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Posted Workers within the EU – More Flexibility for the Labor Market or a Risk Factor for Social Dumping?

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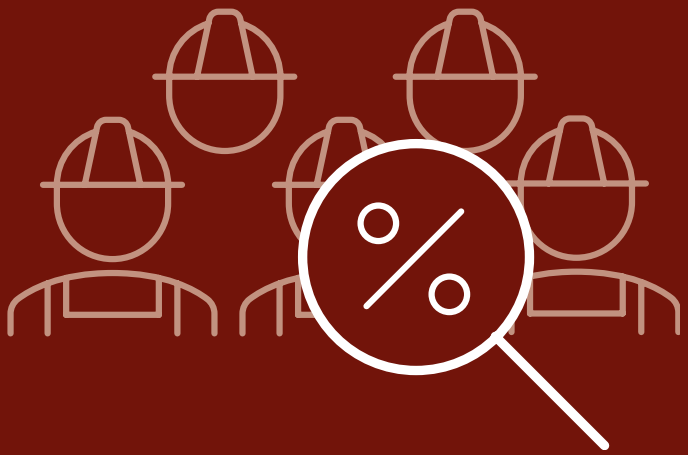

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Western European countries seem to have a rather dual relationship with the use of intra-EU posting: it is often considered a ‘Trojan horse’ while its use has increased significantly. Moreover, the almost exclusive focus by both scholars and politicians on risks of ‘social dumping’ in labor-intensive sectors may have influenced public perception and acceptance of this type of labor mobility among Member States. Above reality shows that further efforts should be made to map out the number, characteristics, and impact of intra-EU posting. Empirical evidence may refute or confirm existing perceptions and may support evidence-based policy both at national and European level.

This specific issue on posted workers zooms in on a number of Member States (Germany, Austria, France, Belgium and Slovenia), often with a focus on a specific sector (e.g., the German meat industry, the Belgian construction sector) or phenomenon (e.g., posted third-country nationals). The first article briefly introduces the social security and labor rules applicable to posted workers and describes the main trends and economic consequences of intra-EU posting. The last article argues that labor mobility by the provision of cross-border services also needs to be taken into account when calculating the employment of a country.

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RESEARCH REPORT

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Frederic De Wispelaere

The Posting of Workers in the EU at a Glance: A Multidisciplinary Introduction

The United Nations Economic Commission for Europe (UNECE 2018) states that the concept of "international labour mobility" includes "all movements of natural persons from one country to another for employment or the provision of services." This comprehensive definition does not make a statement about the frequency and duration of the employment abroad, nor does it make, from a European law perspective, a distinction between movements based on the free movement of workers (Article 45 TIEU), the freedom of establishment (Article 49 TFEU), or the freedom to provide services (Article 56 TFEU). Consequently, this term, and thus cross-border labor mobility in the EU, does not only cover "permanent" cross-border mobility or cross-border commuting but also all types of "temporary" cross-border labor mobility such as business trips, seasonal work, circular labor mobility, and posting of workers. The latter concerns the activity of a company sending (i.e., "posting") workers for a limited period of time from one Member State to another in

order to provide services there. There is a strong link between the export and import of services and the use of intra-EU posting as the former may require the physical presence of workers. Consequently, the evolution of intra-EU posting, a form of labor mobility that is employer-driven (unlike the "worker-driven" types of labor mobility under the free movement of workers and the freedom of establishment), may depend on the evolution of cross-border trade of services.[1]

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Western European countries seem to have a rather dual relationship with the use of intra-EU posting: it is often considered a "Trojan horse" while its use has increased significantly. Moreover, the almost exclusive focus by both scholars and politicians on risks of "social dumping" in labor-intensive sectors (e.g., in construction, road transport, meat processing, agriculture, shipbuilding, and live-in care) may have influenced public perception and acceptance of this type of labor mobility among Member States. The "marginalization" of intra-EU posting seems to have an impact on European and national policy decisions, which today are mainly directed towards enforcement rather than promoting free movement of services by limiting legal and administrative barriers.

The reality described above shows that further efforts should be made to map out the number, characteristics, and impact of intra-EU posting. Empirical evidence may refute or confirm existing perceptions and may support evidence-based policy both at the national and European level. This calls for a broad approach that takes into account the impact of intra-EU posting on all economic actors involved (posted workers, posting undertakings, local employers and workers, service recipients (i.e., "clients"), tax authorities, labor inspectorates, etc.). However, at the same time, this calls for a more detailed and thus narrow approach as costs and benefits for the economic actors involved may differ greatly depending on the sector of activity. Finally, this mapping should distinguish between the use of intra-EU posting (which is perfectly legal) and the infringements it entails in some specific sectors of activity.

Furthermore, it can be argued that the provision of services by intra-EU posting has several benefits compared to other types of intra-EU mobility. Labor emigrants are no longer taxed in their Member State of origin. Consequently, emigration erodes the number of people left to pay taxes. This is in contrast to posted workers, who continue to pay taxes in their Member State of origin. As a result, intra-EU posting may have positive consequences on the labor tax revenues of Member States. Moreover, there are concerns that emigration may lead to "brain drain," labor shortages, and a worsening of the demographic outlook in the Member State of origin. Such costs may turn up less when persons are posted temporarily to another Member State. Finally, economists consider intra-EU labor mobility well suited to absorb an economic shock. In such an event, people are moving from high to low unemployment regions in the EU. However, one tends to narrow the discussion on the role of labor mobility in the EU as an adjustment mechanism to mere labor migration. This might be one of the least suitable forms of labor mobility (see above for disadvantages of labor migration for the Member State of origin), in contrast to intra-EU posting.

This edition of the CESifo Forum presents several findings of the research project "POSTING.STAT" (*Enhancing the collection and analysis of national data on intra-EU posting*).[2] For this research project, administrative micro-data on intra-EU posting was extracted and analyzed in the six main "sending" Member States (Germany, Poland, Italy, Spain, Slovenia, and Luxembourg) and "receiving" Member States (Germany, France, Belgium, Austria, the Netherlands, and Luxembourg) of posted workers. This specific issue on posted workers zooms in on a number of Member States (Germany, Austria, France, Belgium, and Slovenia), often with a focus on a specific sector (e.g., the German meat industry, the Belgian construction sector) or phenomenon (e.g., posted third-country nationals). This article briefly discusses the social security and labor rules applicable to posted workers and its economic consequences. In addition, the main trends of intra-EU posting are briefly described.

OVERVIEW OF THE LEGAL FRAMEWORK APPLICABLE TO POSTED WORKERS AND ITS ECONOMIC CONSEQUENCES

The European legislator and the European Court of Justice (ECJ) distinguishes the situation of posted workers from the one of "standard" mobile workers because the former "return to their country of origin after the completion of their work without at any time gaining access to the labor market of the host Member State."[3] This legal approach has strong implications on the "transnational social protection" of posted workers and may foster differences in social protection compared to local workers and other groups of mobile workers who make use of their freedom of movement under Article 45 TFEU (e.g., movers

[1] Unfortunately, data on trade in services involving the presence of persons in the territory of another country for the purpose of providing a service is not available (see the last article of this special issue on posted workers).

[2] For more information about this research project and an overview of all country reports, see the following link: https://hiva.kuleuven.be/en/news/newsitems/posting-stat-enhancing-collection-and-analysis-national-data-on-intra-eu-posting

[3] ECJ Case C-113/89, Rush Portuguesa. Lda v. Office national d'immigration, 1990.

of working age, frontier workers, seasonal workers). After all, the consequence of this position is that the question of what protection under labor and social security law can be invoked by posted workers must be answered in the light of the principles underlying the free movement of services, in particular the right of their employer to temporarily provide services in another Member State without hindrance. In this legal context, the application of the labor and social security law of the host country can be considered as a barrier to the exercise of the free movement of services. As shown below, this legal approach has some important consequences.

Which national social security system is applicable to the posted worker and, consequently, where social security contributions have to be paid, is regulated by the "basic" Regulation (EC) No 883/2004 on the coordination of social security systems and its implementing Regulation (EC) No 987/2009 (hereinafter jointly referred to as the "Coordination Regulations"). One of the key principles of the Coordination Regulations is that persons are subject to the legislation of a single Member State only. In the event of employment, the legislation of the Member State where the activity is carried out usually applies (i.e., the "*lex loci laboris*" principle). However, in some very specific situations, criteria other than the actual place of employment are applied. Intra-EU posting is such a specific situation. The posted worker remains subject to the social security system of the Member State of origin during a period of 24 months. The motivation behind this exception to the "lex loci laboris" principle is mainly to encourage the freedom of movement of workers and services and to avoid unnecessary and costly administrative and other complications which would not be in the interests of workers, companies, and administrations.

This policy choice has some important consequences. First, differences in social security contributions paid by employers among "sending" and "receiving" Member States may create a competitive advantage (or disadvantage) for foreign service providers compared to local companies.[4] For example, an employer social security contribution rate of 35.86 percent is levied on French companies while Lithuanian companies posting workers from Lithuania to France will only be subject to an employer social security contribution rate of 1.47 percent. Second, in contrast to other forms of labor mobility, intra-EU posting does not lead to an erosion of the number of people left to pay taxes. Indeed, social security contributions, levied on often higher wages of the host Member State (see below), continue to be paid in the Member State of origin. This is an important source of labor tax revenues for several of the main sending Member States of posted workers, such as Slovenia. At the same time, however, host Member States do not receive any social security contributions from posted workers. For instance, the Belgian state does not receive a considerable amount of labor tax revenues because social security contributions for incoming posted workers must be paid in the sending Member State and not in Belgium. It is estimated that this "financial loss" amounts to more than EUR 750 million, which is, however, "only" about one percent of the annual sum of labor tax revenues received by the Belgian State from social security contributions. Finally, since posted workers remain subject to the social security system of the sending Member State, a (large) group of posted workers does not have access to the sometimes better and higher social rights and standards in the host Member State. However, when the principle of "equal pay for equal work in the same workplace" is applied (see below), their net salary and purchasing power will often be higher than those of local workers in the host Member State.

As far as the terms and conditions of employment of the posted worker are concerned, Directive 96/71/EC recently amended by Directive 2018/957/EU, is relevant. Under the old Posting of Workers Directive, only "minimum rates of pay" of the host Member State were granted to posted workers.[5] With Directive 2018/957/EU amending the Posting of Workers Directive, posted workers are entitled from day one to all the elements of remuneration of the host Member State (covering also other advantages such as bonuses and allowances) rendered mandatory by law or by collective agreement made universally applicable.[6] This aims to bring the posted workers' wages closer to those applicable to other groups of mobile workers who make use of their freedom of movement and local workers (announced by the European Commission under the slogan of "equal pay for equal work in the same workplace"). In theory (and in practice), a large proportion of workers will have their wages increased if they are posted to another Member State. This is especially true for workers posted from a low-wage country to high-wage country. For instance, the national minimum wage in Germany is more than three times higher than the national minimum wage in Bulgaria, Romania, and Hungary. This reality shows how sensitive this provision can (and will) be to infringements. In the end, a group of posted workers may already agree to a wage that is twice as high as their wage in the Member State of origin but still below the minimum level in the host Member State.

The financial effects of the above principles are briefly illustrated. It is estimated that the gross

[4] Moreover, social security contributions levied on the higher wages of posted workers earned in the host Member State might be capped in the Member State of origin at a maximum level when an income ceiling is exceeded.

[5] Of course, this principle does not apply when the terms and conditions of employment in the Member State of origin are higher/better compared to these of the host Member State.

[6] When determining the remuneration applicable to the posted worker, a comparison between the remuneration paid under the employment contract in the Member State of origin and the one to be paid in the host Member State should be made in order to apply the highest level of remuneration.

wages for the persons posted to Belgium amounted to around EUR 2 billion in 2020. If they had not been posted but had been employed in their sending Member State, their gross wages would have been approximately EUR 700 million lower. Consequently, their wages increased by about 50 percent. However, the gross wages of posted workers still tend to be (much) below those of local workers. For instance, almost 25 percent of all posted workers to France and even 75 percent of the posted workers employed in the agricultural sector are paid at the French minimum wage. Consequently, posted workers earn on average 30 percent less than comparable French workers employed at the same workplace.

POSTED WORKERS IN THE EU: SOME MAIN TRENDS

Based on 2019 data, there were around 2 million "registered" posted workers and 5.8 million postings in the EU. The EU enlargements of 2004 and 2007 had a huge impact on the scale of intra-EU labor mobility, not least on intra-EU posting. Indeed, the temporary restrictions on the free movement of workers ("the front door" was closed), but not on the free movement of services ("the back door" was open) are probably one the main reasons for the substantial rise of the number of posted workers from Eastern Europe headed towards Western Europe. After all, this opportunity was financially attractive for companies and workers from Eastern Europe as well as for companies in Western Europe active in labor-intensive and price-sensitive sectors of activity. However, statistics show that the import and export of services through posting should not be narrowed down to this single flow. After all, more than half of the posting take place among the "old" Member States.

The main sending Member States of posted workers are Germany and Poland. However, in relation to the total workforce in both countries, the number of posted workers is rather low. In particular, a large part of the workforce in Slovenia is temporarily providing services in another Member State. It is mainly Western European Member States that receive the most posted workers. Indeed, Germany (which makes it both a major sending and receiving Member State of posted workers), as well as France, Belgium, and Austria are the main receiving Member States.

Three types of postings can be distinguished: 1) posting between a company and a service provider ("contract of services" or "(sub)contracting"); 2) posting of workers within the same group ("intra-group posting"), and 3) posting through temporary work or placement agencies. Subcontracting is especially common in price-sensitive and labor-intensive sectors. For instance, in the construction sector in 2017, payments to subcontractors accounted for 24 percent of total turnover and even for 37 percent in the construction of buildings. In this sector, large companies function as main contractors or as building service providers, while small and medium enterprises (SMEs) take up the role of subcontractors. Empirical evidence shows that French and Belgian "clients" of posted workers are substantially larger than non-using firms in the same sector. The fact that clients of posted workers tend to be larger than non-using firms is consistent with the idea that large firms connect more easily with foreign suppliers or exhibit larger economies of scale while searching for a foreign supplier. This suggests that access to foreign service suppliers through posting of workers mostly benefits the larger firms in a given sector. Consequently, competition will mainly be between subcontracting local SMEs and subcontracting posting undertakings. And it is the larger local companies that will benefit from this competition.

Posting through a temporary work agency is also becoming an important type of posting. Figures for France show that 25 percent of the postings by foreign temporary employment agencies are performed by workers that just started working for the foreign company (less than one day before the beginning of the posting abroad), meaning that the use of "hired to be posted" contracts is substantial for incoming postings to France. This means that for one out of four postings from foreign temporary employment agencies, the employment link between the posted workers and the foreign firm is not a usual employment relationship, but rather that the foreign firm hired these workers for posting them to France. Only intra-company postings are characterized by a longer employment relationship between the posted worker and the employer.

The sectoral breakdown shows some strong differences between Member States. Posted workers from "new" EU-13 Member States (i.e., countries that joined the EU in 2004, 2007, or 2013) are mainly active in the construction sector. This is while posted workers from "old" EU-14 Member States are mainly providing activities in the service sector. This reality is strongly reflected when looking at the difference in profile between incoming and outgoing posted workers in several Western European Member States. Countries such as France and Belgium receive a large group of posted blue-collar workers active in labor-intensive sectors such as construction, while most of their outgoing posted workers are concentrated in higher-skilled services. This proves that intra-EU posting is not exclusively "labor-cost" driven. It can also be skills- and project-driven, including in price-sensitive and labor-intensive sectors facing qualitative and quantitative labor shortages.

On average, intra-EU posting represents only a fraction of total employment in the EU. Nevertheless, it has taken a substantial share of the labor market in several labor-intensive and price-sensitive sectors of activity, particularly in the construction sector of several Western European countries (Belgium, Austria, Luxembourg, Germany, and France), in road freight

transport, in the meat processing industry (especially in Germany until recently)), in the agricultural sector (especially in France) and finally in the live-in care sector (especially in Germany). In that respect, posting might have led to job displacement effects in some sectors of activity. For instance, employment decreased in Belgian companies by 2 percent the year they started subcontracting services to posted workers.

Imported services are sometimes referred to as a source of "leakage" because they can have the effect of transferring income (wages and profits) earned in one country to another country. In the case of intra-EU posting, the purchase of services from posting undertakings results in an outflow of income and public revenues. This risk occurs, for instance, in the construction sector of several Western European countries. A large share of investments included in the recovery and resilience plans of several Western European countries, submitted to the European Commission in the framework of the "Recovery and Resilience Facility," is dedicated to the construction and renovation of buildings and dwellings. Given the large presence of posting companies and posted workers in the construction sector of several Western European countries, these recovery plans will not only benefit their economy, but also Eastern-European employment and consumption.

An increasing group of posted workers are third-country nationals sent from another Member State. In several host Member States (e.g., in Belgium, Austria, and France) around one out of five posted workers are third-country nationals. Third-country nationals are mainly posted to another Member State by an employer established in Slovenia and Poland and to a lesser extent in Spain, Portugal, and Lithuania. For instance, six out of ten posted workers from Slovenia are third-country nationals, mainly coming from Bosnia and Herzegovina, and entering Slovenia on the basis of a bilateral agreement concluded between both countries. Furthermore, it appears that a large group of Ukrainians and Belarusians are posted by Polish and Lithuanian companies. Research findings show that posted third-country nationals are mainly employed in labor-intensive sectors and receive lower wages than other posted workers. Moreover, it appears that this group of posted workers is particularly vulnerable to violations to the applicable terms and conditions of employment (sometimes leading to labor exploitation).

The brings us to the "fraudulent" dimension of posting of workers. With regard to the application of the Posting of Workers Directive, infringements such as bogus self-employment and failure to respect the terms and conditions of employment may occur. Regarding the application of the Coordination Regulations, infringements such as the non-compliance with the posting conditions as well as paying the correct level of social security contributions are the main concerns. Inspection data may bias the real relationship between posting and cross-border social fraud. After all, inspections mostly take place on the basis of a risk assessment, mainly focused on specific "risk sectors" (e.g., in the construction sector). Such inspections will yield higher infringement rates and may therefore give a distorted view of the actual number of infringements. In 2020, an infringement was found in more than half of the inspections carried out by the Belgian labor inspectorates relating to the compliance with the posting rules. Moreover, the infringement rate for inspections related to the cross-border dimension of social fraud is much higher than for inspections related to the national dimension of social fraud. For instance, inspection data for Austria show that posting companies are much more likely to underpay their workers than domestic companies, especially in the construction sector where 0.9 percent of inspected Austrian companies were suspected of underpayment compared to 38 percent of inspected posting undertakings.

Finally, figures from several main receiving Member States show that the number of available labor inspectors and the number of inspections do not match the attention paid to "social dumping" in the public and political debates. For instance, about 6 percent of the inspectors employed within the Belgian labor inspectorates focus on the fight against cross-border social fraud and thus on the compliance with the posting rules. Due to the fact that much more infringements are found during inspections on cross-border social fraud, it seems appropriate to increase the number of labor inspectors who focus on this area.

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Posted Workers in Germany – Developments and New Legislations

GERMANY'S ROLE IN EU POSTINGS

Germany is the main receiving country of posted workers in the European Union. In 2020, 16.9 percent of all postings from EU countries (around 0.4 out of 2.4 million) had Germany as a destination country (European Commission 2022). Figure 1 shows that the number of registered postings in Germany increased significantly over time, by 51 percent between 2012 and 2019, even though other EU countries recorded a much larger increase during the same period (e.g., Austria by 319 percent, Spain by 284 percent).[1] There could be several reasons for this, related to a stricter enforcement of the rules, an increase in the awareness of the rules, the increasing digitalization, or an actual increase in postings across the European Union due to an increase in the import of services. There was a drop in the number of postings to Germany from 2019 to 2020. While there were 505,737 postings in 2019, this number decreased to 410,908 in 2020 due to the Covid-19 pandemic.

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To assess the magnitude of postings to Germany, a comparison of the overall work force seems informative (Figure 2). Postings to Germany with 410,908 represented 0.99 percent of the overall German work force (41.17 million) in 2020.[2]

Interestingly, compared to other EU countries workers posted to Germany do not loom large, considering the size of the German labor force. The shares of posted workers compared to the country's labor force are significantly higher, e. g., in Austria, Belgium and Switzerland with shares as high as around 4 percent. Due to the Covid-19 pandemic and the related restrictions on cross-border travel, shares for 2020 dropped in most countries.

DESCRIPTION OF POSTED WORKERS IN GERMANY

Data Sources on Posted Workers in Germany

There are three possibilities to measure the inflow of posted workers to Germany and describe their characteristics. The first measurement relies on A1 certificates registered by sending countries. Every time an employee conducts a work-related travel abroad, the employee needs to carry a so-called A1 certificate. This certificate is proof of the employee being socially insured in their home country. The obligation to carry this A1 certificate applies to all EU and EFTA countries. It applies to all postings, independent of its economic activity or duration, if the posting is below 24 months. It is the employer who requests these certificates for their employees. It is possible to use information gathered on these A1 certificates to describe the nature of postings taking place from a certain country. One can extrapolate the data gathered by sending countries to approximate postings taking place in a certain receiving country.

