

## ANALYSIS

# Brexit Deal or No Deal

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### Introduction

Brexit is fast approaching. The British voted to leave the European Union more than two years ago, and the day of reckoning is now only six months away. The U.K. and the EU have been negotiating the terms of Brexit but remain far apart on a deal. There are many ways this could go, ranging from no deal at all, with the U.K. crashing out of the EU, to a reversal of Brexit altogether. The most likely outcome is somewhere in between. This paper considers five different scenarios that define the range of possibilities and assesses their impact on the U.K., the EU and global economies using the [Moody's Analytics model of the global economy](#).

# Brexit Deal or No Deal

BY MARK ZANDI AND BARBARA TEIXEIRA ARAUJO

**B**rexit is fast approaching. The British voted to leave the European Union more than two years ago, and the day of reckoning is now only six months away. The U.K. and the EU have been negotiating the terms of Brexit but remain far apart on a deal. There are many ways this could go, ranging from no deal at all, with the U.K. crashing out of the EU, to a reversal of Brexit altogether. The most likely outcome is somewhere in between. This paper considers five different scenarios that define the range of possibilities and assesses their impact on the U.K., the EU and global economies using the [Moody's Analytics model of the global economy](#).

## Brexit timeline

As things currently stand, the U.K. is set to leave the EU on March 29, at 11 p.m. local time. If the U.K. leaves the EU and they have failed to reach an agreement, many of the numerous rules that regulate the U.K.'s relationship with the EU and with the rest of world via the EU's legal structure no longer apply.

To be ready for the March deadline, the U.K. and EU hope to have a withdrawal agreement in place in the next couple of months. This would allow enough time for the U.K. and European Parliaments to ratify the agreement. A non-binding political declaration outlining the future relationship between the U.K. and EU is expected to accompany the withdrawal agreement. If everything sticks to script, the U.K. and EU would sign the agreement at a summit held in mid-November.

The U.K. and EU are also negotiating a transition period contingent on signing a withdrawal agreement. The transition would last through the end of 2020, during which the status quo would largely be maintained to give the U.K. and the EU more time to work on the terms of their future relationship. During the transition, the U.K. would remain in both the single market and the customs union. The single market allows for

the free flow of goods, services, people and investment, while the customs union imposes the same tariffs and regulations on trade in goods and services. The rights of businesses and citizens would continue under EU law. The U.K. would lose most of its political rights in the transition—namely the right to vote on and veto EU decisions—though it would be able to negotiate its own trade deals with third countries.

## What's the hang-up?

The U.K. and EU are negotiating a number of thorny issues, but the most significant concerns the border between the Republic of Ireland and Northern Ireland, which is part of the U.K. For many societal and historical reasons, both the U.K. and the EU are determined to avoid erecting a hard border between the two countries. The EU even insists on a legally binding “backstop” in any agreement that ensures that there will be no hard border regardless of whatever else happens, and that Northern Ireland would remain in full alignment with the EU's single market and customs union rules.

This is unacceptable to the U.K., whose government claims it would threaten the constitutional integrity of the country, by creating a border in the Irish Sea. U.K. Prime Minister Theresa May and her cabinet have

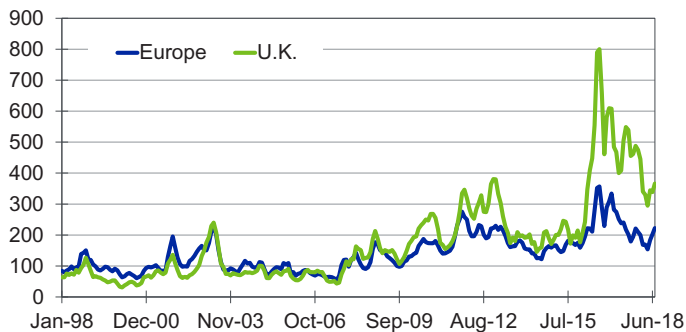
proposed that Britain would continue to observe EU rules on goods to ensure frictionless trade by means of a Facilitated Customs Arrangement. This consists of the U.K. and EU becoming a combined customs territory for goods, in which the U.K. would apply the EU's tariffs for goods intended for the bloc, with domestic tariffs imposed for goods heading to the U.K. This option relies on future advances in technology to streamline the process, eliminating the need for customs checks and a hard border in Ireland.

