

# COVID-19, Remote work and the Potential for a Reverse Brain Drain

Irina Bakalova<sup>\*</sup>, Ruxanda Berlinschi<sup>†</sup>, Jan Fidrmuc<sup>‡</sup> and Yuri Dzyuba<sup>§</sup>

September 2021

The COVID-19 pandemic led to a substantial and potentially permanent increase in the prevalence of remote work. This can instigate significant changes in employees' residential choices. We consider the prospect that some white-collar migrant workers return to their home countries while continuing to work for their employers remotely. Using data from the European Labor Force Survey, we estimate that around three million migrants in Europe could take part in such a reverse brain drain. Two-thirds of these potential return migrants are EU nationals, with the remainder from European neighborhood countries.

Keywords: Covid-19; remote work; return migration; brain drain.

JEL: F22, J61, O15

**Declarations of interest: none**

---

<sup>\*</sup> International Laboratory for Macroeconomic Analysis, National Research University Higher School of Economics. Email: ibakalova@hse.ru.

<sup>†</sup> Faculty of Business and Economics, K.U. Leuven Campus Brussels. Email: ruxanda.berlinschi@kuleven.be.

<sup>‡</sup> Corresponding Author. Lille Économie Management (LEM), Université de Lille; PRIGO University, Havířov; CESifo Munich; Rimini Centre for Economic Analysis (RCEA), and Global Labor Organization (GLO). Contact: Université de Lille, CNRS, IESEG School of Management, UMR 9221 - LEM - Lille Économie Management, F-59000 Lille, France. Email: Jan.Fidrmuc@gmail.com or jan.fidrmuc@univ-lille.fr.

<sup>§</sup> International Laboratory for Macroeconomic Analysis, National Research University Higher School of Economics. Email: ydzyuba@hse.ru.

## **1 Introduction**

The COVID-19 pandemic has induced white-collar workers worldwide to increasingly work from their homes. For many, hybrid or fully-remote work will become the new normal (Bartik et al., 2020; Barrero et al., 2021a,b; McKinsey, 2020; Financial Times, 2021). The commute to work may thus transform from a daily occurrence to something that takes place only occasionally.

Remote work may, in turn, change the worker's residential choices: some will move from urban to rural areas (van Leeuwen & Bourdeau-Lepage, 2020), while others may even move to a different country. In particular, white-collar migrant workers from emerging and middle-income economies may be tempted to return to their home countries, thus potentially reversing decades of brain drain.

The objective of this short paper is to estimate the potential magnitude of such reverse brain drain in Europe and identify the countries and regions most likely to be affected by it. We argue that this phenomenon may have important economic, social and political implications for the countries concerned: both the sources and destinations of these moves.

## **2 Data and methodology**

We use pre-Covid (2016) data from the European Labor Force survey (EULFS), covering all EU countries, the UK, and the EFTA. We identify migrants as those born in a different country than their country of residence at the moment of the survey; in case the country of birth is not known, migrants are those holding a different nationality than the one of their country of residence. We only consider migrants from the EU, UK, EFTA, other European countries, and the Middle East and North Africa (MENA). Migrants from further afield would be less able to comply with the expectation of a regular return to the office, or such occasional commuting to work would be too costly.

The EULFS specifies the occupation and sector of each employed and self-employed person. Since remote work is mainly possible for white-collar workers, we only consider the following four occupations: Managers, Professionals, Technicians and associate professionals, and Clerical support workers. Table 1 reports migrants working

in these four occupations as a share of their residence country labor force, by region of origin.

**Table 1. Share of qualified migrants in the labor force of their residence countries, by region of origin.**

	EU15	NSM13	EFTA	Other Europe	MENA	Total
<b>Austria</b>	0.025	0.018	0.001	0.012	0.002	<b>0.057</b>
<b>Belgium</b>	0.042	0.007		0.006	0.007	<b>0.062</b>
<b>Denmark</b>	0.012	0.003	0.004	0.005	0.003	<b>0.027</b>
<b>France</b>	0.011	0.002		0.003	0.014	<b>0.030</b>
<b>Germany</b>	0.008	0.006	0.000	0.005	0.001	<b>0.022</b>
<b>Greece</b>	0.003			0.004	0.002	<b>0.008</b>
<b>Hungary</b>		0.004		0.002		<b>0.005</b>
<b>Ireland</b>	0.040	0.017		0.003		<b>0.060</b>
<b>Italy</b>	0.006	0.003	0.003	0.003	0.001	<b>0.016</b>
<b>Netherlands</b>	0.010			0.004		<b>0.014</b>
<b>Poland</b>				0.001		<b>0.001</b>
<b>Portugal</b>	0.012					<b>0.012</b>
<b>Spain</b>	0.007					<b>0.007</b>
<b>Sweden</b>	0.018	0.007	0.003	0.010		<b>0.050</b>
<b>Switzerland</b>	0.134	0.011		0.015	0.003	<b>0.166</b>
<b>UK</b>	0.018	0.01		0.003		<b>0.032</b>

