Briefing Paper 26 - The Brexit Burden: A Constituency level analysis for Hampshire and Sussex Appendix

November 2018

Read the Briefing Paper: [The Brexit burden: a constituency level analysis for Hampshire and Sussex]

Table A1: List of 34 parliamentary constituencies in Hampshire and Sussex

Hampshire	Aldershot
	Basingstoke
	East Hampshire
	Eastleigh
	Fareham
	Gosport
	Havant
	Meon Valley
	New Forest East
	New Forest West
	North East Hampshire
	North West Hampshire
	Portsmouth North
	Portsmouth South
	Romsey and Southampton North
	Southampton, Itchen
	Southampton, Test
	Winchester
West Sussex	Arundel and South Downs
	Bognor Regis and Littlehampton
	Chichester
	Crawley
	East Worthing and Shoreham
	Horsham
	Mid Sussex
	Worthing West
East Sussex	Bexhill and Battle
	Brighton, Kemptown
	Brighton, Pavilion
	Eastbourne
	Hastings and Rye
	Hove
	Lewes
	Wealden

Table A2: Age profile of residents in parliamentary constituencies in Hampshire and Sussex, 2017

Constituency	All ages	0-15	16-64	65+	0-15 (%)	16-64 (%)	65+ (%)
Hampshire	**1,837,805**	**337,912**	**1,146,100**	**353,793**	**18.4**	**62.4**	**19.3**
Aldershot	106,193	20,948	69,553	15,692	19.7	65.5	14.8
Basingstoke	115,046	24,045	74,589	16,412	20.9	64.8	14.3
East Hampshire	98,009	18,043	57,791	22,175	18.4	59.0	22.6
Eastleigh	108,865	20,942	68,035	19,888	19.2	62.5	18.3
Fareham	101,851	17,509	62,046	22,296	17.2	60.9	21.9
Gosport	99,877	18,066	60,464	21,347	18.1	60.5	21.4
Havant	95,381	17,263	56,482	21,636	18.1	59.2	22.7
Meon Valley	94,535	16,363	55,943	22,229	17.3	59.2	23.5
New Forest East	93,713	15,976	54,757	22,980	17.0	58.4	24.5
New Forest West	85,877	12,557	45,222	28,098	14.6	52.7	32.7
North East Hampshire	100,563	20,058	60,692	19,813	19.9	60.4	19.7
North West Hampshire	107,227	20,839	65,079	21,309	19.4	60.7	19.9
Portsmouth North	100,174	20,812	63,115	16,247	20.8	63.0	16.2
Portsmouth South	114,544	19,109	81,656	13,779	16.7	71.3	12.0
Romsey and Southampton North	91,141	15,104	56,951	19,086	16.6	62.5	20.9
Southampton, Itchen	110,014	20,399	73,898	15,717	18.5	67.2	14.3
Southampton, Test	112,751	20,994	78,191	13,566	18.6	69.3	12.0
Winchester	102,044	18,885	61,636	21,523	18.5	60.4	21.1
East Sussex	**840,414**	**139,385**	**522,229**	**178,800**	**16.6**	**62.1**	**21.3**
Bexhill and Battle	104,993	16,189	57,046	31,758	15.4	54.3	30.2
Brighton, Kemptown	95,938	15,055	64,240	16,643	15.7	67.0	17.3
Brighton, Pavilion	112,196	16,502	83,865	11,829	14.7	74.7	10.5
Eastbourne	110,809	18,710	63,912	28,187	16.9	57.7	25.4
Hastings and Rye	111,779	19,810	67,722	24,247	17.7	60.6	21.7
Hove	103,177	17,915	69,866	15,396	17.4	67.7	14.9
Lewes	92,793	15,624	52,393	24,776	16.8	56.5	26.7
Wealden	108,729	19,580	63,185	25,964	18.0	58.1	23.9
West Sussex	**852,353**	**154,971**	**504,531**	**192,851**	**18.2**	**59.2**	**22.6**
Arundel and South Downs	100,501	16,919	56,056	27,526	16.8	55.8	27.4
Bognor Regis and Littlehampton	106,496	17,891	61,264	27,341	16.8	57.5	25.7
Chichester	110,722	18,185	63,228	29,309	16.4	57.1	26.5
Crawley	111,664	24,404	72,390	14,870	21.9	64.8	13.3
East Worthing and Shoreham	99,758	18,488	59,525	21,745	18.5	59.7	21.8
Horsham	111,853	21,553	68,852	21,448	19.3	61.6	19.2
Mid Sussex	112,448	22,029	68,149	22,270	19.6	60.6	19.8
Worthing West	98,911	15,502	55,067	28,342	15.7	55.7	28.7
Hampshire and Sussex	**3,530,572**	**632,268**	**2,172,860**	**725,444**	**17.9**	**61.5**	**20.5**

Source: ONS, Parliamentary Constituency Mid-Year Population Estimates in 2017 (Experimental Statistics).

Table A3: Sectoral profile, employment patterns and unemployment in parliamentary constituencies in Hampshire and Sussex, 2016

