

17-9 The City of London after Brexit

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In March 2017 the UK government will apply for Article 50 of the Lisbon Treaty to end its membership in the European Union. This unprecedented step follows the June 23, 2016, UK referendum on the country's exit from the European Union (dubbed Brexit), the results of which surprised many economists. Business leaders had warned about the negative effects of EU departure on the UK and European economies, and specifically on the City of London. Senior bankers threatened to leave the City if Brexit took place,¹ because it will deprive UK-based financial institutions of free access to EU clients and markets.

The City of London may lose up to £18 billion² in revenue and up to 30,000 jobs by leaving the single market (Oliver Wyman 2016). The analysis in this Policy Brief suggests that these estimates account for about 15 percent of financial sector revenue and 3 percent of employment in the City. Other estimates show similar magnitudes: £14 billion to £20 billion in revenue and 70,000 jobs lost (PwC 2016) or 83,000 jobs lost (EY 2017). According to these estimates, the direct negative effect of Brexit on the financial sector in the City of London will be a 12 to 18 percent loss of revenue and a 7 to 8 percent drop in employment, clearly significant effects.

1. Samuel Osborne, "Brexit: Leading banks 'planning to leave UK early next year,'" *The Independent*, October 23, 2016.

2. All figures in this Policy Brief are given in UK pounds and as of February 23, 2017, £1 is worth \$1.25.

In macroeconomic terms the initial effects of Brexit on the country's financial sector are modest: UK GDP may shrink by 0.5 percent and employment by 0.2 percent. These estimates are smaller than those predicted by the government prior to the referendum.³ In April 2016 the UK Treasury predicted declines of £38 billion in revenue and up to 230,000 jobs in the financial sector as a consequence of Brexit. These effects may materialize in the longer term.

The likely effect of Brexit on the European Union is not the subject of this Policy Brief. Readers are referred to studies that estimate the cost of Brexit to European corporations and households and propose a positive agenda for regulatory change in the European Union (Sapir, Schoenmaker, and Véron 2017).⁴ The agenda critically depends on completing the integrated single market for financial services, and in particular the European banking union.

This Policy Brief is organized as follows: Section 1 outlines the key events in the emergence of the City of London as a global financial capital. Section 2 documents the size of the city in terms of revenues and taxes paid and describes the main financial subsectors operating in the City and their relative importance. Section 3 estimates the possible effects of Brexit, using admittedly rough calculations and assuming difficult negotiations with the European Union. Section 4 concludes with a warning about the risks to Britain if it undertakes financial deregulation to discourage financial institutions from leaving the City.

1. THE MAKING OF THE CITY

London's position as a global financial center started to evolve at the end of the 17th century when the first banks set up shop. In 1672 Richard Hoare founded C. Hoare & Co., the oldest bank in the United Kingdom; in 1690 John Freame established Barclays Bank, and two years later John Campbell founded Coutts, originally a goldsmith-banker's shop (Kynaston 2012).

A century later, another burst of activity defined the City. Francis Baring founded Barings Bank in 1792, di-

3. The Report of the UK Treasury on Brexit effects is available at www.gov.uk/government/publications/hm-treasury-analysis-the-long-term-economic-impact-of-eu-membership-and-the-alternatives (accessed on January 30, 2017).

4. Also see Nicolas Véron, "The City Will Decline, and We Will Be the Poorer for It," *Prospect Magazine*, September 2016.

versifying merchant financing from the original wool trade into other commodities and providing services necessary for the rapid growth of international trade. In 1798 Nathan Mayer Rothschild set up N. M. Rothschild & Sons, the London branch of the first global bank, which originated in Frankfurt. With branches in five major European cities (London, Paris, Frankfurt, Vienna, and Naples), the bank made it possible for investors to collect earnings from their bonds in different countries in the currency of their choice (Ferguson 1998). These institutions were the steppingstones toward international banking (Polanyi 1944).

