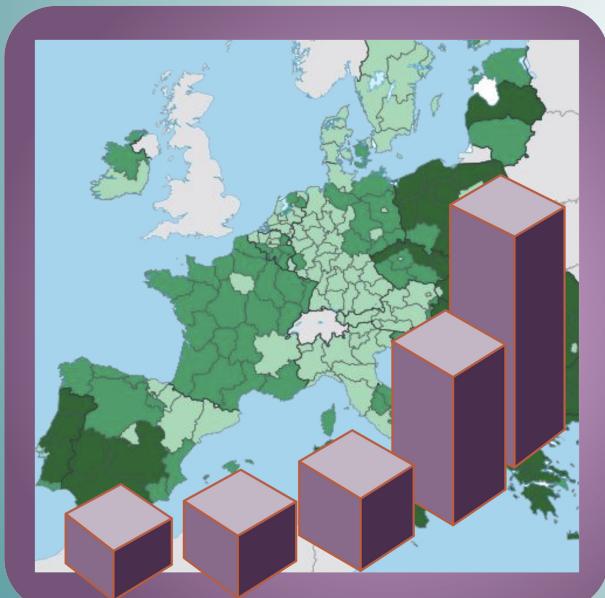


Economía Regional

**Práctica 5. Herramientas interactivas para el análisis territorial en Europa:
el diseño de mapas**



**Marcos Fernández Gutiérrez
Ana Lara Gómez Peña**

Departamento de Economía

Este tema se publica bajo Licencia:
[Creative Commons BY-NC-SA 4.0](https://creativecommons.org/licenses/by-nc-sa/4.0/)



ACTIVIDAD 1

- ▶ A partir de los datos regionales (NUTS 2) de la Oficina Estadística de la Unión Europea ‘Eurostat’:

<https://ec.europa.eu/eurostat/data/database>

- a. Descarga los datos del PIB a precios corrientes (nominal) de las regiones NUTS 2 de Alemania, España y Reino Unido en los años 2010 y 2018 (en millones de euros), así como de la media europea y del país. Expresa el porcentaje de cada región respecto al total nacional:
- **Serie de datos:** ‘Gross domestic product (GDP) at current market prices by NUTS 2 regions (nama_10r_2gdp)’.

ACTIVIDAD 1

DATABASE

- Data navigation tree
- Database by themes
 - General and regional statistics
 - European and national indicators for short-term analysis (euroind) M
 - Regional statistics by NUTS classification (reg)
 - Area by NUTS 3 region (reg_area3) M i
 - Regional agriculture statistics (reg_agr)
 - Regional demographic statistics (reg_dem)
 - Regional economic accounts (reg_eco10) M
 - Gross domestic product indicators (reg_eco10gdp)
 - Gross domestic product (GDP) at current market prices by NUTS 2 regions (nama_10r_2gdp) i
 - Average annual population to calculate regional GDP data (thousand persons) by NUTS 3 regions (nama_10r_3popgdp) i
 - Gross domestic product (GDP) at current market prices by NUTS 3 regions (nama_10r_3gdp) i
 - Real growth rate of regional gross value added (GVA) at basic prices by NUTS 2 regions - percentage change on previous year (nama_10r_2gvagr) i
 - Branch and household accounts (reg_eco10brch)
 - Regional education statistics (reg_educ) M

Práctica 5. Herramientas interactivas para el análisis territorial en Europa: el diseño de mapas