Constituency	Total employment	Private sector employment (%)	Public sector employment (%)	Manufacturing, construction and utilities (%)	Wholesale, retail, transport and storage (%)	Accommodation, entertainment, recreation and other services (%)	Information, communication, financial and insurance (%)	Professional, real estate and other business services (%)	Public administration, education and health (%)	Total unemployment	Unemployment rate (%)
Hampshire	**835,300**	**84.6**	**15.4**	**13.8**	**20.8**	**11.8**	**8.9**	**19.0**	**25.6**	**10,720**	**1.2**
Aldershot	55,455	91.9	8.1	10.7	17.6	11.7	17.1	27.0	15.8	572	1.0
Basingstoke	66,280	85.0	15.0	14.4	26.4	10.6	9.4	18.1	21.1	677	1.2
East Hampshire	40,360	90.4	9.6	15.6	21.1	11.8	8.7	17.8	24.5	362	0.8
Eastleigh	55,105	87.0	13.0	15.9	27.2	10.1	6.4	20.4	20.0	493	0.9
Fareham	45,460	85.0	15.0	14.7	23.1	8.7	7.7	20.5	25.3	410	0.8
Gosport	25,230	81.7	18.3	16.3	18.6	14.7	4.5	14.3	31.7	602	1.2
Havant	34,520	85.3	14.7	15.9	17.4	11.0	6.1	19.8	29.7	864	2.0
Meon Valley	47,310	91.4	8.6	17.3	25.9	9.1	11.1	22.0	14.5	391	0.8
New Forest East	35,285	85.8	14.2	19.4	19.8	19.0	3.2	14.0	24.1	358	0.7
New Forest West	33,980	88.2	11.8	18.0	20.6	16.0	5.3	17.7	21.8	311	1.0
North East Hampshire	38,635	91.0	9.0	13.0	15.5	16.6	11.6	25.2	17.9	260	0.5
North West Hampshire	42,740	87.4	12.6	17.9	23.4	10.1	9.4	15.7	23.4	422	0.7
Portsmouth North	60,795	77.1	22.9	19.6	17.3	7.7	12.3	15.8	27.1	792	1.4
Portsmouth South	45,675	80.8	19.2	9.0	19.2	18.6	3.1	14.0	36.1	1,238	2.3
Romsey and Southampton North	31,625	85.8	14.2	16.8	22.1	13.6	5.5	22.1	19.6	350	0.9
Southampton, Itchen	50,490	88.7	11.3	6.1	26.7	13.0	8.9	25.4	19.8	1,140	1.9

Southampton, Test	63,255	72.9	27.1	6.6	16.6	8.8	9.5	14.2	44.3	1,140	2.1
Winchester	63,100	77.3	22.7	9.4	14.7	10.3	11.1	17.0	37.2	338	0.6
East Sussex	**327,785**	**83.5**	**16.5**	**10.4**	**18.6**	**15.1**	**8.0**	**16.2**	**31.7**	**7,210**	**1.8**
Bexhill and Battle	29,540	89.5	10.5	12.4	21.2	13.5	9.1	15.9	27.8	590	1.5
Brighton, Kemptown	34,905	69.0	31.0	7.6	10.0	17.5	3.3	12.2	49.4	1,073	2.6
Brighton, Pavilion	69,055	88.6	11.4	3.3	18.1	17.4	17.4	19.2	24.6	969	1.4
Eastbourne	39,705	79.4	20.6	8.9	23.3	13.9	3.0	15.6	35.3	1,107	2.2
Hastings and Rye	38,550	79.0	21.0	13.2	20.1	14.3	3.6	13.6	35.0	1,492	3.1
Hove	39,590	87.8	12.2	11.7	20.2	11.4	11.4	18.3	27.0	1,034	1.8
Lewes	38,845	82.3	17.7	12.5	18.7	13.3	4.0	15.4	36.0	537	1.1
Wealden	37,595	88.9	11.1	19.3	17.6	18.0	4.4	16.1	24.5	409	0.8
West Sussex	**387,170**	**86.4**	**13.6**	**13.4**	**24.8**	**12.5**	**6.7**	**19.2**	**23.3**	**4,863**	**1.2**
Arundel and South Downs	34,070	91.3	8.7	17.2	22.0	17.8	3.8	17.6	21.1	330	0.7
Bognor Regis and Littlehampton	31,215	87.9	12.1	16.2	23.2	15.5	2.6	16.8	25.6	792	1.7
Chichester	57,290	80.9	19.1	13.0	18.3	14.8	4.8	18.3	30.5	606	1.3
Crawley	93,905	91.2	8.8	11.5	36.2	10.5	6.9	24.0	10.9	993	1.6
East Worthing and Shoreham	33,340	89.0	11.0	24.0	20.7	10.8	7.5	14.1	22.8	705	1.3
Horsham	46,260	89.5	10.5	11.9	22.2	14.1	9.2	21.1	21.4	440	0.8
Mid Sussex	47,885	84.8	15.2	12.0	23.5	10.0	10.4	18.3	25.7	330	0.6
Worthing West	43,205	74.1	25.9	7.8	19.1	9.5	6.9	16.2	40.5	667	1.8
Hampshire and Sussex	**1,550,255**	**84.8**	**15.2**	**13.0**	**21.3**	**12.7**	**8.2**	**18.4**	**26.3**	**22,793**	**1.3**

Source: ONS, Business Register and Employment Survey 2016 and ONS, Claimant Count 2016.

Table A4: Size of 'no deal' Brexit and 'soft' Brexit output shocks by sector

Sector: ISIC Revision 4		'No deal' Brexit	'Soft' Brexit
Agriculture, forestry and fishing			
01	Crop and animal production, hunting and related service activities	4.2%	3.3%
02	Forestry and logging	4.2%	3.3%
03	Fishing and aquaculture	4.2%	3.3%
Mining and quarrying			
05	Mining of coal and lignite	-12.5%	-7.3%
06	Extraction of crude petroleum and natural gas	-12.5%	-7.3%
07	Mining of metal ores	-12.5%	-7.3%
08	Other mining and quarrying	-12.5%	-7.3%
09	Mining support service activities	-12.5%	-7.3%
Electricity, gas, steam and air conditioning supply			
35	Electricity, gas, steam and air conditioning supply	-2.1%	-1.1%
Water supply; sewerage, waste management and remediation activities			
36	Water collection, treatment and supply	-2.1%	-1.1%
37	Sewerage	-2.1%	-1.1%
38	Waste collection, treatment and disposal activities; materials recovery	-2.1%	-1.1%
39	Remediation activities and other waste management services	-2.1%	-1.1%
Construction			
41	Construction of buildings	-2.6%	-1.4%
42	Civil engineering	-2.6%	-1.4%
43	Specialized construction activities	-2.6%	-1.4%
Wholesale and retail trade; repair of motor vehicles and motorcycles			
45	Wholesale and retail trade and repair of motor vehicles and motorcycles	-1.6%	-0.8%
46	Wholesale trade, except of motor vehicles and motorcycles	-1.6%	-0.8%