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Fast-forward another century and London had become the capital of a vast empire, requiring know-how for global financial management. By 1913 the British Empire administered territories with 412 million people, 23 percent of the world population at the time (Maddison 2001, 97). The wide span of government activities and private business attracted professionals from around the world, turning the City of London into the world's largest agglomeration of financial institutions and talent.

But just a few decades later the United Kingdom emerged from World War II a weakened nation. The economy was in ruins, and the government owed \$3.5 billion to the United States for reconstruction. London lost much of its luster as a financial center. By the 1950s it was not much different from Paris or Frankfurt in terms of size and depth of financial services and had fallen far behind New York (Kennedy 2011). For example, in 1954 the New York-based commercial banks held \$35.4 billion in assets, compared with \$19.4 billion in London. New York also surpassed London in terms of loan issuance, brokering \$4.17 billion in foreign loans between 1955 and 1960, compared with \$1.06 billion in London.⁵ Moreover, the London financial markets were based on a structure that was 150 years old and ossified by regulation.

The City recovered somewhat in the 1960s with the introduction of eurobonds, first arranged by London bank

S. G. Warburg in 1963. An industry developed quickly, and London again started attracting bankers and lawyers from Europe and the United States. But it was the “Big Bang” reforms of the 1980s that turned the City of London into the leading global financial center it is today. The Big Bang introduced new rules for the financial services industry enabling the switch from traditional face-to-face share dealing to electronic trading. There were three key elements to the reforms: abolishing minimum fixed commissions on trades, ending the separation between those who traded stocks and shares and those who advised investors, and allowing foreign firms to own UK brokerages. Removing fixed commissions allowed more competition; ending the separation of dealers and advisors allowed mergers and takeovers; and allowing foreign owners opened the City of London to international banks (Martin 2017).

The Big Bang reforms proved prescient. London became the natural focal point of financial activity in Europe when the euro was introduced in 1999 as the currency of 11 EU member states. The contemporaneous internal market policy efforts—for example, the Lamfalussy Process of developing financial service industry regulations used by the European Union—further fueled growth of the City. Auxiliary service providers such as legal advisory firms developed rapidly, with expertise in not only common law but also the civil law tradition of continental Europe. Thanks to the euro project and the internal market enhancements, the 15 largest legal practices in Europe are all headquartered in London.⁶

In addition to the early emergence of financial institutions and the Big Bang financial reforms, there are other reasons for the City's comparative advantage. One is its time zone: London's trading day starts as the Tokyo market closes and a few hours before New York's opens. Second, the widespread use of English around the world gives London an edge over Frankfurt, Paris, or Milan as Europe's main financial center. Third, the fair and efficient UK legal system is a point of attraction: when there are parties from several different countries in a deal—say, a Dutch firm selling an African business to an Asian rival—they often choose to have the contract drawn up in the language of a country that has clear commercial laws and experienced judges. Fourth, London has highly rated universities that draw international talent and create a pool of well-prepared professionals—in the 2016 ranking of world universities, London and its environs have four among the top 25; only one other European uni-

5. Christopher Skinner, “How the City Developed, After World War II,” The Finanser blog, August 12, 2016.

6. The list of the 200 largest European law firms is available at www.eubusiness.com/topics/eulaw/firms (accessed on January 27, 2017).

versity makes the cut.⁷ The analysis returns to these special characteristics of London in section 4.

These reasons—the historical development of the City as global financial center; the beneficial language, educational, and legal environment for the development of financial services; and the regulatory improvements in the 1980s enhanced by the introduction of the euro and the expansion of the single market program—explain why London ranked first among global financial centers in 2017, ahead of New York and Singapore. The next highest ranked European city is Zürich, in 9th place; Luxembourg is 12th, Frankfurt 19th, Munich 27th, and Paris 29th.⁸

2. SIZE AND CONSTITUTION OF THE CITY

This Policy Brief assesses the possible effect of Brexit on financial institutions operating in London, drawing on analyses by leading business consultancies and my estimates based on those analyses. The research suggests that the immediate effects of Brexit on the City's financial sector may be sizable.

The City is defined in this Policy Brief as the financial sector within the greater London area, comprising the square mile, Canary Wharf, and the West End. My analysis uses 2015 and 2016 revenues and tax data from the financial sector to evaluate the direct effects of Brexit.