Notes: Only countries with at least 35,000 respondents belonging to the labor force in the EULFS are included. Only migrants working as Managers, Professionals, Technicians and associate professionals, and Clerical support workers are included. An empty cell means that less than 100 white-collar migrants per destination country and region of origin were reported in the EULFS and therefore a reliable estimate of the number of potential migrants cannot be computed. \* The figure for Sweden for NMS10 also include the figures for NMS3.

We estimate occupation and sector-specific rates of remote work using two alternative scenarios. In *Scenario 1*, we rely on an EULFS question on working from home. We calculate, for each country, occupation and sector, the share of workers who worked from home sometimes or often. There were significant differences in the prevalence of remote work across European countries – partly driven by social and cultural customs and informal institutions (Felstead et al., 2003; Gottlieb et al., 2020) - but we expect these differences to be reduced by the pandemic experience. In Scenario 1, we take the three countries with the highest prevalence of remote work prior to the pandemic – Denmark, the Netherlands and Sweden – as the potential for post-pandemic remote work in all European countries.

In *Scenario 2*, we instead use the expected rates of remote work provided by Dingel & Neiman (2020) based on the nature of each type of work. Survey evidence from the US

suggests that the Dingel and Neiman (2020) estimates of suitability for remote work predict well the actual patterns of remote work (Bartik et al., 2020). Scenario 2 thus matches the Dingel & Neiman sectors and occupations with those used in the EULFS.

Both scenarios assume that in the post-pandemic period, the prevalence of remote work for specific occupation-sectors will be similar across the countries in our sample, an assumption supported by Boeri et al. (2020).

We estimate the potential for return migration from country  $i$  to region  $j$  as:

$$rm_{ij} = lf_i \cdot \sum_k \frac{migr_{ijk}^{EULFS}}{lf_i^{EULFS}} wfh_k^s,$$

where  $lf_i$  is the total labor force of country  $i$ ,  $migr_{ijk}^{EULFS}$  is the number of migrants in the EULFS sample originating from region  $j$ , working in country  $i$  in occupation-sector  $k$ ,  $lf_i^{EULFS}$  is the EULFS sample for country  $i$ , and  $wfh_k^s$  is the share of workers who can work remotely in occupation-sector  $k$ , according to scenario  $s=1, 2$ .

### 3 Results

The results are reported in Table 2. Scenario 1 (based on the pre-covid prevalence of remote work) yields somewhat lower estimates than Scenario 2 (based on estimates for the post-pandemic period), but the orders of magnitude are similar. The potential for reverse brain drain is high: the UK, France, Switzerland and Germany each have more than 500 thousand white-collar migrants who could work remotely. Most of these migrants originate from EU member states: the old member states (EU15) could receive a reverse brain drain of 1.5 million (Scenario 1) to 2 million (Scenario 2), while the new member states (NMS) could welcome up to half a million. The much higher number for the EU15 reflects both the relatively large size of this geographical area, and the higher share of white-collar work among EU15 migrants than among those from the NMS (Table 1). The other European (not in the EU/the EFTA/the UK) and MENA countries can also gain hundreds of thousands of return white-collar migrants. Altogether, the EU counts around 3 million potential migrants who could work remotely. These figures represent an upper bounds for the potential reverse brain drain.