47	Retail trade, except of motor vehicles and motorcycles	-2.3%	-1.2%
	Transportation and storage		
49	Land transport and transport via pipelines	-1.2%	-0.6%
50	Water transport	9.1%	4.7%
51	Air transport	10.4%	5.2%
52	Warehousing and support activities for transportation	-2.5%	-1.3%
53	Postal and courier activities	-3.9%	-1.8%
	Accommodation and food service activities		
55	Accommodation	-0.2%	0.0%
56	Food and beverage service activities	-0.2%	0.0%
	Information and communication		
58	Publishing activities	-4.0%	-1.7%
59	Motion picture, video and television programme production, sound recording and music publishing activities	-4.0%	-1.7%
60	Programming and broadcasting activities	-4.0%	-1.7%
61	Telecommunications	-3.9%	-1.8%
62	Computer programming, consultancy and related activities	-4.0%	-1.7%
63	Information service activities	-4.0%	-1.7%
	Financial and insurance activities		
64	Financial service activities, except insurance and pension funding	-6.2%	-2.8%
65	Insurance, reinsurance and pension funding, except compulsory social security	-6.2%	-2.8%
66	Activities auxiliary to financial service and insurance activities	-6.2%	-2.8%
	Real estate activities		
68	Real estate activities	-2.6%	-1.4%
	Professional, scientific and technical activities		
69	Legal and accounting activities	-4.0%	-1.7%
70	Activities of head offices; management consultancy activities	-4.0%	-1.7%
71	Architectural and engineering activities; technical testing and analysis	-4.0%	-1.7%
72	Scientific research and development	-4.0%	-1.7%

73	Advertising and market research	-4.0%	-1.7%
74	Other professional, scientific and technical activities	-4.0%	-1.7%
75	Veterinary activities	-4.0%	-1.7%
	Administrative and support service activities		
77	Rental and leasing activities	-4.0%	-1.7%
78	Employment activities	-4.0%	-1.7%
79	Travel agency, tour operator, reservation service and related activities	-4.0%	-1.7%
80	Security and investigation activities	-4.0%	-1.7%
81	Services to buildings and landscape activities	-4.0%	-1.7%
82	Office administrative, office support and other business support activities	-4.0%	-1.7%
	Public administration and defence; compulsory social security		
84	Public administration and defence; compulsory social security	-2.3%	-1.1%
	Education		
85	Education	-2.2%	-1.2%
	Human health and social work activities		
86	Human health activities	-2.4%	-1.3%
87	Residential care activities	-2.4%	-1.3%
88	Social work activities without accommodation	-2.4%	-1.3%
	Arts, entertainment and recreation		
90	Creative, arts and entertainment activities	-2.4%	-1.3%
91	Libraries, archives, museums and other cultural activities	-2.4%	-1.3%
92	Gambling and betting activities	-2.4%	-1.3%
93	Sports activities and amusement and recreation activities	-2.4%	-1.3%
	Other service activities		
94	Activities of membership organizations	-2.4%	-1.3%
95	Repair of computers and personal and household goods	-4.0%	-1.7%
96	Other personal service activities	-4.0%	-1.7%
	Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use		

97		Activities of households as employers of domestic personnel	-4.0%	-1.7%
98		Undifferentiated goods- and services-producing activities of private households for own use	-4.0%	-1.7%
		Activities of extraterritorial organizations and bodies		
99		Activities of extraterritorial organizations and bodies	-4.0%	-1.7%
		Manufacturing		
1010		Processing and preserving of meat	10.6%	1.8%
1020		Processing and preserving of fish, crustaceans and molluscs	3.0%	-0.2%
1030		Processing and preserving of fruit and vegetables	13.8%	2.6%
1040		Manufacture of vegetable and animal oils and fats	0.3%	-1.5%
1050		Manufacture of dairy products	12.7%	2.1%
1061		Manufacture of grain mill products	1.3%	0.5%
1062		Manufacture of starches and starch products	8.3%	1.7%
1071		Manufacture of bakery products	3.3%	0.9%
1072		Manufacture of sugar	6.3%	-1.0%
1073		Manufacture of cocoa, chocolate and sugar confectionery	4.3%	0.9%
1074		Manufacture of macaroni, noodles, couscous and similar farinaceous products	47.0%	2.8%
1075	*	Manufacture of prepared meals and dishes	2.8%	1.4%
1079		Manufacture of other food products n.e.c.	5.0%	0.9%
1080		Manufacture of prepared animal feeds	2.5%	0.8%
1101		Distilling, rectifying and blending of spirits	-3.9%	-0.4%
1102		Manufacture of wines	5.4%	0.8%
1103		Manufacture of malt liquors and malt	1.6%	0.7%
1104		Manufacture of soft drinks; production of mineral waters and other bottled waters	3.2%	0.9%
1200		Manufacture of tobacco products	1.5%	0.7%
1311		Preparation and spinning of textile fibres	-6.5%	-5.6%
1312		Weaving of textiles	-21.5%	-10.3%
1313	*	Finishing of textiles	-5.2%	-6.8%
1391		Manufacture of knitted and crocheted fabrics	-15.5%	-8.5%
1392		Manufacture of made-up textile articles, except apparel	-5.4%	-4.1%