The EU has dismissed this so-called Chequers plan. Michael Barnier, the chief Brexit negotiator for the European Commission, has warned against the U.K. “cherry-picking” aspects of the current relationship that it likes—in this case, remaining in the customs union for goods—while he also warned that it would be illegal for the EU to relinquish control of its external borders and revenue to another country. The EU further argues that the proposal would be an invitation to fraud and has expressed concerns about the as-yet unproven technology proposed by the U.K.

Given the myriad issues and the difficult politics, there seems an almost infinite range of potential outcomes of the negotiations. We consider five scenarios that encompass the range of possible outcomes, and their global economic impacts. Databases for each

## Chart 1: Brexit Uncertainty Weighs on U.K.

Economic policy uncertainty index, 3-mo MA



Sources: Baker, Bloom and Davis, Moody's Analytics

of the scenarios are available for clients with forecasts for the 73 countries in the Moody's Analytics global model.

### Baseline – Customs Union for Goods (50% probability)

Despite the current brinkmanship, under the most likely baseline scenario, the U.K. and EU are expected to come to terms, with the U.K. staying in the customs union for goods—it will continue to fully abide by the EU's tariffs on other regulations on goods—but not for services, for which it negotiates a type of free-trade deal. Under the agreement, the U.K. maintains control over immigration into the country, but allows for the free flow of EU skilled and temporary workers. And the U.K. continues to pay some of the EU's budget. This agreement is negotiated by the end of the transition period, and the trade deal on services is phased in over several years.

This is a sanguine scenario for global financial markets and the global economy since investors expect the U.K. and EU to reach an agreement before the Brexit deadline. However, the British economy is meaningfully diminished. Uncertainty has been weighing on the U.K. economy since the Brexit vote; U.K. growth has lagged growth in the rest of Europe and is expected to do so through the transition period and phase-in of the agreement on services (see Chart 1).

The U.K.'s long-term growth potential is also impaired given the reduced access for U.K. services to the EU, and the reduction in

immigration and foreign investment. Over the next decade, British real GDP growth is projected to be 0.3 percentage point lower per annum than it would have been had there been no Brexit (see Table 1).

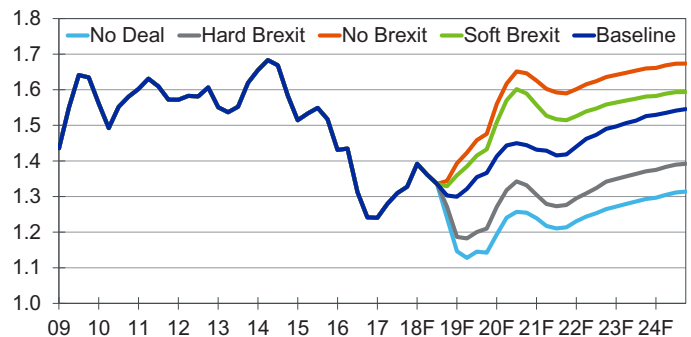
The EU economy is not materially impacted in the long run under the baseline Brexit scenario. Less trade and immigration weighs on growth, but the EU benefits from some shifting of investment onto the Continent. Most significantly, large financial institutions will move some of their operations from London to other financial centers in the EU, including Frankfurt, Amsterdam, Dublin and Paris.

