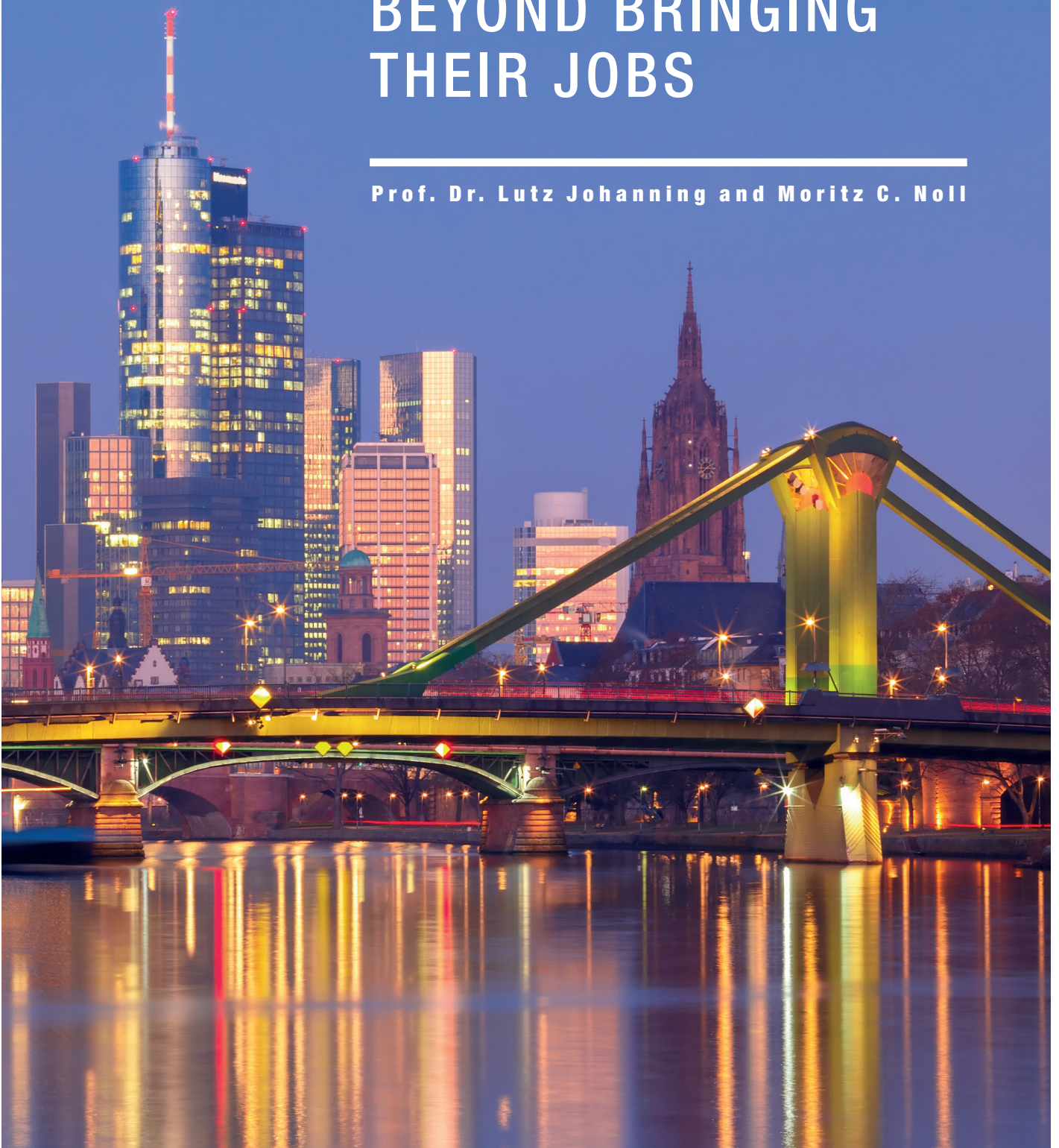


WINNING FRANKFURT: BREXIT BANKERS' WELFARE EFFECT BEYOND BRINGING THEIR JOBS

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1 Introduction and Summary

The Brexit vote on June 23, 2016 opened discussions regarding its impact on the migration of jobs from the City of London to its EU-counterparts: Frankfurt, Paris, Dublin, Amsterdam, and Milan. Meanwhile, it becomes apparent that Frankfurt is going to win the race for new jobs (i.e. FAZ, July 19, 2017). Already a day after Brexit, Frankfurt Main Finance estimated that banking jobs in Frankfurt would increase by 10,000 as a result. The predicted increase is within sight given recent announcements by US and Japanese banks to migrate jobs to Frankfurt. However, this is only the primary and direct effect. The question is what the induced or secondary non-financial employment and welfare effects could be. In this study, we estimate possible non-financial employment and welfare effects for the near future for Frankfurt and Rhein-Main-Region.