1393	Manufacture of carpets and rugs	9.7%	-1.2%
1394	Manufacture of cordage, rope, twine and netting	0.2%	-3.0%
1399	Manufacture of other textiles n.e.c.	-14.3%	-8.1%
1410	Manufacture of wearing apparel, except fur apparel	-23.0%	-8.2%
1420	Manufacture of articles of fur	-17.5%	-8.0%
1430	Manufacture of knitted and crocheted apparel	-25.3%	-8.7%
1511	Tanning and dressing of leather; dressing and dyeing of fur	-15.0%	-8.6%
1512	Manufacture of luggage, handbags and the like, saddlery and harness	-17.6%	-7.7%
1520	Manufacture of footwear	-25.3%	-8.8%
1610	Sawmilling and planing of wood	19.9%	9.2%
1621	Manufacture of veneer sheets and wood-based panels	19.0%	7.4%
1622	Manufacture of builders' carpentry and joinery	9.8%	5.7%
1623	Manufacture of wooden containers	8.7%	5.2%
1629	Manufacture of other products of wood; manufacture of articles of cork, straw and plaiting materials	9.5%	5.5%
1701	Manufacture of pulp, paper and paperboard	5.9%	3.1%
1702	Manufacture of corrugated paper and paperboard and of containers of paper and paperboard	3.4%	1.9%
1709	Manufacture of other articles of paper and paperboard	3.3%	2.1%
1811	Printing	3.1%	1.7%
1812	Service activities related to printing	3.6%	1.9%
1820	Reproduction of recorded media	2.9%	1.7%
1910	Manufacture of coke oven products	-0.4%	-0.3%
1920	Manufacture of refined petroleum products	-4.6%	-1.9%
2011	Manufacture of basic chemicals	-22.2%	-9.7%
2012	Manufacture of fertilizers and nitrogen compounds	-3.4%	-4.2%
2013	Manufacture of plastics and synthetic rubber in primary forms	-22.4%	-10.9%
2021	Manufacture of pesticides and other agrochemical products	-15.7%	-6.5%
2022	Manufacture of paints, varnishes and similar coatings, printing ink and mastics	-9.4%	-5.0%
2023	Manufacture of soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations	-14.8%	-6.7%
2029	Manufacture of other chemical products n.e.c.	-21.0%	-8.3%
2030	Manufacture of man-made fibres	-19.3%	-8.0%

2100		Manufacture of pharmaceuticals, medicinal chemical and botanical products	-14.0%	-6.7%
2211		Manufacture of rubber tyres and tubes; retreading and rebuilding of rubber tyres	-3.3%	-1.1%
2219		Manufacture of other rubber products	-3.3%	-1.2%
2220		Manufacture of plastics products	-1.4%	-0.5%
2310		Manufacture of glass and glass products	1.7%	0.3%
2391		Manufacture of refractory products	-5.3%	-1.9%
2392		Manufacture of clay building materials	15.0%	3.6%
2393		Manufacture of other porcelain and ceramic products	1.5%	0.4%
2394		Manufacture of cement, lime and plaster	2.6%	0.9%
2395		Manufacture of articles of concrete, cement and plaster	1.3%	0.5%
2396		Cutting, shaping and finishing of stone	6.7%	2.4%
2399		Manufacture of other non-metallic mineral products n.e.c.	-3.5%	-1.5%
2410		Manufacture of basic iron and steel	-2.8%	-2.3%
2420		Manufacture of basic precious and other non-ferrous metals	-13.4%	-3.4%
2431		Casting of iron and steel	-8.4%	-3.5%
2432	*	Casting of non-ferrous metals	5.1%	0.5%
2511		Manufacture of structural metal products	3.4%	0.5%
2512		Manufacture of tanks, reservoirs and containers of metal	4.3%	0.7%
2513		Manufacture of steam generators, except central heating hot water boilers	3.8%	0.6%
2520	*	Manufacture of weapons and ammunition	5.1%	0.5%
2591	*	Forging, pressing, stamping and roll-forming of metal; powder metallurgy	5.1%	0.5%
2592	*	Treatment and coating of metals; machining	5.1%	0.5%
2593		Manufacture of cutlery, hand tools and general hardware	0.9%	-0.3%
2599		Manufacture of other fabricated metal products n.e.c.	1.2%	-0.2%
2610		Manufacture of electronic components and boards	-8.3%	-6.8%
2620		Manufacture of computers and peripheral equipment	-12.7%	-8.4%
2630		Manufacture of communication equipment	-9.9%	-7.3%
2640		Manufacture of consumer electronics	-15.1%	-8.1%
2651		Manufacture of measuring, testing, navigating and control equipment	-5.9%	-5.6%
2652		Manufacture of watches and clocks	-13.0%	-6.7%

2660		Manufacture of irradiation, electromedical and electrotherapeutic equipment	-7.3%	-6.2%
2670		Manufacture of optical instruments and photographic equipment	-4.5%	-5.2%
2680	*	Manufacture of magnetic and optical media	-6.3%	-9.5%
2710		Manufacture of electric motors, generators, transformers and electricity distribution and control apparatus	-4.9%	-5.3%
2720		Manufacture of batteries and accumulators	-10.8%	-7.2%
2731		Manufacture of fibre optic cables	-29.2%	-14.2%
2732		Manufacture of other electronic and electric wires and cables	-0.9%	-5.0%
2733		Manufacture of wiring devices	-3.5%	-4.9%
2740		Manufacture of electric lighting equipment	-4.3%	-5.6%
2750		Manufacture of domestic appliances	-5.8%	-5.8%
2790		Manufacture of other electrical equipment	-8.8%	-6.6%
2811		Manufacture of engines and turbines, except aircraft, vehicle and cycle engines	-2.8%	-0.8%
2812		Manufacture of fluid power equipment	-1.7%	-0.6%
2813		Manufacture of other pumps, compressors, taps and valves	-5.6%	-1.8%
2814		Manufacture of bearings, gears, gearing and driving elements	-8.2%	-2.5%
2815		Manufacture of ovens, furnaces and furnace burners	-3.9%	-1.3%
2816		Manufacture of lifting and handling equipment	-5.2%	-1.9%
2817		Manufacture of office machinery and equipment (except computers and peripheral equipment)	-8.5%	-3.3%
2818		Manufacture of power-driven hand tools	-10.4%	-3.4%
2819		Manufacture of other general-purpose machinery	-6.0%	-2.0%
2821		Manufacture of agricultural and forestry machinery	-7.1%	-2.6%
2822		Manufacture of metal-forming machinery and machine tools	-5.0%	-1.7%
2823		Manufacture of machinery for metallurgy	-5.2%	-1.5%
2824		Manufacture of machinery for mining, quarrying and construction	-4.7%	-1.6%
2825		Manufacture of machinery for food, beverage and tobacco processing	-4.1%	-1.4%
2826		Manufacture of machinery for textile, apparel and leather production	-8.4%	-2.6%
2829		Manufacture of other special-purpose machinery	-4.3%	-1.4%
2910		Manufacture of motor vehicles	-5.6%	-1.5%
2920		Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers	1.3%	0.1%
2930		Manufacture of parts and accessories for motor vehicles	-7.5%	-2.4%