### Soft Brexit – Norway+ (20% probability)

With polls showing support for Brexit weakening in the U.K., there is a possibility that May finds a political path to a softer Brexit. This scenario assumes that the U.K. adopts a relationship with the EU similar to that of Norway's. Under this arrangement, the U.K. would have access to the EU market (except for food and drinks, which are subsidized by the EU) in return for implementing all EU laws relating to the market. This option is often called *pay with no say*, because the U.K. would still need to contribute to the EU budget, though it would have no vote on the EU's rules despite having to abide by them. To avoid a hard border in Northern Ireland, the U.K. would also stay in the customs union. Norway is not in the customs union and still has border controls given that its

## Chart 2: Soft Brexit Buys the Pound

Exchange rates, £/\$



Sources: U.S. Board of Governors of the Federal Reserve System, Moody's Analytics

exports must be checked for compliance with EU rules of origin.

This guarantees the U.K. full access to the EU services and goods market, but it also means the U.K. must accept the free movement of people. The U.K. is no longer under the jurisdiction of the European Court of Justice, which was a red line for May, but it has to dock to the European Free Trade Association court, which is heavily influenced by the ECJ.

Picking this so-called Norway+ model for Brexit would surely upset hardline U.K. members of Parliament, but in this scenario they struggle to persuade enough colleagues to sack May in a leadership contest, or to block her proposals in Parliament. Few MPs are willing to risk their careers and a Labour government to back a harder Brexit, especially given shifting public opinion. The PM can also count on Labour MPs who support remaining in the EU, especially if the choice is either the Norway+ deal or no deal.

U.K. financial markets would be cheered by this outcome, and the British pound would be buoyed (see Chart 2). The British economy and real estate markets would benefit, and long-run U.K. growth would not be appreciably different if there had been no Brexit. The EU and global financial market and economic impacts would be positive, albeit on the margin.

### No Brexit (5% probability)

A much more remote scenario is that the British reverse themselves altogether and do not exit the EU. This scenario did not

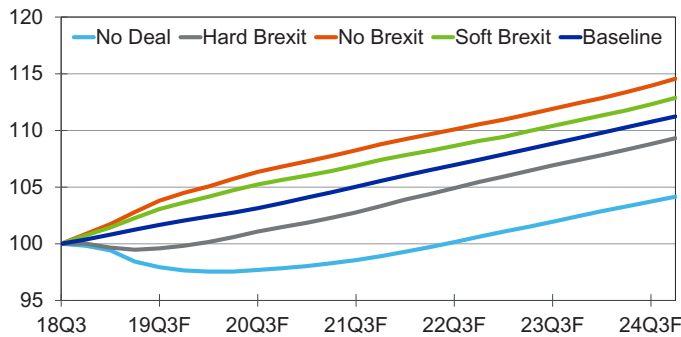
Table 1: U.K. Economic Performance Under Different Brexit Scenarios