ACTIVIDAD 1

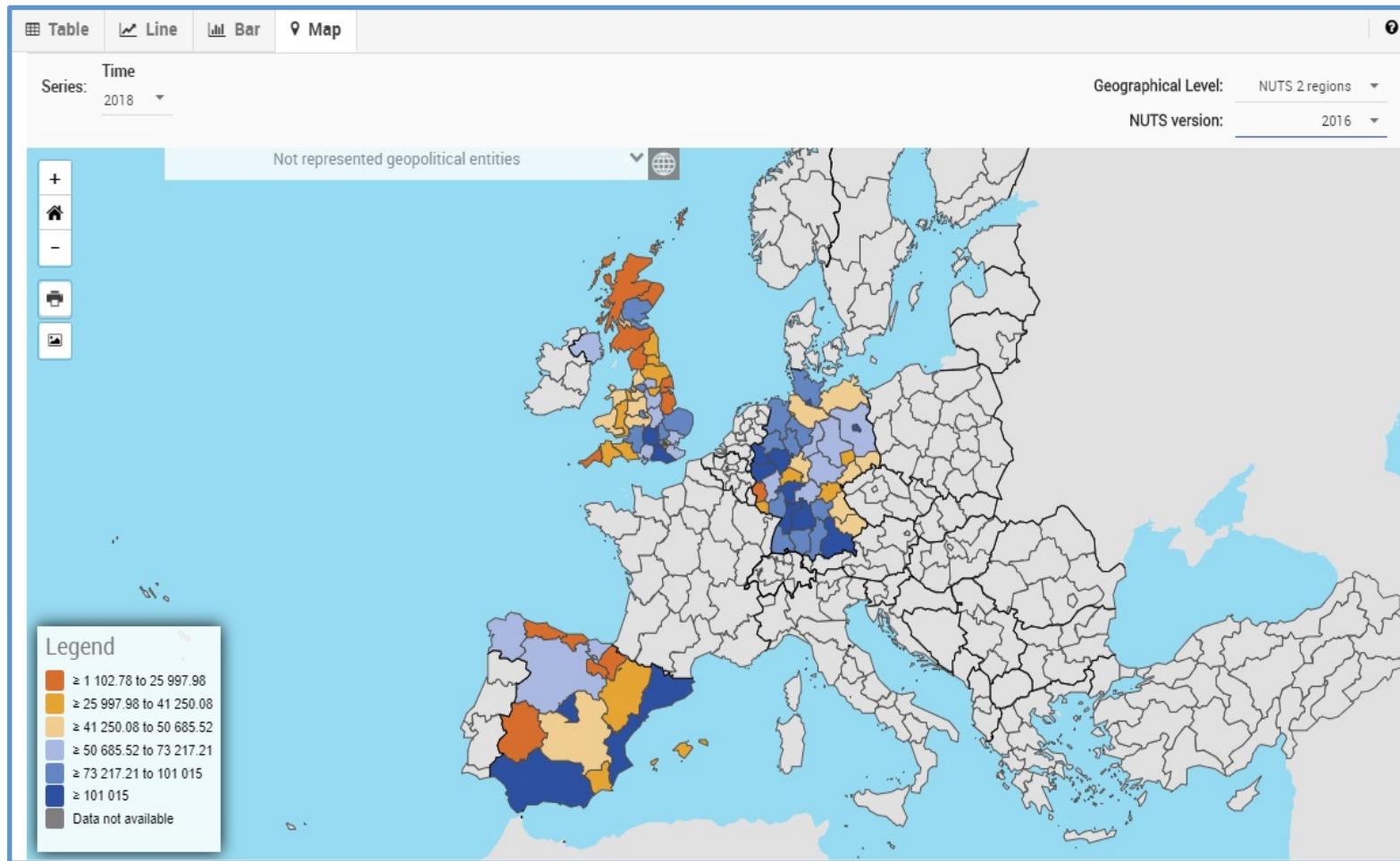
The screenshot shows a web-based data browser interface for Eurostat's EC data. The main area displays a table of Gross Domestic Product (GDP) data for various regions in Germany, categorized by NUTS 2 regions. The columns represent the year (2010, 2015, 2018), the geographical entity (reporting), and the value in millions. The data shows significant variation between regions, such as the European Union reaching approximately 18,978 billion euros in 2018, while some smaller regions like Tübingen and Braunschweig have much lower values. A context menu is open on the right side of the screen, specifically over the download options. A large red arrow points to the 'Spreadsheet (.xlsx)' item in the list, which is highlighted. Other options in the menu include 'SDMX 2.1', 'TSV', 'Full dataset [NAMA_10R_2GDP_custom_171926]', 'SDMX 2.1', 'TSV', 'Source dataset [NAMA_10R_2GDP]', 'Spreadsheet (.xlsx)', 'SDMX 2.1', 'TSV', and 'Options and other formats'.

GEO	2010	2015	2018
European Union - 27 countries (from 2010)	18 978 266,91	12 213 172,55	13 483 857,12
European Union - 28 countries (2013-2020)	12 845 662,91	14 854 107,55	15 987 594,12
Germany (until 1990 former territory of the FRG)	2 564 400	3 030 070 (p)	3 344 370 (e)
Stuttgart	158 881,1 (e)	196 383,38 (e)	213 361,65 (e)
Karlsruhe	97 852,16 (e)	112 855,28 (e)	123 382,15 (e)
Freiburg	65 458,67 (e)	79 038,33 (e)	86 859,14 (e)
Tübingen	59 836,19 (e)	72 039,41 (e)	80 753,16 (e)
Oberbayern	192 501,5 (e)	242 949,81 (e)	273 695,47 (e)
Niederbayern	36 362,27 (e)	43 537 (e)	48 465,84 (e)
Oberpfalz	34 346,85 (e)	41 953,95 (e)	47 273,39 (e)
Oberfranken	30 458,91 (e)	36 397,35 (e)	40 594,82 (e)
Mittelfranken	57 805,45 (e)	70 062,89 (e)	78 647,47 (e)
Unterfranken	48 858,82 (e)	47 928,27 (e)	53 689,63 (e)
Schwaben	55 145,51 (e)	67 412,51 (e)	74 779,63 (e)
Berlin	102 587,27 (e)	124 685,78 (e)	145 698,89 (e)
Brandenburg	55 724,79 (e)	65 599,4 (e)	72 872,45 (e)
Bremen	26 465,33 (e)	30 799 (e)	33 707,61 (e)
Hamburg	94 029,05 (e)	109 850,8 (e)	119 045,59 (e)
Darmstadt	162 703,05 (e)	187 582,45 (e)	207 712,89 (e)
Gießen	28 260,66 (e)	32 355,25 (e)	35 924,61 (e)
Kassel	35 484,37 (e)	40 955,81 (e)	45 406,1 (e)
Mecklenburg-Vorpommern	34 891,46 (e)	40 246,82 (e)	44 450,17 (e)
Braunschweig	50 629,04 (e)	57 713,38 (e)	70 732,9 (e)
Hannover	65 191,71 (e)	74 157,99 (e)	82 753,09 (e)

EC data browser (Latest commit 3a195b738, built on 2020-11-04T10:11:34.156Z)