3011		Building of ships and floating structures	0.3%	-0.1%
3012		Building of pleasure and sporting boats	-1.6%	-0.6%
3020		Manufacture of railway locomotives and rolling stock	2.4%	0.5%
3030		Manufacture of air and spacecraft and related machinery	-4.5%	-1.4%
3040	*	Manufacture of military fighting vehicles	-0.9%	-0.5%
3091		Manufacture of motorcycles	-4.7%	-1.4%
3092		Manufacture of bicycles and invalid carriages	-5.8%	-1.6%
3099		Manufacture of other transport equipment n.e.c.	-3.2%	-1.0%
3100		Manufacture of furniture	2.4%	0.9%
3211		Manufacture of jewellery and related articles	-1.2%	-0.4%
3212		Manufacture of imitation jewellery and related articles	-18.3%	-7.1%
3220		Manufacture of musical instruments	-7.9%	-2.2%
3230		Manufacture of sports goods	-9.4%	-3.2%
3240		Manufacture of games and toys	-8.0%	-3.0%
3250		Manufacture of medical and dental instruments and supplies	-3.7%	-1.3%
3290		Other manufacturing n.e.c.	-3.7%	-1.2%
3311	*	Repair of fabricated metal products	2.5%	0.9%
3312	*	Repair of machinery	2.5%	0.9%
3313	*	Repair of electronic and optical equipment	2.5%	0.9%
3314	*	Repair of electrical equipment	2.5%	0.9%
3315	*	Repair of transport equipment, except motor vehicles	2.5%	0.9%
3319	*	Repair of other equipment	2.5%	0.9%
3320	*	Installation of industrial machinery and equipment	2.5%	0.9%

Notes: For most of the sectors, the estimates of output effects come from Dhingra et al. (2017a, 2017b). For sectors in the manufacturing industry, the estimates of the output effects are the mean of Gasiorek et al. (2018) and Dhingra et al. (2017a, 2017b), which allows us to benefit from both feedback loops (Dhingra et al.) and the detailed modelling of trade barriers (Gasiorek et al.).
* There are a small number of manufacturing sectors (identified with *) for which estimates of the sectoral output effects are not available in Gasiorek et al. (2018); for these sectors the estimates are based on Dhingra et al. (2017a, 2017b).
The ONS employment data from the Business Register and Employment Survey, reported in the UK Standard Industrial Classification (UK SIC) 2007, have been converted to NACE Revision 2 (knowing that to the 4-digit level, UK SIC 2007 follows NACE Revision 2 exactly), converted again to ISIC Revision 4 (using the product concordance tables from the UN Statistical Division), and matched to the above sectoral estimates of output effects to calculate the size of employment shocks for a 'no deal' Brexit and a 'soft' Brexit.

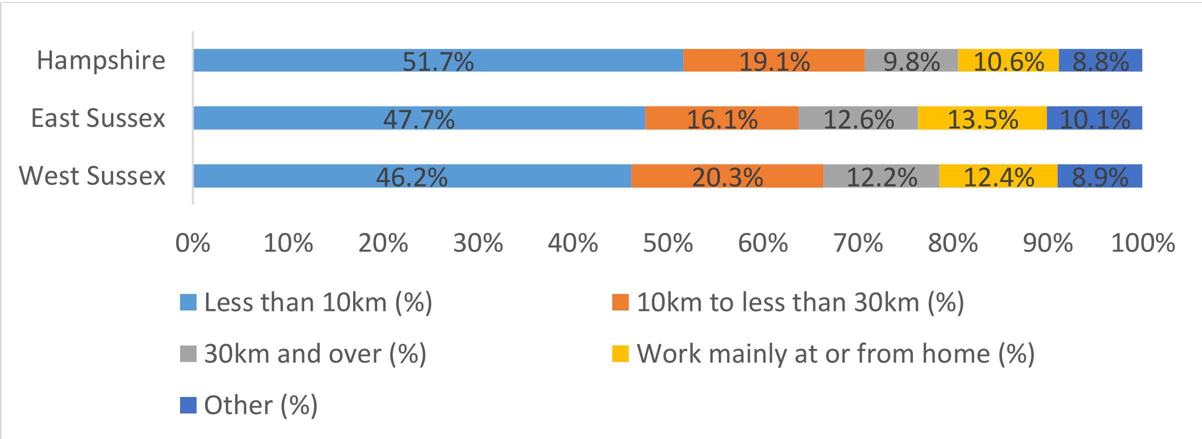
Section 1: Work commuting of Hampshire and Sussex residents

An average UK worker is willing to travel further and longer to get to work than used to be the case. Since the late 1980s, there has been a decline in the number of commuting trips – something attributed to workers commuting to work fewer days per week, and the growth in the number of workers without a 'fixed' usual workplace – but there has also been a corresponding increase in commuting distance and commuting time.[1]

There are large differences in average distance travelled to work by employed residents in different parts of the country. For example, among all parliamentary constituencies of England and Wales, Kingston upon Hull East (closely followed by Kingston upon Hull West) had the highest proportion of employed residents travelling less than 10 kilometres to work (76%).[2] At the other end, only 27% of employed residents of Buckingham travelled less than 10 kilometres to work.