We apply two different econometric models to first estimate relationships between financial and non-financial job creation for the period March 2008 until December 2016. Second, based on this estimation we calculate the non-financial employment effect for three regions defined as the whole Rhein-Main-Region, Frankfurt + Surrounding Districts and Frankfurt City. Assuming the Brexit will create 10,000 additional financial jobs in Frankfurt within the next four years, our first model (Prudent Scenario) predicts 35,913 additional jobs in all non-financial sectors in the Rhein-Main-Region, 41,365 jobs in Frankfurt + Surrounding Districts, and 21,301 in Frankfurt City (Table 1.1). A modified version of this model (Optimistic Scenario) results in forecasts of 87,667 additional jobs in the Rhein-Main-Region, 81,636 in Frankfurt + Surrounding Districts and 34,068 non-financial jobs in Frankfurt.

Table 1.1: Net Employment Effect in Non-Financial Industries Assuming 10,000 Additional Finance Jobs in Frankfurt within the Next Four Years

	Rhein-Main-Region	Frankfurt + Surrounding Districts	Frankfurt City
Model (1) – Prudent Scenario	35,913	41,365	21,301
Model (2) – Optimistic Scenario	87,667	81,636	34,068

Please note: Due to rounding errors in intermediate steps of the computation, these values may slightly differ from the exact results.

Based on historical growth rates we estimate that the majority of non-financial jobs will accrue in real estate, freelance scientific and technical services, other commercial services, as well as healthcare and welfare. These industries will grow ten percent or more in all three regions. In addition, in Frankfurt City traffic and warehousing will grow significantly, whereas in Frankfurt + Surrounding Districts as well as in the Rhein-Main-Region processing industry and automobile trade, maintenance and repair will also benefit largely.

Based on our forecasts on employment, we also determine the increase in local tax revenues for Frankfurt City. In the Prudent Scenario, local tax revenues from income, value-added, and local business taxes will increase by € 136.2 mn yearly, and increase by € 191.1 mn in the Optimistic Scenario.

Two critical assumptions drive our results for the non-financial employment and tax effects. First, we assume that the historical growth rates from March 2008 until December 2016 of the different industries and the identified causalities in our regressions will be stable in the future. Second, we assume that the Brexit will lead to 10,000 additional banking jobs in Frankfurt. Obviously, future dynamics will likely differ from our assumptions. Therefore, we encourage further research on this topic, i.e., looking at alternative empirical model specifications and micro-effects, such as the precise determination of the additional created jobs. Hence, we consider our results as a first insight into potential employment and welfare dynamics for Frankfurt and the Rhein-Main-Region caused by the Brexit. We believe this discussion is of interest to local political institutions and businesses, as it can contribute to sound planning of the social-economic development of Frankfurt and the Rhein-Main-Region.

2 Definitions and Current Employment in and around Frankfurt

This study examines economic effects such as job creation and additional tax income on Frankfurt and its metropolitan region. The NUTS-2 level defines the region, namely DE 71 Darmstadt. It includes the city of Frankfurt, three other cities and ten administrative districts nearby. For the analysis, this region is further divided into three different (sub-)regions: Frankfurt City, Frankfurt + Surrounding Districts and the whole Rhein-Main-Region, see Table 2.1 for the definitions of these regions.

Table 2.1: Definition of Analysis Regions

Region 1: Frankfurt City	Region 2: Frankfurt + Surrounding Districts	Region 3: Rhein-Main-Region
Frankfurt City	Region 1 + ■ Offenbach City ■ Groß Gerau District ■ Hochtaunus District ■ Main-Kinzig District ■ Main-Taunus District ■ Offenbach District ■ Wetterau District	Region 2 + ■ Darmstadt City ■ Wiesbaden City ■ Bergstraße District ■ Darmstadt Dieburg District ■ Odenwald District ■ Rheingau-Taunus District

For each of these regions, we collected employment data from the statistical office of the federal employment agency (Bundesagentur für Arbeit). The data set contains quarterly numbers of employees in each industry from March 2008 to December 2016. The employment sectors are as follows:

- Agriculture, forestry, fishery, mining, energy- and water supply and power industry
- Processing industry
- Construction industry
- Automobile trade, maintenance and repair
- Traffic and warehousing
- Hotel and restaurant industry
- Information and communication
- **Financial and insurance industry**
- Real estate, freelance scientific and technical services
- Other commercial services
- Public administration, defense, social security and external organizations
- Education
- Healthcare and welfare
- Other services, private households

Figure 2.1 shows the fragmentation by labor market sector in Frankfurt City as of December 2016. The financial industry is among the three dominating sectors, accounting for 13.3% of all jobs in Frankfurt.