	2018	2019	2020	2021	2022	2023	Avg annual growth	
							2018-2023	2018-2028
<b>Real GDP (2016£ billion)</b>								
Baseline	2,027	2,060	2,091	2,128	2,167	2,205	1.6	1.7
<i>annual growth, %</i>	<i>1.3</i>	<i>1.6</i>	<i>1.5</i>	<i>1.8</i>	<i>1.8</i>	<i>1.8</i>		
Soft Brexit	2,029	2,083	2,131	2,166	2,202	2,237	1.9	1.8
<i>difference with baseline, ppts</i>	<i>0.1</i>	<i>1.1</i>	<i>1.9</i>	<i>1.8</i>	<i>1.6</i>	<i>1.4</i>		
<i>annual growth, %</i>	<i>1.3</i>	<i>2.7</i>	<i>2.3</i>	<i>1.7</i>	<i>1.6</i>	<i>1.6</i>		
No Brexit	2,030	2,096	2,152	2,193	2,231	2,267	2.1	2.0
<i>difference with baseline, ppts</i>	<i>0.1</i>	<i>1.7</i>	<i>2.9</i>	<i>3.1</i>	<i>3.0</i>	<i>2.8</i>		
<i>annual growth, %</i>	<i>1.4</i>	<i>3.2</i>	<i>2.7</i>	<i>1.9</i>	<i>1.7</i>	<i>1.6</i>		
Hard Brexit	2,025	2,023	2,047	2,082	2,125	2,166	1.3	1.5
<i>difference with baseline, ppts</i>	<i>-0.1</i>	<i>-1.8</i>	<i>-2.1</i>	<i>-2.1</i>	<i>-1.9</i>	<i>-1.8</i>		
<i>annual growth, %</i>	<i>1.2</i>	<i>-0.1</i>	<i>1.2</i>	<i>1.7</i>	<i>2.1</i>	<i>1.9</i>		
No-Deal Brexit	2,024	1,997	1,983	1,999	2,029	2,066	0.5	1.0
<i>difference with baseline, ppts</i>	<i>-0.1</i>	<i>-3.0</i>	<i>-5.2</i>	<i>-6.1</i>	<i>-6.4</i>	<i>-6.3</i>		
<i>annual growth, %</i>	<i>1.1</i>	<i>-1.3</i>	<i>-0.7</i>	<i>0.8</i>	<i>1.5</i>	<i>1.8</i>		
<b>Unemployment rate (%)</b>								
Baseline	4.3	4.6	4.9	5.1	5.1	5.1		
Soft Brexit	4.3	4.2	4.5	4.7	4.8	4.9		
<i>difference with baseline, ppts</i>	<i>-0.0</i>	<i>-0.4</i>	<i>-0.4</i>	<i>-0.4</i>	<i>-0.3</i>	<i>-0.2</i>		
No Brexit	4.2	4.1	4.2	4.4	4.5	4.6		
<i>difference with baseline, ppts</i>	<i>-0.0</i>	<i>-0.6</i>	<i>-0.7</i>	<i>-0.7</i>	<i>-0.6</i>	<i>-0.5</i>		
Hard Brexit	4.3	4.9	5.3	5.6	5.5	5.4		
<i>difference with baseline, ppts</i>	<i>0.0</i>	<i>0.2</i>	<i>0.4</i>	<i>0.5</i>	<i>0.4</i>	<i>0.3</i>		
No-Deal Brexit	4.3	5.0	5.8	6.5	6.5	6.3		
<i>difference with baseline, ppts</i>	<i>0.0</i>	<i>0.4</i>	<i>0.9</i>	<i>1.4</i>	<i>1.4</i>	<i>1.2</i>		
<b>House price index</b>								
Baseline	134.4	137.0	137.8	139.4	141.8	146.0	2.0	2.9
<i>annual growth, %</i>	<i>3.4</i>	<i>2.0</i>	<i>0.6</i>	<i>1.2</i>	<i>1.7</i>	<i>2.9</i>		
Soft Brexit	134.5	139.5	141.3	142.4	144.2	148.2	2.2	3.1
<i>difference with baseline, ppts</i>	<i>0.1</i>	<i>1.8</i>	<i>2.5</i>	<i>2.1</i>	<i>1.7</i>	<i>1.6</i>		
<i>annual growth, %</i>	<i>3.5</i>	<i>3.7</i>	<i>1.3</i>	<i>0.8</i>	<i>1.3</i>	<i>2.8</i>		
No Brexit	134.5	140.3	143.6	145.4	147.8	151.8	2.6	3.2
<i>difference with baseline, ppts</i>	<i>0.1</i>	<i>2.4</i>	<i>4.2</i>	<i>4.3</i>	<i>4.2</i>	<i>4.0</i>		
<i>annual growth, %</i>	<i>3.5</i>	<i>4.3</i>	<i>2.3</i>	<i>1.3</i>	<i>1.7</i>	<i>2.7</i>		
Hard Brexit	134.2	134.7	135.0	136.4	139.7	144.2	1.7	2.5
<i>difference with baseline, ppts</i>	<i>-0.1</i>	<i>-1.7</i>	<i>-2.0</i>	<i>-2.1</i>	<i>-1.5</i>	<i>-1.2</i>		
<i>annual growth, %</i>	<i>3.3</i>	<i>0.4</i>	<i>0.2</i>	<i>1.0</i>	<i>2.4</i>	<i>3.2</i>		
No-Deal Brexit	134.2	129.5	120.7	119.1	121.3	126.5	-0.4	1.3
<i>difference with baseline, ppts</i>	<i>-0.2</i>	<i>-5.5</i>	<i>-12.4</i>	<i>-14.6</i>	<i>-14.5</i>	<i>-13.3</i>		
<i>annual growth, %</i>	<i>3.2</i>	<i>-3.5</i>	<i>-6.8</i>	<i>-1.3</i>	<i>1.8</i>	<i>4.3</i>		
<b>FTSE 100 Stock Price Index</b>								
Baseline	7,560.4	7,225.4	6,997.8	7,621.1	8,073.7	8,353.1	2.2	3.0
Soft Brexit	7,563.1	7,446.0	7,388.2	7,978.1	8,415.0	8,739.7	2.9	3.4
<i>difference with baseline, ppts</i>	<i>0.0</i>	<i>3.1</i>	<i>5.6</i>	<i>4.7</i>	<i>4.2</i>	<i>4.6</i>		
No Brexit	7,612.7	8,133.3	7,756.0	8,328.0	8,756.3	9,054.1	3.5	3.6
<i>difference with baseline, ppts</i>	<i>0.7</i>	<i>12.6</i>	<i>10.8</i>	<i>9.3</i>	<i>8.5</i>	<i>8.4</i>		
Hard Brexit	7,528.8	6,429.1	6,752.8	7,490.7	7,994.0	8,264.0	2.2	2.9
<i>difference with baseline, ppts</i>	<i>(0.4)</i>	<i>(11.0)</i>	<i>(3.5)</i>	<i>(1.7)</i>	<i>(1.0)</i>	<i>(1.1)</i>		
No-Deal Brexit	7,481.5	5,685.9	5,859.0	7,088.9	7,631.6	7,984.7	2.3	2.8
<i>difference with baseline, ppts</i>	<i>-1.0</i>	<i>-21.3</i>	<i>-16.3</i>	<i>-7.0</i>	<i>-5.5</i>	<i>-4.4</i>		