Across parliamentary constituencies in Hampshire and Sussex, the one with the highest proportion of residents travelling less than 10 kilometres to work is Portsmouth North (67%), followed by Southampton Itchen and Southampton Test (66% for both). But in Wealden, and Arundel and South Downs, only 31% of residents travel such short distances to get to work. Overall, close to 50% of employed residents of Hampshire and Sussex travel less than 10 kilometres to work – and 11% travel more than 30 kilometres (while 12% work mainly at or from home).

Figure A1: Average distance travelled to work by employed residents of Hampshire and Sussex, 2011



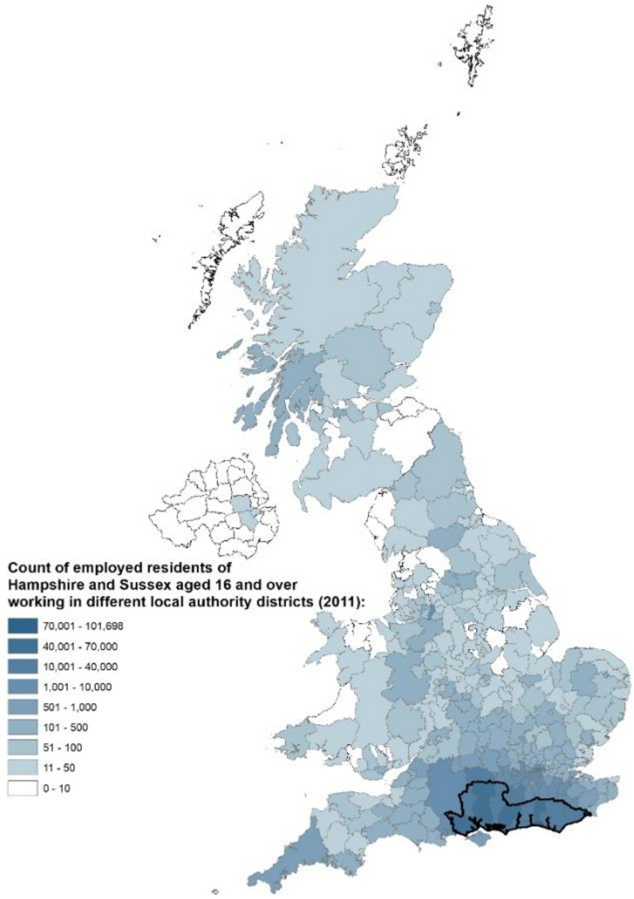
Source: ONS, Census 2011.

[1] Le Vine, S., Polak, J. and Humphrey, A. (2017) 'Commuting Trends in England, 1988-2015', Department for Transport, London. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/657839/commuting-in-england-1988-2015.pdf.

[2] Source: ONS, Census 2011, Table LC7104EW - Distance travelled to work by sex. Alongside Census2011, another – and more recent – source of information on commuting (including average distance travelled) is the National Travel Survey, a household survey by the Department for Transport, designed to monitor the long-term trends in personal travel patterns by residents of England within Great Britain. The National Travel Survey has data on commuting patterns of residents across English regions but does not record and report these data for parliamentary constituencies, a spatial unit of interest to us.

Figure A2 shows the patterns of commuting of employed residents in Hampshire and Sussex: the darker the shading, the larger the number of residents of Hampshire and Sussex that work in that area.[3] Taking Hampshire and Sussex as one geographic unit (where we added commuting flows for the 26 Census merged local authority districts that are part thereof), Table A5 shows the top five local authority district locations of work for the employed residents of Hampshire and Sussex.

Figure A2: Commuting flows of employed residents of Hampshire and Sussex, 2011



Source: ONS, Census 2011.

Brighton and Hove[4] district is the top location of work for employed residents of Hampshire and Sussex (7.7% of all employed residents of the area), followed by Southampton and Portsmouth (each about 7%). Overall, 83.9% of employed residents of Hampshire and Sussex also work within the geographic boundaries of Hampshire and Sussex.

[3] Source: ONS Census 2011. WU01UK - Location of usual residence and place of work by sex. These data are reported for 346 Census merged local authority districts of England and Wales, 32 local authority areas of Scotland and 26 local government districts of Northern Ireland.

[4] Brighton and Hove is the local authority district that consists of the following parliamentary constituencies: Brighton Pavilion, Brighton Kemptown (part thereof) and Hove. Commuting data from the ONS is reported for the level of Census merged local authority districts (as well as more disaggregated units such as middle layer super output areas, MSOAs). In the subsequent sections of this paper we will discuss how we apportioned the commuting flows between Census merged local authority districts to parliamentary constituencies that we do to derive residence-based Brexit shocks for parliamentary constituencies.

Table A5: Top five locations of work of Hampshire and Sussex residents

Local Authority District	Number of workers	% of total number of workers
Brighton and Hove	101,698	7.7%
Southampton	89,378	6.8%
Portsmouth	88,617	6.7%
Winchester	56,271	4.3%
Basingstoke and Deane	54,949	4.2%
Greater London	69,785	5.3%

Source: ONS, Census 2011.

Finally, Table A5 reports how many of the employed residents of Hampshire and Sussex travel to work in Greater London[5] – around 5.3% of these residents (close to 70,000 people).