The second measurement relies on the Minimum Wage Registration Portal, the prior notification tool, governed by the German General Directorate of Customs.[3] In certain economic sectors, employers have the obligation to notify postings prior to placing them in the sending country.[4] In Germany, this notification takes place via the Minimum Wage Registration Portal and applies to the following sectors: setting up and dismantling trade fairs and exhibitions, building industry, meat industry, forestry, catering and hotel businesses, industrial cleaning, passenger transportation industry, fairground and amusement sector, haulage, transport, and associated logistics industry, prostitution industry, private security sector. Additionally, it does also not apply to family workers (Zoll 2022a). This means that the data gathered via the Minimum Wage Registration Portal is subject to certain limitations, as it only mirrors a subgroup of posted workers to Germany. Moreover, employers might not

* We thank Frederic De Wispelaere for helpful comments and revisions and Jennifer Steigmeier for her valuable assistance.

[1] Mainly due to the high increase of the number of PDs A1 issued under Art. 12 by Germany.

[2] Though, it must be noted that some workers are posted several times per year which could lead to an overestimation of the share.

[3] We thank the German General Directorate of Customs for providing the data in March 2022.

[4] The respective legislation is outlined under Article 16 (1 and 2) of the Minimum Wage Act (Mindestlohngesetz - MiLoG) in conjunction with Section 1 of the Ordinance on Minimum Wage Reporting Requirements pursuant to Minimum Wage Act, Posted Workers Act and Provision of Temporary Workers Act (Mindestlohnmeldeverordnung – MiLoMeldV).

go through with previously registered postings. The breakdown of the data by sectors is only available from September 2019 onwards.

Lastly, there is the eESSI IT System. The European Union introduced the Electronic Exchange of Social Security Information (eESSI) IT System to facilitate the data exchange on social security information among its Member States.[5] The aim of the system is to facilitate the coordination on the establishment of social security rights in cross-border situations within the EU (European Union 2022). The system processes this information on A1 certificates in a unified manner and then sends it to receiving countries. In the beginning of 2021, there were still reports on problems and delays with respect to the rollout of eESSI (DSRV 2022). In Germany, the database on incoming A1 certificates has existed since 2008, but the data has to be deleted after 5 years due to data protection regulations.

Where Do Posted Workers to Germany Come from?

Posted workers sent to Germany are mainly from Poland, Slovenia, Slovakia, Croatia, and Austria. In fact, 27.5 percent of registered posted workers in Germany are from Poland and 14.9 percent from Slovenia (Figure 3). This means that the relative importance of Polish workers in all posted workers has fallen over time. Back in 2014, they still accounted for 36.5 percent of registered posted workers in Germany while Slovenian posted workers accounted for 12.1 percent (European Commission 2022).

When comparing these insights to a different data source, namely data on prior notifications on posted workers registered in the German Minimum Wage Registration Portal, the picture is slightly different. While Poland remains the main sending country of posted workers to Germany (40.4 percent in 2020 and 42.7 percent in 2021), the second largest group is Lithuania, accounting for around 9 percent of all prior notifications, and Rumania, accounting for around 7 percent of all prior notifications of incoming posted workers (Figure 4). The differences in the data might be since the Minimum Wage Registration Portal includes the haulage sector, while the A1 database does not. Additionally, not all postings registered in the portal might take place afterwards, and not all employers might make notice of their planned postings beforehand. Around 5 to 6 percent of notifications about planned postings to Germany are from Hungary, and around 4 percent from the Netherlands, Austria, Spain and Bulgaria.

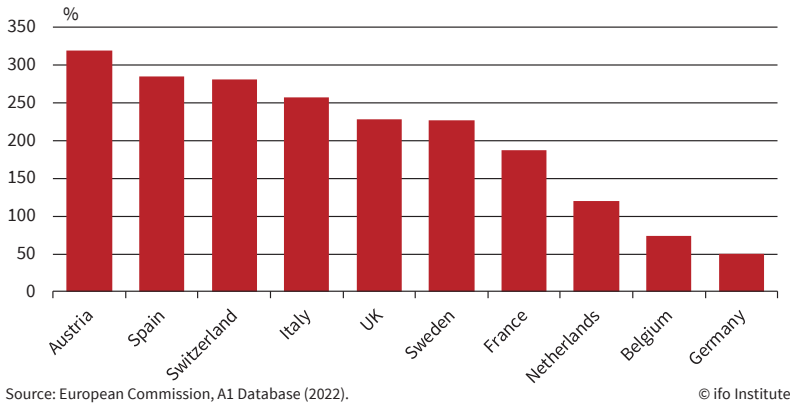
The Duration of Postings to Germany

Postings to Germany took on average 181 days in 2021 when conducted by self-employed people, compared to 145 days for employees (eESSI Data). The average duration has increased steadily for postings of self-employed workers, from 160 in 2018 to 181 in 2021 (Figure 5). The average duration of employees' postings has remained stable, with a drop in 2019. In 2021, only 5.8 percent of all postings by self-employed people lasted less than 8 days, compared to 9.4 and 16.5 percent of all postings in 2020 and 2019, respectively. This means that short business trips only play a limited role in postings by self-employed people to Germany. For employee postings, this share is larger, accounting for nearly one-quarter of postings in 2021.

[5] We thank the German Pension Insurance (DRV) for providing the data in March 2022.

Figure 1

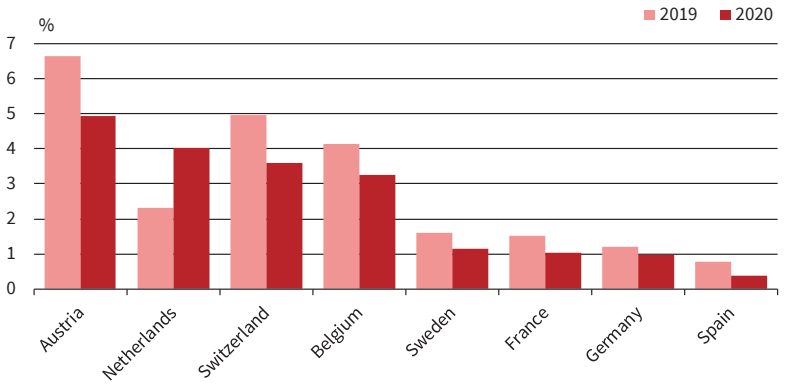
Increases in Received Posted Workers 2012–2019



Source: European Commission, A1 Database (2022). © ifo Institute

Figure 2

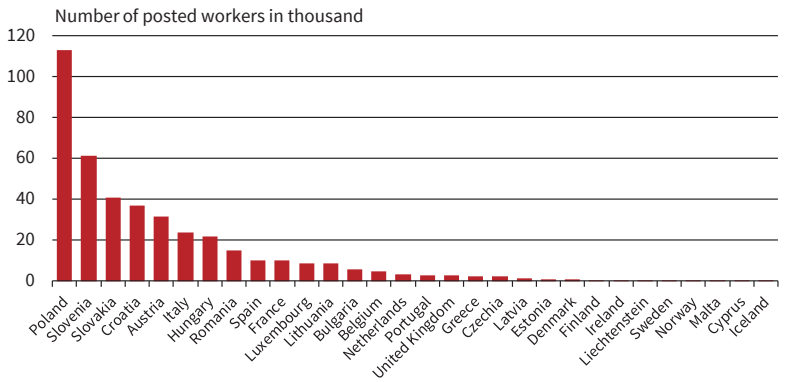
Share of Posted Workers in Comparison to Labor Force



Source: European Commission, A1 Database (2022); Eurostat (2022). © ifo Institute

Figure 3

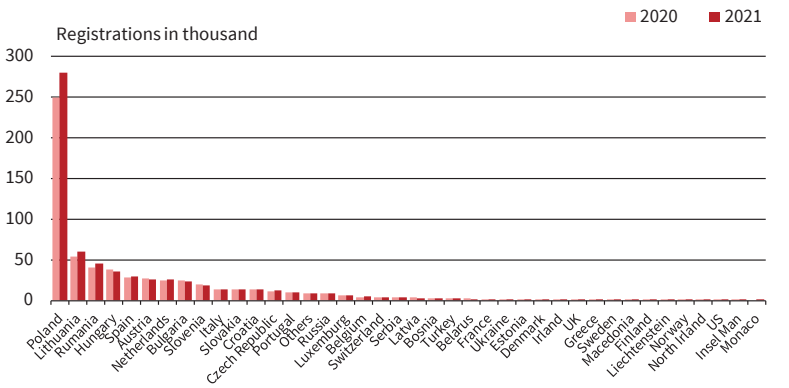
Inflow of Posted Workers to Germany 2020



Source: European Commission, A1 Database (2022). © ifo Institute

Figure 4

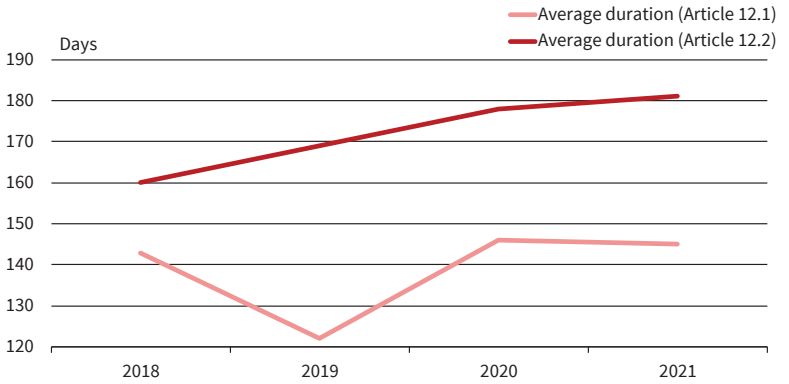
Prior Notifications of Potential Incoming Posted Workers



Source: Minimum Wage Registration Portal (2022). © ifo Institute

Figure 5

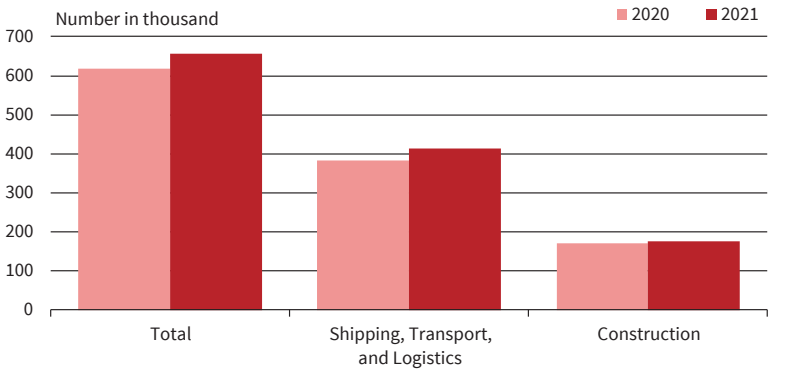
Average Duration of Postings to Germany



Note: The data shows all postings registered via A1 certificates under Article 12.
Source: eESSI IT System (2022). © ifo Institute

Figure 6

Number of Notifications and Main Economic Sectors



Source: Minimum Wage Registration Portal (2022). © ifo Institute

In 2019, 42.4 percent of employee postings took less than 8 days.

The Sectoral Distribution of Posted Workers in Germany

To study the impact of posted workers on labor market outcomes, it is necessary to understand to which economic sectors in Germany they are mainly posted. One can then assess if they play a considerable role in the overall number of employed workers in each sector.

Following data on prior notifications about postings, Figure 6 shows that most notifications took place in the Shipping, Transport and Logistic Industry (62.1 percent in 2020 and 63.2 percent in 2021), followed by the construction sector (27.6 percent in 2020 and 26.8 percent in 2021). The total number of notifications registered in the Minimum Wage Registration Portal increased from 617,253 to 656,153 between 2020 and 2021. The increase was larger in the Shipping, Transport and Logistic Industry (8.1 percent) than in the construction sector (3.0 percent). The increase could be related to economic relief after the economic contraction took place in the beginning of the Covid-19 pandemic.

There are several other economic sectors with more than 1,000 notifications in 2020, and 2021, respectively (Figure 7). The graph shows that the scaffolding trade plays another important role in all notifications, with more than 9,000 notifications in 2021. While the notifications in this specific sector have increased by 10.6 percent between 2020 and 2021, this does not apply to all other sectors with more than 1,000 notifications. The observed drop in the number of notifications has been especially large in the meat industry (a decrease of 89.9 percent). This is related to several new laws that impact the German meat industry (for details see the next section). Still, the setting up and dismantling of trade fairs and exhibitions as well as the cleaning of buildings industry report also significant decreases of around 25 percent between 2020 and 2021. This could be due to further impacts of the Covid-19 pandemic on these sectors, as exhibitions and conferences have been significantly impacted by lockdowns, distancing measures as well as new hygiene rules. The remaining economic sectors listed in the graph below report a decrease in the number of notifications between 5.7 and 10.1 percent for the period 2020 to 2021.

Lastly, we draw from data registered via the eESSI IT System.[6] The European Union introduced the Electronic Exchange of Social Security Information (eESSI) IT System to facilitate the data exchange on social security information among its Member States. The data therefore gives an overview of the postings that took place (DSRV 2022). As Figure 8 shows, the construction sector remains the main receiver of postings in Germany. Especially the subsector of specialized construction activities plays a significant role, receiving more than 12,000 postings in 2021. This is more than double the number of the second most important sector, the manufacturing of fabricated metal products, except machinery and equipment. Different from the other data sources, certain manufacturing subsectors account for a crucial part of postings. These might

[6] The eESSI System is subject to limitations, as only approximately 25 percent of registered postings are matched to an economic sector by the German Federal Employment Agency.

not be reflected in the Minimum Wage Registration Portal, as they are not located among the lower end of the wage distribution. These postings reflect the dominant role of the automotive sector in the German economy.

The Economic Impact of Postings on the German Labor Market

There might be concerns about postings leading to unemployment effects or wage decreases in Germany, as the employment of posted workers – although subject to certain aspects of the German labor law – might still be cheaper than the one of native workers. To assess the economic importance of posted workers in the overall German labor market, one can compare the number of postings to the number of workers in each economic sector. Overall, postings only accounted for 1 percent of jobs in 2021, when compared to the total of socially insured workers in Germany. The overall impact of postings on the German unemployment rate or wages might therefore be negligible and highly unlikely.

Still, postings accounted for 8.1 percent of jobs in the construction sector in 2021, when compared to the number of socially insured employees in this sector (2.0 million in June 2021).[7] In the Shipping, Transport and Logistics sector they amounted to 18.0 percent, when compared to the number of socially insured employees in this same sector (1.9 million in June, 2021) (Bundesagentur für Arbeit, Beschäftigung nach Wirtschaftszweigen (WZ 2008), 2022). This means that, while postings play a negligible role in the overall German economy, making up for less than 1 percent of workers, they play a significant role in some sectors.

Due to Germany's demographic structure, the country is experiencing skill shortages in some occupational groups, which cannot be met by the German labor supply. 50 percent of companies perceive that these skill shortages are the greatest threat to their business development (ibid). In fact, 352 out of 801 occupational groups are subject to these skill shortages (Bundesministerium für Wirtschaft und Klimaschutz 2022). When relying on the bottleneck analysis of the Federal Labor Office, many of the affected jobs form part of the construction sector (Bundesagentur für Arbeit 2022a). It might therefore be unlikely that posted workers lead to job displacements in this factor. On the contrary, companies might take advantage of postings to meet their skill shortages (Das Handwerk 2020).

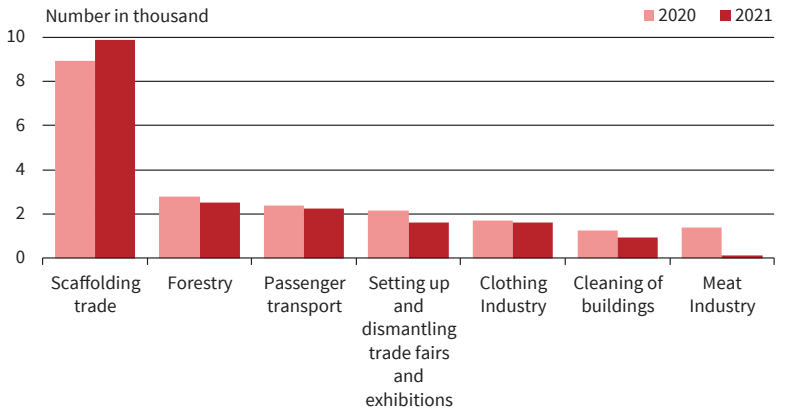
POSTED WORKERS AND THE GERMAN MEAT SECTOR

Germany is an important player in the European meat industry. In 2021, it accounted for 21.1 percent of pig meat production in the EU-27 countries (producing 4.9 million tons of pig meat) and 15.7 percent of the European beef production (producing 1.1 million tons of beef meat) (Eurostat 2022). It is also one of the main producers of poultry. In the period 2006–2016 the turnover of the German meat sector doubled (Wagner 2017). This development is a result of the adaption of a low-cost business model which is primarily characterized by very low labor costs in comparison to other European countries. In Denmark labor costs in the meat industry are twice as high as in Germany and also Belgium's and the Netherlands's labor costs exceed the German labor costs by 65 percent (Erol and Schulten 2021). As a result, in recent years big European players in the European meat sector, such as Danish Crown (Denmark) and Vion (the Netherlands), have relocated many of their plants to Germany (Staunton 2021).

The German meat industry's low labor costs are accompanied by a low union density and no industry-level collective agreements to set minimum employment standards in place (Erol and Schulten 2021a). In addition, a restructuring process in the

Figure 7

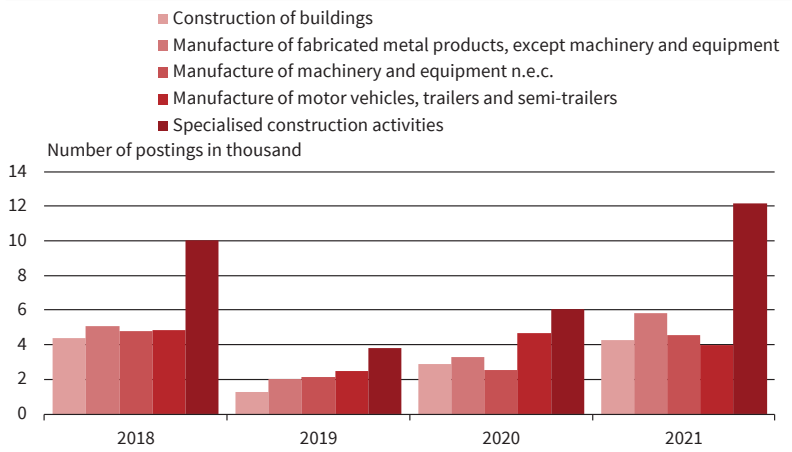
Rest of Notifications with More than 1,000 Counts



Source: Minimum Wage Registration Portal (2022). © ifo Institute

Figure 8

5 Main Sectors of Postings Registered via the sESSI IT System



Note: The data shows all postings registered via A1 certificates under Article 12. Only 25 percent of the data is matched to an industry classification.
Source: eESSI IT System (2022). © ifo Institute

[7] As there can be multiple postings per worker and a posting can be of short duration, this might be an overestimation. We can thus interpret this as a maximum effect.

German meat sector that started in the 1980s led to the dominance of three large corporations that account for 58 percent of all pig slaughters in Germany (Schulte and Specht 2021).

The EU eastwards enlargement in 2004 in combination with EU Posting of Workers Directive of 1996 created an opportunity for German slaughterhouses to further reduce labor costs. Because no statutory or sector-wide binding minimum wage was in place in Germany, German meat producers could legally employ posted workers from eastern European countries at wages as low as 3 to 5 EUR, about a third of what the German core workforce in the industry would earn. The Posted Workers Directive stipulated that, in case no minimum wage was existent in the countries posted workers were sent to, the sending country's wage would be paid. (Wagner 2017; Solomon Hookins and Vladov 2021). Posted workers at subcontractors do not appear in official German statistics as they are not obliged to register. Therefore, official information about the incidence of posted workers in the meat industry is missing. Considering that 44.000 workers in the German core workforce subject to social security contribution of the meat industry lost their jobs between 1999 and 2014 and that survey information from the industry's trade union and work councils suggest that about 50 percent of abattoir works did not belong to the core workforce of the companies, posted workers used to play a crucial role in the German meat industry. Even though a nationwide statutory minimum wage was introduced in Germany in 2015 and a voluntary agreement to improve working conditions in the sector was put in place by the six largest German meat producers (65 percent market shares in the field of pig slaughtering) that would also end the employment of posted workers, precarious working conditions in the meat industry did not come to an end. The companies agreed to only take on contract workers hired in Germany and be subject to German labor law and social security provisions (Erol and Schulten 2021; Wagner 2017). Instead of integrating formerly posted workers into the core workforce, the new strategy of the meat producing companies was to use workers from German-based subcontracted firms, which continued to recruit their workers in eastern European countries. Despite the lack of official figures, evidence indicates that up to 90 percent of slaughterhouse workers were contract workers and that fundamental legal requirements are not met. According to a report of the North Rhine-Westphalian labor inspection authority, 9,000 violations of the law were found during the inspection of 30 slaughterhouses in 2019. Most infringements were related to excessive working hours and subsequent unpaid overtime, undermining the statutory minimum wage and illegal wage deduction (e.g., for rent, individual protective equipment, or transport) (Erol and Schulten 2021 and 2021a). As a reaction to ongoing public outrage and criticism in combination with a huge Covid-19 outbreak at a big meat packing plant that dragged the poor working conditions in the industry into the spotlight again, the German Government passed the Occupational Safety and Health Inspection Act in December 2020, immediately banning subcontracting in the meat sector (Staunton 2021). Since April 2021 there has been an additional prohibition of temporary employment in the sector. There has also been an obligation to electronically record working hours and store these records since January 2021, a minimum inspection rate of 5 percent of meat industry workplaces per year and a doubling of the fines to EUR 30,000 for violations of the Working Hours Act (Schulten und Specht 2022).

