

## LOCAL ECONOMIC EFFECTS OF BREXIT

### APPENDIX I: HARD AND SOFT BREXIT AND TIMESCALES

The soft Brexit scenario is defined by assuming that the UK remains in the Single Market and negotiates a deal like that of Norway with tariffs remaining at zero. However, non-tariff barriers are assumed to increase to one quarter of the reducible barriers faced by US exporters to the EU (a 2.77 per cent increase). In addition, the UK will not fully benefit from further market integration of the EU. It is assumed that this further market integration reduces within EU non-tariff barriers 20 per cent faster than for the rest of the world, which now includes the UK (this means within EU non –tariff barriers are 5.63 per cent lower in 10 years).<sup>1</sup> For the fiscal effect, we assume that the UK could save 17 per cent from its fiscal contribution to the EU (the same proportionate saving as Norway) – that is, approximately 0.09 per cent of UK GDP.

Hard Brexit is defined by assuming that the UK and EU trade under World Trade Organization (WTO) conditions

after Brexit. Non-tariff barriers increase to three quarters of the reducible barriers faced by US exporters to the EU (an 8.31 per cent increase). Furthermore as before, the UK will not fully benefit from further integration of EU. It is assumed that these effects are larger outside of a free trade agreement and that this further integration reduces within EU non-tariff barriers 40 per cent faster than in the rest of the world which now includes the UK (this means within EU barriers are 12.65 per cent lower in 10 years). For the fiscal effect, we assume that the UK saves more on fiscal contributions to the EU than under Soft Brexit – specifically, 0.31 per cent of UK GDP. For more details, see Dhingra *et al.* (2017).

The assumption that it takes 10 years for the non –tariff barriers (NTB) within EU to converge to their new levels after Brexit means that the long run predictions reported in the paper correspond to the new equilibrium after 10 years of further EU integration.

#### NOTE

1 Mejean and Schwellnus (2009) provide evidence of faster market integration within the EU (based on faster observed price convergence).

#### REFERENCES

Dhingra, S., Machin, S. and Overman, H.G. (2017), 'The local economic effects of Brexit', CEP Brexit paper no. 10.  
 Mejean, I. and Schwellnus, C. (2009), 'Price convergence in the European Union: within firms or composition of firms?', Working Papers hal –00354190, HAL.

## APPENDIX 2: FULL RESULTS TABLE FOR LOCAL AUTHORITIES

Table A1 presents results for all Local Authorities under the two different scenarios