Figure 2.1: Share of Employment by Industry in Frankfurt City (Dec. 2016)

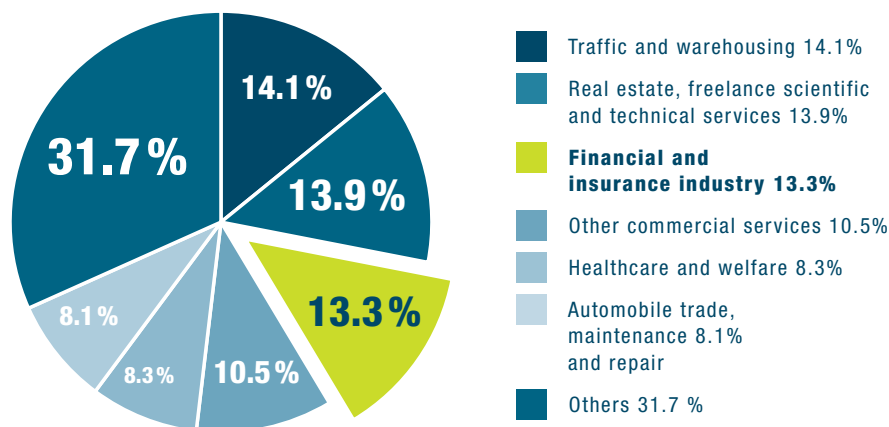
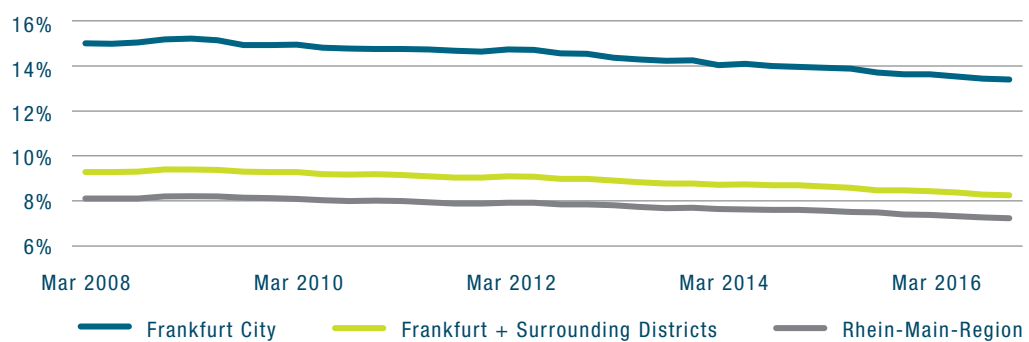


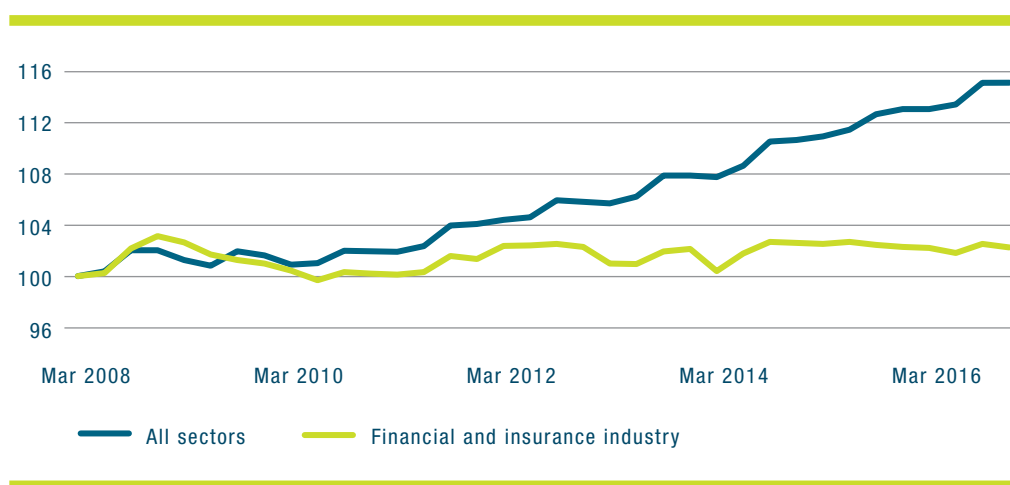
Figure 2.2 shows the relative weight of the financial and insurance industry in the labor for the three regions. It can be seen that the relative importance of the financial and insurance industry on the labor market in Frankfurt declined from over 15% in 2008 to 13–14% at the end of 2016. The same trend applies to its outer regions, although here the financial sector is not as dominant as in the city itself.

Figure 2.2: Share of jobs in the financial and insurance industry over time



Finally, Figure 2.3 shows the growth of the number of jobs in Frankfurt City for the whole labor market and for the financial and insurance industry.¹ The graphs for the other two regions look very similar.