To assess the effects of Brexit, it is instructive to understand the City's sectors and services, how they are interrelated, and which depend most extensively on the environment that London offers.

First, this section presents some statistics on the importance of the City for the UK economy. London accounts for about 7 percent of UK GDP and employs 1,060,000 workers.⁹ Some 1,400 financial services firms in the City are majority foreign owned, from about 80 countries (City of London 2013). EU membership has contributed to the internationalization of the City as the largest financial institutions in the world—from commercial and investment banks to insurers, asset managers, and hedge funds—have their European headquarters in the United Kingdom (IMF 2016a). The Big Bang reforms were, however, the primary impetus for the agglomeration of European financial services in London (IMF 2016b).

The City is the United Kingdom's largest exporter. In 2015 the country ran a £19.1 billion surplus in financial services with the European Union and £3.6 billion in insurance services. Financial services accounted for 25 percent of UK service exports to the European Union, and insurance a further 4 percent.¹⁰ Aerospace equipment and university education were the next largest exports (ONS 2017).

The following sections review the size and makeup of the subsectors that constitute the City. This exercise clarifies to what extent financial services exports to continental Europe are essential for the viability of London as a financial center.

a. Banking

There are 250 foreign banks operating in London—more than in its nearest rivals New York, Paris, or Frankfurt (TheCityUK 2016). Nearly a fifth of global banking activity worldwide is booked in the United Kingdom.¹¹ The EU passport system allows a financial institution headquartered in one European Union country to conduct business in all other member countries. Many foreign banks headquarter their European subsidiaries in London and then use the passport system to operate branches across the rest of the European Union. The number of such EU-oriented banks can be estimated by the number of applicable passports. Under EU Capital Requirements Directive (CRD) IV, which governs access to deposit-taking activities, 102 passports for UK-based firms providing services to firms in other EU/European Economic Area (EEA) states have been issued,¹² while under the Markets in Financial Instruments Directive (MiFID), the EU regulation on investment services and activities, 2,250 outbound passports have been issued to firms based in the City of London (FCA 2016).

The most significant subsector in banking is retail and business banking, which accounts for about 55 percent of the banking sector's revenues and about 82 percent of its employees (table 1). The second largest subsector is sales and trading, responsible for 30 percent of banking sector revenue and about 11 percent of its employment, while investment banking and private banking and wealth management account for 10 and 5 percent of banking revenues, respectively.

7. Academic Ranking of World Universities 2016, www.shanghairanking.com/ARWU2016.html (accessed on January 17, 2017).

8. Global Financial Centres Index 2017, www.longfinance.net/images/gfci/20/GFCI20_26Sep2016.pdf (accessed on February 22, 2017).

9. Office for National Statistics, 2016, www.ons.gov.uk/economy/grossdomesticproductgdp (accessed on January 17, 2017).

10. Eurostat, International Trade in Services: United Kingdom (accessed on January 6, 2017).

11. Vincenzo Scarpetta, and Stephen Booth, "How the UK's financial services sector can continue thriving after Brexit," Open Europe, October 17, 2016.

12. For further detail on the Capital Requirements Directive (CRD) IV directive, see www.bankofengland.co.uk/pract/pages/crddiv/default.aspx.

Table 1 Financial services by subsector

	Revenues (billions of pounds)	Value added (billions of pounds)	Tax (billions of pounds)	Employment (thousands)
Total banking	109	66	30	560
Retail and business banking	62	40	18	460
Sales and trading	30	15	8	60
Investment banking	12	7	3	15
Private banking and wealth management	5	4	1	25
Insurance and reinsurance	41	32	14	325
Asset management	22	17	6	45
Market Infrastructure and other	28	18	10	130
Exchanges, clearing, and interdealer brokering	4	2	1	10
Securities services	4	2	1	35
Technology, data, and other	20	14	8	85
Total financial services	200	133	60	1,060

Note: The table uses point estimates rather than a range, as presented in the original analyses.