| Local Authority       | Soft Brexit % | Hard Brexit % | Local Authority           | Soft Brexit % | Hard Brexit % |
|-----------------------|---------------|---------------|---------------------------|---------------|---------------|
| City of London        | -1.9          | -4.3          | Southwark                 | -1.2          | -2.5          |
| Aberdeen City         | -2.1          | -3.7          | Windsor and Maidenhead    | -1.3          | -2.5          |
| Tower Hamlets         | -1.7          | -3.6          | Cheshire West and Chester | -1.3          | -2.5          |
| Watford               | -1.5          | -3.1          | Lambeth                   | -1.2          | -2.5          |
| Mole Valley           | -1.5          | -3.0          | Runnymede                 | -1.2          | -2.5          |
| East Hertfordshire    | -1.5          | -2.8          | Brighton and Hove         | -1.3          | -2.5          |
| Reading               | -1.4          | -2.8          | Glasgow City              | -1.3          | -2.5          |
| Reigate and Banstead  | -1.4          | -2.8          | South Oxfordshire         | -1.3          | -2.5          |
| Worthing              | -1.5          | -2.8          | Woking                    | -1.3          | -2.5          |
| Islington             | -1.3          | -2.8          | Broxbourne                | -1.3          | -2.5          |
| Swindon               | -1.5          | -2.8          | Cardiff                   | -1.3          | -2.5          |
| Halton                | -1.5          | -2.8          | Welwyn Hatfield           | -1.3          | -2.5          |
| Craven                | -1.4          | -2.8          | Guildford                 | -1.3          | -2.5          |
| Three Rivers          | -1.4          | -2.8          | Havant                    | -1.5          | -2.5          |
| Slough                | -1.4          | -2.8          | Dacorum                   | -1.3          | -2.5          |
| Brentwood             | -1.3          | -2.8          | Croydon                   | -1.2          | -2.5          |
| Wokingham             | -1.4          | -2.8          | Merton                    | -1.2          | -2.5          |
| St Albans             | -1.3          | -2.7          | Cheshire East             | -1.3          | -2.5          |
| Bracknell Forest      | -1.3          | -2.7          | Warrington                | -1.3          | -2.5          |
| Edinburgh, City of    | -1.4          | -2.7          | Redbridge                 | -1.2          | -2.5          |
| Hertsmere             | -1.4          | -2.7          | Manchester                | -1.2          | -2.5          |
| Westminster           | -1.3          | -2.7          | Barnet                    | -1.2          | -2.5          |
| Salford               | -1.4          | -2.7          | Peterborough              | -1.2          | -2.5          |
| Eastleigh             | -1.6          | -2.7          | Cambridge                 | -1.3          | -2.5          |
| South Cambridgeshire  | -1.5          | -2.7          | South Gloucestershire     | -1.3          | -2.5          |
| Bournemouth           | -1.3          | -2.7          | North Tyneside            | -1.3          | -2.5          |
| Camden                | -1.3          | -2.7          | Blaby                     | -1.3          | -2.5          |
| Trafford              | -1.3          | -2.6          | Dartford                  | -1.3          | -2.5          |
| Stockton –on –Tees    | -1.4          | -2.6          | Gloucester                | -1.4          | -2.5          |
| Bristol, City of      | -1.3          | -2.6          | Poole                     | -1.4          | -2.4          |
| Rushmoor              | -1.4          | -2.6          | Chelmsford                | -1.3          | -2.4          |
| Harrow                | -1.3          | -2.6          | Wandsworth                | -1.2          | -2.4          |
| Tunbridge Wells       | -1.2          | -2.6          | Waverley                  | -1.2          | -2.4          |
| Elmbridge             | -1.3          | -2.6          | Broxtowe                  | -1.3          | -2.4          |
| Surrey Heath          | -1.3          | -2.6          | Exeter                    | -1.2          | -2.4          |
| Leeds                 | -1.3          | -2.6          | Harlow                    | -1.4          | -2.4          |
| Ipswich               | -1.3          | -2.6          | Winchester                | -1.3          | -2.4          |
| Kingston upon Thames  | -1.3          | -2.6          | Stockport                 | -1.3          | -2.4          |
| Hackney               | -1.3          | -2.6          | Inverclyde                | -1.3          | -2.4          |
| Nottingham            | -1.3          | -2.6          | Cheltenham                | -1.2          | -2.4          |
| Basingstoke and Deane | -1.4          | -2.6          | Southend –on –Sea         | -1.3          | -2.4          |
| Northampton           | -1.3          | -2.6          | Darlington                | -1.2          | -2.4          |
| Bromley               | -1.3          | -2.6          | Fareham                   | -1.4          | -2.4          |
| Hart                  | -1.4          | -2.6          | Preston                   | -1.2          | -2.4          |
| Epsom and Ewell       | -1.2          | -2.6          | Liverpool                 | -1.2          | -2.4          |
| Chiltern              | -1.3          | -2.5          | East Hampshire            | -1.3          | -2.4          |
| Vale of White Horse   | -1.4          | -2.5          | Richmond upon Thames      | -1.1          | -2.4          |
| Milton Keynes         | -1.3          | -2.5          | Bury                      | -1.3          | -2.4          |