Section 2: Impact of a 'soft' Brexit on employment

As part of the analysis we also calculated the size of the possible employment losses across the 34 parliamentary constituencies in Hampshire and Sussex as a result of a 'soft' Brexit scenario, both among the workers and the residents. In contrast to a 'no deal' Brexit scenario, a 'soft' Brexit is more reminiscent of the so-called 'Norway'-'EEA' option, where the UK is no longer part of the European Customs Union but part of the European Single Market. The assumption is that tariffs remain at zero but that there is some increase in non-tariff barriers. As with a 'no deal' Brexit, for manufacturing sectors we use estimates of the 'EEA' output effects from Gasiorek et al. (2018); for other sectors we use 'soft' Brexit estimates from Dhingra et al. (2017a, 2017b) – as detailed in Table A4. The size of the workplace and residence employment losses is reported in Table A6 below.

[5] The Greater London consists of 33 local authority districts: Barking and Dagenham, Barnet, Baxley, Brent, Bromley, Camden, Croydon, Ealing, Enfield, Greenwich, Hackney, Hammersmith and Fulham, Haringey, Harrow, Havering, Hillingdon, Hounslow, Islington, Kensington and Chelsea, Kingston upon Thames, Lambeth, Lewisham, Merton, Newham, Redbridge, Richmond upon Thames, Southwark, Sutton, Tower Hamlets, Waltham Forest, Wandsworth, and Westminster, City of London.

Table A6: The 'soft' Brexit shock on a workplace-basis and a residence-basis

	Workplace-basis		Residence-basis		Workplace-basis	Residence-basis
Constituency	**Employment loss among workers**	**Employment loss among workers who live elsewhere**	**Employment loss among residents who work elsewhere**	**Employment loss among residents**	**Employment loss among workers (as % of all employment)**	**Employment loss among residents (as % of all employment)**
Hampshire	**-10,668**	**-7,399**	**-8,113**	**-11,382**	**-1.3%**	**-1.3%**
Aldershot	-734	-443	-658	-948	-1.3%	-1.7%
Basingstoke	-919	-629	-449	-739	-1.4%	-1.3%
East Hampshire	-541	-283	-432	-690	-1.3%	-1.7%
Eastleigh	-703	-439	-563	-827	-1.3%	-1.7%
Fareham	-623	-434	-376	-565	-1.4%	-1.1%
Gosport	-265	-114	-467	-618	-1.0%	-1.3%
Havant	-503	-251	-410	-662	-1.5%	-1.6%
Meon Valley	-632	-543	-373	-463	-1.3%	-1.0%
New Forest East	-442	-285	-387	-544	-1.3%	-1.0%
New Forest West	-414	-300	-335	-449	-1.2%	-1.5%
North East Hampshire	-535	-430	-589	-694	-1.4%	-1.4%
North West Hampshire	-547	-450	-528	-625	-1.3%	-1.0%
Portsmouth North	-810	-606	-315	-519	-1.3%	-1.0%
Portsmouth South	-481	-331	-507	-656	-1.1%	-1.3%
Romsey and Southampton North	-384	-247	-384	-521	-1.2%	-1.3%
Southampton, Itchen	-534	-390	-531	-675	-1.1%	-1.2%
Southampton, Test	-787	-562	-487	-713	-1.2%	-1.4%
Winchester	-815	-663	-323	-475	-1.3%	-0.9%

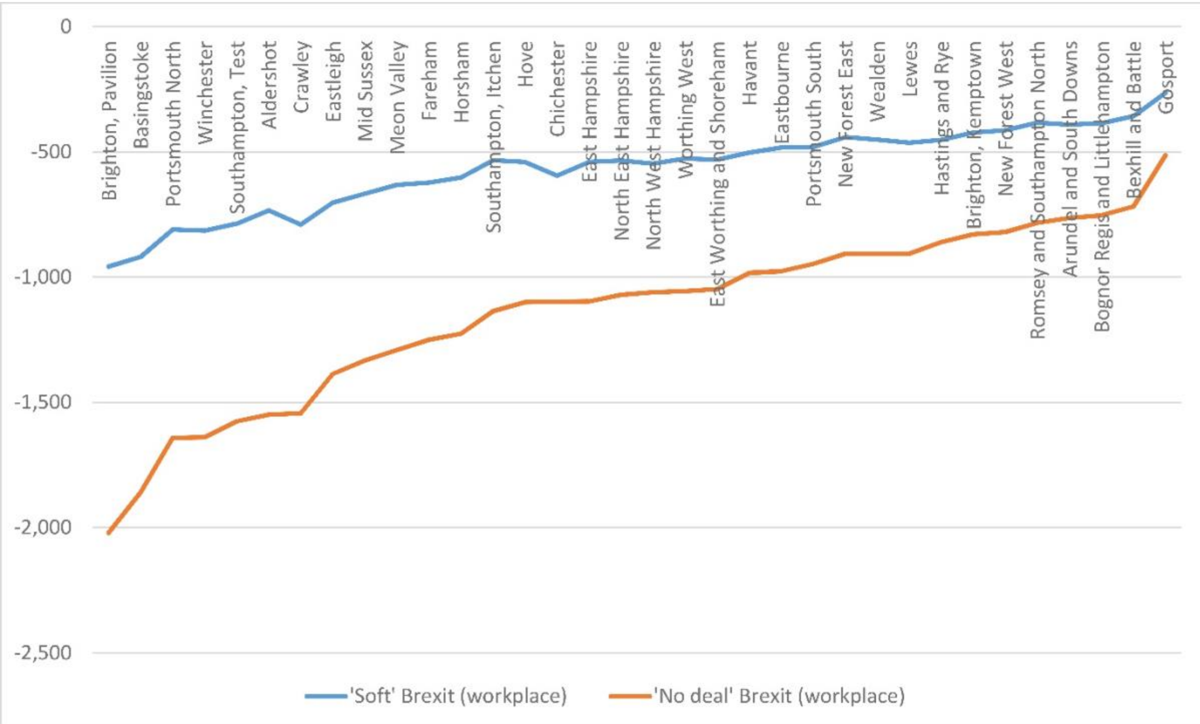
East Sussex	**-4,130**	**-2,622**	**-3,237**	**-4,746**	**-1.3%**	**-1.2%**
Bexhill and Battle	-358	-288	-259	-329	-1.2%	-0.9%
Brighton, Kemptown	-423	-344	-539	-618	-1.2%	-1.7%
Brighton, Pavilion	-958	-680	-507	-785	-1.4%	-1.2%
Eastbourne	-483	-176	-316	-623	-1.2%	-1.3%
Hastings and Rye	-452	-120	-334	-666	-1.2%	-1.5%
Hove	-541	-412	-516	-645	-1.4%	-1.2%
Lewes	-464	-312	-376	-529	-1.2%	-1.1%
Wealden	-451	-289	-390	-552	-1.2%	-1.2%
West Sussex	**-4,492**	**-2,848**	**-3,255**	**-4,898**	**-1.2%**	**-1.3%**
Arundel and South Downs	-392	-334	-481	-540	-1.2%	-1.1%
Bognor Regis and Littlehampton	-386	-204	-358	-541	-1.2%	-1.2%
Chichester	-596	-353	-265	-508	-1.0%	-1.1%
Crawley	-790	-521	-340	-609	-0.8%	-1.0%
East Worthing and Shoreham	-531	-332	-391	-590	-1.6%	-1.1%
Horsham	-602	-391	-522	-733	-1.3%	-1.4%
Mid Sussex	-668	-394	-463	-737	-1.4%	-1.4%
Worthing West	-527	-320	-435	-642	-1.2%	-1.8%
Hampshire and Sussex	**-19,290**	**-12,870**	**-14,605**	**-21,025**	**-1.2%**	**-1.3%**