ACTIVIDAD 1

Gross Domestic Product (GDP) at current market prices by NUTS 2 regions



ACTIVIDAD 1

Practica tema 5 Economía Regional 2020

	A	B	C	D	E	F	G
1							
2		Gross domestic product (GDP) at current market prices by NUTS 2 regions [nama_10r_2gdp]					
3		GDP (million euro, current prices)					
4		PIB (precios corrientes, millones de euros)					
5	TIME	2010	2015	2018	2010 (% del país)	2018 (% del país)	
6	European Union - 27 countries (from	10,978,266.91	12,213,172.55	13,483,857.12			
7	European Union - 28 countries (2013	12,845,662.91	14,854,107.55	15,907,594.12			
8	Germany (until 1990 former territory	2,564,400	3,030,070	3,344,370	100	100	
9	Stuttgart	158,881.1	196,383.38	213,361.65	6	6	
10	Karlsruhe	97,852.16	112,855.28	123,302.15	4	4	
11	Freiburg	65,450.67	79,038.33	86,859.14	3	3	
12	Tübingen	59,836.19	72,039.41	80,753.16	2	2	
13	Oberbayern	192,501.5	242,949.81	273,695.47	8	8	
14	Niederbayern	36,362.27	43,537	48,465.84	1	1	
15	Oberpfalz	34,346.85	41,953.95	47,273.39	1	1	
16	Oberfranken	30,458.91	36,397.35	40,594.82	1	1	
17	Mittelfranken	57,805.45	70,062.89	78,647.47	2	2	
18	Unterfranken	40,858.82	47,928.27	53,689.63	2	2	
19	Schwaben	55,145.51	67,412.51	74,779.63	2	2	
20	Berlin	102,587.27	124,685.78	145,698.09	4	4	
21	Brandenburg	55,724.79	65,599.4	72,872.45	2	2	
22	Bremen	26,465.33	30,799	33,707.61	1	1	
23	Hamburg	94,029.05	109,850.8	119,045.59	4	4	

ACTIVIDAD 1

- b. Descarga los datos de empleo total de las regiones NUTS 2 de Alemania, España y Reino Unido en los años 2010 y 2018, así como de la media europea y del país, y calcula la tasa de variación entre ambos años (en porcentaje). Representa dichas tasas de variación del empleo en un gráfico de barras:
- **Serie de datos:** ‘Employment (thousand persons) by NUTS 3 regions (nama_10r_3empers)’.

ACTIVIDAD 1

European Commission > Eurostat > Data > Database

COVID-19: Statistics serving Europe

DATABASE

Data navigation tree

Database by themes

General and regional statistics

- European and national indicators for short-term analysis (euroind) M
- Regional statistics by NUTS classification (reg)
 - Area by NUTS 3 region (reg_area3) M i
 - Regional agriculture statistics (reg_agr)
 - Regional demographic statistics (reg_dem)
 - Regional economic accounts (reg_eco10)
 - Gross domestic product indicators (reg_eco10gdp)
 - Branch and household accounts (reg_eco10brch)
 - Gross value added at basic prices by NUTS 3 regions (nama_10r_3gya) i
 - Gross fixed capital formation by NUTS 2 regions (nama_10r_2gfcf) i
 - Compensation of employees by NUTS 2 regions (nama_10r_2coe) i
 - Employment (thousand persons) by NUTS 3 regions (nama_10r_3empers) i
 - Employment (thousand hours worked) by NUTS 2 regions (nama_10r_2emhrw) i
 - Data browser of households by NUTS 2 regions (nama_10r_2hhinc) i
 - Regional education statistics (reg_educ) M
 - Regional science and technology statistics (reg_sct)
 - Regional structural business statistics (reg_shs)

Práctica 5. Herramientas interactivas para el análisis territorial en Europa: el diseño de mapas

ACTIVIDAD 1

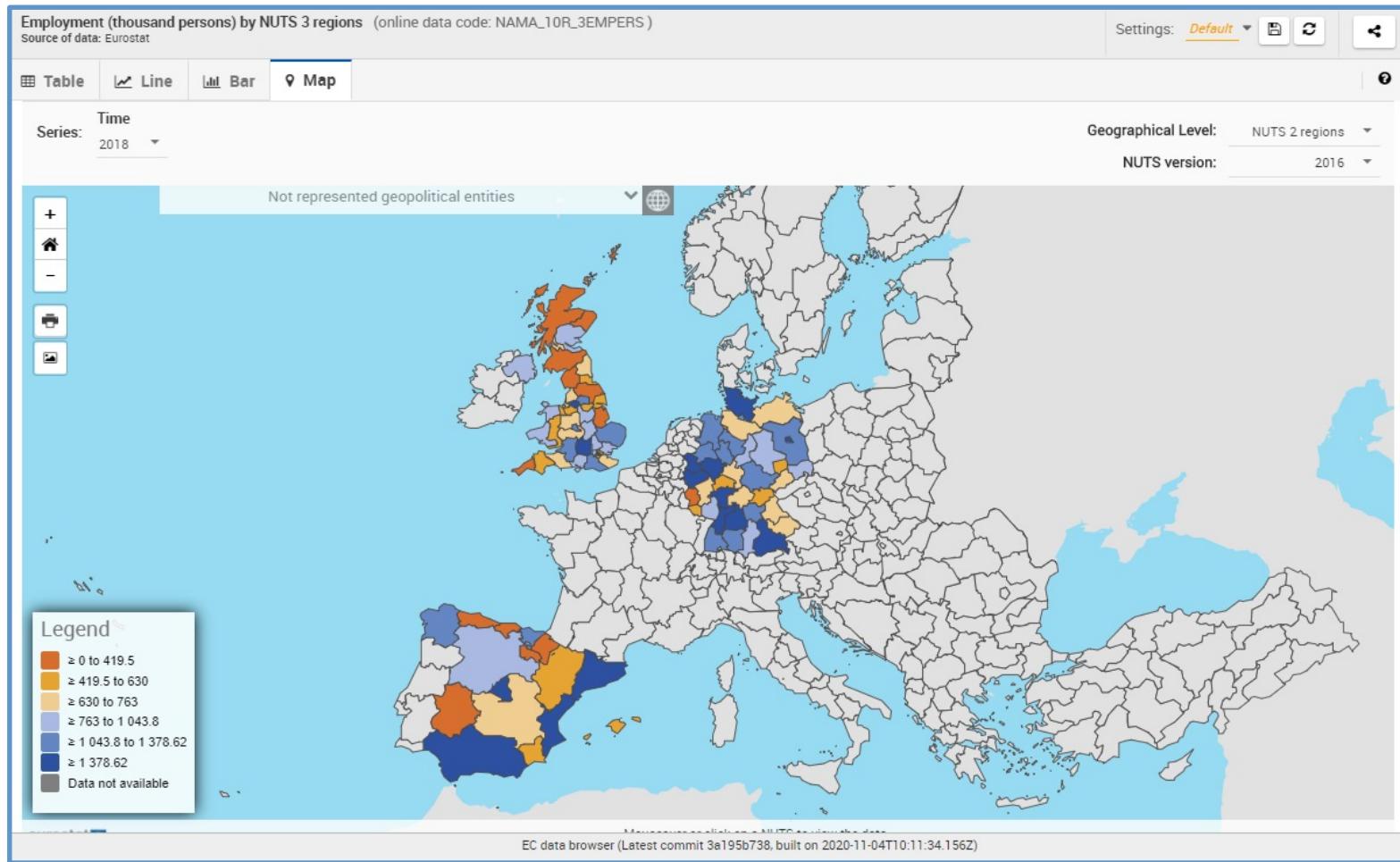
The screenshot shows the Eurostat Data Explorer interface. The main area displays a table of employment data for NUTS 3 regions in Germany. The table has two columns: 'TIME' (2010 and 2018) and 'GEO' (list of regions). The data shows employment figures in thousands of persons. The right sidebar provides download options for the data, with a red arrow pointing to the 'Spreadsheet (.xlsx)' link.