Table A1 (continued)

| Local Authority           | Soft Brexit % | Hard Brexit % | Local Authority              | Soft Brexit % | Hard Brexit % |
|---------------------------|---------------|---------------|------------------------------|---------------|---------------|
| St Edmundsbury            | -1.3          | -2.4          | Ashford                      | -1.2          | -2.2          |
| Stevenage                 | -1.3          | -2.4          | Tandridge                    | -1.1          | -2.2          |
| Calderdale                | -1.3          | -2.4          | Spelthorne                   | -1.1          | -2.2          |
| Hammersmith and Fulham    | -1.1          | -2.4          | Rugby                        | -1.2          | -2.2          |
| Middlesbrough             | -1.2          | -2.4          | Aberdeenshire                | -1.2          | -2.2          |
| West Lothian              | -1.3          | -2.4          | Bath and North East Somerset | -1.1          | -2.2          |
| Mid Sussex                | -1.2          | -2.3          | Castle Point                 | -1.2          | -2.2          |
| Lewisham                  | -1.2          | -2.3          | Medway                       | -1.2          | -2.2          |
| West Berkshire            | -1.2          | -2.3          | Thanet                       | -1.3          | -2.2          |
| Maidstone                 | -1.2          | -2.3          | Doncaster                    | -1.2          | -2.2          |
| Warwick                   | -1.2          | -2.3          | Derby                        | -1.2          | -2.2          |
| Bolsover                  | -1.2          | -2.3          | Bromsgrove                   | -1.1          | -2.2          |
| Sefton                    | -1.2          | -2.3          | Stafford                     | -1.3          | -2.2          |
| Taunton Deane             | -1.2          | -2.3          | Lancaster                    | -1.1          | -2.2          |
| Birmingham                | -1.2          | -2.3          | Gateshead                    | -1.2          | -2.2          |
| Redcar and Cleveland      | -1.3          | -2.3          | Great Yarmouth               | -1.2          | -2.2          |
| Coventry                  | -1.2          | -2.3          | Bexley                       | -1.1          | -2.2          |
| Sevenoaks                 | -1.2          | -2.3          | Rochdale                     | -1.3          | -2.2          |
| Wycombe                   | -1.2          | -2.3          | Canterbury                   | -1.1          | -2.2          |
| Broadland                 | -1.2          | -2.3          | East Cambridgeshire          | -1.3          | -2.2          |
| North West Leicestershire | -1.3          | -2.3          | North Lanarkshire            | -1.2          | -2.2          |
| Test Valley               | -1.2          | -2.3          | Mansfield                    | -1.2          | -2.2          |
| Sutton                    | -1.1          | -2.3          | Charnwood                    | -1.3          | -2.1          |
| Havering                  | -1.2          | -2.3          | Eastbourne                   | -1.1          | -2.1          |
| Waltham Forest            | -1.2          | -2.3          | Newport                      | -1.2          | -2.1          |
| Epping Forest             | -1.2          | -2.3          | Dundee City                  | -1.2          | -2.1          |
| Norwich                   | -1.2          | -2.3          | Bradford                     | -1.2          | -2.1          |
| Thurrock                  | -1.2          | -2.3          | Lewes                        | -1.2          | -2.1          |
| Shepway                   | -1.2          | -2.3          | Sheffield                    | -1.2          | -2.1          |
| Lincoln                   | -1.2          | -2.3          | West Oxfordshire             | -1.3          | -2.1          |
| Knowsley                  | -1.2          | -2.3          | Staffordshire Moorlands      | -1.1          | -2.1          |
| Solihull                  | -1.1          | -2.3          | Rother                       | -1.1          | -2.1          |
| Tonbridge and Malling     | -1.1          | -2.3          | Brent                        | -1.1          | -2.1          |
| North Hertfordshire       | -1.3          | -2.3          | Stirling                     | -1.1          | -2.1          |
| The Vale of Glamorgan     | -1.3          | -2.3          | Harborough                   | -1.1          | -2.1          |
| East Renfrewshire         | -1.2          | -2.3          | South Tyneside               | -1.2          | -2.1          |
| Wiltshire                 | -1.2          | -2.3          | Plymouth                     | -1.1          | -2.1          |
| York                      | -1.1          | -2.3          | Blackburn with Darwen        | -1.3          | -2.1          |
| Renfrewshire              | -1.3          | -2.3          | Daventry                     | -1.1          | -2.1          |
| Rushcliffe                | -1.1          | -2.3          | Leicester                    | -1.2          | -2.1          |
| Harrogate                 | -1.1          | -2.3          | East Dunbartonshire          | -1.1          | -2.1          |
| Aylesbury Vale            | -1.2          | -2.3          | Fife                         | -1.2          | -2.1          |
| Swansea                   | -1.2          | -2.3          | Sunderland                   | -1.2          | -2.1          |
| Horsham                   | -1.2          | -2.2          | Gravesham                    | -1.1          | -2.1          |
| Rossendale                | -1.4          | -2.2          | Colchester                   | -1.1          | -2.1          |
| Wirral                    | -1.2          | -2.2          | North Ayrshire               | -1.2          | -2.1          |
| South Bucks               | -1.1          | -2.2          | Tewkesbury                   | -1.2          | -2.1          |
| Newham                    | -1.1          | -2.2          | Torbay                       | -1.1          | -2.1          |
| Enfield                   | -1.2          | -2.2          | Denbighshire                 | -1.3          | -2.1          |
| Bedford                   | -1.2          | -2.2          | Barking and Dagenham         | -1.1          | -2.1          |
| Portsmouth                | -1.2          | -2.2          | Hastings                     | -1.2          | -2.1          |
| Haringey                  | -1.2          | -2.2          | Tamworth                     | -1.2          | -2.1          |
| Greenwich                 | -1.1          | -2.2          | North Devon                  | -1.2          | -2.1          |
| West Dunbartonshire       | -1.2          | -2.2          | North East Lincolnshire      | -1.1          | -2.1          |
| Bolton                    | -1.2          | -2.2          | Fylde                        | -1.0          | -2.1          |
| Newcastle upon Tyne       | -1.1          | -2.2          | St. Helens                   | -1.1          | -2.1          |
| Chorley                   | -1.2          | -2.2          | Mendip                       | -1.1          | -2.1          |