Figure 2.3: Growth of Employment in Frankfurt City (March 2008 = 100)



In summary, employment in the financial industry stagnated in absolute terms over the last few years, while employment in most other sectors rose significantly. Thus, in relative terms, the financial industry lost importance in the local labor market, but remains one of the major employers in Frankfurt City. Adding 10,000 jobs to the financial industry would mean a substantial shift into this sector. If all of those jobs came immediately and if there were no indirect employment effect on other sectors, the share of the financial industry would rise from 13.3% to 14.9%. Compared to March 2008, this would imply an increase of 16%.

¹ In March 2008, there were 485,807 employees in all sectors (financial and non-financial) in Frankfurt City (73,010 in the financial and insurance industry) compared to 559,566 in all sectors and 74,684 in the financial industry in December 2016.

3 Job Creation in Frankfurt

3.1 A Brief Review of Literature

As unemployment is one of the most relevant social, economic and hence political topics, the analysis of economic shocks to employment growth and employment variation is also of high academic interest. Davis and Haltiwanger (1999) give a comprehensive overview of gross job flows and analyze the effect of oil price shocks on the labor market. Blanchard and Katz (1992) investigate how a typical US state adjusts to an adverse shock to employment. They use a Vector Autoregression (VAR) model in which they regress employment increments on its own lagged increments. They conclude, "Rather than leading to fluctuations around trends, employment shocks typically have permanent effects."(Blanchard and Katz, 1992, p. 2).

Marchand (2012), Hartley et al. (2015) and Agerton et al. (2017) estimate state regression models in similar fashion, while adding other exogenous economic variables. For example, Agerton et al. (2017) examine the impact of an increase in production of oil and gas on employment. They use the growth of the number of oilrigs as regressor.² One current literature strand focuses on the employment and wealth effects of the US fracking industry. For example, Feyrer et al. (2017) find that mining jobs dominate the initial increase in employment but are less important long-term. Mining wage and employment gains are concentrated around the time of new production while transportation, construction and other impacts tend to emerge with a lag. In a similar study, Agerton et al. (2017) state that after 24 months a ten percent increase in oil rig-counts create an approximately five percent increase in industry employment.

As the establishment of the fracking industry was an exogenous positive shock to the US labor market so is the Brexit employment effect to Frankfurt and Rhein-Main-Region. It should induce a permanent non-financial job creation effect. Different estimates are available for the number of financial jobs created in Frankfurt due to Brexit. The Association of Foreign Banks in Germany estimates the number of additional jobs to be 3,000 to 5,000 within the next 2 to 3 years; the Landesbank Hessen-Thüringen Helaba estimates additional 8,000 Brexit jobs in Frankfurt (see Bischoff (2016)). The Frankfurt School of Finance & Management estimates the number to be 20,000 (FAZ, February 29, 2016). Already a day after the Brexit, Frankfurt Main Finance estimated that banking jobs in Frankfurt would increase by 10,000. The predicted increase is within sight given recent announcements by US and Japanese banks to migrate jobs to Frankfurt. Therefore, we use the estimation of 10,000 additional financial jobs as basis for our analysis.

² Another method to study the employment effect is the Input-Output approach used by Considine et al. (2009, 2010).

It is reasonable to assume that the Brexit shock will not only create jobs in the banking industry, but will also have indirect (or secondary) employment effects in non-financial industries in Frankfurt and the Rhein-Main-Region. The situation is similar to 1998, when the European Central Bank (ECB) was located in Frankfurt. Today, ECB employs 2,500 employees. This exogenous shock might have significantly contributed to the economic growth in Frankfurt and the Rhein-Main-Region during the last years. However, when compared to the ECB-effect, the Brexit shock is supposed to be 4 times larger. Additional bank offices and activity require new office space, as well as technical and freelance services. New bank employees will increase demand for housing, infrastructure and transportation, education, health-care, consumer goods, food, and so on. As the Brexit effect is permanent, the non-financial employment effect will also be long-term. Only a few industries like construction might benefit in a short-term one-off effect. In summary, all three regions should experience long-term positive employment and welfare impacts.

3.2 Econometric Framework

In this section, we estimate the non-financial employment effect in Frankfurt City and the other two regions. We apply two simple regression models to derive the employment effect in non-financial industries. Our model is similar to the VAR model of Blanchard and Katz (1992), and is a modified version of the autoregressive distributed lag model (ADL) by Agerton et al. (2017). As a starting point, we estimate the change in non-financial jobs $\Delta jobs_{non-financial,t}$ in a VAR-like equation with four lags of changes in non-financial jobs, a contemporaneous effect in changes in financial jobs and lagged changes in financial jobs:

$$\begin{aligned}\Delta jobs_{non-financial,t} &= \alpha + \beta \Delta jobs_{financial,t} + \gamma_1 \Delta jobs_{financial,t-1} + \dots \\ &+ \gamma_4 \Delta jobs_{financial,t-4} + \lambda_1 \Delta jobs_{non-financial,t-1} + \dots \\ &+ \lambda_4 \Delta jobs_{non-financial,t-4} + \epsilon\end{aligned}$$

with $\Delta jobs = \ln\left(\frac{jobs_t}{jobs_{t-1}}\right)$ as the logarithmic difference from quarter to quarter. $jobs_{non-financial,t}$ is the total number of non-financial jobs at the end of time period t and $jobs_{financial,t}$ is the number of jobs in the financial sector at the end of time period t .