Source: authors' own calculations using ONS, Census 2011, Gasiorek et al. (2018) and Dhingra et al. (2017a, 2017b).

We then ranked the 34 constituencies according to the size of employment loss under a 'no deal' Brexit, and looked at how these losses differed from that of a 'soft' Brexit – considering losses among workers and among residents in Figure A3 and Figure A4 respectively.

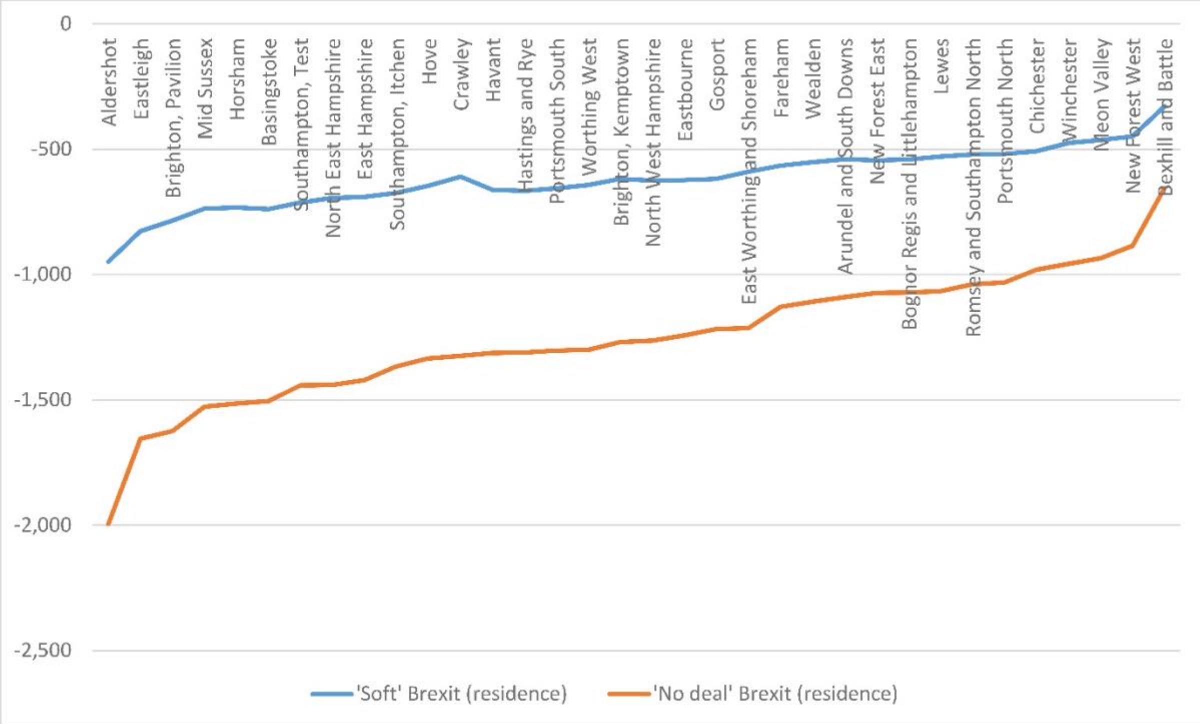
Two patterns are evident: first, even a 'soft' Brexit scenario will result in a loss of employment across all constituencies, with this loss being approximately half the size of that under a 'no deal' Brexit. Second, with a small number of exceptions, also the ranking of constituencies (small to large employment loss) is practically identical in both a 'no deal' and a 'soft' Brexit scenario. This means that those constituencies that may be the most vulnerable to employment loss under a 'no deal' Brexit tend to be the ones that are also the most vulnerable under a 'soft' Brexit.

Figure A3: Comparison of employment losses among workers under a 'no deal' and a 'soft' Brexit scenario for parliamentary constituencies in Hampshire and Sussex



Source: authors' own calculations using ONS, Census 2011, Gasiorek et al. (2018) and Dhingra et al. (2017a, 2017b).

Figure A4: Comparison of employment losses among residents under a 'no deal' and a 'soft' Brexit scenario for parliamentary constituencies in Hampshire and Sussex



Source: authors' own calculations using ONS, Census 2011, Gasiorek et al. (2018) and Dhingra et al. (2017a, 2017b).

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