Since January 2022 a sector-wide minimum wage of EUR 11,00[8], negotiated through collective bargaining, for the meat industry has been in force. As a next step the collective bargaining partner agreed on further negotiations about additional agreements regulating working conditions such as working hours, holidays and extra payments, which would go beyond the general minimum standards in force for all workplaces in Germany (Schulten and Specht 2022).

And indeed, the data gathered on posted workers for this report confirms that postings to the German meat sector unsurprisingly only play a very limited role in overall postings today. Data from the Minimum Wage Registration Portal shows that they only accounted for 0.23 percent of all postings in 2020, and for 0.02 percent in 2021. Posted workers also play a negligible role in the number of employees in the meat industry. While estimations by the industry's trade union NGG suggest that in 2014 around 25,000 posted workers were employed in the meat industry, the number declined to only 144 workers in 2021 (Brümmer 2014).

Figure 9 shows that the number of employees subject to statutory social security contributions substantially increased since 2015 when the Minimum Wage Act was introduced, and the voluntary agreement stipulated to waive the employment of posted workers. While in 2014 143,145 employees subject to social security contributions worked in the industry, the number increased by 27 percentage points to 181,570 in 2021, surpassing the number of 2000 when 175,007 persons were employed (not shown in the figure, see Brümmer 2014). Effects of both the voluntary agreement and the Occupational Safety and Health Inspection Act are reflected in the data, with a stronger effect of the latter. The increase in employees subject to social security contributions was at 7 percentage points from 2014 to 2015, and an even more pronounced increase by 11 percentage points is observable between 2020 and 2021. For the companies which had signed the voluntary agreement, Jaehrling, Wagner, and Weinkopf (2016) found a weaker effect on

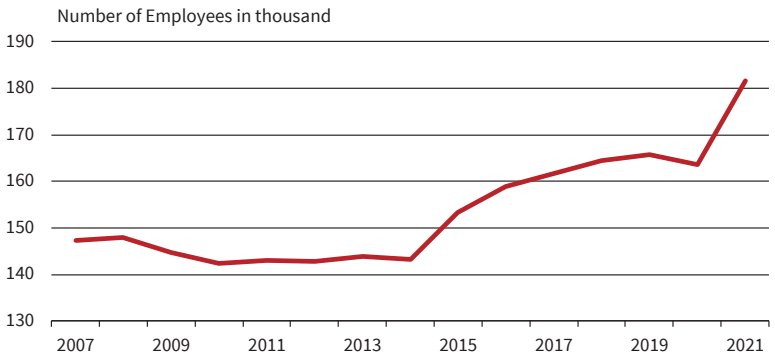
[8] Further increases will be implemented: EUR 11,50 by 1 December 2022 (which will be below the statutory minimum wage which will raise to 12 EUR in October 2022) and EUR 12,30 by 1 December 2023.

the number of core employees. From 2014 to 2015 the core workforce only increased by 3.7 percent, while the number of employees at subcontractors slighter decreased by 1.2 percent.[9] This can most probably be explained by the fact that unlike posted workers, subcontracted workers are also subject to social security contributions.

Many have taken the recent increase in socially insured employees since 2015 as evidence that the Occupational Safety and Health Inspection Act, which led to a movement from contract work via subcontractors to directly employed workers, is working well. (Westfalenspiegel 2021). According to data published by one of Germany's largest newspapers, this applied to a total of 12,300 contract workers in 3 of the largest employers in the beginning of 2021 (Süddeutsche Zeitung 2021). Still, when relying on information by Deutschlandfunk (2021), a German radio program, and the German Trade Union Confederation DGB, the working conditions in the sector have not improved since then (Sepso and Szot 2021). On the contrary, while earning the same amount of money, namely the industry-level minimum wage, and due to the introduction of electronically recorded working hours, the sector must manage with less employees due to the new German legislation as well as with conducting the same workload in less time, causing more distress and pressure for remaining workers. This could mean that while certain aspects of the working conditions have improved, others remain a challenge. The work culture and management style might especially pose a threat to these conditions. In fact, according to the political scientist Stanimir Mihaylov, the law did not tackle the partly abusive behavior of foremen towards their subordinates as they were all taken over from the subcontracted firms (Deutschlandfunk 2021).

Figure 9

Employees in the German Meat Industry Subject to Social Security Contributions



Source: Federal Labor Office (2022). © ifo Institute

POLICY RECOMMENDATIONS

Based on the evidence outlined in this report, we can draw several policy recommendations: First, there is an urgent need to improve the data environment on posted workers from and to Germany. To the best of our knowledge, there is currently no entity gathering data on outflows of postings from Germany. To understand the contribution of German workers to the economy of other EU Member States, it would be useful to gather data on A1 certificates on postings from Germany to other countries centrally. Next, onboarding all Member States to the eESSI System, and enforcing the electronic registration of A1 certificates via the system would increase the reliability of data on posted workers. Additionally, the share of postings matched to industry classifications in the eESSI System should be increased to get a better understanding of the nature of postings to Germany. Moreover, to assess the labor market effects of posted workers on the German population, it would be helpful to dispose of disaggregated data at the regional level. One possibility would be to include posted workers in the matched employer-employee data (SIAB) gathered by the German Institute of Labor (IAB), or in the Foreign Central Register Data gathered by the Federal Ministry on Migration and Refugees (BAMF).

Next, the developments in the German meat industry show that foreign workers are not only vulnerable under postings, but also in other forms of employment. With the introduction of the statutory minimum wage, postings became unprofitable in the meat sector, resulting in the employment of foreign workers via German subcontractors and labor agencies. Policymakers interested in addressing these vulnerabilities should make sure that the legal frameworks impede the abuse of these same vulnerabilities at the European level. Policymakers should revise the conditions under which foreign workers are employed via temporary contracts or subcontractors. They should also strengthen enforcement and control mechanisms.

Lastly, postings seem to play a role in companies encountering skill shortages in Germany. Legislations that tighten the conditions under which employers can access workers from abroad should make sure that the hurdles do not become too large for employers. They should try to implement lean, transparent, and efficient processes behind these employment procedures. Digital platforms and tools can help to realize this.

[9] Around half of all employees working at the companies which had signed the voluntary agreement were subcontracted in 2014 and 2015.

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Sonila Danaj and *Leonard Geyer*

Posted Workers to Austria: An Unstoppable Trend?

Posting to Austria has become a significant form of temporary cross-border labor supply. In a recent study (Geyer, Premrov and Danaj 2022), we estimated that the pre-pandemic number of postings reached at least 320,480, which represents about 1.7 percent of the work carried out by individuals living in Austria during the same period. Most postings to Austria are from neighboring lower-income countries, such as Poland, Hungary, Romania, the Slovak Republic, Slovenia, and Germany. In this article, we present the trends of postings to Austria and discuss them in relation to some of the prevalent posting drivers like labor cost differentials between sending and receiving countries, wage and social dumping, and the COVID-19 pandemic. Estimates for the 2011–2021 period suggest an overall increase in the number of postings until 2019, an expected decrease during the first phase of the COVID-19 pandemic, followed by a subsequent increase. We discuss whether the growth trend is likely to continue and identify which factors might influence the number of postings to Austria in the near future.

The Posting of Workers Directive 96/71/EC aimed to facilitate the supply of labor for temporary labor market demands raised in the various EU countries by regulating temporary cross-border labor mobility in the framework of the provision of services rather than permanent intra-EU labor mobility (Cremers 2013). Under this framework, workers are sent by their employer to provide a service from their country of residence to another EU country, where they are expected to return to once the job is finished. During their posting, their social contributions continue to be paid in the sending country. Thus, the original driver of posting was to enable labor demand and supply across national labor markets in an expedient and efficient way. In addition, posting aimed to be skills-driven by matching quantitative and qualitative labor shortages and surpluses among the various EU countries (Lens, Mussche and Marx 2022).

Yet, this form of cross-border service provision was not used a lot until the Eastern enlargement of 2004, when the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, and Slovenia joined the European Union. Some of the older Member States imposed restrictions to their labor market for workers from the new Member States for a transitional period of up to seven years (Fihel, Janicka, Kaczmarczyk and Nestorowicz 2015), whose side effect might have been the provision of services becoming an important channel of temporary cross-border labor mobility. Since then, there has been a constant increase in the number of postings, especially from these "new" Member States (De Wispelaere, De Smedt and Pacolet 2020). Scholars, the EU, and national actors have argued that it is not simply the labor market demand and labor shortages driving the increase, but also the economic disparities and labor cost differentials between the mostly lower-income sending and the higher-income receiving EU countries (Arnholtz and Lillie 2020; Cremers 2011; European Parliament 2017; Fihel et al. 2015). A third set of drivers are arguably the differences in the national regulatory regimes and mechanisms among the EU countries, which have allowed certain labor market actors, such as posting companies and temporary work agencies to go "regime shopping" for the most convenient and cost-efficient regime, which often has been in the lower-income sending country (Houwerzijl 2014). Unfortunately, these practices are questionable at best, if not abusive and conducive to social dumping (Berntsen and Lillie 2015).

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AUSTRIAN ANTI-DUMPING MEASURES AND POSTING TRENDS

When transposing the original 1996 Posting of Workers Directive (96/71/EC), Austria also tried to address the issues of wage differences and social dumping in its national legislation. The Law on Anti-Wage and Social Dumping (Lohn- und Sozialdumping-Bekämpfungsgesetz – LSDB-G), which included provisions to enforce the equal pay principle, was adopted in 2011. An amended version of the law (LSD-BG) was passed in 2016 (entering in force in 2017) and included the requirements of the Directive 2014/67/EU on the enforcement of Directive 96/71/EC concerning the posting of workers in the framework of the provision of services.

One of the main anti-dumping elements of the Austrian law is the application of the principle of equal wages for posted workers according to national standards of pay and includes rates stipulated in the collective bargaining agreements. Austria applied the

equal pay principle, although it was not a requirement of the 1996 Directive, to protect national standards and fight any efforts from foreign companies to take advantage of the differences in pay among EU countries and thus engage in wage and social dumping practices. To enforce the equal pay rule, several infringements were outlined in the law supported by tough corresponding punitive measures introduced in 2017. Posting companies found in breach of the Anti-Wage and Social Dumping Law are subject to administrative fines and, based on the severity of the infringement, also banned from engaging in economic activity in Austria.

There is evidence that posting companies violate the equal pay principle and underpay workers on a significant scale and much more frequently than domestic companies. In 2019, the Austrian Financial Police suspected one in ten posted workers to be underpaid (Finanzpolizei 2020). Furthermore, data for the same year suggests that posting companies were 14.7 times more likely to underpay their workers than companies located in Austria (Geyer et al. 2022).

The ongoing violations notwithstanding, Austrian legislation has been considered one of the toughest national enforcement mechanisms against wage and social dumping regarding the posting of workers due to the application of cumulative administrative fines (Krings 2019). According to this approach, posting undertakings and user undertakings are charged for the same violation for each individual worker involved, which could potentially lead to substantially high fines amounting to millions of euros. The measure was considered an important deterrent factor against abusive companies (Danaj and Kahlert 2021; Gagawczuk 2019).

To see how the introduction of the equal pay principle in 2011 and the subsequent introduction of the stronger enforcement measures in 2017 influenced trends of postings to Austria, we examined data collected through two diverse data collection tools: data from the Portable Documents A1 (PD A1) and from the national prior declaration tool. PDs A1 are issued by social security providers in the sending country and provide evidence that the posted worker is covered by the social security system of the sending country (Regulation (EC) No 883/2004 – on the coordination of social security systems; Regulation (EC) No 987/2009 laying down the procedure for implementing Regulation (EC) No 883/2004 on the coordination of social security systems). A1 forms can be issued according to Article 12 of the Basic Regulation for those employees posted to another EU country, and according to Article 13, for those who work in two or more Member States or the self-employed. In the case of Austria, only data on PDs A1 issued under Article 12 are available and we used these data to calculate lower estimates.

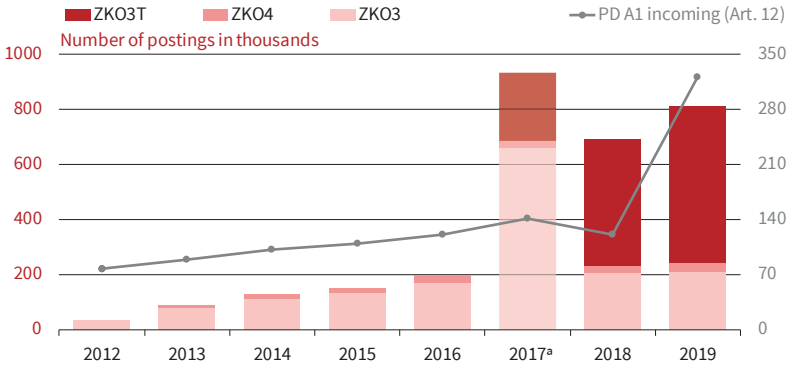
A prior declaration, on the other hand, must be submitted by posting undertakings to the authorities of the receiving country to notify their intention to send posted workers to that country (Directive 2014/67/EU on the enforcement of Directive 96/71/EC concerning the posting of workers in the framework of the provision of services). In Austria, this is done through the ZKO forms based on the Austrian Law against Wage and Social Dumping (LSD-BG). ZKO forms are issued for general posting (ZKO3), mobile employees in the transport sector (ZKO3T), and cross-border secondments (ZKO4). The difference between postings (ZKO3) and cross-border secondments (ZKO4) is that posted workers provide services in Austria under the direction of the sending company, whereas seconded workers are employed by a foreign undertaking, but work under the direction of an Austrian employer. We used data from both PDs A1 and ZKOs to estimate the number of postings to Austria, i.e., the number of instances in which an individual was sent to Austria to provide a service for a temporary period.

Figure 1 shows the estimates of the number of postings to Austria based on the number of PDs A1 issued under Article 12 for individuals sent to Austria between 2012 and 2019, as well as based on the number of all three types of ZKO forms submitted by EU/EEA posting undertakings to notify their intention to post their workers to Austria for the same period.

As it can be observed from the graphs in Figure 1, estimates drawn from both sets of data indicate a steady increase in the number of postings to Austria since 2012, regardless of the application of the equal pay principle for posting companies. Data from the PDs A1 show a steady increase until 2017, then a drop in 2018, followed by a doubling of the figures in 2019. The number of postings notified through ZKO forms also increased steeply between 2012 and 2016. From 2016 to 2017, the number of postings notified through ZKO forms more than tripled (most likely due to a technical error therefore we present it in vague colors due to unreliability). The numbers fell in 2018, before increasing again between 2018 and 2019. The 2018 drop in both sets of data may be explained as an adjustment period that took place after the intro-

Figure 1

Postings to Austria 2012–2019 Based on PD A1 (Art. 12) and ZKO Forms



[a] Number of prior declarations not reliable for 2017 (break in the timeseries due to a technical error).
Source: Own visualization with data from De Wispelaere et al. (2020); Financial Police (2020).

duction of the 2017 Anti-Wage and Social Dumping Law. However, the increase in numbers of PDs A1 and in the overall ZKOs in the subsequent year suggests that the tougher measures introduced in 2017 did not have a lasting deterrent impact on the posting trends.

The continued increase may partially be attributed to companies continuing to underpay their workers. However, the estimated 10 percent of posting undertakings continuing to violate the equal pay principle certainly cannot account for the entirety of the upward trend of postings to Austria.

THE IMPACT OF THE COVID-19 PANDEMIC ON POSTING TRENDS

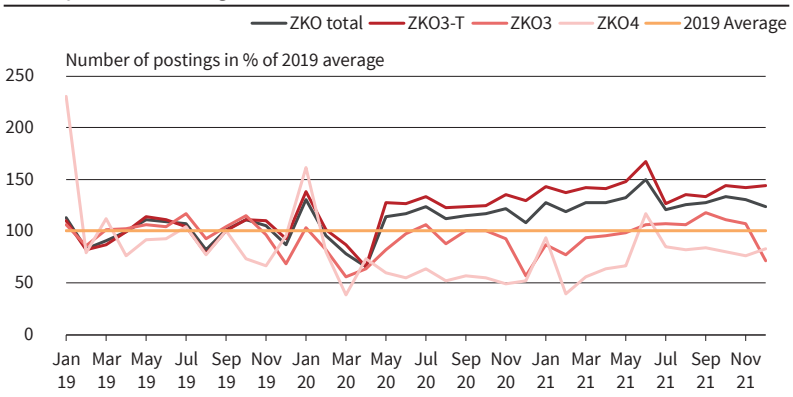
For the 2019 – 2021 period, only the ZKO data are currently available, so we used them to understand the impact of the COVID-19 pandemic on postings to Austria. In Figure 2, we show the number of postings according to the three different categories as well as their evolution in time. The number of secondments (notified through ZKO4) has been the smallest, while the number of postings in all industries except transport (notified through ZKO3) has been about 8.6 times higher than secondments, and the number of postings in transport (notified through ZKO3T) has been 3.6 times higher than the previous category.

The figure shows a steep drop in the number of postings in February, March, and April of 2020 (when the first lockdown was introduced in Austria). This seems to indicate a reduction in posting activity due to the pandemic. The number increased again in May 2020, driven mainly by the increase in numbers of postings notified in the transport sector (ZKO3T). The number of notified postings in this industry increased in May 2020 to 128 percent of the 2019 average and remained well above the 2019 level for the remainder of 2020 and the entire year of 2021. In contrast, the number of postings notified through ZKO3 forms remained below the 2019 average since the beginning of 2020. The average monthly number of notified ZKO3 postings declined by 14 percent from 2019 to 2020. In 2021, the numbers recovered, but remained slightly (1.8 percent) below the 2019 level.

The sudden, significant drop in the number of notified postings in February, March, and April 2020 can clearly be attributed to the COVID-19 pandemic and the associated policy response by the Austrian government. However, as far as longer-term developments are concerned, it is important to separate the COVID-effect from other trends. If we look at the number of postings notified in the two years before the pandemic (Figure 1), we notice a decrease in the growth rate of postings notified through ZKO3 and ZKO4 between 2018 and 2019, whereas the number of postings notified through ZKO3T forms has continued to increase strongly. During the pandemic (Figure 2), we notice an acceleration of the unequal growth of the postings notified in the transport sector. Meanwhile,

Figure 2

Monthly Notified Postings to Austria Jan 2019– Dec 2021



Source: Own visualization with data from the Financial Police (2022). © ifo Institute

postings notified for all other sectors seem to have recuperated from the initial impact of the pandemic in early 2020 but remain below the 2019 average. Hence, we argue that the overall trend of postings notified since 2019 appears to be driven not only by the pandemic. The high number of postings notified even in the unprecedented context of a global pandemic, shutdowns, and travel restrictions suggests posted workers are an important element of the Austrian economy. Nevertheless, the number of postings to Austria in the non-transport sector seems to be plateauing, which signifies a change in the trend of strong growth for most of the last decade.

CONCLUSIONS

Posting to Austria is a significant form of temporary labor supply for the Austrian economy, which is confirmed by the high number of postings notified even in the unprecedented context of a global pandemic, shutdowns, and travel restrictions. Posting trends to Austria have been growing since 2011, despite the removal of wage differentials between sending countries and Austria when the equal pay principle was introduced in the national posting regulations. This can be explained by the fact that most postings to Austria come from lower-income EU countries, which means that despite the equal wages in theory, overall cost differentials between sending countries and Austria remain due to the employers' lower social security contributions. This might be one of the contributing drivers to maintain a high number of postings in the future as well. In addition, some posting undertakings seem to violate rules like equal pay to preserve and/or increase their competitive advantage, even in countries with strong enforcement mechanisms like Austria.

The global pandemic resulted in a sharp decrease in the number of postings for the initial period between January – April 2020, but we observe a recuperation in numbers from May 2020. Despite the increase, the number of postings to Austria in the non-transport sector seems to be plateauing. This signifies a

change in the trend of strong growth for most of the last decade, which could be driven by the fact that the demand in the Austrian labor market has reached maturity.

Other factors might influence the posting trends to Austria differently. The most significant ones are the recent changes in the Austrian legislation on posting. The Anti-Wage and Social Dumping Law was amended in September 2021. The amendment was triggered by two different EU-level regulatory interventions that Austria needed to reflect in its national legislation. The first one was the adoption of Directive (EU) 2018/957 on the Posting of Workers, whose main change was the introduction of the equal pay principle at the EU level. As the equal pay principle was already embedded in the Austrian legislation long before EU legislation required it, we can assume the transposition of the new Directive might not have a significant impact on the number of postings.

The second relates to the revision of the cumulative principle of the punitive measures stipulated in the Anti-Wage and Social Dumping Law, because of the European Court of Justice (ECJ)'s deliberation on the joined cases of "Maksimovic and others versus Bezirkshauptmannschaft Murtal and Finanzpolizei." The Croatian subcontractor Maksimovic and an Austrian engineering company as third-party employer were fined EUR 13 million for not complying with administrative obligations and payroll documentation for their 217 posted workers during inspections by Austrian authorities. The ECJ ruled that the practice of cumulative fines was in violation of European law on the proportionality of punitive measures and recommended Austrian legislators to align their regulations to Community law. This recommendation was reflected in the 2021 Anti-Wage and Social Dumping Law by abolishing the practice of cumulative fines and putting a cap on the amount a posting company can be charged with when in violation of the law (Danaj and Kahlert 2021). The abolishment of the cumulative fines has been criticized by some of the national stakeholders (such as the Social Democratic Party and the Chamber of Labour), who have argued that the removal of this preventative measure has weakened the anti-wage and social dumping efforts in Austria (Geyer et al. 2022). The changes in the legislation are too recent to have an observable effect on posting trends. However, it must be assumed that if anything, lower fines will further increase the already significant number of violations against the equal pay principle.