Sources: Oliver Wyman (2016); PwC (2016).

There are significant differences in the international profile of each subsector. Retail and business banking is primarily domestic, with less than 1 percent of household loans destined for the euro area (European Commission 2015, 6). In contrast, private banking and wealth management practice is primarily international, with two-thirds of revenues generated by services for foreign clients. Approximately 14 percent of global investment banking revenue is booked through the London subsidiaries of international banks; this is the share of business that relies on passporting (TheCityUK 2016). Within this share, about half of European investment banking activity is conducted in London.

When the United Kingdom leaves the single market the investment banking sector will be subject to the upcoming MiFID II and Markets in Financial Instruments Regulation (MiFIR), both set to take effect January 3, 2018.¹³ The legislation regulates access to the EU market by third-country firms that provide certain types of investment services and activities, such as portfolio management, investment advice, and the execution of trading orders on behalf of clients.

The main difference for London-based banks before and after Brexit will be the application of regulatory standards, from data protection to capital rules. If UK financial institutions operate under World Trade Organization (WTO) rules, for example, separate capital requirements for subsidiaries in EU countries will apply.

b. Insurance and Reinsurance

Approximately 600 insurers and reinsurers operate in the City of London, covering life, nonlife, composite insurers, and Lloyd's syndicates (IMF 2016b, 18). The insurance sector accounts for roughly 20 percent of the City's annual revenues (£41 billion out of £200 billion, about a quarter of value added produced in the financial sector, and 30 percent of employment (table 1). Estimates show that this sector employs some 325,000 people; about 114,000 are directly employed by insurance companies and the rest work in auxiliary services to insurance and pension funding, such as brokering and third-party services (Association of British Insurers 2016). About £4 billion of annual insurance business comes from the rest of the European Union (ONS 2017).

The majority of insurance services provided in other EU countries are delivered via subsidiaries rather than via branches requiring passport, so the United Kingdom's EU departure would result in few increased costs. An important exception is Lloyd's of London, as current regulations allow the pool of underwriters based in London to serve clients across the European Union. Yet this business accounts for only 11 percent of the market's gross written premium—£2.9 billion and possibly as little as £800 million directly reliant on passporting (Scarpetta and Booth 2016). Moreover, under EU rules insurers that use the passport system are not required to hold deposits or trust funds in other EU states; they can keep their deposits in a single pool such as the United Kingdom if they see fit.

13. For more information, see www.esma.europa.eu/policy-rules/mifid-ii-and-mifir and www.fca.org.uk/markets/mifid-ii (accessed on February 14, 2017).

The main regulation through which the passport is operated is Solvency II, which covers all types of insurance, from life through maritime.¹⁴ Under Solvency II both the equivalence and passport-like rights for third countries could be available for reinsurance, but not for insurers. Again, the ability to operate through existing subsidiaries in other EU countries substantially reduces the risk from Brexit for City-based insurers.

c. Asset Management

The City of London is responsible for 45 percent of all assets managed in Europe, estimated at about £6.9 trillion. Of this amount, 18 percent was managed for EU clients and another 15 percent for non-EU clients. Asset management accounts for 11 percent of the City's revenues, 10 percent of annual tax payable, and about 5 percent of the City's employment (table 1). Asset management companies employ 45,000 people directly while another 40,000 people are hired as contractors or consultants, all of them throughout the United Kingdom (Investment Association 2016).

Pension funds are the main asset managers in the City, responsible for approximately £1.9 trillion of assets under management, followed by insurance funds (£960 billion), commercial property managers (£480 billion), private wealth managers (£417 billion), hedge funds (£245 billion), and private equity funds (£210 billion).

The City is the largest center for hedge funds in Europe. About 800 funds located in London manage some 85 percent of EU-based hedge funds' assets. London is also the leading center for hedge fund services such as administration, prime brokerage, custody, and auditing (TheCityUK 2016).

The City of London is also the largest European hub for the management of private equity investments and funds, and is second only to the United States globally. In 2014 City-based private equity funds accounted for 7 percent of global investments and 9 percent of funds raised. Private equity employment in the United Kingdom is approximately 8,000 people, almost all concentrated in the City.