Source: Moody's Analytics

### Chart 3: Real GDP Highest in No Brexit

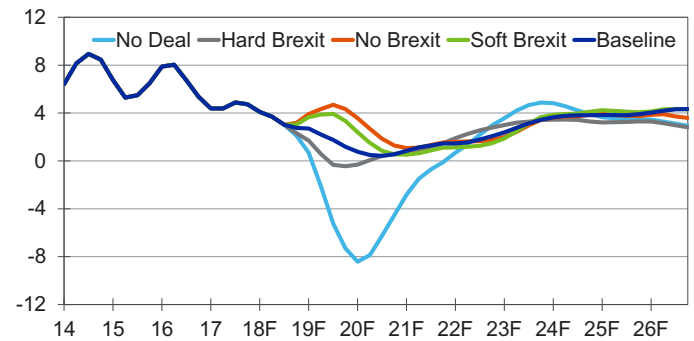
Real GDP, 2018Q3=100



Sources: ONS, Moody's Analytics

### Chart 4: Hard Brexit Hard on Housing

Avg house prices, % change yr ago



Sources: ONS, Moody's Analytics

seem even worth considering until recently as the messy reality of Brexit appears to be dawning on the British population, and sentiment is shifting. In this scenario, as it becomes clearer that negotiations with the EU are headed to collapse, May decides to hold a second referendum, in which the public changes its mind and votes to remain in the EU.

Another plausible political path to a second referendum is that the PM loses a no-confidence vote, the Conservative party fails to form a government, and new elections are held. The Labour party wins based on a platform to reverse Brexit. The main uncertainty with this path is that new elections normally take several months, making it difficult to do before the Brexit deadline, although the EU would likely agree to an extension.