GEO	2010	2018
European Union - 27 countries (from 2020)	195 890.94	206 652.04
European Union - 28 countries (2013-2020)	225 117.81	239 095.01
Germany (until 1990 former territory of the FRG)	41 048	44 854 (p)
Stuttgart	2 183.53 (e)	2 438.86 (e)
Karlsruhe	1 461.53 (e)	1 589.61 (e)
Freiburg	1 123.35 (e)	1 256.42 (e)
Tübingen	951.7 (e)	1 055.34 (e)
Oberbayern	2 487.73 (e)	2 884.39 (e)
Niederbayern	611.89 (e)	682.76 (e)
Oberpfalz	572.38 (e)	648.47 (e)
Oberfranken	549.91 (e)	598.09 (e)
Mittelfranken	938.96 (e)	1 057.21 (e)
Unterfranken	688.04 (e)	739.17 (e)
Schwaben	931.87 (e)	1 040.12 (e)
Berlin	5 601.01	5 815.30

Data on this page only

- Spreadsheet (.xlsx)
- SDMX 2.1
- TSV
- Classification of e
- Full dataset [NAMA_10R_3EMPERS__custom_172789]
- Spreadsheet (.xlsx)
- SDMX 2.1
- TSV
- Source dataset [NAMA_10R_3EMPERS]
- SDMX 2.1
- TSV
- Options and other formats

ACTIVIDAD 1



ACTIVIDAD 1

ACTIVIDAD 1

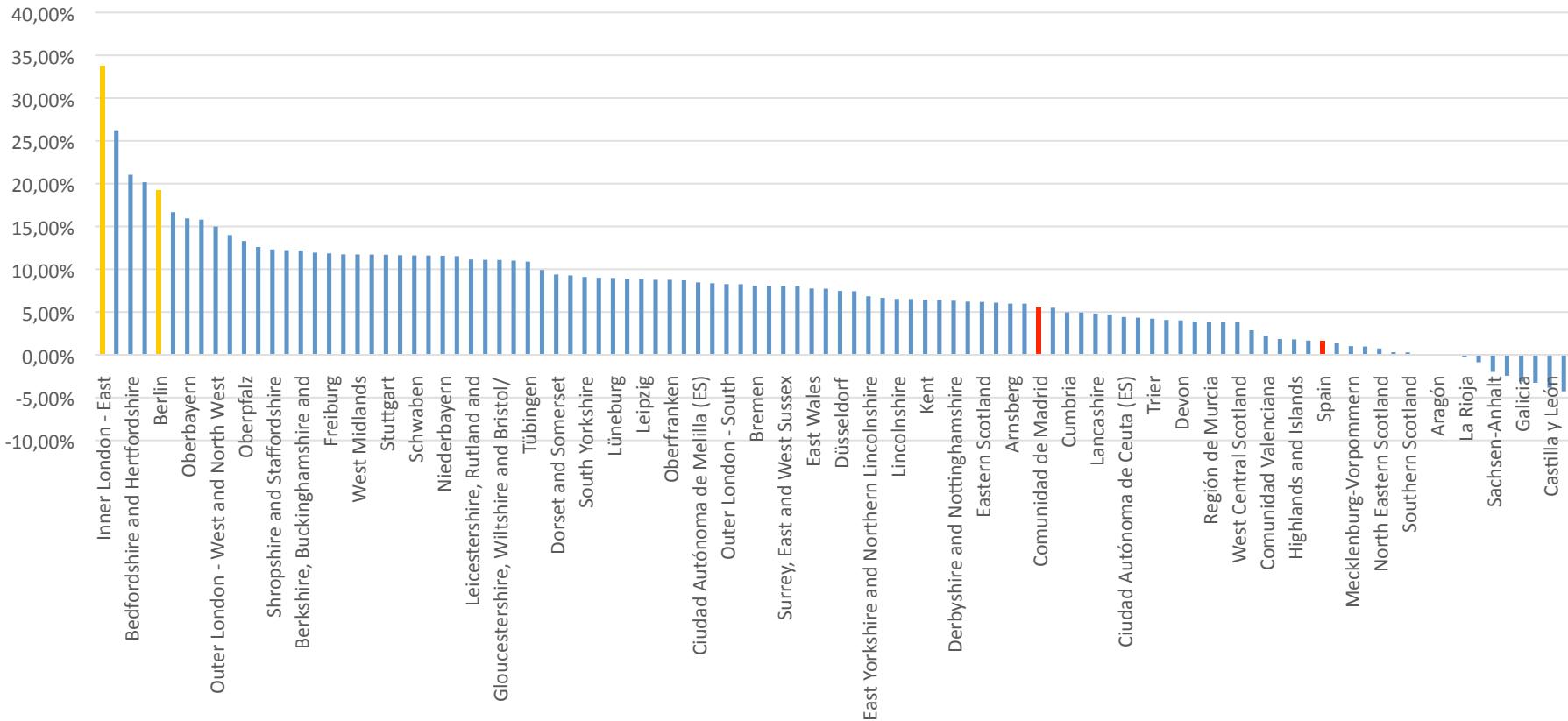
Calculando el porcentaje de variación de empleo total entre 2010 y 2018:

= $(H6-G6)/G6$

TIME	2010	2015	2018	2010 (% del país)	2018 (% del país)	G	H	I	J
European Union - 27 countries (from 1995)	10,978,266.91	12,213,172.55	13,483,857.12						
European Union - 28 countries (2013)	12,845,662.91	14,854,107.55	15,907,594.12						
Germany (until 1990 former territory Stuttgart)	2,564,400	3,030,070	3,344,370	100	100	41,048	44,854	9.27%	
Karlsruhe	158,881.1	196,383.38	213,361.65	6	6	2,183.53	2,438.86	11.69%	
Freiburg	97,852.16	112,855.28	123,302.15	4	4	1,461.53	1,589.61	8.76%	
Tübingen	65,450.67	79,038.33	86,859.14	3	3	1,123.35	1,256.42	11.85%	
Oberbayern	59,836.19	72,039.41	80,753.16	2	2	951.7	1,055.34	10.89%	
Niederbayern	192,501.5	242,949.81	273,695.47	8	8	2,487.73	2,884.39	15.94%	
Oberpfalz	36,362.27	43,537	48,465.84	1	1	611.89	682.76	11.58%	
Oberfranken	34,346.85	41,953.95	47,273.39	1	1	572.38	648.47	13.29%	
Mittelfranken	30,458.91	36,397.35	40,594.82	1	1	549.91	598.09	8.76%	
Unterfranken	57,805.45	70,062.89	78,647.47	2	2	938.96	1,057.21	12.59%	
Schwaben	40,858.82	47,928.27	53,689.63	2	2	688.04	739.17	7.43%	
Berlin	55,145.51	67,412.51	74,779.63	2	2	931.87	1,040.12	11.62%	
Brandenburg	102,587.27	124,685.78	145,698.09	4	4	1,691.81	2,016.29	19.18%	
Bremen	55,724.79	65,599.4	72,872.45	2	2	1,082.05	1,123.39	3.82%	
Hamburg	26,465.33	30,799	33,707.61	1	1	403.47	436.12	8.09%	
Darmstadt	94,029.05	109,850.8	119,045.59	4	4	1,140.39	1,274.26	11.74%	
Gießen	162,703.05	187,582.45	207,712.89	6	6	2,074.62	2,304.8	11.10%	
Kassel	28,260.66	32,355.25	35,924.61	1	1	489.06	529.42	8.25%	
Mecklenburg-Vorpommern	35,404.37	40,955.81	45,406.1	1	1	615.09	664.21	7.99%	
Braunschweig	34,891.46	40,246.82	44,450.17	1	1	748.28	755.82	1.01%	
Hannover	50,629.04	57,713.38	70,732.9	2	2	770.26	838.74	8.89%	
Lüneburg	65,191.71	74,157.99	82,753.09	3	2	1,050.29	1,141.75	8.71%	
Weser-Ems	36,932.42	44,564.43	48,437.61	1	1	688.99	750.84	8.98%	
Düsseldorf	69,129.84	81,179.95	90,608.92	3	3	1,231.27	1,378.24	11.94%	
Köln	179,115.1	200,652.89	215,671.85	7	6	2,614.3	2,809.35	7.46%	
Münster	149,410.75	176,150.61	190,785.37	6	6	2,190.04	2,442.52	11.53%	
	71,125.07	90,890.72	99,112.92	2	2	1,204.26	1,312.71	9.00%	

ACTIVIDAD 1

Tasa de variación de empleo (%) por regiones NUTS 2 (2010-2018)



ACTIVIDAD 1

- c. Calcula el dato de productividad media por trabajador en cada región NUTS 2 de Alemania, España y Reino Unido (incluida la media europea y del país), en los años 2010 y 2018, a precios corrientes:
- Representa el nivel de productividad en 2018 en un gráfico de barras.
 - Expresa los datos de productividad en relación a la media europea, tomando ésta como base 100.