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Mathilde Muñoz

Posted Workers to France: Recent Trends

France is the second-largest receiving Member State of posted workers in the European Union (EU) and the posting of workers is a sensitive topic in French political and public debate. In particular, posting of workers has sometimes been seen as causing pressures on local labor markets due to wage dumping, deteriorated working conditions, or fraudulent practices. To date, the lack of granular and reliable data on posted workers has been an obstacle to the assessment of the impact and profile of incoming posted workers. In a recent study, (Muñoz 2022), granular data on prior posting declarations covering all posting missions performed in France were accessed to provide a very detailed analysis of the impact of posted workers on the French labor market. In this article, we emphasize the recent trends in posting of workers to France, its importance for the French labor market, and the potential abuses related to social dumping and tax arbitrage.

THE SCALE AND IMPACT OF POSTING OF WORKERS TO FRANCE

Posting of workers is a large and growing phenomenon in the French labor market. In 2019, 629,425 posting missions were performed in France by 236,339 unique posted workers (Muñoz 2022). These figures indicate that posting of workers is a phenomenon of large magnitude in the French labor market: posted workers represent roughly 1 percent of the French working age population. Postings to France were increasing at a significant rate before 2020, with an annual increase of postings of 11 percent between 2018 and 2019 and of 6 percent for the number of unique posted workers for the same period. The average duration of postings was 135 days in 2018, 119 days in 2019, and 140 days in 2020. In 2019, 29 percent of the posted workers were Eastern Europeans, 28 percent were from Southern Europe, 22 percent were coming from other EU/EFTA countries, and 21 percent were third-country nationals (TCNs). This means that around one out of five posted workers to France are non-EU citizens. For instance, only 43 percent of the postings from Spain to France are in fact performed by Spanish citizens (Muñoz 2022).

Incoming posting of workers is concentrated in labor-intensive sectors, blue-collar occupations, and is heterogeneously distributed in the French territory. This means that posting of workers represents an important form of employment in some sectors, occupations, and French provinces. Most postings are performed in construction (39 percent) and manufacturing (30.5 percent), followed by services (18.5 percent) and agriculture (8.7 percent). For comparison, only 6.7 percent of French domestic employment was in construction the same year. Posted workers are also overrepresented in blue-collar jobs. Blue-collar workers represent roughly 60 percent of all postings to France but less than 20 percent (5.3 million workers) of total French employment. Finally, the 16 border provinces received 30 percent of all workers posted to France in 2019 (38 percent in 2014), which is twice as high as their weight in total French employment. Posted workers account for 2.2 percent of national employment in agriculture, 1.7 percent in construction, and 0.8 percent in manufacturing. But in highly exposed local labor markets, the impact of posted workers on employment can reach 20 percent in agriculture, 8 percent in construction, and 5 percent in manufacturing. This means that the foreign competition through posting of workers can be substantial in some specific segments of the French labor market.

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Finally, up to 10 percent of all postings to France and even 25 percent of the postings by foreign temporary employment agencies are performed by workers who just started working for the foreign company (less than one day before the beginning of the posting mission), meaning that the use of "hired to be posted" contracts is substantial for incoming postings to France. This suggests that for some companies, posting of workers has truly become a "business model."

THE PROFILE OF FIRMS USING POSTED WORKERS IN FRANCE

Workers posted to France were linked to 23,282 unique French clients over the 2017–2018 period. The intensity of the use of posted workers at the firm level is higher in construction and agriculture where posted workers perform tasks very close to the French client core activity. Firms operating in masonry work and building are the top users of posting services in terms of firms using posting, as they account for 7.6 percent of all French clients in 2018. For firms using posting in that sector, the hours worked by posted workers represented on average 43 percent of the total num-

ber of hours worked by French workers that same year in that same firm. Firms operating in construction of houses and painting and glazing also exhibit a large intensity of posting use, with hours of posting work representing on average respectively 61 percent and 43 percent of domestic workers' hours of work (Muñoz 2022).

The average wage paid to French workers employed at firms making use of posting in 2018 was EUR 21.15 per hour, while the median wage was EUR 17.6. Among the total number of French firms using posting services, 66 percent were employing domestic workers with a fixed term contract (CDD) and 45 percent were using domestic temporary agency workers in the same year (Muñoz 2022). Thus, firms using posted workers not only rely on foreign alternative work arrangements, but also use important amounts of alternative work arrangements in the domestic labor market. French firms with posted workers are also substantially larger and more profitable than non-using firms in the same sector.

Posted workers in France are paid a low level of wages, even compared to similar workers in the same sector. Almost 25 percent of all posted workers to France and even 75 percent of the posted workers employed in the agricultural sector are paid at the French minimum wage. More than 80 percent of the workers posted from Bulgaria, the Member State in the EU with the lowest wages, are paid at the French minimum wage. This suggests that the French minimum wage is the upper bound for many foreign companies posting workers to France. Importantly, posted workers earn on average 30 percent less than comparable French workers employed at the same workplace and 15 percent less than comparable temporary workers hired through French agencies. This suggests that posted workers earn lower wages for comparable skills and competences compared to regular French employees in the same firm.

SOCIAL DUMPING AND CROSS-BORDER FRAUD

Social dumping and cross-border social fraud have been two persistent worries related to the posting of workers to France. The existence of French residents posted to France and paying their social security contributions in their country of formal employment is suggestive of "artificial posting" practices to avoid labor taxes and regulations (Belkacem and Pigeron-Piroth 2016). Indeed, 80 percent of French nationals posted to France through a company located outside France in fact reside in France. This finding suggests that posting of French workers to France does not imply a "real" mobility as these workers reside in France and are simply hired by a firm located outside France. Despite the fact that 80 percent of French workers posted to France both live and perform their work mission in France, only 23 percent of them pay their social security contributions in France. French citizens are mostly posted to France through companies located in Luxembourg, where social security contributions are much lower. Of all French workers posted to France, 23 percent are hired by a company located in Luxembourg, and French nationals perform 55 percent of posting missions declared by Luxembourgish companies in the French territory.

There are three theoretical mechanisms that cause the posting of workers to be cheaper than employing French regular employees. *Lower social security contributions rates* in the sending country compared to France can lead to lower labor costs for workers paid at the *same* gross wage. Second, foreign companies may use a *lower basis to compute employers' social security contributions* (Trésor Eco 2016). For instance, posting undertakings based in Slovenia are obliged to pay social contributions based on the minimum gross wage the worker would have received for the same work in Slovenia (Zirnstein, Sedmak and Širok 2021), which leads to lower costs for posting workers from Slovenia to higher cost countries. Finally, cost competitiveness of foreign companies may come from *different reservation wages*[1] *of workers* posted from low-wage countries. While posted workers cannot be paid under the French minimum wage, the equilibrium wages of French workers for the same job may still be higher than wages paid to posted workers.

A simulation shows that lower social security contribution rates and bases in sending Member States indeed lead to substantial cost differences between French and posted workers. At the median level of wage of French employees hired at French clients, social security contributions account for 36 percent of total labor cost for domestic workers, but only for 21 percent for workers posted from Poland. The difference between posted workers and French employees ranges between EUR 700 and EUR 1,000 per month when comparing workers paid at the average wage at French clients. Even after equalizing the gross wage paid to posted workers to the wage of comparable French workers at receiving firms, posted workers could still be up to 25 percent cheaper due to those differences in payroll taxes.

When posting workers abroad, infringements against the applicable labor law, which is implemented by the Posting of Workers Directive (Directive 96/71/EC – recently amended by Directive (EU) 2018/957), can occur. For instance, from 2016 to 2017, 23 percent of infringements were related to non-compliance with the hard-core rules of the Posted Workers Directive (Cour des Comptes 2019). Those infringements may lead the cost of posted workers to be even lower compared to domestic workers, in addition to the (legal) differences in social security contribution rates and bases created by the current law. A recent

[1] An individual's minimum wage that would have to be offered in order for him or her to accept a job.

case has been heavily documented in the French media and has shed light on the fraudulent practices that can be associated with the posting of workers in France. Terra Fecundis is a temporary employment agency located in Spain that has been posting workers in the French territory, mostly in the agriculture sector. It has been shown that Terra Fecundis was not complying with the Directive 96/71/EC: posted workers did not receive the additional wage related to overtime hours and paid leave they were entitled to.

CONCLUSION

This article has shown that intra-EU posting in the French labor market is of high importance and may lead to social dumping threats. Competition from posting of workers is concentrated in specific occupations, sectors, and provinces in the French labor market. This means that the potential implications of posting of workers is likely to be highly concentrated and to affect mostly blue-collar workers in labor intensive sectors. In contrast, posting of workers is mostly used by French firms that are more profitable than others and that tend to engage more in cost-saving strategies, such as outsourcing. It is worth noting that in some cases, the posting of workers has become a business model, with a substantial part of posted workers that are "hired to be posted" by firms located in lower wage countries.

In addition to the impact of posted workers in employment of some sectors and occupations, the aspects of social dumping and infringements in posting are of high importance. The presence of French residents posted to France through companies located abroad is suggestive of tax arbitrage and illustrates the potential abuses of the regime. The large differences in social security contribution rates and basis in Member States create substantial incentives to use posted workers as a way to save on payroll taxes. Furthermore, even abstracting from taxes, posted workers are paid substantially less than French workers with similar skills and occupations. This means that cost differences of posted workers come from both differences in reservation wages and differences in payroll taxes and basis. Ensuring that posted workers are paid their fair share during their posting mission seems to represent an important challenge for the future of internationally mobile workers rights.

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Lynn De Smedt

Posted Workers to Belgium with a Focus on the Construction Sector

This article analyzes the posting of workers in the Belgian construction sector. The choice for this sector is defendable for several reasons. First, most incoming posted workers in Belgium are active in this sector. Consequently, the impact of posted workers in the total workforce in the construction sector is considerable, which illustrates the high dependency on posted workers in this sector. This has even led to job displacement effects in certain subsectors of the construction sector. Second, specific phenomena which are manifesting themselves in the general posting landscape are exposed even more strongly in the construction sector. It concerns, for instance, the high share of posted self-employed persons and the increasing number of posted third-country nationals (TCNs). Third, in the construction sector, the "dark side" of posting can also be illustrated. Overall, the public and political perception of posting is often negative, with reference being made to social dumping practices, bogus self-employment, and letterbox companies, to name a few. It appears that the construction sector is especially vulnerable to these practices.

THE SCALE OF POSTING IN THE BELGIAN CONSTRUCTION SECTOR

In 2021, approximately 255,000 persons (workers and self-employed persons) were posted to Belgium, of which some 225,000 were posted workers and 30,000 were posted self-employed persons (De Wispelaere et al. 2022a). This number increased by 5.5 percent compared to 2020, while from 2019 to 2020, the number of persons reported in LIMOSA[1] decreased by 6.3 percent due to the COVID-19 pandemic.

Posting of workers is an important form of labor mobility in Belgium and a substantial type of employment in various sectors of the Belgian economy. This is particularly the case in the Belgian construction sector. In 2021, one-third of the persons declared in LIMOSA were temporarily employed in the construction sector. It concerned 87,470 posted persons. However, for various reasons, this may be a (strong) underestimation of the actual number of posted persons active in the Belgian construction sector (for more information see De Wispelaere et al. 2022a). The posted persons active in the Belgian construction sector are mainly coming from the Netherlands and Poland. Indeed, 23 percent of the posting undertakings were located in the Netherlands and 19 percent in Poland.

Another way to estimate the importance of posting is looking at the import and export of services. Both concepts are strongly connected to each other, as providing services in another Member State presupposes the presence of workers in that Member State. In 2020, Belgium imported approximately EUR 1.6 billion construction services, of which 86 percent were from EU-27 Member States and 14 percent were from outside the EU (Eurostat 2022). Most of the construction services were imported from Belgium's neighboring countries: the Netherlands (27 percent), Germany (14 percent), and France (11 percent), followed by Poland (6 percent) and Portugal (6 percent). It is remarkable to see that while a high share of the incoming posted workers and self-employed persons in the construction sector are coming from Poland, the share of imported services from Poland is rather on the low side. This may demonstrate that the value of the services imported by Poland is lower. In other words, that the services are cheaper.

THE PROFILE OF POSTING IN THE BELGIAN CONSTRUCTION SECTOR

The 87,470 posted persons in the construction sector in 2021 mentioned in the previous paragraph consist of 63,530 posted workers and 23,940 self-employed persons. This implies that more than one out of four persons posted to the Belgian construction sector are self-employed. This is a considerably higher share than the share of 14 percent self-employed posted persons in the general Belgian economy.

Most posted workers to the Belgian construction sector are nationals from the Netherlands (10.8 percent of all incoming posted workers), Portugal (10.3 percent), Poland (9.1 percent), and Romania (8.1 percent). Nevertheless, it is remarkable to see that the number of TCNs, persons with a nationality other than one of the EU-27, has been on the rise in recent years, mostly starting from 2018. For instance, many posted workers in the construction sector have Ukrainian (9.3 percent) or Brazilian (3.5 percent) nationality. These workers are mostly not posted directly

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[1] Data on the number of incoming postings to Belgium are collected via the LIMOSA declaration. The obligation to file a LIMOSA declaration has been in force since 1 April 2007 for incoming posted workers and self-employed persons.

from the third country, but through a company established in another EU Member State. Two important routes for the construction sector are Ukrainians being posted to Belgium through Poland and Brazilians being posted through Portugal. Posted self-employed persons in this sector, on the other hand, primarily have Polish nationality (51.2 percent of all incoming posted self-employed persons), Dutch (10.1 percent), and Slovak (6.6 percent) nationality to a lesser extent.

The Belgian clients of posted workers are particularly active in the subsectors "Construction of residential and non-residential buildings" (NACE 412) (i.e., activities at large construction sites), "Building completion and finishing" (NACE 433), "Electrical, plumbing and other construction installation activities" (NACE 432) and finally "Other specialised construction activities" (NACE 439). Moreover, in particular, large Belgian (construction) companies seem to rely on the services of posted workers. Of the 100 Belgian largest construction companies, 7out of 10 relied on posted workers. Smaller Belgian construction companies made much less use of intra-EU posting.

THE IMPACT OF POSTING IN THE BELGIAN CONSTRUCTION SECTOR

When comparing the number of incoming posted workers registered in LIMOSA to the national workforce, the importance of intra-EU posting can be calculated. For the complete Belgian economy, this impact amounted to around 2.8 percent in 2021 (De Wispelaere et al. 2022a). However, in the Belgian construction sector, the share of incoming posted workers in total employment amounted to 13.9 percent in 2020 and the share of incoming posted self-employed persons to 6.2 percent. As a result, this phenomenon represents about one-fifth of total employment in the Belgian construction sector. The share in terms of full-time equivalents (FTE) amounted to "only" 11 percent, as posted workers are usually only posted for a limited period of time. Keeping in mind that the number of posted persons active in the Belgian construction sector calculated on the basis of LIMOSA data is probably a (strong) underestimation of the actual number of posted persons active in this sector, it can be concluded that the Belgian construction sector has become strongly dependent on intra-EU posting.

The question then arises of how it is possible that the Belgian construction sector became so reliant on intra-EU posting. The main suggested reason by scholars, and also in political and public discussions, is the high labor cost in Belgium. The recent exemption from payment of wage withholding tax for shift work in the construction,[2] together with the so-called "tax shift,"[3] undoubtedly represented a sizeable tax break for the Belgian construction sector. The question arises to what extent these measures had an impact on the evolution of the number of incoming posted workers in the construction sector. However, this analysis goes beyond the scope of this article. Other drivers are the flexibility of using posted workers as well as quantitative and qualitative labor shortages in the Belgian construction sector. Professions in the Belgian construction sector are consistently mentioned in the list of "bottleneck professions" (Actiris 2022; Forem 2022; VDAB 2022). It was recently communicated by one of the employers' organizations for the construction sector (*Confederatie Bouw*) that roughly 20,000 additional construction workers are needed and that about seven out of ten of the (large) Belgian construction companies have one or more vacancies.

Seeing that the impact of posted workers in the construction sector is extensive, the issue of job displacement effects comes up as well. One can wonder whether local "Belgian" workers in this sector have been replaced by posted workers. The answer to this question is a nuanced one. Between 2010 and 2015, during a period of economic growth, local employment in the construction sector decreased, while the number of incoming posted works increased, which indicates possible job displacement effects (De Wispelaere and Pacolet 2017). Furthermore, in recent research Muñoz (2021) found that the employment of "Belgian" workers decreased in Belgian companies that make use of the services of posted workers. Local employment decreased in these companies by 2 percent the year they started subcontracting services to posted workers. However, job displacement effects did not appear for every activity in the construction sector and mainly occur(ed) in the "Construction of buildings; development of building projects" (NACE 41) (i.e., activities at large construction sides) and "Plastering" (NACE 43.31) sub-sectors. Finally, Belgian companies may also experience displacement effects. Belgian small and medium-sized enterprises (SMEs) make less use of the services provided by companies established abroad. Thus, the competition is mainly between (subcontracting) local SMEs and (subcontracting) posting undertakings, and it is the larger local companies which will benefit from this competition.

INFRINGEMENTS TO THE POSTING RULES IN THE BELGIAN CONSTRUCTION SECTOR

When posting persons abroad, different infringements can occur. There can be infringements against the applicable labor law, which is implemented by the Posting of Workers Directive (Directive 96/71/EC – recently amended by Directive (EU) 2018/957). These infringements particularly consist of bogus self-employment and non-compliance with the Belgian wage and labor conditions, which can even lead to labor exploitation. For instance, when a worker is posted to

[2] The wage withholding tax exemption amounted to 3 percent of taxable remuneration in 2018 and 6 percent of taxable remuneration in 2019. In 2020, the measure was at "full speed" as the exemption amounted to 18 percent of taxable remuneration.

[3] This includes a reduction in employers' social security contributions from 33 to 25 percent.

Belgium, he/she should receive at least the sectoral minimum wage applicable in Belgium. For Bulgarian workers this means at least a fivefold wage compared to the minimum wage in Bulgaria. However, it is not unthinkable that these posted Bulgarian workers will accept a wage lower than the Belgian wage but two or three times higher than the Bulgarian minimum wage. In practice, labor inspectorates notice the increasing use of TCNs, as well as the problematic situations that come with it. For example, there have been cases where an hourly wage between EUR 2 and EUR 3 was paid, far below the Belgian minimum wage in the construction sector of EUR 15.

To uncover infringements in the field of posting, inspections are carried out. However, it is important to keep in mind that they are often "targeted" inspections, based on a risk analysis and carried out in specific risk sectors. Therefore, infringement rates will be rather on the high side, which could give a distorted view of the actual volume of infringements related to intra-EU posting in the receiving Member State (De Wispelaere et al. 2022a).

A high share of the inspections regarding transnational social fraud takes place in the construction sector. In 2019, it concerned 68 percent of all inspections focused on transnational social fraud, and in 2020 it concerned 57 percent. More than four out of ten inspections on transnational social fraud carried out in the construction sector found at least one infringement on the applicable wage and working conditions to posted workers.

CONCLUSION

This article has shown that intra-EU posting in the Belgian construction sector is of high importance and may lead to a labor and import leakage. For several reasons, efforts could be made to increase the proportion of "local" workers and self-employed on Belgian construction sites. First, posting undertakings, posted workers, and posted self-employed persons pay social security contributions in the sending Member State and thus not in Belgium. Second, the total employment rates in Belgium (71.4 percent for third quarter 2021), and especially in the Walloon region (65.8 percent) and the Brussels region (62.6 percent), are (much) lower than the EU average (73.9 percent) and the EU2020 target of 75 percent. Finally, a large share of investments in the recovery and resilience plan that Belgium submitted to the European Commission in the framework of the "Recovery and Resilience Facility" is dedicated to the construction and renovation of buildings and dwellings. The positive impact of the plan on the number of additional jobs would come from the construction sector in particular. However, given the large presence of foreign companies and workers by the posting of workers, the Belgian recovery plan will not only benefit the Belgian economy, but certainly also foreign employment and consumption.

In addition to the employment in the construction sector, the aspect of infringements in this sector and posting in particular is of high importance. About 5 percent of the inspectors employed within the Belgian labor inspectorates focus on the fight against cross-border social fraud and thus on the compliance with the posting rules. Consequently, only 4 percent of the inspections in Belgium, mainly in the construction sector, relate to the cross-border dimension of social fraud. The number of available inspectors and inspections does not match the high infringement rates as well as the attention paid to "social dumping" in the public and political debate. In the Belgian construction sector, the attention is strongly focused on transnational (social) fraud through posting, which has taken away attention from national social fraud in this sector. The National Bank of Belgium estimated that one-fifth of the wealth generated by the construction sector comes from activities in the undeclared economy, a much higher share than in other sectors (De Wispelaere 2020). Thus, it is of high importance that the fight against social fraud in general and in the construction sector specifically continues, with a focus on both transnational and national social fraud.

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Posted Workers from Slovenia: Six out of Ten are Third-Country Nationals

Slovenia is one of the main sending Member States of posted workers in the EU, mainly towards Germany and Austria (De Wispelaere et al. 2022). The upward trend of the posting of workers from Slovenia to other EU Member States continued even in 2020 despite the COVID-19 pandemic. There was a 6 percent increase in the number of persons posted compared to 2019. Outgoing posted workers amount to roughly 7 percent of total employment in Slovenia and even to 30 percent of total employment in the Slovenian construction sector.