**Table A1 (continued)**

| Local Authority        | Soft Brexit<br>% | Hard Brexit<br>% | Local Authority              | Soft Brexit<br>% | Hard Brexit<br>% |
|------------------------|------------------|------------------|------------------------------|------------------|------------------|
| Midlothian             | -1.1             | -2.1             | Blackpool                    | -1.0             | -1.9             |
| Cotswold               | -1.1             | -2.1             | Burnley                      | -1.1             | -1.9             |
| Stratford –on –Avon    | -1.1             | -2.1             | King’s Lynn and West Norfolk | -1.0             | -1.9             |
| Central Bedfordshire   | -1.1             | -2.1             | Rochford                     | -1.0             | -1.9             |
| Chesterfield           | -1.2             | -2.1             | Braintree                    | -1.1             | -1.9             |
| Bridgend               | -1.2             | -2.1             | Walsall                      | -1.2             | -1.9             |
| South Norfolk          | -1.1             | -2.1             | Wakefield                    | -1.1             | -1.9             |
| Newcastle –under –Lyme | -1.2             | -2.1             | Tendring                     | -1.1             | -1.9             |
| Rhondda, Cynon, Taff   | -1.2             | -2.1             | Isle of Wight                | -1.1             | -1.9             |
| East Ayrshire          | -1.1             | -2.1             | West Dorset                  | -1.1             | -1.9             |
| Adur                   | -1.1             | -2.1             | Highland                     | -1.0             | -1.9             |
| South Lanarkshire      | -1.1             | -2.1             | East Lothian                 | -1.0             | -1.9             |
| Ealing                 | -1.0             | -2.0             | Caerphilly                   | -1.2             | -1.9             |
| Suffolk Coastal        | -1.1             | -2.0             | Blaenau Gwent                | -1.2             | -1.9             |
| Falkirk                | -1.1             | -2.0             | Purbeck                      | -1.0             | -1.9             |
| Southampton            | -1.0             | -2.0             | East Riding of Yorkshire     | -1.0             | -1.9             |
| North Somerset         | -1.1             | -2.0             | Chichester                   | -1.0             | -1.9             |
| South Staffordshire    | -1.2             | -2.0             | Breckland                    | -1.0             | -1.9             |
| Lichfield              | -1.1             | -2.0             | Perth and Kinross            | -0.9             | -1.9             |
| Oxford                 | -1.0             | -2.0             | Swale                        | -1.0             | -1.9             |
| Worcester              | -1.1             | -2.0             | Rotherham                    | -1.1             | -1.9             |
| Basildon               | -1.1             | -2.0             | Wealden                      | -1.0             | -1.9             |
| Kirklees               | -1.2             | -2.0             | East Staffordshire           | -1.0             | -1.9             |
| Wigan                  | -1.1             | -2.0             | Gedling                      | -1.2             | -1.9             |
| Nuneaton and Bedworth  | -1.1             | -2.0             | Torridge                     | -1.0             | -1.9             |
| Hartlepool             | -1.2             | -2.0             | Clackmannanshire             | -1.0             | -1.9             |
| Oldham                 | -1.2             | -2.0             | Wolverhampton                | -1.1             | -1.9             |