Práctica 5. Herramientas interactivas para el análisis territorial en Europa: el diseño de mapas

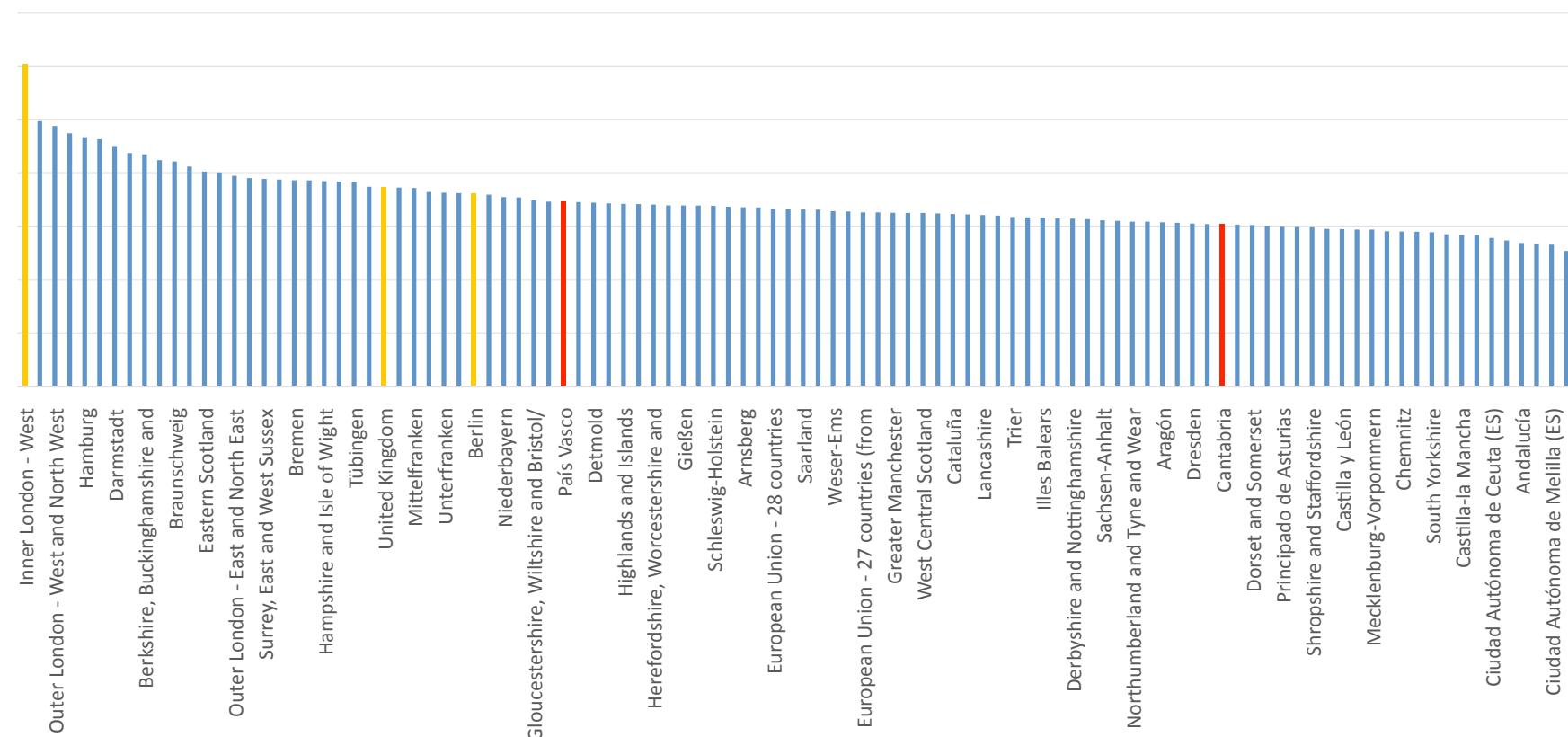
ACTIVIDAD 1

SUMA : X ✓ fx =B6/G6

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1															
2		Gross domestic product (GDP) at current market prices by NUTS 2 regions [nama_10r_2gdp]													
3		GDP (million euro, current prices)													
4		PIB (precios corrientes, millones de euros)													
5	TIME	2010	2015	2018	2010 (% del país)	2018 (% del país)	2010	2018	Var. (%)	2010-2018	2010.00	18.00	2008 (respec 2015 [respecto media europea])		
6	European Union - 27 countries (from 1994)	10,978,266.91	12,213,172.55	13,483,857.12			195,890.941	206,652.04	5.49%		65.25	100	100		
7	European Union - 28 countries (2013)	12,845,662.91	14,854,107.55	15,907,594.12			225,117.81	239,095.01	6.21%	57.06	66.53				
8	Germany (until 1990 former territory)	2,564,400	3,030,070	3,344,370	100	100	41,048	44,854	9.27%	62.47	74.56	111	114		
9	Stuttgart	158,881.1	196,383.38	213,361.65	6	6	2,183.53	2,438.86	11.69%	72.76	87.48	130	134		
10	Karlsruhe	97,852.16	112,855.28	123,302.15	4	4	1,461.53	1,589.61	8.76%	66.95	77.57	119	119		
11	Freiburg	65,450.67	79,038.33	86,859.14	3	3	1,123.35	1,256.42	11.85%	58.26	69.13	104	106		
12	Tübingen	59,836.19	72,039.41	80,753.16	2	2	951.7	1,055.34	10.89%	62.87	76.52	112	117		
13	Oberbayern	192,501.5	242,949.81	273,695.47	8	8	2,487.73	2,884.39	15.94%	77.38	94.89	138	145		
14	Niederbayern	36,362.27	43,537	48,465.84	1	1	611.89	682.76	11.58%	59.43	70.99	106	109		
15	Oberpfalz	34,346.85	41,953.95	47,273.39	1	1	572.38	648.47	13.29%	60.01	72.90	107	112		
16	Oberfranken	30,458.91	36,397.35	40,594.82	1	1	549.91	598.09	8.76%	55.39	67.87	99	104		
17	Mittelfranken	57,805.45	70,062.89	78,647.47	2	2	938.96	1,057.21	12.59%	61.56	74.39	110	114		
18	Unterfranken	40,858.82	47,928.27	53,689.63	2	2	688.04	739.17	7.43%	59.38	72.64	106	111		
19	Schwaben	55,145.51	67,412.51	74,779.63	2	2	931.87	1,040.12	11.62%	59.18	71.90	106	110		
20	Berlin	102,587.27	124,685.78	145,698.09	4	4	1,691.81	2,016.29	19.18%	60.64	72.26	108	111		
21	Brandenburg	55,724.79	65,599.4	72,872.45	2	2	1,082.05	1,123.39	3.82%	51.50	64.87	92	99		
22	Bremen	26,465.33	30,799	33,707.61	1	1	403.47	436.12	8.09%	65.59	77.29	117	118		
23	Hamburg	94,029.05	109,850.8	119,045.59	4	4	1,140.39	1,274.26	11.74%	82.45	93.42	147	143		
24	Darmstadt	162,703.05	187,582.45	207,712.89	6	6	2,074.62	2,304.8	11.10%	78.43	90.12	140	138		
25	Gießen	28,260.66	32,355.25	35,924.61	1	1	489.06	529.42	8.25%	57.79	67.86	103	104		