We add the contemporaneous effect, $jobs_{financial,t}$, since shocks in financial jobs are exogenous – as is the Brexit effect – to non-financial sectors. Reverse causality should not play an important role, as only a small number of additional retail financial jobs is required to serve additional non-financial employees and their families. The type of Brexit banking jobs such as in middle and back offices should not benefit from growth in non-financial jobs.

To estimate the coefficients, we apply Ordinary Least Squares analysis. Time series regressions might suffer from autocorrelated and heteroscedastic residuals. However, neither the Ljung-Box test for autocorrelation nor the Engle test for heteroscedasticity can reject the null hypothesis of no autocorrelation or no homoscedasticity at the 5 % significance level.

In a next step, we further simplify our model as we drop all variables that are insignificant at a 10 % level for the regression on Frankfurt City. To get comparable models for all three regions, we keep the set of variables for the regression models for Frankfurt + Surrounding Districts and Rhein-Main-Region. This leads to the first model specification, as given in equation (1):

$$\begin{aligned} \Delta jobs_{non-financial,t} & & (1) \\ &= \alpha + \beta \Delta jobs_{financial,t} + \gamma \Delta jobs_{financial,t-3} \\ &+ \lambda \Delta jobs_{non-financial,t-4} + \epsilon \end{aligned}$$

In addition, we further specify this model by removing $\Delta jobs_{financial,t-3}$ from the regression equation to get even higher significance of the model parameters. This results in the following model (2):

$$\Delta jobs_{non-financial,t} = \alpha + \beta \Delta jobs_{financial,t} + \lambda \Delta jobs_{non-financial,t-4} + \epsilon$$

3.3 Empirical Results

For March 2008 until December 2016 we estimate the regressions for each region as defined in section 2, namely Frankfurt City, Frankfurt + Surrounding Districts and the Rhein-Main-Region. Table 3.1 shows the regression coefficients.

Table 3.1: Estimators of the Regression Parameters (standard errors in parentheses)

Dependent variable: $\Delta jobs_{non-financial,t}$		Rhein-Main-Region	Frankfurt + Surrounding Districts	Frankfurt City
Model (1) – Prudent Scenario	<i>Constant</i>	0.0020** (0.0009)	0.0019** (0.0008)	0.0015** (0.0006)
	$\Delta jobs_{financial,t}$	0.2412 (0.1896)	0.2903* (0.1608)	0.2410*** (0.0797)
	$\Delta jobs_{financial,t-3}$	-0.1378 (0.0948)	-0.1466 (0.0983)	-0.1144* (0.0669)
	$\Delta jobs_{non-financial,t-4}$	0.7054*** (0.1476)	0.7202*** (0.1135)	0.7697*** (0.0814)
	Adj. \widehat{R}^2	0.82	0.82	0.83
Model (2) – Optimistic Scenario	<i>Constant</i>	0.0023** (0.0009)	0.0021** (0.0008)	0.0016** (0.0064)
	$\Delta jobs_{financial,t}$	0.3660** (0.1723)	0.3757** (0.1535)	0.2567*** (0.0819)
	$\Delta jobs_{non-financial,t-4}$	0.6117*** (0.1354)	0.6562*** (0.1074)	0.7319*** (0.0809)
	Adj. \widehat{R}^2	0.81	0.81	0.82

The results show that all regions have positive constant growth rates and that finance jobs have a contemporaneous impact on non-financial jobs. Especially, this effect is significant in Model (2). The non-financial job changes with lag 4 have a positive and significant coefficient, whereas the sensitivity for financial job changes with lag 3 in Model (1) is negative, but rather not significant.

After having estimated the regression parameters, a post-Brexit $\Delta jobs_{financial}$ is computed using the following equation: $\Delta jobs_{financial} = \ln \left(\frac{jobs_{financial,T} + additional\ Brexit\ jobs\ in\ Finance}{jobs_{financial,T}} \right)$ where T is the latest date of the data set (i.e. December 2016) in the first iteration and the latest forecast date afterwards. As given above $additional\ Brexit\ jobs\ in\ Finance = \frac{10,000}{4 \cdot 12} = 625$. Together with the regression coefficients, this is inserted into the corresponding equations (1) or (2) to get a one-step ahead forecast for $\Delta jobs_{non-financial}$. Finally, $\Delta jobs_{financial,t}$ and $\Delta jobs_{non-financial,t}$ are used to get one-step ahead forecasts for $jobs_{non-financial,t+1}$ and