A high number of the posted workers from Slovenia do not have Slovenian nationality but are nationals of several Western Balkan countries, mainly Bosnia and Herzegovina (BiH) and to a lesser extent Serbia, Kosovo, North Macedonia, and Montenegro. These countries share a strong historical link, as they were once part of the same federation, and are in relatively close geographical proximity to Slovenia. This article provides insight into the vibrant dynamics of posting of third-country nationals from Slovenia by presenting figures on the nationality of posted workers, on the proportion of third-country nationals posted to another Member State, and on the proportion of posted third-country nationals in the total group of third-country nationals residing/working in Slovenia. First, the article discusses the historical and institutional networks between Slovenia and the former Yugoslavian republics, now defined as the Western Balkan countries, and their impact on the establishment of close institutional cooperation shaping the recruitment and employment of workers by Slovenian companies. Also, the legal and policy instruments that enable posting of third-country nationals are briefly described.

DRIVERS OF MIGRATION TOWARDS SLOVENIA

Migration trends between Slovenia and BiH are shaped by a combination of push and pull factors. The labor market in BiH has suffered from political and economic instability, the collapse of key industries, and skills and demand mismatches (Danaj et al. 2020). It is also characterized by low wages and a large informal sector (Efendic 2021), which contributes to the vulnerability of workers in terms of income irregularity and lack of social security. This has resulted in a significant outflow of workers and consequently persistent labor shortages. The Bosnian government has recognized the challenges posed by persistent emigration, but a comprehensive policy framework directly targeting these challenges is still missing (*Ibid*.). According to the latest available World Bank estimates published in 2017, the share of emigrants as a share of its population is 44.4 percent, which positions the country in the 16th place among the 214 countries they collect data on (in Čičić et al. 2019). According to the World Bank, the number of emigrants born in BiH and residing in other countries is 1,638,113 and the Ministry of Security of the Bosnia and Herzegovina estimates that the total number of BiH emigrants and their descendants is even higher, around 2 million (Danaj et al. 2020). Furthermore, the latest World Migration Report states that BiH had the largest share of emigrants as a share of its population in Europe in 2020 (McAuliffe and Triandafyllidou 2021). The Eurostat statistics of residence permits within the EU show the increasing popularity of Slovenia (as well as Croatia and Germany) as a country of destination in the current emigration flows from BiH (Efendic 2021).

In addition to the push factor of discouraging economic and political conditions in BiH, the pull factor is the high labor demand in Slovenia. Slovenia is an appealing option for Bosnian workers due to significantly higher wages, better labor market prospects, familiarity with the language, historical ties, geographical proximity and, importantly, facilitated immigration procedures. Slovenia has a bilateral agreement on employment of workers with BiH (since 2012) which allows citizens unrestricted access to the Slovenian labor market if a set of conditions are fulfilled: they are registered with the public employment agency in their home country, there is a justifiable demand for labor in Slovenia, and they are offered a work contract for at least one year by a Slove-

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Table 1

The Number of Granted Work Permits and Total Valid Work Permits under the Bilateral Agreements between Slovenia and Bosnia and Herzegovina, Serbia, 2019–2020

	Work permits – BiH nationals		Work permits – Serbian nationals	
	Granted	Total valid (M12)	Granted	Total valid (M12)
2019	16.225	36.154	706	425
2020	13.624	36.383	1.970	2.017

Source: Employment Service of Slovenia (2021).

nian employer.[1] Many Bosnian workers also prefer Slovenia as their country of destination over other high-paying EU countries because of less demanding and less uncertain procedures for granting work permits. With many other countries, the outcome of their visa application is more uncertain and so are the prospects of finding suitable employment once they arrive (Danaj et al. 2020). Slovenia also has a bilateral agreement with Serbia (since 2019), but the majority of recruited workers in the last three years have been Bosnian nationals (Employment Service of Slovenia 2022) (Table 1).

The number of employed BiH nationals in Slovenia has been rising continuously. It has increased by over 50 percent since 2018 (Statistical Office of the Republic of Slovenia 2022). In 2020, for nearly 50 percent of all immigrants in Slovenia (whose country of first residence was not Slovenia), the country of first residence was BiH. For 10.3 percent, the country of first residence was Serbia (Razpotnik 2021).

LEGAL AND POLICY INSTRUMENTS THAT ENABLE POSTING OF THIRD-COUNTRY NATIONALS

As previously mentioned, recruitment and employment of workers from BiH and Serbia is enabled and facilitated by bilateral agreements on labor migration (Smolnikar and Marinček 2021).[2] With a few exceptions, workers from the two countries can only be issued a work permit in Slovenia according to the rules set out in the bilateral agreements and when there is an officially listed vacancy that cannot get filled by a Slovenian worker. Contrary to popular opinion, the process of recruitment and employment from both countries is not shorter but slightly longer than the process of obtaining a work permit by other third-country nationals. Public employment agencies cooperate bilaterally to ensure compliance with the regulations and the process takes time. Moreover, in the case of recruitment of workers from Serbia, the employment contract needs to be translated into Serbian and the worker needs to sign the contract in person at the premises of the competent authority of Serbia, which is a time-consuming process. The agreements enable the nationals of BiH and Serbia free access to the Slovenian labor market after one year of working in Slovenia. For other employed third-country nationals this period equals five years. The length of a job contract for workers from BiH and Serbia must be at least one year, and the worker is to be employed by the same employer throughout this period. In the case of the early termination of the contract initiated by the employer, the worker is entitled to unemployment benefits. The validity of the work permit is three years, after which the permit can be extended for another three years.

Once the nationals of BiH, Serbia, and other third countries are legally employed in Slovenia, they may be posted abroad under the same conditions as Slovenian and EU nationals.[3] This decision follows the series of cases of the Court of Justice of the EU (e.g., C-43/93 Vander Elst case, C-18/17 Danieli, or C-477/17 Balandin), where it has been decided that third- country nationals who hold a valid work and residence permit in one Member State may be posted across the EU. Therefore, all workers employed in Slovenia, regardless of their nationality, can be posted abroad to provide services under the Transnational Provision of Services Act (Official Gazette No. 10/17, No. 119/21, in force since 1 January 2018, hereinafter the Act) and under Article 12 of the Basic Regulation[4] or under other applicable articles of the Basic Regulation.

NEARLY ALL THIRD-COUNTRY NATIONALS POSTED FROM SLOVENIA ARE NATIONALS OF FORMER YUGOSLAVIAN REPUBLICS

Workers from third countries posted from Slovenia are mostly nationals of Western Balkan countries, i.e., BiH, Serbia, Kosovo, North Macedonia, and Montenegro. In 2020, their share among all third-country nationals posted from Slovenia was 99 percent (Health Insurance Institute of Slovenia 2021). By far the highest number and share of third-country nationals posted from Slovenia in 2020 were the nationals of BiH (64.5 percent of all third-country nationals), followed by the nationals of Serbia (21.6 percent),

[1] Most work contracts are issued for jobs in the construction, manufacturing, and transport sectors (Employment Service of Slovenia).

[2] The Agreement between the Government of the Republic of Slovenia and the Council of Ministers of Bosnia and Herzegovina on the employment of the citizens of BiH in the Republic of Slovenia was ratified in 2012 (Official Gazette 92/12, 29/17), and the Agreement between the Government of the Republic of Slovenia and the Government Republic of Serbia on the Employment of Citizens of the Republic of Serbia in the Republic of Slovenia was ratified in 2019 (Official Gazette 38/2019).

[3] It should be noted that third-country nationals may not be employed by the private employment agencies until they gain free access to the Slovenian labor market.

[4] Regulation (EC) No 883/2004 of the European Parliament and of the Council of 29 April 2004 on the coordination of social security systems.

Table 2

Number of Third-Country Nationals Posted from Slovenia, Breakdown by Nationality, 2018-2020

Nationality	2018		2019		2020		Change 2020 vs. 2018	
	Number	% in total TCNs	Number	% in total TCNs	Number	% in total TCNs	Number	%
BiH	14.450	63,70	18.925	62,50	23.051	64,50	8.601	59,50
Serbia	5.917	26,10	7.670	25,30	7.706	21,60	1.789	30,20
Kosovo	1.343	5,90	2.404	7,90	3.368	9,40	2.025	150,80
North Macedonia	702	3,10	927	3,10	1.172	3,30	470	67,00
Ukraine	138	0,60	173	0,60	163	0,50	25	18,10
Montenegro	53	0,20	70	0,20	113	0,30	60	113,20
Other[1]	78	0,30	101	0,30	150	0,40	72	92,30
Total	22.681	100	30.270	100	35.723	100	13.042	57,50

Source: Health Insurance Institute of Slovenia (2021).

Kosovo (9.4 percent), and North Macedonia (3.3 percent) (see Table 2). Compared to 2018, the number of posted workers who are nationals of BiH has increased by nearly 60 percent, from 14,450 in 2018 to 23,051 in 2020.

ALMOST SIX OUT OF TEN POSTED WORKERS FROM SLOVENIA ARE THIRD-COUNTRY NATIONALS

In 2020, almost 60 percent of the workers posted by Slovenian undertakings were third- country nationals. Only one out of three workers posted from Slovenia had the Slovenian nationality and 7 percent had another EU nationality. Compared to previous years, the percentage of posted workers who are Slovenian nationals and EU nationals has been decreasing, while the share of third-country nationals has been rising. The number of Slovenian posted workers has decreased by over 8 percent, from 22,525 in 2018 to 20,616 in 2020. In 2020, compared to 2018, the number of posted workers who are third-country nationals increased by 58 percent. Moreover, the number of PDs A1 issued for third- country nationals has increased by 78 percent – from 55,111 in 2018 to 98,352 in 2020. In 2020, the share of PDs A1 granted for workers who are citizens of BiH was 45.7 percent, while the share of PDs A1 granted for Slovenian citizens was only 24.8 percent (Health Insurance Institute of Slovenia 2021). As a result, less Slovenian nationals were posted abroad from Slovenia in 2020 than BiH nationals. The share of BiH and Slovenian nationals posted abroad in the total number of persons posted abroad in 2020 amounted to 38 percent and 34 percent respectively (Health Insurance Institute of Slovenia 2021).

The breakdown by the sector of activity shows that in all four sectors, i.e., international freight transport, installation/assembly and servicing, construction, and industry, most PDs A1 are issued for third-country nationals. The percentage is highest in the construction sector, where over 73 percent of PDs A1 were issued for third-country nationals and less than 19 percent for Slovenian nationals. In all four sectors, the highest share of PDs A1 was issued to the nationals of BiH. Again, the percentage for BiH nationals is the highest in the construction sector (49 percent).

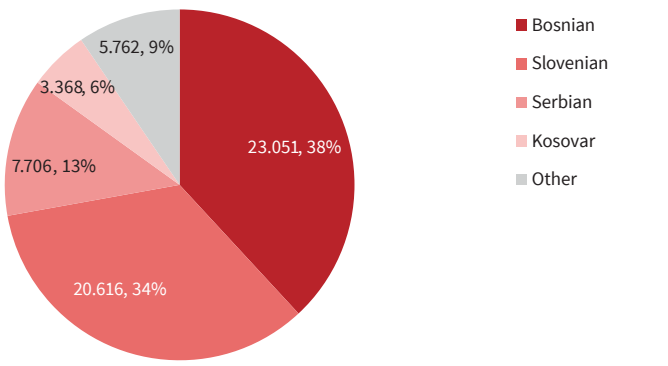
FOUR OUT OF TEN OF ALL THIRD-COUNTRY NATIONALS EMPLOYED IN SLOVENIA ARE POSTED TO ANOTHER MEMBER STATE

It is estimated that one out of three third-country nationals of working age (which is a broader notion than the notion "employed" used in the next paragraph) and living in Slovenia was posted to another Member State in 2020. These figures contrast with only two percent of Slovenians of working age who were posted. For example, more than half of Serbians of working age and living in Slovenia were employed as a posted worker in another Member State.

The share of employed third-country nationals that were posted to another Member State is even higher. It is estimated that over 40 percent of all third-country nationals employed in Slovenia were posted to another Member State in 2020 (Vah Jevšnik et al. 2021).

Figure 1

Share and Number of Persons Posted from Slovenia by Nationality, 2020



Source: Health Insurance Institute of Slovenia (2021).

CONCLUSION

An increasing number of third-country nationals are mobile across the EU as posted workers. In the case of Slovenia, most of them are low- and medium-skilled workers recruited from the former Yugoslavian republics, who would, as Lens et al. (2021) note, most likely have difficulties obtaining a work and residence permit from Member States that privilege highly skilled labor migration. In this article, we argue that recruitment and employment of persons from BiH and Serbia is facilitated by public employment agencies of all three countries and is based on the bilateral agreements concluded between Slovenia and BiH and Slovenia and Serbia. We discussed the figures that show that the largest share of persons recruited and subsequently posted by Slovenian undertakings are nationals of BiH.

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Improving the Monitoring of Posted Workers in the EU: Towards an Exhaustive Approach of Employment Statistics

The actual employment in a country at a specific point in time may differ greatly from the figures published in national employment statistics, for the following reasons. First, because there is still too little administrative or survey data available on the inflow and outflow of temporary cross-border labor mobility, including the provision of services abroad. In that respect, steps should be taken to improve the measurement of temporary cross-border labor mobility. Second, several types of temporary labor mobility are excluded when measuring employment in a country. For instance, the inflow and outflow of posted workers is not taken into account. As a result, the real extent of employment in a number of labor-intensive sectors, mainly in Western European Member States, is strongly underestimated.

THE CHANGING FACE OF CROSS-BORDER LABOR MOBILITY IN THE EU: FROM PERMANENT TOWARDS TEMPORARY MOBILITY

As already stated in the introduction to this special issue on posted workers, cross-border labor mobility in the EU does not only cover "permanent" cross-border mobility or cross-border commuting but also all types of "temporary" cross-border labor mobility such as business trips, seasonal work, circular labor mobility, and posting of workers. In 2020, the total number of EU-movers of working age in the EU-27 amounted to almost 10 million persons. Furthermore, there were 1.3 million intra-EU frontier workers and 650,000 to 850,000 intra-EU seasonal workers. The posting of workers represents the main channel of temporary labor mobility in the EU (OECD 2019). Based on 2019 data, there were around 2 million "registered" posted workers and 5.8 million postings in the EU. However, the volume of labor mobility in the EU for just a few days or hours is probably much higher than the posting figures seem to suggest. For instance, in 2019 around 25 million cross-border trips for professional reasons were carried out in the EU. This comprises a wide range of professional/business trips: attending meetings, conferences or congresses, trade fairs and exhibitions; giving lectures, concerts, shows and plays; promoting, purchasing, selling, or buying goods or services on behalf of non-resident producers (i.e., employers).

QUANTIFYING THE NUMBER OF POSTED WORKERS IN THE EU: A VERY CHALLENGING TASK

While there is need and demand for statistics on cross-border labor mobility, producing comprehensive and comparable statistics on the topic remains very challenging (UNECE 2018). This is especially the case when it comes to collecting data on the extent of temporary labor mobility. In this instance, workers are active in the economy of the host country for only a few months, weeks, days or even hours, often without changing their country of usual residence and/or without being employed by a resident employer. In 2019, guidelines were published by the United Nations Economic Commission for Europe UNECE to support improved measurement of international labor mobility. Several recommendations to guide national statistical offices in realizing this objective have been formulated.

In this contribution, the focus is on measuring the group of non-resident foreign workers whose employment relation is with a non-resident entity, the so-called "posted workers." There is a strong link between the export and import of services and the use of intra-EU posting as the former may require the physical presence of workers. Consequently, the evolution of intra-EU posting, a form of labor mobility that is employer-driven (unlike the "worker-driven" types of labor mobility under the free movement of workers and the freedom of establishment), may depend on the evolution of cross-border trade of services. The Balance of Payments (BoP) provides data on international trade in services.[1] Under the General Agreement on Trade in Services (GATS), services can be traded internationally in four different ways – known as the four modes. Mode 4 refers to the presence of persons in the territory of another country for the purpose of providing a service (UNECE 2006). Data on trade in services covering mode 4 would probably be the best source to collect data on posting (i.e., non-resident foreign workers whose employment relation is with a non-resident employer). However, statistics on this matter are scarce at the national and European level. Therefore, alternative data sources should be used.

The two main sources of information on intra-EU posting are data from the so-called "Portable Document A1" (PD A1) and data from the national prior

[1] In the production of data on International Trade in Services the references are the IMF's BPM6 and the United Nations' Manual on Statistics of International Trade in Services.

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declaration tools. In order to prove that a worker or a self-employed person remains subject to the social security system of the Member State of origin, a "Portable Document A1 (PD A1)" can be requested by the posting undertaking or the self-employed person. The current legal framework provides that the employer or the self-employed person must inform the competent authorities about their planned transnational activities, whenever possible before these activities take place (this also applies to "business trips"). Furthermore, Member States may require that a service provider established in another Member State makes a "simple declaration" containing the relevant information necessary in order to allow factual controls at the workplace. All Member States used this possibility to implement a prior declaration tool for incoming posting undertakings and the workers concerned.

The statistics that become publicly available by reporting data from the PD A1 and the prior declarations tools are almost the only source of comparable information at the European level to estimate the number of postings and posted workers. Consequently, these data are frequently used by scholars as well as in political debates. Therefore, when using and citing both data sources, it is of the utmost importance that one is aware of the limitations of these data.

The availability of data on intra-EU posting and the completeness of it largely depends on the extent to which companies are obliged to declare these posting activities in both the sending Member State and the receiving Member State. In practice, authorities in the sending and receiving Member State are not always informed about the posting activities. In that regard, there will be a discrepancy between the number of posted workers with a PD A1 or the number of workers notified in the prior declaration tools and the actual number of outgoing and incoming posted workers, for the following reasons. First, because several Member States have exempted certain activities and sectors from the requirement to report in the prior declaration tools. Second, not every posting activity will be reported in the sending or receiving Member State, even when this should be reported. However, compliance may have increased recently. Indeed, some Member States, such as France and Austria, seem to be much stricter in their judgment of having a PD A1 as a condition for being legally posted. They implemented sanctions in case of failure to show a PD A1 and/or are currently carrying out far more inspections on having a PD A1. As there are often high administrative sanctions if no proof can be delivered, it might be an incentive for posting undertakings to ask for a PD A1. Furthermore, the notification of posted workers in the prior declaration tool is a legal obligation in several receiving Member States under penalty of administrative or criminal sanctions. As a result, the discrepancy between the number of posted workers with a PD A1 or the number of workers notified in the prior declaration tools and the actual number of outgoing and incoming posted workers is likely to have narrowed (slightly) over the past five years. Finally, differences exist in the personal scope between the PD A1 and the prior declaration tools. For instance, self-employed persons or workers who are sent temporarily to work in another Member State, but do not provide services there (this is the case, for example, for workers on business trips, attending conferences and meetings) may have a PD A1 while being exempt from notification in the prior declaration tools.

UNIT OF MEASUREMENT: NUMBER OF POSTINGS VERSUS NUMBER OF POSTED WORKERS

It is important that the correct unit of measurement is selected when measuring the scale of the phenomenon, especially when its size is to be compared with total employment in the sending and receiving Member State. Comparing the number of PDs A1 or the number of declarations with total employment may overestimate the relative importance of posting. Therefore, it is best to look at the number of workers involved. Even then, the relative importance of posting may be overestimated when taking into account the total group of workers posted during the year. After all, posted workers tend to be active in the host Member State for a short period of time. In this respect, it is best to consider the number of posted workers at a given point in time, or the average over the year, or to calculate the number of full-time equivalents (FTEs).

Recently, the French administration for labor market statistics (DARES) has implemented a new methodology to measure the number of posted workers working in France by taking into account the quarterly average of posted workers (Boughazi and Parent 2021). This measure allows capturing posted workers active for each reference period, accounting for potential differences in work duration between posted workers and local employment measured in France.

MEASURING EMPLOYMENT: IGNORING THE REALITY OF THE MOVEMENT OF WORKERS SUPPLYING SERVICES ABROAD

One would assume that the place of employment of the worker has the upper hand in deciding in which country the worker is employed. This is not the case in practice. The place of establishment of the employer is currently decisive in determining which forms of cross-border labor mobility are or are not included in the employment statistics of a given country. Indeed, in the "domestic concept"[2] of employment as

[2] There are two employment concepts depending on the geographical coverage: resident persons in employment (i.e., the so-called national concept of employment) and employment in the resident production unit irrespective of the place of residence of the employed person (i.e., domestic concept). The difference between them corresponds mainly to the net number of cross-border workers.

Table 1
The Coverage of Labor Mobility in Employment Statistics

		Employer	
		Resident	*Non-resident*
Worker	*Resident*	Local workers EU-movers	Long-term postings (e.g., intra-corporate transfers)
	Non-resident	Frontier workers Seasonal workers	Posted workers Other service suppliers, Business travelers

* Shading: types of labor mobility not taken into account.

Source: Author's elaboration (2022).

defined by the "system of national accounts – SNA 2008"[3] and by the "European system of national and regional accounts - ESA 2010,"[4] the territory of the "resident production unit" (i.e., "the resident employer") is the criterium for counting employment. Consequently, employment in a country as defined by the "domestic concept" includes (only) those persons who were paid during the reference period by an employer established in that country. As a result, employment provided by (non-)resident workers on behalf of non-resident employer, and thus covering labor mobility by the freedom to provide services, is not taken into account (both from a "receiving" and "sending" perspective) (see Table 1).