Asset management in Europe is regulated by the Undertakings for Collective Investment in Transferable Securities (UCITS) and the Alternative Investment Fund Managers Directive (AIFMD) for alternative funds (such as hedge funds, private equity funds, real estate funds, or other structures not covered by UCITS because of liquidity or portfolio concentration issues). Neither the AIFMD nor UCITS make provisions for third-country equivalence, which would make life harder for London-based businesses after Brexit.

14. See <https://eiopa.europa.eu/regulation-supervision/insurance/solvency-ii> (accessed on February 14, 2017).

d. Clearing Transactions

The City of London is the global base for clearing foreign exchange transactions. Clearing is a post-trade activity that aims to reduce operational, counterparty, settlement, market, and legal risks between transaction parties. It is executed through a central counterparty (CCP), typically a clearinghouse. Four clearinghouses operating in the City are regulated as CCPs. Currently, about three-quarters of all foreign exchange trading takes place in London, followed by 11 percent in Paris and 7 percent in Frankfurt.¹⁵

London is also home to the world's largest "over the counter" (OTC) foreign exchange derivatives and OTC interest rate derivatives markets. In the former, around €1 trillion are exchanged daily, compared with €395 billion in the United States. In terms of interest rate derivatives, including forward rate agreements, swaps, and options, the City is the global leader in euro-denominated transactions, with a daily turnover of €927 billion (out of a total daily global turnover of €1.3 trillion).¹⁶

The financial market infrastructure subsector, which includes all post-trade activities—such as clearing, settlement listing of companies and other securities and their trading on UK market infrastructure—contributes 2 percent of the City's revenues, 2 percent in value added, 1.6 percent in taxes, and about 1 percent of the City's employment or 10,000 people (The percentages are derived by comparing the row exchanges, clearing, and interdealer brokering in table 1 with the total financial services row).

Clearing falls under the European Market Infrastructure Regulation (EMIR), which imposes an obligation to either centrally clear certain classes of OTC derivative contracts through CCPs or apply risk mitigation techniques. The regulation ensures that information on all European derivative transactions is reported to trade repositories and accessible to supervisory authorities, including the European Securities and Markets Authority (ESMA), to give policymakers and supervisors a clear overview of what is going on in the markets. For third countries, EMIR (Article 25) states that "A CCP established in a third country may provide clearing services to clearing members or trading venues established in the Union only where that CCP is recognized by...ESMA." ESMA recognition requires an equivalence decision by the European Commission, suggesting that Brexit will have a material effect on this subsector.

There is a significant economy of scale to having a number of different types of instruments and currencies traded through a single clearinghouse. For example, the netting off

15. Bank for International Settlements, 2017, www.bis.org/cpmi/paysysinfo.htm (accessed on January 17, 2017).

16. Ibid.

margin on a number of different trades that run through a single CCP allows the overall amount of collateral posted to be significantly lower. This means that trades and clearing often coalesce around single locations, and once in place the industry is not footloose.

3. POSSIBLE IMPACT FROM BREXIT BY SUBSECTOR

In the weeks leading up to and immediately after the referendum various scenarios were developed by economists and industry groups to argue why Brexit would be disastrous for the financial sector.¹⁷ But the UK government has stood firm that the United Kingdom will leave the single market.¹⁸

Estimates on the size of the potential impact of Brexit on the City of London are only suggestive as negotiations are yet to start on the timing and precise shape of the EU exit. The estimates discussed here refer only to the share of business reliant on EU markets and do not account for the possible relaxation of regulation and the attraction of business from other regions, such as Asia and the Middle East.¹⁹ Among the most affected financial services will be banking, followed by market infrastructure, asset management, and insurance and reinsurance services.