This is the most optimistic scenario for the U.K. and global financial markets and the economy (see Chart 3). Most importantly, it would likely help solidify the unity of the EU and euro zone. In most EU nations, there is some meaningful political support for leaving the EU—support fueled in part by the success of Brexit to date. A Brexit failure would reduce the political energy behind these other splinter movements.

#### Hard Brexit – Canada FTA (20% probability)

Despite the opinion polls, it is conceivable that Brexit takes a very different turn, and there is a much cleaner break between the U.K. and the EU. In such a hard Brexit scenario, the relationship between the U.K.

and EU is assumed to be similar to the current free-trade agreement between the EU and Canada.

The U.K.-EU FTA would focus on the trade in goods, working to keep tariffs down. To ensure compliance with regulatory standards and rules of origin, border checks would seem necessary. The U.K. may thus have no choice but to relent to a hard border between Ireland and Northern Ireland or, barring that, the creation of an invisible border in the Irish Sea. The FTA for services would be limited, as most sectors would likely remain excluded. In the EU-Canada FTA, audio-visual services, public services, and air transport are entirely left out of the agreement. The EU is also unlikely to open its markets for U.K. financial institutions given how some member countries see Brexit as an opportunity to attract those institutions from the U.K.

Despite all these drawbacks, the British may be willing to do a hard Brexit since immigration from the EU to the U.K. would be restricted, and the U.K. would leave the jurisdiction of the ECJ. Britain would also be free to sign trade deals with third countries.

Coming to terms on a FTA will take time to finalize—EU-Canada negotiations took seven years—as will the ratification process. A lengthy transition period would thus be necessary.

A hard Brexit will weigh heavily on U.K. growth. In the near term, cross-border supply chains between the U.K. and EU would be significantly disrupted, especially for just-in-time delivery of manufactured goods and food products. The Bank of England would

respond by easing monetary policy and the pound would fall in value, cushioning the near-term blow to the economy. House prices and stock values would go flat for a while (see Chart 4).

Longer run, restriction on services trade would depress growth, as services account for an outside three-fourths of U.K. GDP and almost half of the country's exports. With "passporting rights" to the EU likely curtailed, London's status as a global financial center would fade. Also hurting long-term growth would be less foreign investment and immigration. British real GDP growth will be approximately half a percentage point lower per annum over the next decade than if there had been no Brexit.

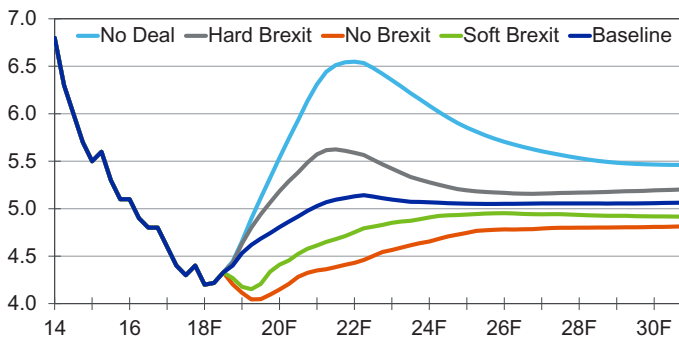
Fallout from a hard Brexit on the EU economy will be meaningful in the short term given the disruption to supply chains, but there should be little longer-run impact as economic activity and investment shifts from the U.K. to the EU. The global economy should ultimately navigate through this scenario largely unscathed.

#### No Deal (5% probability)

The most worrisome scenario is that the U.K. and EU fail to come to terms on Brexit by the March deadline, and the U.K. crashes out of the customs union and single market. Trade between the U.K. and EU would revert to rules governed by the World Trade Organization. This means border controls will be necessary, tariffs will increase, and regulations and standards will ultimately diverge.

