<transparency>,ALL,5	
<truce>,ALL,5	
<uncertainty>,ALL,-5	
<unchanged>,ALL,-3	
<vital>,ALL,3	
<vulnerability>,ALL,-5	
<weak>,ALL,-3	

Table 7. Ad-hoc plugin for English and Spanish.

Table 7 shows the plugins made for the respective subcorpora in English and in Spanish, with a difference in amount (49 items in the English plugin, 42

in the Spanish one) reflecting concomitances with the taxonomy above. The keywords were selected manually in the segments processed by *Lingmotif,* taking note of those that, according to our results, were outside the valuation assigned by default by the internal dictionary of the application, or whose valuation was newly adjusted to concur with our conceptual study. Once the keywords had been selected, they were assigned a negative or positive valence, depending on their context in the text, in a scale from -5 to +5. Thus, for example, words that in context were found to very negatively depict the economy as a conflict scenario ('dispute', 'risk', 'escalate' and 'tension'; *disputa, riesgo, tensión*), or as a journey ('Brexit', 'barrier', 'fall', 'burden', 'slowdown'; *Brexit, barrera, obstáculo, desaceleración*) were assigned a -5 valence, whereas intensifiers with a negative value ('severe', 'heightened') were all found to contain less negativity and were assigned a -3 valence. Most positive words conceptualizing economy as a living organism ('develop', 'growth', 'responsive'; *desarrollo, crecimiento, receptivo*), and framing economic systems as objects or buildings ('multilateral', 'diversification'; *multilateral, diversificación*) were assigned a 3 valence, since they were found to have a moderate (not very intense) sentiment weight in context. Likewise, intensifiers with a positive value (almost absent in the Spanish subcorpora and with scarce examples in the English ones, like 'vital' or 'fundamental') were assigned a 3 valence. Only words with more emotional weight in context, like 'transparency', 'momentum', 'truce' or 'sustainable' (*transparencia, , ímpetu, tregua, sostenible*) were assigned a 5 valence.

Figure 5 shows the results of the analysis performed by *Lingmotif*:

Corpus	TSS	TSI	Sent. Items	Pos. Items	Neg. Items	Neut. Items
WESP	48	100	415	223	192	1170
WEO	37	100	420	190	230	1689
WESPES	44	100	428	218	210	1372
WEOES	34	100	440	195	245	1904

Figure 5. New values assigned the 4 subcorpora with ad hoc plugin.

One of the most striking findings is the fact that the four reports now present the maximum TSI –100, all of them "extremely intense"– score. This is undoubtedly due to the fact that the number of sentiment items has risen in the scrutiny of the reports overall, the number of neutral items having, consequently, decreased. Sentiment polarities have also changed, predictably

going down in the two reports by the IMF (from 42 to 37 in the English original and from 41 to 34 in the Spanish one, both sets turning from slightly negative to fairly negative in sentiment polarity) and increasing in the case of the UN's reports (from 45 to 48 sentiment polarity in WESP and from 45 to 44 in WESPES). As remarked upon above, these changes are in line with the incorporation of our findings in the previous section. In the first place, adding up all the emotion-laden items as sentiment factors implies that intensity increases, since new sentiment words were integrated into the plugin and some others were granted more intensity than previously, as is the case of all the items assigned a -5 or 5 valence. Secondly, the deployment of our new taxonomy also points to differences in sentiment scores. In fact, it is the reason for the larger amount of negative items in the IMF reports (187 before, to 230 after the plugin in WEO, 216 to 245 in WEOES) and the greater number of positive items in the UN ones (154 to 223 in WESP, 167 to 218 in WESPES). Hence, WEO, as the most adverse of reports in our corpus, show fragments that *Lingmotif* evaluates as having an extremely negative score, where items that had not been picked up by the software as negative, now are:

> (10) China's economy **slowed** in 2018 mainly due to financial regulatory **tightening** to **rein in shadow** banking activity and off-budget local government investment, and as a result of the widening trade **dispute** with the United States, which intensified the **slowdown** toward the end of the year.

And in its Spanish version, in WEOES:

> (11) *La economía china se* ***desaceleró*** *en 2018 debido principalmente al* ***endurecimiento*** *de las regulaciones financieras con el fin de* ***frenar*** *la actividad de la banca paralela y excluir del presupuesto la inversión de los gobiernos locales, y también como resultado de la creciente* ***disputa*** *comercial con Estados Unidos, que* ***agravó*** *la* ***desaceleración*** *hacia finales del año.*

As we can see in the Spanish version, the verbal form *agravó* constitutes a more explicit, negative version than its referent in the original, 'intensified'.

Additionally, an increase of positive polarity is observable in WESP and WESPES:

> (12) Nevertheless, this must leave space for countries to adopt **effective** tax policies that **enhance** domestic public finance for **sustainable development**.

(13) *Sin embargo, esto debe dejar espacio para que los países adopten políticas fiscales* ***eficaces*** *que* ***mejoren*** *las finanzas públicas nacionales en pos del* ***desarrollo sostenible***.

All in all, the integration of the plugin into the process of analysis with *Lingmotif* has shown how connected sentiment is to the way in which information is conceptualized by the sender of the message. This conceptualization is made, in economic discourse, through the deployment of an array of discourse metaphors that transmit sentiment and attitude to heighten emotional impact. Even if differences in intensity and polarity before and after the application of the plugin are not abysmal, the results are really relevant, since they confirm that there exist interesting asymmetries between texts, aligned with the intentions of their issuers.