This analysis considers the scenario of the United Kingdom leaving the single market and not receiving equivalence rights in the sectors where such arrangements are possible. It assumes the absence of a free trade agreement with the European Union and reliance on general WTO rules. New restrictions could be placed on the EU-related business that can be transacted by London-based financial firms. Up to 50 percent of EU-related activity (approximately £18 billion in revenue and £10.5 billion in value added) and as many as 30,000 jobs could be at risk, along with approximately £3 billion to £5 billion of tax revenues per annum (Oliver Wyman 2016). An alternative estimate by PricewaterhouseCoopers estimates a loss of £14 billion to £20 billion in revenue, £7 billion to £12 billion in value added, and 70,000 to 100,000 jobs by 2020 (PwC 2016).

EY (2017) calculates that 83,000 jobs could be made redundant in the City of London after Brexit. Of those, 31,000 sales and trading jobs at banks could go and 18,000 back office legal and accounting roles, 15,000 jobs in wealth and asset management, and 12,000 positions at companies that provide technology to finance firms.²⁰

The following sections detail possible losses by subsector. The calculations also provide a basis for future analysis of where and how new business can substitute for the lost business in EU markets.

a. Banking

Nearly 80 percent of UK banking sector revenues is not directly dependent on passporting, because retail and business banking is overwhelmingly domestic. Nonetheless, estimates indicate about £25 billion in revenues come from EU-related banking business, or 23 percent of total retail and business banking. The potential implication of Brexit on banks reliant on EU markets is an increase in their operation costs dictated by reorganization and the possible need to open subsidiaries in the European Union. As a result, smaller banking institutions may consider leaving the City of London or continue serving EU markets by consolidating with other banks. Bigger banks will likely continue their City activities, bearing the additional costs of reorganization and compliance with EU rules. Oliver Wyman (2016) assumes that about a third of the EU-related banking business, about £8 billion in revenues, is at risk of relocation. PwC (2016) puts this number at £5 billion.

Anthony Browne, chief executive of the British Banking Association, argues that “Most international banks now have project teams working out which operations they need to move to ensure they can continue serving customers, the date by which this must happen, and how best to do it. Their hands are quivering over the relocate button. Many smaller banks plan to start relocations before Christmas; bigger banks are expected to start in the first quarter of next year.”²¹ So far, however, only one international bank, the Russian bank VTB, has publicly announced the possible move of its European operations entirely away from London.²² Several banks have announced deep staff cuts in their City operations. HSBC, the UK’s largest international bank, announced that it will move 1,000 jobs to France; and Axel Weber, CEO of Swiss bank UBS, told the BBC that “about 1,000” of its 5,000 London jobs could be hit by Brexit.²³ US bank Goldman Sachs plans to move 3,000 staff from

17. Huw Jones, “‘Brexit’ would be disaster for UK financial sector,” Reuters, June 30, 2016.

18. Laura Kuenssberg, “Brexit: UK to leave single market, says Theresa May,” BBC, January 17, 2017.

19. BBC, “Brexit: UK ‘could change economic model’ if single market access denied,” January 17, 2017.

20. Philip Stafford, “Losing euro-denominated clearing would

cost London 83,000 jobs,” *Financial Times*, November 14, 2016.

21. Anthony Browne, “Brexit politicians are putting us on a fast track to financial jeopardy,” *The Guardian*, October 22, 2016.

22. Marion Dakers, “Russian bank VTB mulls a shift away from London,” *The Telegraph*, October 11, 2016.

23. Simon Jack, “City banks warn of Brexit job moves,” BBC News, January 18, 2017.

London to Frankfurt and New York as part of a post-Brexit reorganization, reducing its City operations by half.²⁴

b. Insurance and Reinsurance

Most insurance and reinsurance services in EU economies are already provided through subsidiaries (FCA 2016), so leaving the single market has a small potential effect on this sector. Estimates show that about £4 billion of insurance and reinsurance sector revenues, or 10 percent of the total, are from EU-related business. But because 75 percent of insurance and reinsurance services are provided through subsidiaries, about a quarter of these revenues or £1 billion may be lost to competitors due to Brexit.

c. Asset Management

Approximately £6 billion, or 25 percent of UK asset management revenues, comes from EU-related business that will be directly affected by Brexit. Lack of equivalence in the underlying regulation (UCITS or AIFMD) may mean the loss of direct access to passporting. Hence, any UK funds marketed in the European Union and any EU funds in the United Kingdom would have to comply with the national requirements or restrictions of each EU country. UK-based asset managers may need to set up subsidiaries across Europe to continue to manage investment funds domiciled there in an efficient manner. As a result, investment activities may become more expensive and complex for clients. About a third to half of this EU-related business, £2 billion to £3 billion, may look for a new home (Oliver Wyman 2016, PwC 2016).