ESA 2010 defines "employees" as "persons who, *by agreement,* work for a resident institutional unit and receive remuneration for their labor. In case of posting of workers there is no employer-employee relationship, and thus no employment contract, with the employer established in the host country. As a result, these workers will be counted as employees in the country in which the employer is established. Their activities will be considered as imports of services by the country in which the work is being done, and as exports of services in the country in which the posting undertaking is established. These activities, based on a service contract, fall under *GATS mode 4* and refers to the presence of persons in the territory of another country for the purpose of providing a service."

From a statistical point of view, the labor market appears to be demarcated by the place of establishment of the employer, thus excluding work (i.e., services) carried out through non-established employers. As stated by Howe and Owens (2016) "When a contract for the delivery of a service by a provider in one country to a consumer in another country also entails the workers of the provider moving into the other country for the period in which they will produce and deliver the service, this might ordinarily be characterized as an example of a temporary migration of the worker who will be participating in the labor market of the country in which they work." Yet, this is not how such movements and the labor of these workers tends to be conceptualized in employment statistics. In this respect, the idea that posted workers do not access the labor market of the host Member State is not only a legal fiction (see first article of this issue) but also a statistical fiction. Indeed, this boundary might be too narrow if we want to have a reliable view on the number of persons working in a country (and thus are in the labor market in that country) at any given moment. This could be unrelated to whether or not the employer is established there. Under the current definition, employment in certain (labor-intensive) sectors that are highly dependent on incoming posted workers might be significantly underestimated. In contrast, countries that have a high number of outgoing posted workers may overestimate the actual level of employment in certain (labor-intensive) sectors. Therefore, it can be argued that labor mobility by the provision of cross-border services also needs to be taken into account when calculating the employment of a country (by taking into account the "net balance" of incoming and outgoing posted workers). As early as 10 years ago, the challenge of better reflecting the impact of increasing cross-border labor mobility, including trade in services through the movement of persons, in the employment statistics within national accounts was acknowledged in a report of the United Nations Economic Commission for Europe (UNECE 2011). As a solution, a satellite account[5] or a labor account was proposed that could be integrated into the national accounts. In this satellite account, foreign employees and the self-employed who are employed by or have a contract with a foreign institutional unit and are providing services should be included. This could be a relevant exercise, as will be shown in the analysis below.

QUANTIFYING THE IMPORTANCE OF POSTED WORKERS IN TOTAL EMPLOYMENT

On average, employment by the posting of workers represents only a fraction of total employment in the

[3] The System of National Accounts 2008 (SNA 2008) is a statistical framework that provides a comprehensive, consistent, and flexible set of macroeconomic accounts for policymaking, analysis, and research purposes.

[4] The European System of National and Regional Accounts (ESA 2010) is the newest internationally compatible EU accounting framework for a systematic and detailed description of an economy.

[5] Satellite accounts provide a framework linked to the central national accounts, focusing on a certain field or aspect of the national accounts. Satellite accounts can meet specific data needs by providing more detail, by rearranging concepts from the central framework, or by providing supplementary information (definition from EUROSTAT).

EU. It is estimated that posting accounts for about 1 percent of total employment in the EU and even only 0.4 percent of total employment in FTEs. Nonetheless, in several labor-intensive and price-sensitive sectors of activity, intra-EU posting constitutes an important form of employment. Consequently, not taking into account incoming posted workers significantly underestimates the actual volume of employment in these sectors of activity. Some examples are given below, both from a receiving (for Belgium, France, and Austria) and a sending perspective (Slovenia and Luxembourg).

The group of incoming posted workers amounts to approximately 2.8 percent of the total group of workers employed in Belgium. However, posted workers represent about one-fifth of the employment in the Belgian construction sector. It can even be argued that this is probably an underestimation of the actual share of posted workers in the Belgian construction sector.

Posted workers represent 0.4 percent of total employment in France but this percentage masks large heterogeneities among sectors and regions. The group accounts for 2.2 percent of the employment in agriculture and 1.7 percent in construction. Moreover, the share of posted workers in employment is heterogeneously distributed over French regions. The impact of posted workers on employment goes up to 20 percent in agriculture and 8 percent in construction in some regions.

In 2019, the full-time equivalent of workers posted to Austria accounted for 1.7 percent of the full-time equivalent of the Austrian labor force. Moreover, the number of construction workers posted to Austria was equivalent to 5 percent of total employment in the Austrian construction sector.

In 2020, 7 percent of the labor force in Slovenia had been sent to another Member State for at least one day. Even three out of ten workers active in the Slovenian construction had been sent to another Member State for at least one day. Therefore, the actual number of construction workers employed in Slovenia is much lower than what the available employment statistics suggest.

Finally, in December 2019, the number of outgoing workers posted in the total workforce amounted to 3.2 percent for Luxembourg. The number of companies posting at least one worker abroad increased from 3.3 percent in January 2017 to 4.4 percent in December 2019.

CONCLUSION

Steps should be taken regarding the measurement of the number of posted workers in the EU. In this regard, the integration of different kinds of data sources, such as surveys and administrative sources, should be aimed for. New data sources may supplement or even refute existing data collected on the basis of the number of PDs A1 issued and the number of notifications made in the declaration tools. In particular, the collection of data on the export of services involving the presence of persons in the territory of another country for the purpose of providing a service (GATS mode 4) could be an important step forward. In addition, a specific question on posting could be included in the European Labour Force Survey (EU-LFS).

Furthermore, the increasing importance of cross-border temporary labor mobility, including trade in services through the movement of persons, should be better reflected in national employment statistics. In this respect, the development of a satellite account or a labor account that could be integrated into the national accounts, an idea that was proposed by the United Nations Economic Commission for Europe (UNECE), might be a good solution.

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Vera Freundl and *Katharina Wedel*

How does Instruction Time Affect Student Achievement? The Moderating Role of Teacher Qualifications

ABSTRACT

This study focuses on the interaction between the quantity and the quality of instruction at school. On average, across all studied countries, one hour more instruction time leads to 0.03 standard deviations higher test scores. Importantly, the effect varies according to teachers' formal qualifications: It is larger for students with better qualified teachers. The moderating role of teacher quality is particularly important in understanding the effect of instruction time in developing countries: more instruction time alone has no significant effect on average in these countries, but instruction by a highly qualified teacher increases test scores by 0.02 standard deviations.

INTRODUCTION

In the course of the Covid-19 pandemic, students from all around the world have experienced severe learning and achievement losses (Chetty et al. 2020; Engzell et al. 2021; Grewenig et al. 2021; Maldonado and de Witte 2021; Woessmann et al. 2021). The pandemic-induced school closures in many countries have fueled the debate about the role of education and instruction in our society. Research shows that both instructional quantity (e.g., Lavy 2015; Rivkin and Schiman 2015) and instructional quality (e.g., Hanushek and Rivkin 2006; Rockoff 2004) prove to be important for student achievement. While there is a consensus that both quantity and quality of instruction individually are essential for students' educational achievement, the interaction between the two factors is less well understood. This article reports the findings of a recent study by Wedel (2021) on the extent to which the effect of instruction time on student performance is moderated by the quality of teachers.[1]

The effect of instruction time might go in different directions. On the one hand, a teacher might have the opportunity to cover more material, analyze and discuss it in more detail, take the time to answer students' questions, and combine concepts that arise in different classes (National Center on Time & Learning 2017) through increased instruction time. Students will probably benefit more from instruction time if teachers use the additional time efficiently, e.g., by covering new or revising old content instead of using the time for classroom management or administrative tasks. On the other hand, students might become bored or less focused such that they are not able to absorb further information, making more instruction time and more input rather harmful. At the same time, it is also important how well a teacher knows the subject and how well she can explain it to her students (Carroll 1989).

The novelty in this study is that it contributes to the literature by exploring the interaction between quantity and quality of instruction. Using the 2015 Trends in International Mathematics and Science Study (TIMSS) data also allows studying countries that were not considered in previous studies on instruction time (see Box 1 for a description of the data source). These mostly include countries from the Middle East, such as Saudi Arabia, the United Arab Emirates, and Oman, as well as Singapore and Kazakhstan. Moreover, the study focuses on fourth-graders, which is especially relevant since young children are particularly sensitive to interventions and the returns to investments in human capital are higher (Cunha et al. 2006).

MEASURING INSTRUCTION TIME, TEACHER QUALIFICATIONS, AND STUDENT OUTCOMES

The main variable of interest is *instruction time* in either math or science. Instruction time in general is defined as the ''amount of time during which students receive instruction from a classroom teacher in a school [...] context'' (UNESCO 2021). It does not include teacher training days, holidays, breaks at school, or learning time outside of school, such as

[1] This article is a policy-focused summary of Katharina Wedel (2021), "Instruction Time and Student Achievement: The Moderating Role of Teacher Qualifications," *Economics of Education Review* 85, 102183.

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DATA SOURCE AND DESCRIPTION

The TIMSS & PIRLS International Study Center at the International Association for the Evaluation of Educational Achievement (IEA) conducts standardized assessments of students' achievements in math, science and reading, which are internationally comparable. Hereby, science is a combination of life science, physical science, and earth science. The study is conducted in more than 60 countries (TIMSS 2019). In addition to information about a student's achievement, the data also include information about students' attitudes, teachers, school resources, and instructional practices (TIMSS 2019). TIMSS uses a two-stage random sample design: In the first stage, a sample of schools is determined, and in the second stage, one or more classes within a school are selected for data collection (Martin et al. 2016).

The final sample for this study contains 108,358 fourth-grade students in 1,586 classes and 4,283 schools in 39 countries[1] from the 2015 survey wave in TIMSS. The countries are categorized according to the WESP classification (United Nations 2014) into developed and developing countries as well as countries in transition. For simplicity, countries in transition and developing countries are both referred to as "developing countries." In total, 15 of the countries in the sample are developing countries. In TIMSS, every student is evaluated twice: once in math, and once in science. Therefore, the number of observations amounts to 216,716. Overall, 49 percent of the students in the sample are female and 83 percent of the teachers are female.

[1] Not all 60 countries are used in the analysis since some do not report science test scores.

time for homework and tutoring. The underlying question for teachers in the TIMSS data is the following: "In a typical week, how much time do you spend teaching mathematics to the students in this class? (minutes)" (TIMSS 2015). The same question is asked for science. To make the resulting numbers comparable to other studies, in this study they are converted into hours and aggregated on the school-by-subject level as in Lavy (2015). TIMSS also provides information on the curriculum for each participating country. Percentages of math and science lessons as a proportion of total instruction time are prescribed by a curriculum in some but not all countries: 27 (24) of the 39 countries in the sample indicate that the curriculum prescribes a certain percentage of instruction time in math (science). In some countries, these percentages vary by state or school. Other countries define a range of percentages that should be devoted to instruction time in a given subject. Hence, differences in instruction time occur both across and within countries.

Teacher quality is a major determinant of student achievement. One approach used in the literature to determine the quality of a teacher is the teacher value-added (e.g., Hanushek 1971; Koedel et al. 2015; Rivkin et al. 2005), assessing the quality of a teacher in terms of the gain in student achievement from one year to another. However, the teacher value-added cannot be measured with the TIMSS data since students and teachers are only assessed in fourth grade at one point in time. To measure the teacher value-added, one needs at least two observations per student at two points in time, ideally one at the beginning of a school year and one at the end. Instead, Wedel (2021) uses teachers' educational background as a measure for teacher quality, defined by their formal qualifications: subject specialization, years of experience, highest degree of education, and participation in professional development (Nilsen et al. 2018).

Previous evidence on the relationship between student achievement and these teacher qualifications is rather mixed: One part of the literature finds no returns to better qualified teachers (e.g., Hanushek 1986; Rivkin et al. 2005) while others find positive effects on student achievement (e.g., Clotfelter et al. 2007; Goldhaber and Brewer 2000; Goldhaber and Anthony 2007). However, in the public debate and politics as well as in educational institutions, certain teacher qualifications are required in recruitment processes and play a major role in compensation and tenure decisions (e.g., Podgursky and Springer 2007; Shuls and Trivitt 2015). In the US, for example, the No Child Left Behind Act required all core subject matter teachers to be highly qualified, which implied that they had to hold a bachelor's degree, be certified or licensed by the state, and be able to demonstrate subject matter competence (Jacob 2007).

In TIMSS 2015, teachers answered questions about their highest level of completed formal education (according to the ISCED classification), about their major in a subject, and their specialization when majoring in teacher education. The variable *major degree* indicates whether the teacher has a bachelor's degree (or higher) and whether she majored in the relevant subject. This variable thus indicates a teacher's subject knowledge. For example, studying mathematics as a major provides knowledge of the content required for teaching mathematics to students (Blömeke et al.

2016). The indicator *education specialization* measures whether a teacher has a specialization in the relevant subject if she has an educational background, i.e., a major in teacher education or pedagogy. A further aspect is participation in *professional development* (PD) in the respective subject in the last two years. Subcategories of professional development are subject content, subject pedagogy/instruction, or subject curriculum.

These three teacher qualifications are subject-specific and can vary within teachers: For example, a teacher might have a specialization in math, but not in science when her major was teacher education. Similarly, a teacher might have participated in professional development in science, but not in math. Overall, 20 percent of teachers have a bachelor's degree (or higher) with the relevant subject as their main subject and 28 percent have an educational background with a specialization in the subject. About half of all teachers participated in professional development in the last two years.

Teachers were also asked about their experience, i.e., the number of years they had been teaching. On average, teachers had been teaching for 17.4 years across all countries, with a maximum of 60 years. In her study, Wedel (2021) generates a variable that indicates whether a teacher had more than two years of experience (*high experience*). Teachers' performance with only one or two years of experience tends to be worse than that of more experienced teachers, and the latter are also better at raising student achievement than inexperienced teachers (Clotfelter et al. 2007).

A student's test score in math or science as well as her motivation and attitude towards a subject are used as outcomes. The *test score* of a student in math or science measures a student's cognitive attainment in those subjects (Woessmann 2003). To measure a student's motivation and attitude towards a subject, Wedel (2021) uses factor analysis to generate an index called *like subject* that consists of four variables for each subject. The corresponding questions include ''I enjoy learning mathematics'' and ''I learn many interesting things in mathematics,'' equivalently for science. Students could answer on a 4-point scale which ranges from ''agree a lot'' to ''disagree a lot.''

THE IMPACT OF INSTRUCTION TIME ON STUDENT OUTCOMES

From a theoretical point of view, additional instruction time can have positive or negative effects on students' outcomes. The results in the study by Wedel (2021) show that students benefit in terms of test scores from additional instruction time: An additional hour of instruction time increases students' test scores by 0.030 standard deviations. This finding is in line with the results of previous studies (Rivkin and Schiman 2015; Lavy 2015; Bingley et al. 2018).

EMPIRICAL STRATEGY

Wedel (2021) uses a student fixed-effects model and exploits within-student between-subject variation to identify the effect of instruction time on student achievement. The TIMSS data provide two observations per student and are therefore particularly suitable for using this model: Both student attainment and instruction time are reported for math and science. Using a student fixed-effects model controls for unobservable student characteristics, such as unobserved ability and school differences in both subjects (Rivkin and Schiman). The attractiveness of this model lies in the fact that the students taking two subjects have the same overall skill level and that the school environment is the same for both subjects (Rivkin and Schiman 2015). Wedel (2021) interacts the instruction time variable with a quality indicator of the teacher, measured by her formal qualifications.

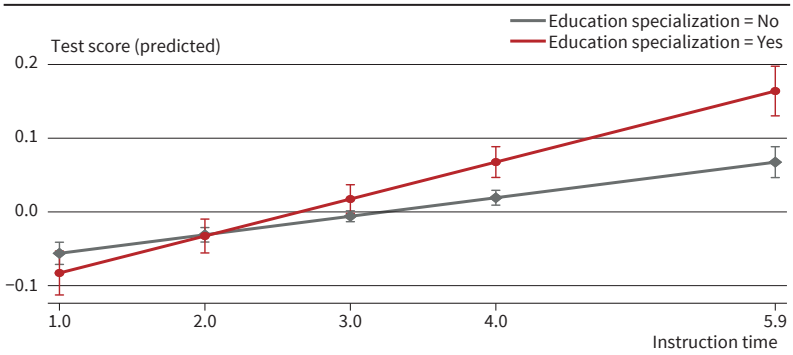
Additionally, Wedel (2021) examines whether there are differences in the effect with respect to a student's gender. The results indicate that an additional hour of instruction time leads to a higher increase in test scores for male students than for girls. Hence, boys seem to benefit more from additional instruction time, which is surprising since returns to schooling are often lower for boys than for girls, especially in low-income countries (Montenegro and Patrinos 2014). A potential reason for this might be that boys study less for school outside school hours than girls. Consequently, boys might need to spend more time studying with a teacher than girls to improve their test scores. For girls, homework time (as compared to instruction time) might play a greater role than for boys.

As explained, additional instruction time can also affect a student's attitude towards a subject. A student might become tired of a subject, leading to an aversion to the subject. Alternatively, a student might enjoy a subject even more when additional instruction time is used to deal with more specific content. The results by Wedel (2021) suggest that additional instruction time also leads to a more positive attitude towards the subject.

THE MODERATING ROLE OF TEACHER QUALIFICATIONS

As hypothesized, the effect of instruction time might differ according to the quality of the teacher: An additional hour of instruction by an unqualified teacher or a teacher who does not know the subject matter well might not result in achievement gains for students. It

Figure 1
Marginal Effects Using Specialization as the Teacher Qualification Measure



Notes: TIMSS student test scores in math and science in 4th grade in 2015. Instruction time and education specialization are aggregated on school-by-subject-level.
Source: Wedel (2021).
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might be more important how time at school is spent, how good teachers are at teaching, and how motivated students are to learn, rather than the amount of instruction time (Organisation for Economic Co-operation and Development 2014). To assess this, Wedel (2021) interacts the instruction time variable with the quality indicator of the teacher, measured by her formal qualifications as described above.

The results suggest that the impact of one hour more instruction time is larger when having a teacher who participated in professional development (Table 1, column 1), who has a teacher training background and a specialization in the subject (Table 1, column 2) and who completed the relevant subject as the main subject with a bachelor's degree (or higher) (Table 1, column 3). For example, the impact of one hour more instruction time is 0.050 standard deviations for teachers with an educational background and a specialization in the relevant subject, while it is 0.025 standard deviations for teachers without such a background (Table 1, column 2). Figure 1 suggests that a teacher with an educational background and a specialization in the subject who teaches three hours has the same impact on student achievement as a teacher who teaches four hours but does not meet these criteria. When a teacher teaches the same students for many hours, i.e., more than three hours, it is especially important for the effect of instruction time on test scores whether the teacher is highly qualified.

Across all countries, it seems that the impact of instruction time is enhanced by the fact that a teacher has knowledge about the content, i.e., majored in the relevant subject, and that she has an educational background. However, in the case of having a more experienced teacher, the effect seems to be slightly reduced (Table 1, column 4). This is surprising in that more experienced teachers are expected to know how to use the time such that it benefits the students.

The results on teacher qualifications (except experience) by Wedel (2021) complement the study by Rivkin and Schiman (2015). They examine the quality and environment of the classroom instead of teacher qualifications and find that a better classroom envi-

Table 1
Results for Teachers' Formal Qualifications

	(1)	(2)	(3)	(4)
	Test score	Test score	Test score	Test score
Instruction time	0.012***	0.025***	0.024***	0.034***
	(0.004)	(0.003)	(0.003)	(0.007)
PD x instruction time	0.030***			
	(0.004)			
Education specialization x instruction time		0.025***		
		(0.005)		
Major degree x instruction time			0.034***	
			(0.005)	
Experience x instruction time				– 0.004
				(0.007)
Observations	216,716	216,716	216,716	216,716
R– squared	0.923	0.923	0.923	0.923
Student FE	Yes	Yes	Yes	Yes
Subject FE	Yes	Yes	Yes	Yes
Teacher Controls	Yes	Yes	Yes	Yes
Effect for high qualification	0.042***	0.050***	0.058***	0.030***
	(0.003)	(0.005)	(0.005)	(0.003)

Notes: Dependent variable: TIMSS student test score in math and science in 4th grade in 2015. Instruction time and teacher qualifications are aggregated on school-by-subject-level. Teacher controls are teacher being female and teacher age. Senate weights are used. PD stands for professional development. Effect for high qualification shows the coefficient on instruction time when the respective teacher qualification (PD, education specialization, major degree, experience) equals 1. Clustered standard errors at school level in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1.

Source: Wedel (2021).

ronment increases the effect of additional instruction time. Hence, it seems that both teacher quality and student behavior in the classroom play an important role.[2]

COUNTRY ANALYSIS

In addition, the effects might vary across country groups. Various countries from different continents participate in TIMSS. Often, these countries especially differ in their educational culture and educational system. One main difference is that some participating countries are developing countries or countries in transition (such as Chile, Oman, and Saudi Arabia), while others are developed countries (such as France, the US, and Japan). The effect of instruction time on students' test scores is statistically significant and higher in developed countries (0.061 standard deviations) than in developing countries (not statistically significant). The magnitude of the coefficient on instruction time in developed countries is similar to the coefficient determined by Lavy (2015) for OECD countries.

In developed countries, the effect is smaller for girls, while it is even negative for girls in developing countries. This might be due to the fact that education for girls is still not taken as given in many developing countries. Girls might react negatively to spending more time in school, when they know that they are actually needed at home for work or that they have to earn income that their families depend on (Glewwe and Kremer 2006). Alternatively, teachers might spend the additional instruction time on boys and less on girls, leading to higher gains for boys than for girls.