4. Discussion and conclusions

Our study has endeavoured to demonstrate how the combination of qualitative and quantitative linguistic analyses can offer interesting data as to the way in which institutions issue very similar financial information in different ways, according to their aims and scope. The reports under scrutiny show that the 2008 crisis is not over, and seems to lengthen towards a new economic mayhem in 2020; but the UN and the IMF do not communicate this information in the same way. From the onset of this study we hypothesized that the lexicon of the reports under analysis would combine technical terms belonging to the area of economics, together with emotion-laden items with a metaphorical value depicting sentiment, but with uneven combinations, in tune with the institution's role and goals. In fact, our initial lexical analysis showed how the IMF reports seemed to be more technical and scarcer in emotion-laden items and discourse metaphors than the UN's. One could infer from such results that the IMF (a body which is solely involved in macroeconomic analyses and recommendations) is more bent on technical issues and less involved emotionally. Nonetheless, our processing of the texts through *Lingmotif* has unveiled that the reports issued by this institution are, in fact, acutely intense, and even more negative in character than the UN's. This appears to support the discourse metaphor constellations uncovered initially, which suggested that the IMF resorts to a wider range of conceptualizations (the economy is a battlefield, but also a sick living organism, a vehicle whose failure to get to a destination is mapped as

wreckage– and its problems, objects in need of repairing. We illustrated all of this above, but the following extract also summarizes the institution's dire warnings:

(14) Risks to global growth tilt to the **downside**. An **escalation** of trade **tensions** beyond those already incorporated in the forecast remains a key source of **risk** to the outlook. Financial conditions have already **tightened** since the fall. A range of triggers beyond **escalating** trade **tensions** could spark a further **deterioration** in **risk sentiment** with **adverse** growth implications, especially given the high levels of public and private debt.

On the other hand, in the first batch of results, the UN reports actually showed more sentiment words overall, exuding a social inspiration that is seemingly scant in the other group of reports. This, and the higher number of positive items, showed a wider-ranging scope and a more positive character in this report than in the IMF's. Eventually, processing WESP and WESPES with the SA software confirmed that the UN reports contain negative items, but these are actually fewer than the positive ones. In tune with such processing, we saw how the discourse metaphors in the UN reports tended to stick more narrowly to the framing of the economic situation as an arena of conflict, but also used very positive imagery with words such as 'growth', 'achievement', 'transparency' and 'multilateral', which point to an incessant fight of economies towards improvement and wellbeing:

(15) Strengthening **multilateralism** is, therefore, central to advancing **sustainable development** across the globe.

(16) Trade in services also contributes to **inclusiveness, resilience,** and **diversification**.

This conceptualization could respond to the formulation that a weak economy is something that countries have to fight against to protect their citizens, but that there might be a series of possible way-outs for the solution to problems, a sense of shared objectives in the social sphere to overcome them, in the picture portrayed by the UN's reports.

In conclusion, the present study has tried to demonstrate that the discourse of economy is not exempt from emotion, nor are the official reports on the situation of the world finances –by institutions as prominent as the UN and the IMF– written in a detached way. On the contrary, international think tanks

emit their diagnoses on the state of the global economy deploying emotional triggers with the aim of promoting international response, mainly from economic policymakers and operators. This study has carried out a scrutiny of the emotion-laden items and discourse metaphors with positive or negative values that these institutions apply when issuing their annual reports directed to warn the world about the symptoms of the crisis that they seem to predict. Nevertheless, there is a lack of linearity in sentiment polarity and intensity between reports. As we stated above, our second objective was to detect which of the reports –the IMF's or the UN's– carried more emotional weight, and whether such weight would be maintained in their translated versions. On the one hand, this study has proved that the way in which the global economic scenario is pictured is different, in line with the sociological or ideological purposes that each institution is set to attain. On the other hand, it has unveiled slight rhetorical-linguistic differences between the economic discourse of the two languages. Overall, there are differences of verbalization in the English originals and their Spanish translations, since even if the versions transmit analogous meanings overall, they are embodiments of the different ways to conceive economic discourse in either language, where English has conciseness as one of its main characteristics and Spanish tends to be more verbose and categorical, mainly in the use of adverbials. More importantly, the polarized expression of positivity or negativity is embedded in the way that each think tank describes the economic difficulties that the world has ahead of it, and the role that such an institution plays in the global scenario. Hence, probably our results, if restricted in size and scope to these reports, may be 'softer', in the case of the UN, 'harsher', regarding the IMF, in line with the way in which each institution depicts itself: the UN being broader in its scope, highlighting social problems and environmental issues that affect world economies from the humanitarian standpoint; the IMF's bleak discourse, on the other hand, showing the institution's role as a watchdog in charge of monitoring changes in the economy, as it issues regulatory advice to governments in the face of a new economic havoc that seems to loom in the world's horizon.

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NOTES

[1] According to iFOREX, "market sentiment is the combined attitude of investors toward a specific market or instrument", as in <https://www.iforex.in/market-sentiment>.

[2] WESP is available at <https://www.un.org/development/desa/statements/asg/mr-harris/2019/01/launch-of-wesp-2019.html>.

[3] WEO is available at <https://www.imf.org/en/Publications/WEO>.

[4] UNTERM is available at <https://unterm.un.org/unterm/portal/welcome>.