ACTIVIDAD 1

Productividad media por trabajador (2018)

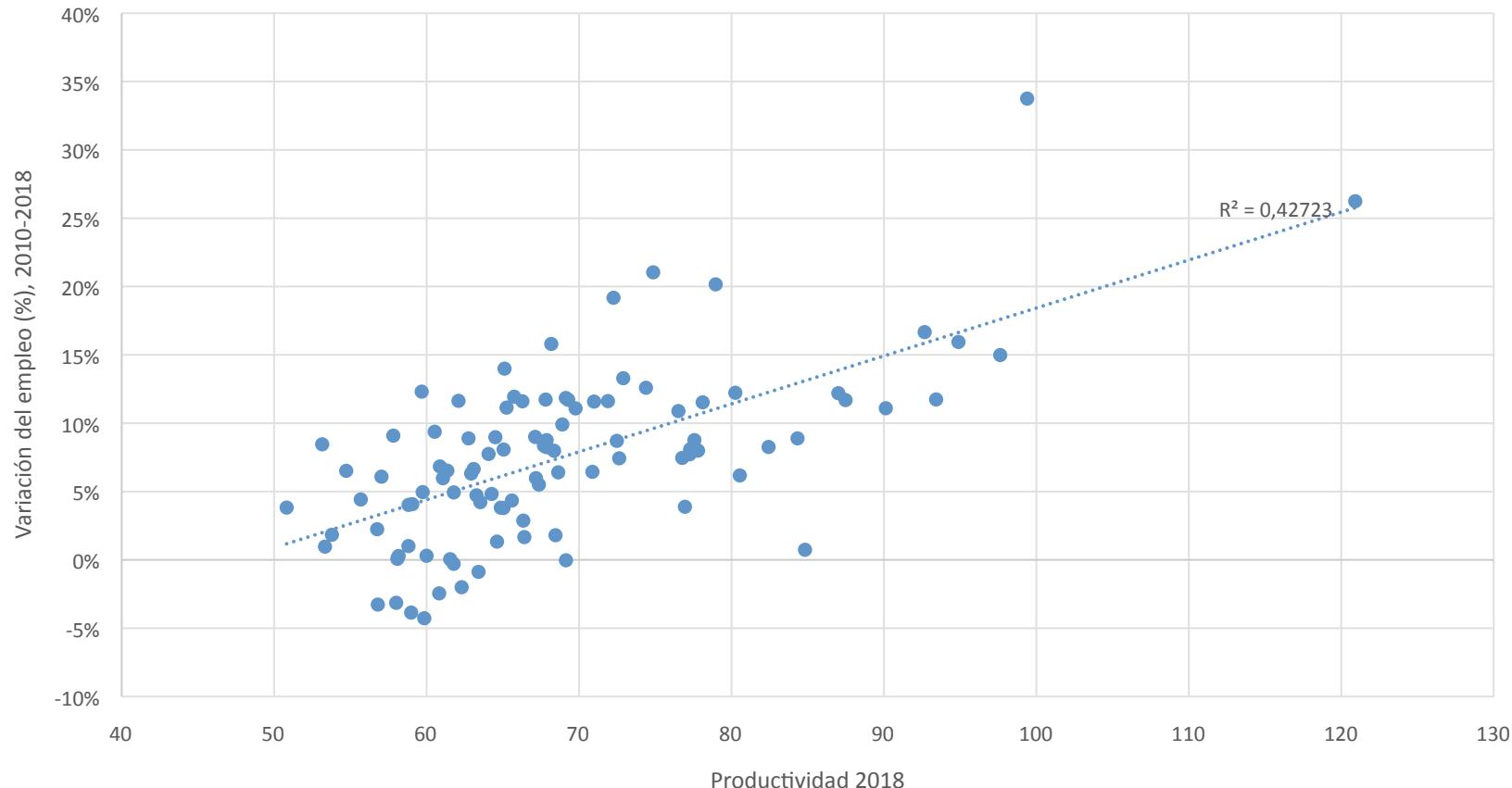


ACTIVIDAD 1

- d. ¿En las regiones NUTS 2 (de Alemania, España y Reino Unido) con mayor nivel de productividad es donde más ha aumentado el empleo? Respóndelo a partir de un gráfico de dispersión:
- Entre las regiones NUTS 2 que más han creado empleo, ¿su nivel de productividad está por encima o por debajo de la media?
 - Para el caso de España, analiza la relación entre el peso de cada región en 2018 y el empleo (2018), la tasa de variación del empleo (2010-2018) y la productividad (2018) mediante gráficos de dispersión. ¿Existe correlación?