More importantly, Wedel (2021) also analyzes how teacher qualifications interact with instruction time in developed and developing countries separately since the influence of teacher quality might differ between educational systems (Blömeke et al. 2016). In developing countries, the impact of instruction time is enhanced by having a teacher who completed the relevant subject as a main subject with a bachelor's degree (or higher) or having a teacher who participated in professional development. The impact of instruction time is even negative when having a low-qualified teacher, but it becomes positive when having a better qualified teacher: Instruction time by a highly qualified teacher (e.g., a teacher who has a bachelor's degree (or higher) with the relevant subject as a major subject) increases test scores by 0.027 standard deviations, while it seems to decrease test scores when having an unqualified teacher, i.e., a teacher without this qualification. A potential reason for this again might be that in developing countries students are needed at home to work. If these students stay longer at school with a teacher without good qualifications, they might become distracted and unfocused, leading to worse outcomes. The coefficient on educational background with a specialization, however, is much smaller and only statistically significant at the 10 percent level in developing countries. Hence, the results suggest that majoring in the relevant subject is more important than having an educational background. In light of the observation from previous research that teachers lack adequate knowledge and that the quality of school education in developing countries is often rather low (Glewwe and Kremer 2006), majoring in the relevant subject with at least a bachelor's degree could thus indicate more substantial content knowledge about the subject. Hence, this plays a moderating role for the impact of instruction time.

In developed countries, by comparison, having a teacher with an educational background seems to enhance the impact, as does having a teacher who majored in the relevant subject with a bachelor's degree (or higher). The coefficients are of similar magnitude and hence suggest that both subject knowledge and knowledge about pedagogical elements can enhance the impact of instruction time in developed countries.

POLICY RECOMMENDATIONS AND CONCLUDING REMARKS

In the reported study by Wedel (2021), instruction time is found to positively affect students' test scores. More importantly, teacher quality, measured by teachers' formal qualifications, plays a moderating role for the effect of instruction time on student achievement: The effect is larger for students with better qualified teachers. This is especially relevant in developing countries, where the effect of instruction time on student achievement is on average not statistically significant and close to zero. However, instruction time with a highly qualified teacher also increases test scores in developing countries.

The positive effect of instruction time on students' test scores and its interaction with teachers' qualifications is of particular importance for policy decisions, especially when considering the impact of the recent Covid-19 crisis on education. As documented by various studies, Covid-19-related school closures led to severe reductions in student achievement (Chetty et al. 2020; Engzell et al. 2021; Maldonado and de Witte 2021; UK Department for Education 2021) and losses in learning time (Grewenig et al. 2021; Woessmann et al. 2021). Lower student competencies and reduced learning time are associated with long-term losses in students' later life-time income and a substantially lower GDP for several decades to come (Hanushek and Woessmann 2020). According to estimates from mostly high-income countries, students' lifetime income losses may range from 1.5 to 5.6 percent if they miss out on one-third of a school year.

[2] In addition, Wedel (2021) examines whether the interaction between instruction time and teacher qualifications also impacts a student's motivation towards the subject. The results do not offer statistically significant results for all teacher qualifications.

In addition, there is evidence that only a small share of students attends additional tutoring lessons, and participation is especially low among socially disadvantaged students, who seem to be particularly hard-hit by Covid-19-related school closures (Chetty et al. 2020; Engzell et al. 2021; Grewenig et al. 2021; Maldonado and de Witte 2021; Woessmann et al. 2021). With more instruction time, especially when taught by highly qualified teachers, the Covid-19-induced learning losses could be mitigated, particularly for those hit hardest by the crisis. Where in-person instruction is not possible due to the pandemic situation, at least hybrid or online models could be employed.

Thus, the task of policy makers lies in finding ways to avert these learning losses to ensure future individual and societal welfare. The reported findings help to assess which measures are useful to counteract lost learning. In developed countries, more learning time could be a straightforward and effective way to increase student achievement. However, it must be scrutinized whether extending the instruction time in a certain subject increases the overall time that students spend in school and whether this is at the expense of breaks, vacation time, or other subjects (Farbman 2015; Jarrett et al. 1998). For example, more instruction time in math at the expense of instruction time in arts and music might improve test scores in math, especially if the lessons are given by a highly qualified teacher. On the other hand, this could affect students' development in terms of creativity, physical activity, and health, particularly in primary school and especially for students from lower socioeconomic backgrounds since they often do not have access to voluntary education outside of school. Hence, potential trade-offs need to be considered carefully. Developing countries, on the other hand, should first focus on the quality of instruction since a mere increase in instruction time does not seem to have a beneficial effect. Policy makers should thus aim at improving teacher training before extending instruction time.

The results described in Wedel (2021) and those of previous research (e.g., Rivkin and Schiman 2015; Lavy 2015) suggest that instruction time is indeed one of the key factors in promoting student achievement and that the quality of teachers, in particular their qualifications, can enhance the influence of instruction time on student achievement. Hence, it is the combination between instruction time and the quality of a teacher that is relevant to student achievement.

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Benjamin W. Arold, Ludger Woessmann and *Larissa Zierow*

Religious Education in School Affects Students' Lives in the Long Run*

ABSTRACT

Being exposed to compulsory religious education in school can have long-run consequences for students' lives. At different points in time since the 1970s, German states terminated compulsory religious education in public schools and replaced it by a choice between ethics classes and religious education. This article shows that the reform not only led to reduced religiosity in students' later life, but also eroded traditional attitudes towards gender roles and increased labor-market participation and earnings.

The proper relationship between churches and the state has been a deeply contested matter throughout long stretches of history. This is particularly true for the role of churches in public schools. Most Western school systems have their historical roots with the churches. When states tried to transform church-run schools into non-denominational mass education systems during the 19th century, they faced fierce resistance by the churches (Ramirez and Boli 1987; West and Woessmann 2010). The churches wanted to ensure that schools taught children to become good Christians. Likewise, states used the public school systems for indoctrination, social cohesion, and socialization (Lott 1999; Gradstein and Justman 2002; Pritchett and Viarengo 2015).

But does it matter? Can school curricula in fact change students' religious attitudes and lives in the long run? After all, religious attitudes might be deeply rooted in humans' personality and family socialization.

Religious attitudes are certainly an important component of people's personalities and values. In the World Values Survey, 82 percent of participants belong to a religious denomination, 71 percent say that religion is important in their life, and 57 percent pray several times a week (Inglehart et al. 2014). Recently, the Covid-19 pandemic saw a strong surge in prayer globally (Bentzen 2020). Studies in the economics of religion clearly show that religiosity has important consequences for individual outcomes and economic development (Iannaccone 1998; Iyer 2016; McCleary and Barro 2019; Becker, Rubin, and Woessmann 2020). Becker and Woessman (2009, 2013, 2018) and Becker, Nagler and Woessman (2017) have documented various aspects of the role of religion in German economic history.

In a new paper (Arold, Woessmann, and Zierow 2022), we show that being exposed to compulsory religious education in school indeed affects students' religiosity in adulthood. We also find effects beyond the religious sphere on family and labor-market outcomes, consistent with churches conveying specific family and worldly norms.

A GERMAN REFORM THAT TERMINATED COMPULSORY RELIGIOUS EDUCATION

Our analysis exploits the unique German setting where a reform abolished compulsory religious education in a staggered way across states beginning in the 1970s. The 1949 Constitution of West Germany had formally enshrined religious education as the only subject that is institutionalized as a regular sub-

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ject in public schools, so that religious education was a compulsory subject in state curricula. Religious education was very intense: High-school graduates were exposed to roughly 1,000 hours of religious education over their school career – more than four times the hours of physics classes, for example.

The compulsory nature of religious education was changed in the different German states at different points in time, from Bavaria in 1972 to North Rhine-Westphalia in 2004. The reform replaced the obligation to attend religious education with the option to choose between denominational religious education and "ethics" as a non-denominational subject. By competitive pressures, introducing this choice option also changed the content of religious classes and likely altered overall social norms towards religion. A particularly interesting feature of the reform is that the counterfactual to compulsory religious instruction is not to have no value-oriented instruction, but rather *non-denominational* value-oriented instruction. As a consequence, the reform allows us to identify the impact of the religious part of instruction, holding the overall exposure to value-oriented instruction constant.

Given the staggered adoption of the reform, we use the variation in the abolishment of compulsory religious education across states and over time to study reform effects on outcomes in adulthood in two-way fixed effects models. Accounting for fixed effects for each state and birth year, the series of reforms provides plausibly exogenous variation in individuals' exposure to compulsory religious education that can be exploited in a difference-in-differences setting. Effects were identified from differences in adult outcomes between cohorts within the same state that were and were not subject to compulsory religious education, relative to the differences between the same cohorts in other states that did not have reform events at the same time.

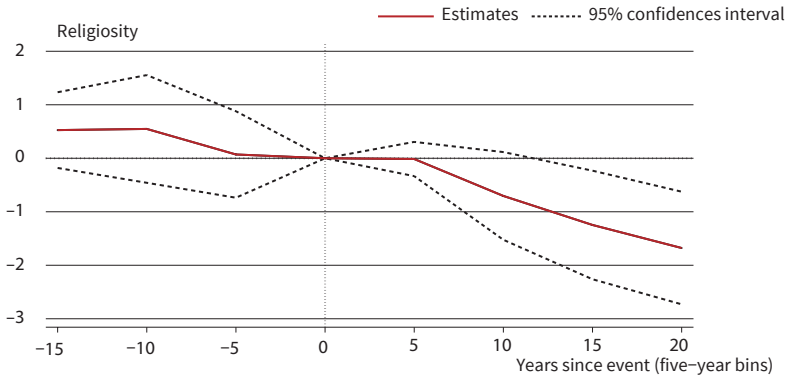
We use three datasets, each of which allows us to link religious (as well as family and labor-market) outcomes of adults to their state and time of schooling in childhood: the National Educational Panel Study (NEPS), the German General Social Survey (ALLBUS), and the German Socio-Economic Panel (SOEP). Our merged dataset combines up to 58,000 observations of adults who entered primary school between 1950 and 2004.

THE REFORM REDUCED STUDENTS' RELIGIOSITY IN ADULTHOOD

Our results show that schools can affect religious outcomes later in life. We find that the abolishment of compulsory religious education significantly decreased the religiosity of affected students in adulthood. As indicated in Figure 1, individuals who entered school after the reform report significantly lower levels of religiosity. On average, the reform

Figure 1

The Effect of Abolishing Compulsory Religious Education on Religiosity



Source: Arold, Woessmann and Zierow (2022). © ifo Institute

reduced the share of people reporting to be religious by about 3 percentage points (compared to an average incidence of 52 percent) and of those reporting to be very religious by 2 percentage points (average 11 percent).[1] The figure also shows that reforming states did not have significantly different trends in religiosity in the years prior to reform compared to non-reforming states. This finding is consistent with the identifying assumption that the exact timing of the reform in the different states is as good as random.

We find reductions not just in general religiosity, but also in different measures that capture specific religious actions: the personal act of prayer, the public act of going to church, and the formal act of church membership (which is also a costly act in Germany due to its connection to paying church taxes). The effects on religiosity and personal prayer phase in gradually over time. Effects are mostly restricted to predominantly Catholic rather than Protestant counties.

EFFECTS BEYOND RELIGIOSITY

Historically, the churches promoted traditional religious family role models, advocating gender-specific roles in families and marriage before cohabitation. Correspondingly, we find that the reform led to more equitable and less conservative attitudes towards gender roles and family norms later in life. For example, abolishing compulsory religious education reduced the likelihood to think that men are better suited for certain professions than women by 8 percent of a standard deviation. Recent studies suggest that gender norms are important determinants for lifetime outcomes (Kleven et al. 2019; Jayachandran 2021), but it is not well understood where these norms come from. Our results show that changes in school curricula can impact gender norms, implying that they are malleable in public settings outside the family.

[1] The outcome variable "religiosity" in Figure 1 is standardized.

The abolishment of compulsory religious education also affected actual family outcomes. It reduced the probability of being married by 1.5 percentage points and decreased the number of children by 0.1 children per respondent.

The reform may additionally have affected economic behavior and outcomes. The Bible quotes Jesus as saying, "It is easier for a camel to go through the eye of a needle than for someone who is rich to enter the kingdom of God" (Mark 10:24-27, Luke 18:24–27). In line with these Christian values, the decrease in religiosity may have promoted materialistic orientation. The reduction in time used for various religious actions may have induced a substitution effect towards economic activities (Barro and McCleary 2003; Gruber and Hungerman 2008). The reduced time required to raise (fewer) children may have changed decisions about family and career planning. The change of gender roles may have opened up better labor-market opportunities for women. In addition, leaving the church means a reduction in the tax rate on labor income in Germany, increasing incentives to work.

Our results show that the reform indeed led to increases in labor-market participation (+ 1.5 percentage points), working hours (+ 0.6 hours per week), and earnings (+ 5.3 percent). Overall, the results suggest that the reform impacted people's lives well beyond the religious sphere.

In contrast, there is no evidence that the reform affected ethical values and behavior such as reciprocity, trust, volunteering, and life satisfaction, nor political values and behavior such as political interest and leaning, voting, and satisfaction with democracy. It appears that the counterfactual of attending non-denominational ethics classes was equivalent to attending religious-education classes in terms of these outcomes. This speaks against concerns in the policy debate at the time that abolishing compulsory religious education may deteriorate students' ethical orientation.

The reform is also unrelated to placebo outcomes such as years of schooling, type of school degree, or age of first employment. Consequently, the identifying variation is unlikely to capture alternative sources such as other contemporaneous educational reforms – which is corroborated by the fact that results do not change when conditioning on a range of other educational reforms. Results are also robust when restricting the sample to individuals who attend school in counties neighboring each other across state borders and including county-pair fixed effects, so that the identifying variation is restricted to close geographic areas.

SCHOOLS EXERT LIFETIME INFLUENCES

In sum, we find that students who were subject to compulsory religious education in school do indeed show higher religiosity when they are adults. The school reform also affected their family and economic outcomes.

There is ample evidence that the quality of teachers and institutional features of school systems have important effects on students' academic achievement and later labor-market success (Hanushek 1986; Chetty, Friedman and Rockoff 2014; Woessmann 2016). Our results indicate that the content of the school curriculum exerts a lifetime influence on students, too, even on inner attitudes and values such as religiosity. What you learn in school is indeed for life.

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Introducing the Economic Experts Survey (EES)

ABSTRACT

The Economic Experts Survey (EES) is a newly initiated global quarterly survey of economic experts. The EES elicits the assessment of influential economic experts around the world about current economic policies and the political performance of their host countries. This article introduces the EES and presents the results from the first survey wave in the first quarter of 2022. Expert responses reveal large regional differences in the assessment of economic policy. The results further show that the overall political situation worsened compared to the previous quarter. In a special module, the EES also asks experts about their assessments of the current Covid-19 policies. Experts notice improvement in public health measures and recommend relaxing measures further compared to end-2021. They also recommend more expansionary Covid-19 fiscal policies.

INTRODUCTION

In an increasingly complex world, there is great demand by policymakers, firms, and households for information about the state and development of economic policy, both globally and decentralized for regions. Many datasets compile information on economic policy in individual countries and geographic regions, but there is a lack of a database that transparently and comparably documents the global state of economic policies. The Economic Experts Survey (EES) establishes such a dataset, which describes the quality of economic policy and political performance as evaluated by economic experts worldwide. It provides information in the form of assessments by internationally renowned and influential economic experts. Published quarterly, the EES results are timely and internationally comparable. Considering the ongoing Covid-19 pandemic, the first wave of the EES also examines national Covid-19 management and related fiscal policies in a special module. Further economic questions on matters of current and global importance may be included. The survey is jointly conducted by the ifo Institute and the Institute for Swiss Economic Policy (IWP).

The first survey results reveal large geographic heterogeneity in the assessment of economic policy around the globe. A common pattern, however, is that the overall political situation worsened in the first quarter of 2022 compared to the previous quarter. Regarding policies targeted towards the ongoing Covid-19 pandemic, the experts are more optimistic and report, on average, that public health measures have improved in the first quarter of 2022. Consequently, the experts recommend relaxing public health measures further and favor more expansionary Covid-19 fiscal policies. The first survey ran from February 16, 2022, to March 2, 2022. In total, 1,603 economic experts from 132 countries took part in the survey.

RELATED SURVEYS AND LITERATURE

The EES relates to other international and national experts surveys. The Initiative on Global Markets at the University of Chicago Booth School of Business regularly polls over 80 economists on a range of

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economically relevant topics via their US and European Economic Experts Panels.[1] The Centre for Macroeconomics conducts surveys in collaboration with the Centre for Economic Policy Research and ask prominent economists based in Europe important macroeconomic and public policy questions to inform the public about experts' views.[2] The European Central Bank regularly asks about expected rates of inflation, real GDP growth, and unemployment in the euro area in their Survey of Professional Forecasters.[3] The KOF Swiss Economic Institute conducts several expert surveys such as the KOF Consensus Forecast on macroeconomic data (which covers, e.g., GDP growth).[4] The ifo Institute and the Frankfurter Allgemeine Zeitung survey economics professors at German universities on current economic policy issues in their Economists Panel.[5] In political science, the Chapel Hill Expert Survey asks European experts every three to five years about national parties' positioning on European integration, political ideology, and policy issues in numerous European countries.[6]

A key contribution of the newly introduced EES to the existing surveys is the global coverage of experts. The worldwide perspective allows gathering a complete picture about economic policies and their evaluation by influential economic experts in all geographic regions, and its use of a harmonized methodology allows for direct comparison between geographic regions. Furthermore, the EES asks experts about pressing and topical global economic policy issues in special modules in addition to the standard questionnaire.

Data from national and international expert surveys have been prominently used in recent publications. One strand of literature uses surveys to study the field of economics itself. Andre and Falk (2021) ask academic economists worldwide about their preferences for research topics and objectives. Gordon and Dahl (2013) study disagreement between economists at US universities on economic questions. Other research compares perceptions and expectations of economists to those of the general public, i.e., regarding macroeconomic forecasts (Andre et al. 2022), or beliefs about policy topics (Caplan 2002; Sapienza and Zingales 2013). Further literature uses expert surveys to forecast GDP growth (Garnitz et al. 2019), to evaluate tax policy (Boumans et al. 2020), or to instrument for fiscal policy (Gründler and Potrafke 2020). Surveys of economic experts are also used to study changes in economic expectations in response to political shocks (Boumans et al. 2021; Dräger et al. 2022) or natural disasters (Gründler and Potrafke 2020).

METHODOLOGY

a. Expert Panel: We recruit economic experts from two groups. The first are renowned economic experts working at universities, research institutes, central banks, multinational companies, embassies, and international organizations. Experts from this group were previously recruited for the World Economic Survey (WES) that was introduced in the 1980s at the ifo Institute. These experts were curated to establish a sample of influential economists. The second group includes leading academics and researchers in economics according to the Research Papers in Economics (RePEc) ranking. We contact the top experts in all listed countries. Experts from both groups are renowned and shape the public economic debates in their host country.

b. Implementation: Each wave of the EES is scheduled to run quarterly over a period of two weeks. We contact the experts via email with an invitation to participate in the EES. The experts choose the country they wish to provide expertise for and answer the questions online. In the survey, the experts are presented with the four core EES questions from two main areas, (1) economic policy and (2) political climate. The core EES questions are as follows:

[1] https://www.igmchicago.org/igm-economic-experts-panel/
[2] https://cfmsurvey.org/surveys
[3] https://www.ecb.europa.eu/stats/ecb_surveys/survey_of_professional_forecasters/html/index.en.html
[4] https://kof.ethz.ch/en/surveys/experts-surveys.html
[5] https://www.ifo.de/en/survey/oekonomenpanel
[6] https://www.chesdata.eu/

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Economic Policy

1. How do you rate *your country's* current economic policy?
2. How well does *your country's* economic policy address the challenges of the future?

Political Climate

3. How do you rate the performance of *your country's* current government?
4. How do you rate the stability of *your country's* current political situation?

The questions display the expert's country of expertise. Each question is followed by the reference statement: "Please compare to the last quarter and indicate a lower and an upper bound." Experts provide lower and upper bound estimates on a scale from – 100 ("worse") to + 100 ("better").

The first survey wave contained the following four questions on national Covid-19 management and related fiscal policies in a special module:

Covid-19 public health measures

5. How do you rate *your country's* current Covid-19 public health measures?
6. How would you change your country's current Covid-19 public health measures?

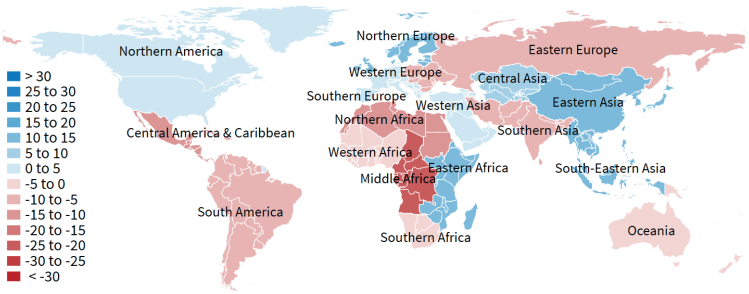
Covid-19 fiscal policies

7. How do you rate your country's current fiscal policies to address the economic consequences of the Covid-19 pandemic?
8. How would you change your country's current fiscal policies to address the economic consequences of the Covid-19 pandemic?

All questions were followed the reference statement "Please compare to the last quarter and indicate a lower and an upper bound." The answer scales ranged from – 100 to + 100 with indications of "worse" to "better" (Q5, Q7), "more strict" to "more lenient" (Q6), and "more restrictive" to "more expansionary" (Q8).