| Scottish Borders       | -1.2             | -2.0             | Tameside                     | -1.1             | -1.9             |
| Arun                   | -1.2             | -2.0             | Gosport                      | -1.0             | -1.9             |
| North Warwickshire     | -1.1             | -2.0             | Rutland                      | -1.1             | -1.9             |
| Wyre                   | -1.1             | -2.0             | South Hams                   | -1.0             | -1.9             |
| New Forest             | -1.1             | -2.0             | South Lakeland               | -1.1             | -1.8             |
| Stoke –on –Trent       | -1.1             | -2.0             | South Ayrshire               | -1.0             | -1.8             |
| Cherwell               | -1.1             | -2.0             | Cornwall                     | -0.9             | -1.8             |
| County Durham          | -1.2             | -2.0             | Kingston upon Hull, City of  | -1.0             | -1.8             |
| South Ribble           | -1.1             | -2.0             | North Dorset                 | -1.2             | -1.8             |
| Redditch               | -1.4             | -2.0             | High Peak                    | -1.1             | -1.8             |
| Torfaen                | -1.2             | -2.0             | Richmondshire                | -0.9             | -1.8             |
| Teignbridge            | -1.1             | -2.0             | Eilean Siar                  | -0.9             | -1.8             |
| Gwynedd                | -1.1             | -2.0             | Carlisle                     | -1.0             | -1.8             |
| Weymouth and Portland  | -1.0             | -2.0             | Selby                        | -1.1             | -1.8             |
| Telford and Wrekin     | -1.1             | -2.0             | Ceredigion                   | -0.9             | -1.8             |
| Luton                  | -1.1             | -2.0             | Ashfield                     | -1.2             | -1.8             |
| Babergh                | -1.2             | -2.0             | South Somerset               | -1.0             | -1.8             |
| Christchurch           | -1.2             | -2.0             | Kettering                    | -1.0             | -1.8             |
| Wyre Forest            | -1.2             | -2.0             | Monmouthshire                | -1.0             | -1.8             |
| East Dorset            | -1.1             | -2.0             | Pembrokeshire                | -1.0             | -1.8             |
| Northumberland         | -1.1             | -2.0             | Hillingdon                   | -0.9             | -1.8             |
| Mid Suffolk            | -1.1             | -2.0             | Boston                       | -1.0             | -1.8             |
| South Northamptonshire | -1.1             | -2.0             | Angus                        | -1.1             | -1.8             |
| Huntingdonshire        | -1.1             | -2.0             | East Northamptonshire        | -1.0             | -1.8             |
| Maldon                 | -1.2             | -2.0             | Mid Devon                    | -1.1             | -1.8             |
| Malvern Hills          | -1.1             | -1.9             | Shropshire                   | -0.9             | -1.8             |
| Conwy                  | -1.0             | -1.9             | Bassetlaw                    | -1.0             | -1.8             |
| Stroud                 | -1.4             | -1.9             | West Devon                   | -0.9             | -1.8             |
| Wellingborough         | -1.1             | -1.9             | Hinckley and Bosworth        | -1.1             | -1.7             |
| Kensington and Chelsea | -0.9             | -1.9             | Derbyshire Dales             | -1.1             | -1.7             |