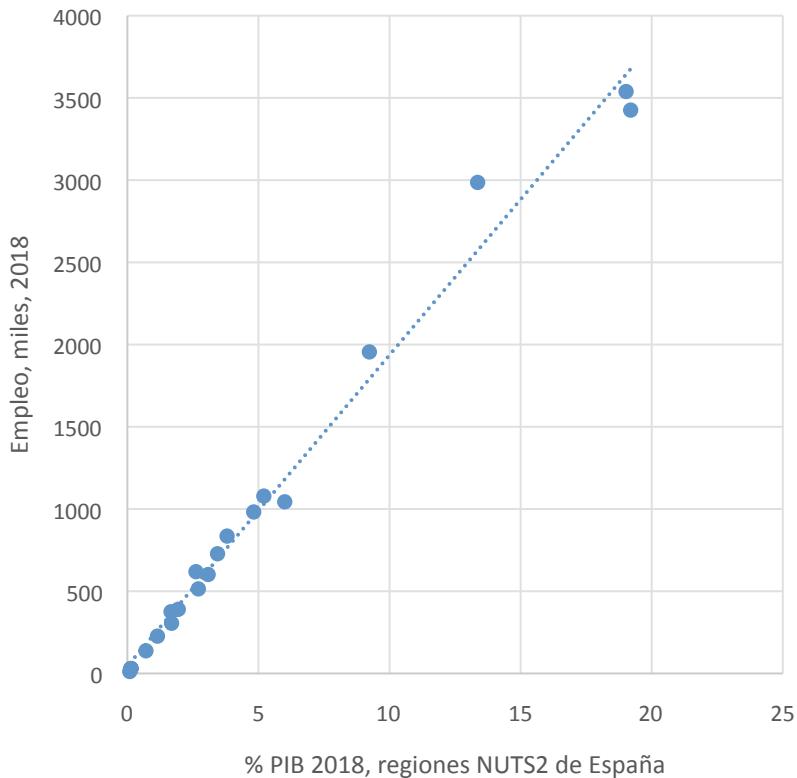
ACTIVIDAD 1

Gráfico de dispersión, variación empleo – productividad (regions NUTS 2 de Alemania, España y Reino Unido)

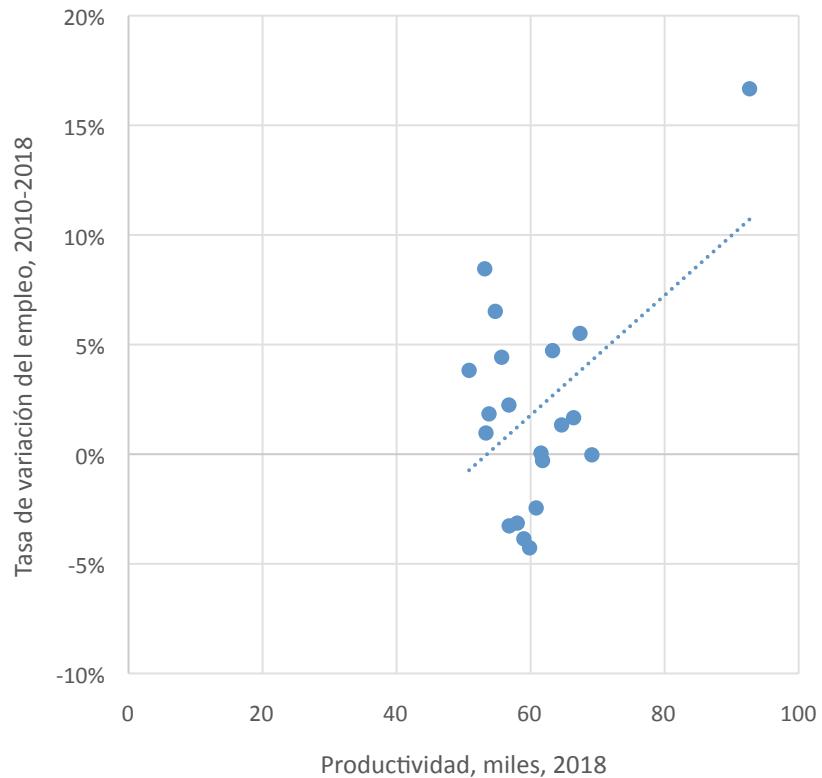


ACTIVIDAD 1

España, gráfico de dispersión
(empleo - % PIB)



España, gráfico de dispersión
(Productividad - variación empleo)



ACTIVIDAD 2

- A partir de los datos del Ejercicio 2 de la práctica anterior, elabora, utilizando la aplicación Mapchart.net (<https://mapchart.net/>):
- Un mapa de las regiones alemanas, españolas y británicas de acuerdo con su nivel medio de productividad por trabajador.
 - ¿Dónde se sitúan las regiones con mayor productividad? ¿Y las regiones con menor productividad?
 - Analiza la relación entre densidad de la actividad económica y nivel de productividad de las regiones españolas. ¿La distribución geográfica de ambas variables es similar? Destaca algunos casos en los que ambas variables coincidan, y otros en los que ambas variables difieran.

ACTIVIDAD 2