$jobs_{financial,t+1}$. We repeat this procedure 16 times to get forecasts over the whole four-year period. In a final step, we subtract the growth of employment for non-Brexit from this growth forecast to get the net effect of additional Brexit jobs. Hence, we account for potential substitution effects i.e. additional Brexit jobs might only replace job reduction by Frankfurt banks (see Bischoff (2016) for discussion). Therefore, our estimate gives the net employment change in absolute terms (see Table 3.2 for results).³

Table 3.2: Net Employment Effect in Non-Financial Industries in Absolute Values (per Brexit Financial Employee)

	Rhein-Main-Region	Frankfurt + Surrounding Districts	Frankfurt City
Model (1) – Prudent Scenario	3.59	4.14	2.13
Model (2) – Optimistic Scenario	8.77	8.16	3.41

Please note: Due to rounding errors in intermediate steps of the computation, these values may slightly differ from the exact results.

Given our assumptions especially that 10,000 Brexit banking jobs are created in Frankfurt, the number of additional jobs in non-financial industries are in the range of 35,913 (Prudent Scenario) and 87,667 (Optimistic Scenario) for the Rhein-Main-Region, 41,365 and 81,636 for Frankfurt + Surrounding Districts, respectively, as well as 21,301 and 34,068 for Frankfurt City, respectively (see also above Table 1.1).

This raises the question whether specific industries are going to profit more than others from this overall shock. To model this effect, we extrapolate historical growth in non-financial sectors over the following 4 years (forecast period). At the end of the forecast period, we determine each industry's new share in the non-financial labor market and the net effect among the sectors as given in Table 3.2 (see appendix for results). In summary, in Frankfurt City the sectors traffic and warehousing and real estate, freelance scientific and technical services profit most from the employment shift. In Frankfurt + Surrounding Districts, these sectors are real estate, freelance scientific and technical services and automobile trade, maintenance and repair. Finally, in the whole Rhein-Main-Region, processing industry and automobile trade, maintenance and repair are the winning industries.

³ It seems surprising that, in Model (1), the employment effect is higher for Frankfurt and its Surrounding Districts than for the Rhein-Main-Region. While the financial industry has a very high influence on the labor market in Frankfurt City, its influence decreases relatively with higher distance from the center. The regression parameters illustrate this effect: For Frankfurt and Surrounding Districts, the estimated contemporaneous finance-dependent coefficient, $\hat{\beta}$, is 20 % higher than for the Rhein-Main-Region (0.2903 and 0.2412). At the same time, the corresponding coefficients for the lagged Finance-influence, $\hat{\gamma}$, are relatively close (−0.1466 and −0.1378). This indicates that Frankfurt and Surrounding Districts react much more sensitive (in a positive relationship) to a change of jobs in the financial industry than the Rhein-Main-Region.

3.4 Long-Term Impacts

In our models, we assume that the additional employment growth in the financial industry would occur over four years. Our models are limited in the way that they are simple static and linear models and do not account for dynamic effects. Nevertheless, it is possible to indicate long-term trends caused by the temporary excess growth beyond the first four years. To do so, we simulate the following time series: First, we use quarterly periods 1-36, i.e., March 2008 to December 2016 (9 years) to estimate the model parameters. We implement these estimated parameters to forecast periods 37-52, i.e. March 2017 to December 2020 (4 years) with additional employment growth in the financial sector caused by the Brexit (see section 3.3). Finally, we further simulate periods 53-68, i.e. March 2021 to 2024 (another 4 years) with the original employment growth from the estimation period. Comparing this simulated employment growth with non-Brexit growth, it can be seen that the difference between Brexit and non-Brexit employment growth gets even larger in the long-run, see Figures 3.1 to 3.3. However, one should not overestimate this effect, especially as our model is static and the database is limited.

Figure 3.1: Simulated long-term growth of Non-Finance Employment in Rhein-Main Region

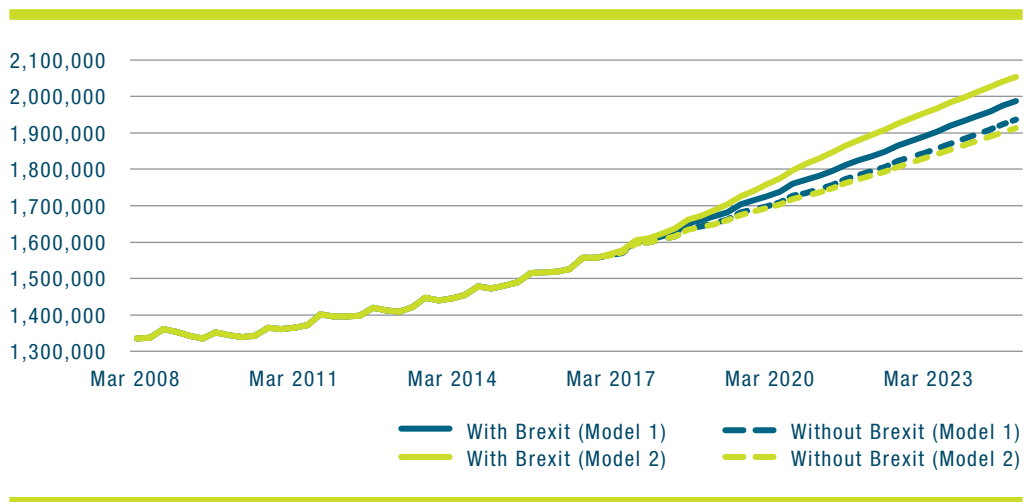


Figure 3.2: Simulated long-term growth of Non-Finance Employment in Frankfurt + Surrounding Districts