**Table A1 (continued)**

| Local Authority     | Soft Brexit<br>% | Hard Brexit<br>% | Local Authority          | Soft Brexit<br>% | Hard Brexit<br>% |
|---------------------|------------------|------------------|--------------------------|------------------|------------------|
| East Devon          | -0.9             | -1.7             | Forest Heath             | -0.9             | -1.6             |
| Dudley              | -1.0             | -1.7             | Orkney Islands           | -0.8             | -1.6             |
| Oadby and Wigston   | -1.0             | -1.7             | Sedgemoor                | -0.9             | -1.6             |
| Cannock Chase       | -1.0             | -1.7             | Shetland Islands         | -0.8             | -1.6             |
| Barrow –in –Furness | -1.0             | -1.7             | Wychavon                 | -0.9             | -1.6             |
| South Derbyshire    | -0.9             | -1.7             | Erewash                  | -1.0             | -1.6             |
| Barnsley            | -0.9             | -1.7             | Waveney                  | -0.8             | -1.5             |
| Wrexham             | -1.1             | -1.7             | Pendle                   | -1.1             | -1.5             |
| West Lindsey        | -0.9             | -1.7             | Merthyr Tydfil           | -0.8             | -1.5             |
| Dover               | -0.9             | -1.7             | Herefordshire, County of | -0.8             | -1.5             |
| Argyll and Bute     | -0.9             | -1.7             | Dumfries and Galloway    | -0.7             | -1.4             |
| Carmarthenshire     | -1.0             | -1.7             | Forest of Dean           | -0.8             | -1.4             |
| Uttlesford          | -0.9             | -1.7             | Allerdale                | -0.8             | -1.4             |
| Copeland            | -0.9             | -1.7             | Amber Valley             | -0.9             | -1.4             |
| South Kesteven      | -1.0             | -1.7             | Fenland                  | -0.7             | -1.4             |
| Flintshire          | -1.0             | -1.7             | Ryedale                  | -0.8             | -1.4             |
| West Lancashire     | -0.9             | -1.7             | Neath Port Talbot        | -1.0             | -1.4             |
| Scarborough         | -0.9             | -1.7             | North East Derbyshire    | -0.9             | -1.4             |
| Ribble Valley       | -0.9             | -1.7             | Eden                     | -0.7             | -1.3             |
| Hyndburn            | -1.0             | -1.6             | Moray                    | -0.7             | -1.3             |
| Sandwell            | -1.0             | -1.6             | North Lincolnshire       | -0.8             | -1.3             |
| East Lindsey        | -0.9             | -1.6             | Corby                    | -0.8             | -1.3             |
| Hambleton           | -0.9             | -1.6             | Anglesey                 | -0.6             | -1.2             |
| Newark and Sherwood | -0.9             | -1.6             | South Holland            | -0.6             | -1.1             |
| West Somerset       | -0.8             | -1.6             | Crawley                  | -0.7             | -1.1             |
| North Kesteven      | -0.9             | -1.6             | Isles of Scilly          | -0.5             | -1.1             |
| Powys               | -1.0             | -1.6             | Melton                   | -0.4             | -0.8             |
| North Norfolk       | -0.8             | -1.6             | Hounslow                 | -0.2             | -0.5             |