US private equity funds Blackstone and Carlyle have announced plans to establish passporting rights in Luxembourg to retain the ability to do business in the European Union after Brexit,²⁵ and Morgan Stanley and Aberdeen Asset Management are exploring options for new headquarters in the European Union. So far these decisions do not spell out the number of jobs transferred away from London.

d. Clearing Transactions

Leaving the single market could have significant consequences for the City's role in clearing activities as the United Kingdom would be treated as a third country in the European Union, affecting half of the City's business, around £11 billion, and possibly resulting in the partial relocation of euro clearing activities to markets in the eurozone. Fragmentation of clearing functions across countries may increase costs for

both UK and non-UK clients because of rising inefficiencies. About half of the business in this sector—£6 billion—may be lost to competitors (Oliver Wyman 2016).

e. Spillover Effects

The secondary effects of Brexit could be broader than those described in these four subsectors, but they will emerge over time. This is because the strong interconnectedness between the financial services sector and subsectors such as accounting, auditing, legal services, management consultancy, real estate, and other professional business services can serve as a centripetal force in keeping business in the City of London, even at increased costs.

Still, estimates suggest that about 15 to 20 percent of activities in these auxiliary sectors, or £17 billion in revenues, will be adversely affected by Brexit (Oliver Wyman 2016). In other words, the effect of Brexit roughly doubles once the ecosystem of auxiliary services that support the smooth running of the City are taken into account.

This calculation is replicated by looking at the UK input-output table for 2014, and in particular the intermediate consumption matrix.²⁶ Auxiliary legal, accounting, business advisory, advertising, and office management services account for 46 percent of intermediate inputs for banking and asset management services, and 32 percent of intermediate inputs in insurance and reinsurance. Thus the rough effect on auxiliary service revenues is about £8 billion (46 percent of £17 billion in banking, asset management, and clearing services plus 32 percent of £1 billion in insurance and reinsurance revenues), or about half of the Oliver Wyman (2016) estimates.

Importantly, some subsectors, such as business advisory and legal, would, at least for a transition period, enjoy a boost in demand, as businesses contemplate their restructuring. This temporary boost in demand is not accounted for in the estimations, and may be followed by losses after the transition period. The length of the transition period is difficult to predict.

4. CONCLUSIONS

Preliminary results presented in this analysis suggest that Brexit will have substantial negative effects on the City of London. The UK government may revisit some of its financial regulation in an effort to bring in more investment. But such a policy move may trigger a regulatory race with other major financial markets, to the detriment of the global financial system. In the meantime, uncertainty surrounding

24. Katharina Slodczyk, "Deep London Cuts amid Brexit Concerns," *Handelsblatt*, January 18, 2017.

25. Sarah Syed, "Blackstone, Carlyle Said to Plan Luxembourg Bases Post Brexit," *Bloomberg*, January 25, 2017.

26. Available at www.ons.gov.uk/economy/nationalaccounts/supplyandusetables/datasets/inputoutputsupplyandusetables (accessed on February 21, 2017).

the transition from the European Union and the possible changes in the regulatory stance of the UK government will deter new business.

The biggest uncertainty, however, is whether the UK government will be able to deliver on the various promises made with Brexit: Can corporate taxes be reduced without negatively affecting the fiscal outlook? Can a reform of im-

migration maintain the flow of talent to the City of London and more generally to UK universities and companies? Can reforms on executive pay and transparency in corporate decision making be implemented without diminishing the attractiveness of the United Kingdom for foreign investors? So far there is little sense of how any of these changes might take place.

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