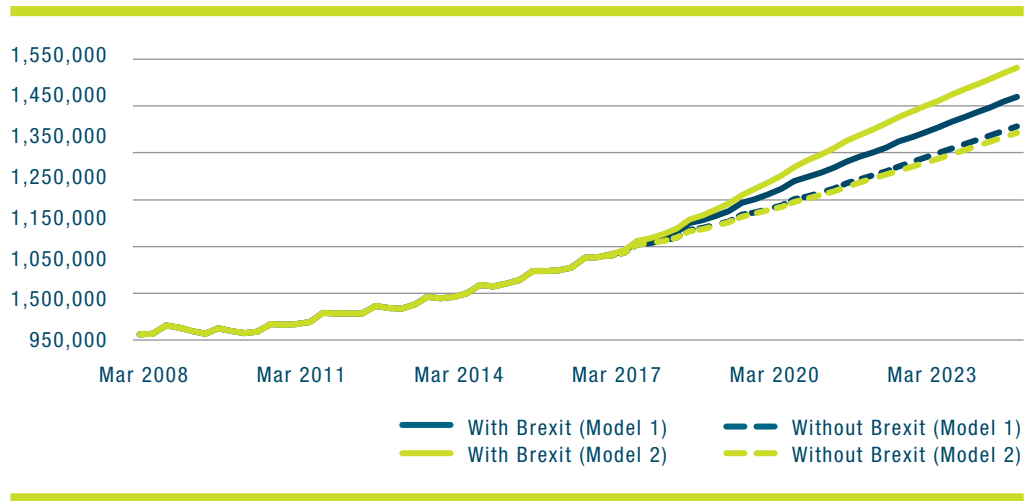
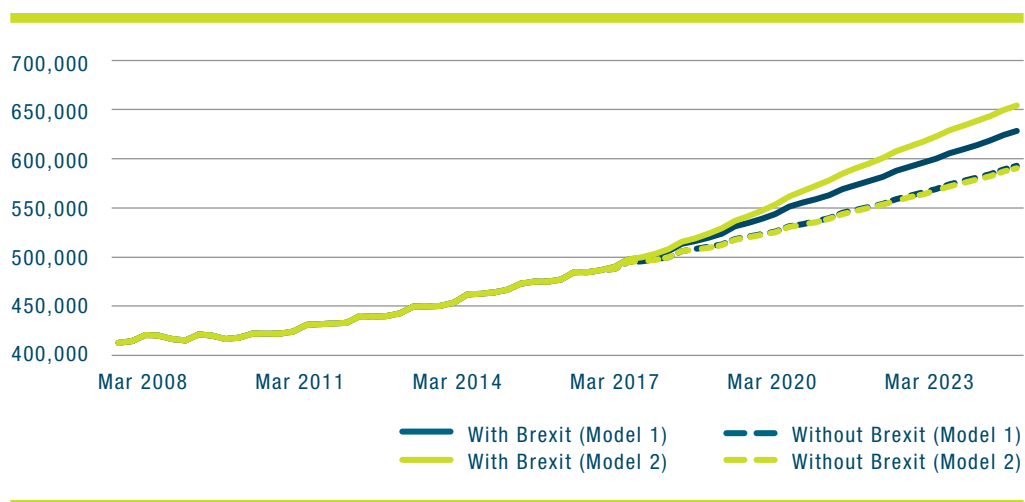


Figure 3.3: Simulated long-term growth of Non-Finance Employment in Frankfurt City



4 Impact on Local Tax Revenues in Frankfurt City

In 2016, the city of Frankfurt received € 417.2 mn in income tax (the city's share of the national revenue), € 138.8 mn in value-added tax and € 1,880.7 in local business tax (Table 4.1). In the next step, we estimate potential additional local tax revenues due to the Brexit effect.

Table 4.1: Local Tax Revenues in Frankfurt City in 2016

Frankfurt City	Total (in millions)	Tax revenue per employee
Income tax (city's share)	€ 417.2	€ 745.5
Value-added tax	€ 138.8	€ 247.2
Local business tax	€ 1,880.7	€ 3,361.0

Please note: 559,566 employees in Frankfurt city in 2016 (Statistical service of the Bundesagentur für Arbeit).