**Table 2. Estimates of potential return migrants by country of residence and region of origin (thousands)**

<i>Region of origin</i>	<i>EU15</i>		<i>NMS</i>		<i>Other Europe</i>		<i>MENA</i>		<i>Total</i>	
<b>Country of residence</b>	Scenario 1	Scenario 2	Scenario 1	Scenario 2	Scenario 1	Scenario 2	Scenario 1	Scenario 2	Scenario 1	Scenario 2
<b>Austria</b>	56.71	75.01	26.85	38.5	26.26	36.98	3.68	5.03	<b>113.5</b>	<b>155.52</b>
<b>Belgium</b>	102.57	120.49	18.01	17.85	12.94	16.76	15.93	21.81	<b>149.45</b>	<b>176.91</b>
<b>Denmark</b>	18.61	25.29	3.64	5.44	12.51	17.83	4.22	6.17	<b>38.98</b>	<b>54.73</b>
<b>France</b>	170.26	224.19	29.67	40.5	40.54	54.08	210.61	291.59	<b>451.08</b>	<b>610.36</b>
<b>Germany</b>	177.1	233.21	103.63	155.54	106.31	154.92	22.98	32.43	<b>410.02</b>	<b>576.1</b>
<b>Greece</b>	6.7	9.42			5.86	9.93	3.09	4.88	<b>15.65</b>	<b>24.23</b>
<b>Hungary</b>			7.8	10.82	4.25	5.89			<b>12.05</b>	<b>16.71</b>
<b>Ireland</b>	47.78	63.58	18.54	24.27	3.08	3.89			<b>69.4</b>	<b>91.74</b>
<b>Italy</b>	67.36	95.44	31.81	51.4	58.97	87.51	11.52	16.51	<b>169.66</b>	<b>250.86</b>
<b>Netherlands</b>	44.86	62.56			14.81	21.52			<b>59.67</b>	<b>84.08</b>
<b>Poland</b>					9.41	11.43			<b>9.41</b>	<b>11.43</b>
<b>Portugal</b>	28.5	38.95							<b>28.5</b>	<b>38.95</b>
<b>Spain</b>	81.15	109.32							<b>81.15</b>	<b>109.32</b>
<b>Sweden</b>	48.68	66.31	16.98	24.44	31.91	45.94	34.12	49.03	<b>131.69</b>	<b>185.72</b>
<b>Switzerland</b>	342.91	444.17	28.04	37.13	33.8	45.79	14.73	18.94	<b>419.48</b>	<b>546.03</b>
<b>United Kingdom</b>	332.93	430.99	178.4	237.98	52.31	65.29			<b>563.64</b>	<b>734.26</b>
<b>Total</b>	1526.09	1998.93	463.37	643.88	412.95	577.75	320.89	446.40	<b>2723</b>	<b>3667</b>

Notes: Only countries with at least 35.000 respondents belonging to the labor force in the EULFS are included. An empty cell means that less than 100 white-collar migrants per destination country and region of origin reported in the EULFS and therefore a reliable estimate of the number of potential migrants cannot be computed.

## **4 Discussion**

The pandemic has started a process of unprecedented relocation of work from employers' offices to workers' homes, from city centers to suburbs and rural locations, and even to other countries. While digital nomads were around before the pandemic, they accounted for a very marginal part of the work force. In the post-pandemic reality, international teleworkers can enter the mainstream. We estimate that the reverse brain drain made possible by this change in workplace culture can entail up to 3 million white-collar migrant workers returning to live in their countries of origin while working remotely for their employers abroad.

Such relocation of skilled migrants has potentially important implications. Most of migrants' income is consumed and invested in the country of residence. The return of digital nomads will increase the demand for housing, education, cultural activities, services and consumption goods, boosting the economies of the receiving regions. The revival of these places may attract other skilled professionals. Return migrants also bring with them ideas, values and norms adopted abroad: both political and social attitudes as well as new and more productive technologies and practices. Finally, the wellbeing of migrants, their extended families and friends can increase due to falling physical separation.

## **References**

Barrero, J. M., Bloom, N., & Davis, S. J. (2021a). Why Remote work Will Stick. NBER Working Paper 28731.

Barrero, J. M., Bloom, N., & Davis, S. J. (2021b). Let Me Work From Home, or I Will Find Another Job. University of Chicago, Becker Friedman Institute for Economics Working Paper, (2021-87).

Bartik, A W, Z B Cullen, E L Glaeser, M Luca and C T Stanton (2020), "What Jobs are Being Done at Home During the COVID-19 Crisis? Evidence from Firm-Level Surveys", NBER Working Paper 27422.

Bick, A., Blandin, A., & Mertens, K. (2020). Work from home after the COVID-19 Outbreak, CEPR Discussion Paper No. DP15000.

Boeri, T, A Caiumi, and M Paccagnella (2020), "Mitigating the work-security trade-off while rebooting the economy", VoxEU.org, 9 April.

Dingel, J. I. & Neiman, B. (2020). How many jobs can be done at home? *Journal of Public Economics*. 189. 104235.

Felstead, A., Jewson, N., and Walters, S. (2003). Managerial control of employees working at home. *British journal of industrial relations*, 41(2), 241-264.

Financial Times (2021), “Employers aim for hybrid working after Covid-19 pandemic”, 28 February.

Financial Times (2021), “UK businesses think big about smaller office spaces”, 4 March.

Gottlieb, C., Grobovsek, J., and Poschke, M. (2020). Remote work across countries. *Covid Economics*.

McKinsey (2020). “What’s next for remote work: An analysis of 2000 tasks, 800 jobs and nine countries.”

van Leeuwen, E. and Bourdeau-Lepage, L. (2020). Spatial differences and the impact of the lockdown on well-being in the Netherlands.