## Chart 5: No-Deal Brexit Jolts Unemployment

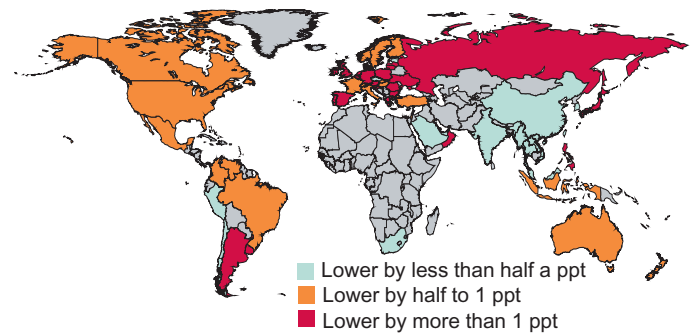
Unemployment rate, %



Sources: ONS, Moody's Analytics

## Global Economy Suffers in No-Deal Brexit

Difference in Real GDP in 2020Q4



Source: Moody's Analytics

A no-deal scenario seemed inconceivable just a few months ago, given the clearly large economic costs involved for both parties, but as the stalemate drags on, the odds of a no-deal Brexit have risen enough that this scenario cannot be dismissed.

While it is likely that May will find a way to say yes to some agreement with the EU, it seems much less likely that the House of Commons will go along. This would be especially problematic if the British delay a vote to the last moment, leaving no time to reopen negotiations. It is also possible that the EU could refuse to engage in further talks, or even that the prime minister loses a no-confidence vote to hardline Brexit MPs who replace her and refuse to compromise with the EU.

If it appears that the U.K. and EU will be unable to reach a Brexit deal, it is possible that they strike smaller temporary arrangements regarding different aspects of trade and immigration to minimize the fallout. The impact of a no-deal Brexit would then vary from sector to sector, with some sectors hit harder than others.

A no-deal scenario would push the U.K. economy into recession, and meaningfully damage its long-term growth prospects. The supply chain between the U.K. and the EU would be badly broken, resulting in long delays at borders due to customs checks and passport issues. The fate of Britons in the EU and EU citizens in the U.K. would be up in the air. And regulatory arrangements that govern many aspects of everyday life, ranging from medicines to driver licenses would break

down. Air traffic could be grounded, while financial institutions would be unsure how to operate.

The BoE would quickly respond by pushing short-term rates back close to the zero lower bound and restart quantitative easing. The BoE would also likely ease capital requirements for the banking system, at least temporarily. The value of the pound would fall sharply, even potentially approaching parity with the euro. Lower interest rates and a weaker pound would cushion the immediate blow of a no-deal Brexit but not enough to forestall a British recession.

The EU economy suffers in this scenario but avoids an outright recession. Growth nearly stalls out as trade, immigration and investment with the U.K. are upended, and unemployment rises. Not surprisingly, the Irish economy struggles greatly in this scenario, as does the Eastern European economy, which is highly sensitive to economic events in the rest of Europe (see Map). The German and Dutch economies are also hit somewhat hard given their reliance on trade.

The rest of the global economy feels the fallout from the disorderly breakup of the U.K. and EU. Emerging economies reliant on global capital flows such as Argentina and Turkey suffer in the risk-off environment. So do economies such as Russia and Oman that are reliant on oil and other commodities, which decline in price due to weaker global demand. The U.S. economy weathers the fallout relatively well as the sting is mitigated by the current fiscal stimulus. However, the value of the dollar rises, powered by the

global flight to quality, and growth slows enough that unemployment stabilizes close to where it is today. The Asian economy, including China and India, navigates through this scenario most gracefully. Trade linkages with Europe are less important, and Asia's economy benefits from the lower oil and other commodity prices. Weaker currencies, particularly the Chinese yuan, also support the Asian economy.

The no-deal Brexit scenario would be even more disruptive to the global economy if not for our assumption that the immediate financial and economic turmoil would prompt the U.K. and EU to quickly re-engage in talks regarding a free-trade agreement. There would be no going back on Brexit, but the pressure to quickly strike an FTA to quell the tumult would be intense.