Based on the forecasts on the non-financial labor market, we estimate additional tax revenues and use a simple forecast: Exploiting tax income data from the statistics yearbooks of the city of Frankfurt, we derive tax revenues per employee.⁴

Assuming that the tax revenue per employee stays constant over time we conclude: In Model (1) – Prudent Scenario, all additional jobs caused by the Brexit-movements induce approximately € 23.3 mn yearly in income tax for the city of Frankfurt (meaning Frankfurt's share in the national taxation system) and € 32.9 mn in Model (2) – Optimistic Scenario. Regarding the value-added tax (VAT), Frankfurt will gain additional € 7.7 mn in Model (1) and € 10.9 mn in Model (2). Local business tax will increase by € 105.2 mn yearly in Model (1) and € 148.1 mn in Model (2), see Table 4.2 for a detailed breakdown.

Table 4.2: Additional Local Tax Revenues (in millions)

Frankfurt City	Model (1) – Prudent Scenario	Model (2) – Optimistic Scenario
Income tax (city's share)	€ 23.3	€ 32.9
Value-added tax	€ 7.7	€ 10.9
Local business tax	€ 105.2	€ 148.1

⁴ Only data for the city of Frankfurt is available, but not for the whole metropolitan area.

Appendix: Allocation of Additional Non-Financial Jobs among Sectors

Table A.1: Allocation of Additional Jobs: Rhein-Main-Region

Rhein-Main-Region	Share at End of Forecast Period	Model (1) – Prudent Scenario	Model (2) – Optimistic Scenario
Agriculture, forestry, fishery, mining, energy- and water supply and power industry	1.67 %	599	1,464
Processing industry	14.82 %	5,322	12,993
Construction industry	4.97 %	1,784	4,355
Automobile trade, maintenance and repair	14.03 %	5,038	12,299
Traffic and warehousing	8.50 %	3,052	7,450
Hotel and restaurant industry	3.86 %	1,386	3,384
Information and communication	5.15 %	1,849	4,514
Real estate, freelance scientific and technical services	11.50 %	4,131	10,084
Other commercial services	9.72 %	3,489	8,518
Public administration, defense, social security and external organizations	5.48 %	1,969	4,806
Education	3.98 %	1,429	3,489
Healthcare and welfare	12.54 %	4,501	10,989
Other services, private households	3.78 %	1,357	3,314
Sum	100.00 %	35,913	87,667

Please note: Due to rounding errors in intermediate steps of the computation, these values may slightly differ from the exact results.

Table A.2: Allocation of Additional Jobs: Frankfurt + Surrounding Districts

Frankfurt + Surrounding Districts	Share at End of Forecast Period	Model (1) – Prudent Scenario	Model (2) – Optimistic Scenario
Agriculture, forestry, fishery, mining, energy- and water supply and power industry	1.50 %	619	1,221
Processing industry	13.32 %	5,510	10,875
Construction industry	4.86 %	2,008	3,963
Automobile trade, maintenance and repair	13.79 %	5,702	11,254
Traffic and warehousing	10.34 %	4,277	8,442
Hotel and restaurant industry	4.10 %	1,694	3,344
Information and communication	5.39 %	2,228	4,397
Real estate, freelance scientific and technical services	12.56 %	5,194	10,251
Other commercial services	10.62 %	4,391	8,666
Public administration, defense, social security and external organizations	4.99 %	2,065	4,075
Education	3.44 %	1,424	2,811
Healthcare and welfare	11.42 %	4,722	9,319
Other services, private households	3.69 %	1,525	3,011
Sum	100.00 %	41,365	81,636

Please note: Due to rounding errors in intermediate steps of the computation, these values may slightly differ from the exact results.

Table A.3: Allocation of Additional Jobs: Frankfurt City

Frankfurt City	Share at End of Forecast Period	Model (1) – Prudent Scenario	Model (2) – Optimistic Scenario
Agriculture, forestry, fishery, mining, energy- and water supply and power industry	1.26 %	269	430
Processing industry	7.67 %	1,634	2,614
Construction industry	2.98 %	635	1,016
Automobile trade, maintenance and repair	8.87 %	1,888	3,021
Traffic and warehousing	16.45 %	3,504	5,604
Hotel and restaurant industry	4.96 %	1,056	1,689
Information and communication	7.50 %	1,597	2,554
Real estate, freelance scientific and technical services	15.82 %	3,370	5,390
Other commercial services	12.25 %	2,608	4,172
Public administration, defense, social security and external organizations	3.58 %	763	1,220
Education	3.78 %	805	1,288
Healthcare and welfare	10.04 %	2,139	3,421
Other services, private households	4.82 %	1,025	1,640
Sum	100.00 %	21,301	34,068

Please note: Due to rounding errors in intermediate steps of the computation, these values may slightly differ from the exact results.

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