Even so, the U.K. economy's longer-term prospects are significantly diminished in a no-deal scenario, with real GDP growth reduced by a full percentage point per annum over the next decade. British unemployment will be significantly higher as displaced workers are unable to easily move to the EU, lifting the full-employment unemployment rate, and living standards will be substantially smaller a generation from now (see Chart 5). The long-term implications for the EU economy depend on whether this no-deal break ignites similar political and economic breaks throughout Europe. It is conceivable that the fissures that now exist in nearly every European country turn into fault lines. If so, the economic damage will mount across the globe.

## Conclusions

The British have made a serious error with Brexit. The question now is how damaging it will be. Given shifting political sentiments in the U.K. as the reality of Brexit comes into view, the most likely scenario is that the U.K. will soon strike a deal with the EU that minimizes the break. The U.K. will remain in a customs union for goods

with the EU, but give up unfettered access to the EU for services, including financial services. If so, the fallout on the U.K., EU and global economies would be small, especially in the longer run after an adjustment period. There are more optimistic scenarios, in which the break between the U.K. and EU is even less significant, but there are also much more pessimistic ones,

the darkest of which involves a full and unplanned parting of ways early next year. With each passing week that British and EU authorities cannot come to terms, odds increase that Brexit goes off the rails. The economic fallout would be painful, but the political implications are potentially even worse. The British must figure this out before it is too late.

## About the Author

**Mark Zandi** is chief economist of Moody's Analytics, where he directs economic research. Moody's Analytics, a subsidiary of Moody's Corp., is a leading provider of economic research, data and analytical tools. Dr. Zandi is a cofounder of Economy.com, which Moody's purchased in 2005.

Dr. Zandi's broad research interests encompass macroeconomics, financial markets and public policy. His recent research has focused on mortgage finance reform and the determinants of mortgage foreclosure and personal bankruptcy. He has analyzed the economic impact of various tax and government spending policies and assessed the appropriate monetary policy response to bubbles in asset markets.

A trusted adviser to policymakers and an influential source of economic analysis for businesses, journalists and the public, Dr. Zandi frequently testifies before Congress on topics including the economic outlook, the nation's daunting fiscal challenges, the merits of fiscal stimulus, financial regulatory reform, and foreclosure mitigation.

Dr. Zandi conducts regular briefings on the economy for corporate boards, trade associations and policymakers at all levels. He is on the board of directors of MGIC, the nation's largest private mortgage insurance company, and The Reinvestment Fund, a large CDFI that makes investments in disadvantaged neighborhoods. He is often quoted in national and global publications and interviewed by major news media outlets, and is a frequent guest on CNBC, NPR, Meet the Press, CNN, and various other national networks and news programs.

Dr. Zandi is the author of *Paying the Price: Ending the Great Recession and Beginning a New American Century*, which provides an assessment of the monetary and fiscal policy response to the Great Recession. His other book, *Financial Shock: A 360° Look at the Subprime Mortgage Implosion, and How to Avoid the Next Financial Crisis*, is described by the New York Times as the "clearest guide" to the financial crisis.

Dr. Zandi earned his BS from the Wharton School at the University of Pennsylvania and his PhD at the University of Pennsylvania. He lives with his wife and three children in the suburbs of Philadelphia.

**Barbara Teixeira Araujo** is an economist at the Moody's Analytics Prague office. She is responsible for providing research and analysis on key European economies. Before joining Moody's Analytics, Barbara worked at the economic research department of Natixis in Paris. Her work experience includes macroeconomic forecasting and real-time economic coverage. She holds a master's degree in international economics and a BSc in financial engineering from Paris-Dauphine University.



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Moody's Analytics added the economic forecasting firm Economy.com to its portfolio in 2005. This unit is based in West Chester PA, a suburb of Philadelphia, with offices in London, Prague and Sydney. More information is available at [www.economy.com](http://www.economy.com).

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