Figure 1

Economic Policy Assessment



Note: The map shows the mean of the regional average of two questions: "How do you rate your country's current economic policy?" and "How well does your country's current economic policy address the challenges of the future?" The experts were asked for a comparison with the previous quarter; the response options range from −100 ("worse") to +100 ("better"). The data is first averaged at the country level and then within 18 world regions.
Source: Economic Experts Survey in Q1 2022. © ifo Institute

c. Aggregation: From the experts' answers to each survey question, we first calculate the arithmetic mean for each country and then the arithmetic mean for each world region. We use 18 world regions within five continents, building on the UN geographical region definition.[7] We calculate the arithmetic mean of the values from questions one and two to derive the overall economic policy assessment for each region. We proceed with the same procedure for questions three and four to derive the political assessment.

RESULTS

Economic Policy Assessment

Economic experts' assessments of the current economic policy in their countries vary widely at the global level (see Figure 1). In Northern, Western, and Southern Europe, the experts observe a slight improvement compared to the previous quarter. In Eastern Europe, however, they assess the current economic policy situation more negatively than at the end of 2021. While the economic policy in Central and Southern America is assessed more negatively than in the last quarter of 2021, the experts in Northern America observe a slight improvement. Apart from Eastern Africa, the experts assess the economic policy situation in the African regions slightly more negatively than at the end of 2021. The results for Asia and Oceania are similarly divided: Experts in Central Asia, Eastern Asia, and South-Eastern Asia observe positive economic policy developments; participants in Southern Asia and Oceania have a more negative perception.

Economic Policy and Future Challenges

The assessment of the overall economic policy is derived from the experts' assessments of the current economic policy and the assessment of the economic policy regarding future challenges. Figure 2 shows that, globally, the economic policy is rated better when future challenges are not considered. The differences are particularly pronounced in the Americas, Asia (with the exception of Southern Asia), Europe, and Oceania. Findings for Africa are more heterogeneous: while Northern Africa follows the general trend, and differences are in Central and Western Africa, the experts in Southern Africa and Eastern Africa assess the economic policy regarding future challenges more positively than current policy. In general, however, experts still assess the economic policy in large parts of Asia and Europe as more forward-looking than in the previous quarter.

[7] In contrast to the UN regional classification, we define all sub-regions within Oceania to be one region and combine the regions of Central America and the Caribbean into one single region.

Political Assessment

According to the economic experts, the global political climate deteriorated compared to the previous quarter. Figure 3 shows that especially in Central and Southern America, but also in Northern America, the political situation worsened. In Europe, there is a clear east-west difference: while the political situation in Northern, Western, and Southern Europe improved, the political climate in Eastern Europe deteriorated. Similar to the experts' assessment of the economic policy, the experts assess the political situation in the African regions slightly to noticeably more negatively than in the previous quarter with the exception of Eastern Africa. In Asia, Western and Central Asia show a slight improvement and Eastern and South-Eastern Asia even a significant improvement. Southern Asia is the only region in Asia where the political climate deteriorated. In Oceania, the experts observe a slightly negative political trend.

Government Performance and Political Stability

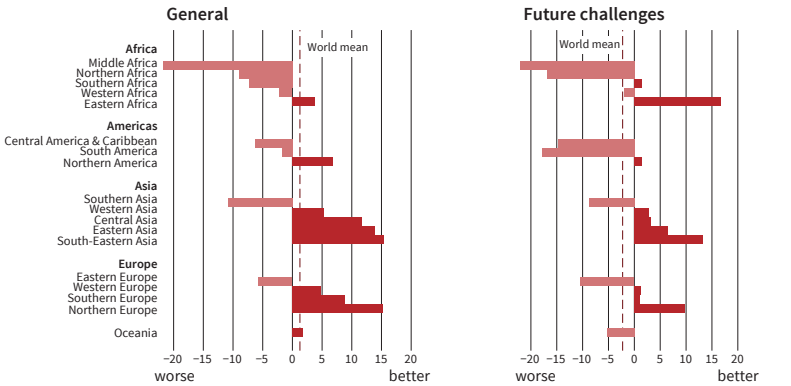
The assessment of the political climate is derived from the experts' assessments of government performance and political stability. Figure 4 shows that both political stability and government performance deteriorated in the experts' perception. Governments in Africa (with the exception of Eastern Africa) and the Americas (with the exception of Northern America) were primarily responsible for the deterioration in political performance. The experts report improvements in political performance among governments in Asia (with the exception of Southern Asia). Findings for Europe are more heterogeneous: while government performance improved especially in Northern Europe, performance in Eastern Europe deteriorated significantly. In Oceania government performance deteriorated somewhat compared to the previous quarter.

Political stability improved in large parts of Asia (with the exception of Southern Asia) and in Oceania. In contrast, political instability became more pronounced in the Americas. Experts report strong regional differences in Africa: while political stability deteriorated in Central and Southern Africa, the experts observe an improvement of the situation in the Northern, Eastern, and Western regions of the continent. There are also pronounced regional differences in Europe: Northern, Western, and Southern Europe are showing increased political stabilization, while Eastern Europe is experiencing political destabilization. Both government performance and political stability in Eastern Europe were rated worse compared to the previous quarter.

Covid-19 Public Health Measures

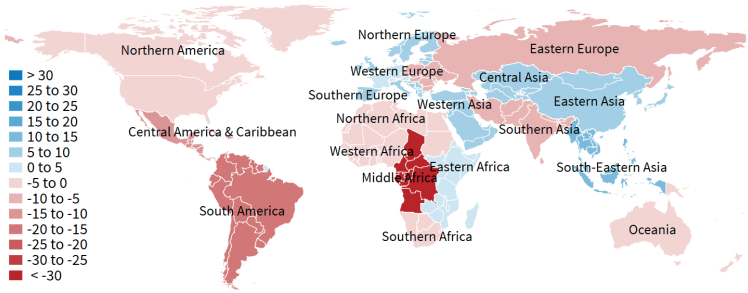
Figure 5 shows that, overall, the assessments of the current Covid-19 public health measures are very positive. Participants in Asia and Oceania are consistently positive in how they rate the change in measures compared to the previous quarter. There are also improvements in Northern, Western, and Southern Europe compared to the previous quarter. However, in Eastern Europe participants assess the current Covid-19 public health measures more negatively than they

Figure 2
Economic Policy Assessment



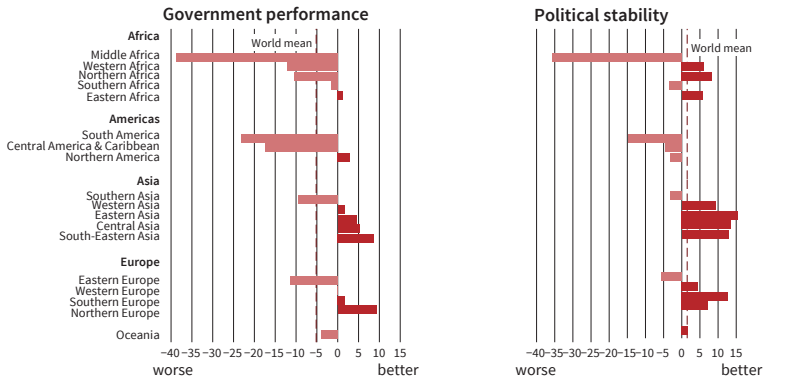
Note: The figure shows the regional mean of the questions "How do you rate your country's current economic policy?" (left panel) and "How well does your country's current economic policy address the challenges of the future?" (right panel). The experts were asked for a comparison with the previous quarter, with response options ranging from −100 ("worse") to +100 ("better"). The data is first averaged at the country level and then within 18 world regions.
Source: Economic Experts Survey in Q1 2022. © ifo Institute

Figure 3
Political Assessment



Note: The map shows the regional average of two questions: "How do you rate the performance of your country's current government?" and "How do you rate the stability of your country's current political situation?" The experts were asked for a comparison with the previous quarter; the response options range from −100 ("worse") to +100 ("better"). The data is first averaged at the country level and then within 18 world regions.
Source: Economic Experts Survey in Q1 2022. © ifo Institute

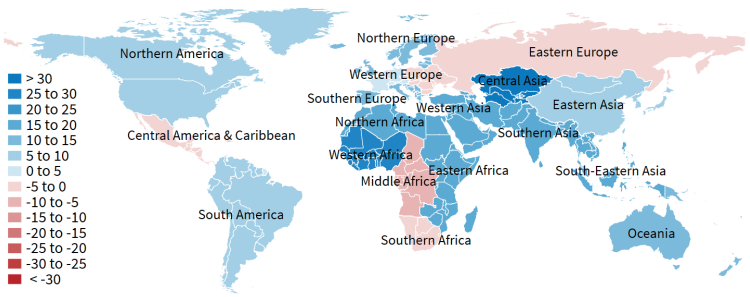
Figure 4
Political Assessment



Note: The figure shows the regional mean of the questions "How do you rate the performance of your country's current government?" (left panel) and "How do you rate the stability of your country's current political situation?" (right panel). The experts were asked for a comparison with the previous quarter, with response options ranging from −100 ("worse") to +100 ("better"). The data is first averaged at the country level and then within 18 world regions.
Source: Economic Experts Survey in Q1 2022. © ifo Institute

Figure 5

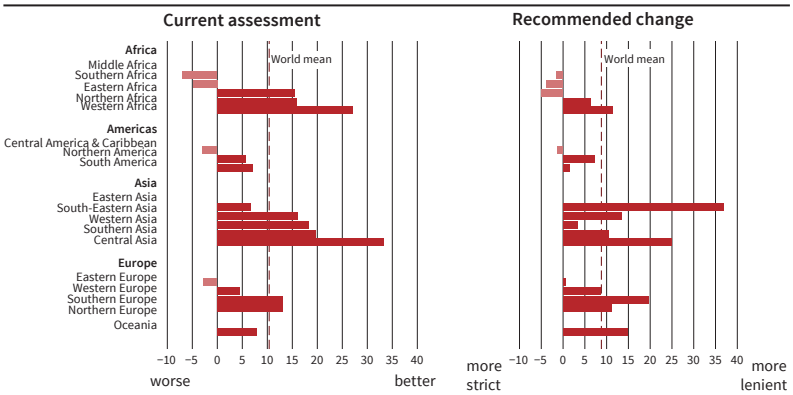
Current Assessment of Covid-19 Public Health Measures



Note: The map shows the regional mean response to the question, "How do you rate your country's current Covid-19 public health measures?" The experts were asked for a comparison to the previous quarter, with the possible answers ranging from −100 ("worse") to +100 ("better"). The data was averaged first at the country level and then within 18 world regions.
Source: Economic Experts Survey in Q1 2022. © ifo Institute

Figure 6

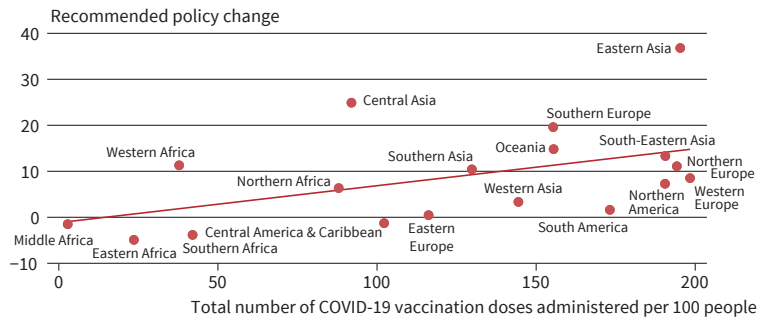
Covid-19 Public Health Measures



Note: The figure shows the regional mean of the questions "How do you rate your country's current Covid-19 public health measures?" (left panel) and "How would you change your country's current Covid-19 public health measures?" (right panel). Experts were asked for a comparison to the previous quarter, with the possible answers ranging from −100 ("worse") to +100 ("better") and from −100 ("stricter") to +100 ("looser"). The data is first averaged at the country level and then within 18 world regions.
Source: Economic Experts Survey in Q1 2022. © ifo Institute

Figure 7

Recommended Change of Covid-19 Health Policy and Vaccination Rates



Note: The figure shows the regional mean response to the question "How would you change your country's current Covid-19 public health measures?" Experts were asked for a comparison to the previous quarter, with the possible answers ranging from −100 ("stricter") to +100 ("looser"). The data is first averaged at the country level and then within 18 world regions. Data for vaccination doses was taken from Mathieu et al (2021). The data for the total number of Covid-19 vaccination doses administered per 100 people is the highest reported number reported during the survey period for each country, averaged within regions.
Source: Mathieu et al. (2021); Economic Experts Survey in Q1 2022. © ifo Institute

did at the end of 2021. While the current measures in North and South America are assessed more positively than in the last quarter of 2021, the experts in Central America notice a slight deterioration. Apart from Central and Southern Africa, the current Covid-19 public health measures throughout the African regions are assessed more positively than at the end of 2021.

Recommended Change of Covid-19 Public Health Measures

Figure 6 shows that, on a global average, experts are calling for relaxing the current Covid-19 public health measures. In only 4 out of 18 regions a slight tightening is recommended. In all regions where participants perceive a positive development of Covid-19 public health measures, they also prefer laxer measures (except for East Africa). The call for further relaxing measures is particularly strong in Asia and Oceania, as well as in Europe. In the Americas, preferences are not as clear: while experts in North and South America have a slight preference for relaxations, more restrictive public health measures are preferred in Central America. There is similar heterogeneity in Africa: North and West Africa want to relax restrictions, while Central and East Africa as well as Southern Africa are more cautious and prefer slightly more restrictive public health measures.

Figure 7 shows that the experts' preference for relaxing public health measures correlates strongly with the number of Covid-19 vaccination doses administered per 100 people (significant at the 5 percent confidence level). In contrast, the recommended policy change shows no statistically significant relationship with current or overall severity of the pandemic (as measured by cases and deaths relative to population). Considering the less severe health consequences of the Omicron variant, this suggests that experts favor looser measures when a larger share of the population is protected by vaccinations.

Covid-19 Fiscal Response

Figure 8 shows that the experts' assessment of fiscal policy in response to the Covid-19 pandemic varies considerably from region to region in a quarterly comparison. In North America, fiscal policy is rated slightly better; in Central and South America, fiscal policy is rated worse. In Northern, Western, and Southern Europe, experts observe improvements; in Eastern Europe, the situation has deteriorated. In Africa, Central Africa stands out with a clear deterioration; in North Africa and Southern Africa, the values are only slightly negative and in West and East Africa even positive. In Asia, fiscal policy in response to the Covid-19 pandemic is assessed more positively compared to the last quarter of 2021 (except for South Asia). In Oceania, participants assess fiscal policy slightly more negatively than at the end of 2021.

Recommended Change of Covid-19 Fiscal Policies

Figure 9 shows that the assessments of fiscal policy in response to the Covid-19 pandemic do not show a

clear global trend for the first quarter of 2022. This is different for the recommended change in fiscal policy: experts favor substantial expansions. In Asia, Africa (except for Central Africa), and Central and South America, they call for more expansionary fiscal policy. In Northern, Eastern, and Western Europe, and Oceania, there are only slight preferences for either a more expansionary or a more restrictive fiscal policy. In North America, participants are in favor of a reduction in government spending.

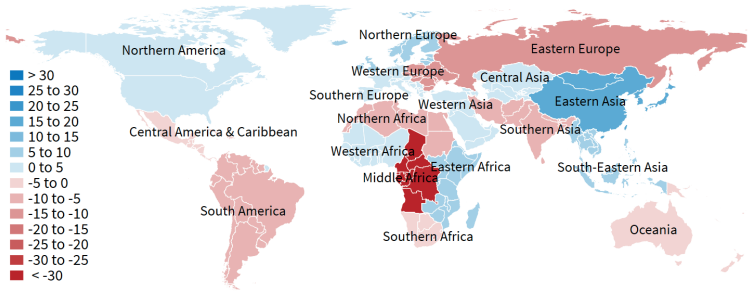
CONCLUSION

The EES uniquely adds to the universe of economic experts surveys and related academic publications. The EES captures experts' opinion on a global scale, both in terms of the number of experts and the covered regions. The quarterly posed questions on economic policy and the political situation allow for a comparison across time, while the survey also captures pressing global policy issues such as preferences for Covid-19 fiscal policy. Results for the first survey wave in the first quarter of 2022 with 1,603 economic experts showcase large regional differences in the assessment of economic policy and a deteriorating political situation in many regions. In addition, the economic experts notice improving public health measures at the beginning of this year and recommend relaxing measures further.

Results of future waves of the EES will be published on the project's website.[8]

Figure 8

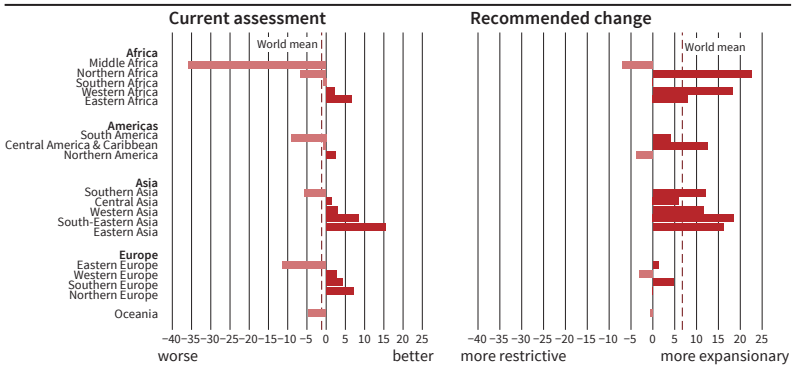
Current Assessment of the Covid-19 Fiscal Response



Note: The map shows the regional mean response to the question: "How do you rate your country's current fiscal policies to address the economic consequences of the Covid-19 pandemic?" Experts were asked to provide a comparison to the previous quarter, with the possible answers ranging from −100 ("worse") to +100 ("better"). The data is averaged first at the country level and then within 18 world regions.
Source: Economic Experts Survey in Q1 2022. © ifo Institute

Figure 9

Covid-19 Fiscal Response



Note: The figure shows the regional mean of the questions "How do you rate your country's current fiscal policies to address the economic consequences of the Covid-19 pandemic?" (left panel) and "How would you change your country's current fiscal policies to address the economic consequences of the Covid-19 pandemic?" (right panel). Experts were asked for a comparison with the previous quarter, with the possible answers ranging from −100 ("worse") to +100 ("better") or from −100 ("more restrictive") to +100 ("more expansionary"). The data is first averaged at the country level and then within 18 world regions.
Source: Economic Experts Survey in Q1 2022. © ifo Institute

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[8] https://www.ifo.de/en/survey/economic-experts-survey

*Chang Woon Nam**

World Economic Outlook for 2022 and 2023

ABSTRACT

The war in Ukraine slows the global recovery. This article briefly presents the IMF's growth forecasts for 2022 and 2023. In addition to addressing the immediate challenges of the war and the pandemic, it also highlights the need for continued, focused longer-term economic policies, particularly in the areas of structural, digital, and energy transformation.

The economic damage caused by the war in Ukraine will contribute to a significant slowdown in global growth in 2022 and further accelerate inflation. In addition to contributing to the economic stresses caused by the pandemic, the conflict has led to global economic fragmentation, as a large number of countries have severed their trade ties with Russia, which will again hinder the rapid post-pandemic recovery. Global growth is expected to slow from 6.1 percent in 2021 to 3.6 percent in 2022 and 2023 (Table1).[1] This forecast assumes that the conflict remains confined to Ukraine, further sanctions against Russia exempt the energy sector, and the health and economic effects of the pandemic subside in the course of 2022.

* ifo Institute

[1] IMF World Economic Outlook April 2022, https://www.imf.org/en/Publications/WEO/Issues/2022/04/19/world-economic-outlook-april-2022.

Table 1

Overview of World Economic Outlook Projections (%)

	2020	2021	2022[a]	2023[a]
World output	– 3.1	6.1	3.6	3.6
Advanced economies	– 4.5	5.2	3.3	2.4
US	– 3.4	5.7	3.7	2.3
Euro area	– 6.4	5.3	2.8	2.3
Germany	– 4.6	2.8	2.1	2.7
France	– 8.0	7.0	2.9	1.4
Italy	– 8.9	6.6	2.3	1.7
Spain	– 10.8	5.1	4.8	3.3
Japan	– 4.5	1.6	2.4	2.3
UK	– 9.4	7.4	3.7	1.2
Canada	– 5.2	4.6	3.9	2.8
Other advanced economies	– 1.9	5.0	3.1	3.0
Emerging market and developing economies	– 2.0	6.8	3.8	4.4
Emerging and developing Asia	– 0.9	7.3	5.4	5.6
China	2.3	8.1	4.4	5.1
India	– 7.3	8.9	8.2	6.9
ASEAN5[b]	– 3.4	3.4	5.3	5.9
Emerging and developing Europe	– 1.8	6.7	– 2.9	1.3
Russia	– 2.7	4.7	-8.5	– 2.3
Latin America and the Caribbean	– 6.9	6.8	2.5	2.5
Brazil	– 3.9	4.6	0.8	1.4
Mexico	– 8.2	4.8	2.0	2.5
Middle East and Central Asia	– 2.8	5.7	4.6	3.7
Saudi Arabia	– 4.1	3.2	7.6	3.6
Sub-Saharan Africa	– 1.7	4.5	3.8	4.0
Nigeria	– 1.8	3.6	3.4	3.1
South Africa	– 6.4	4.9	1.9	1.4

Note: [a] Projections. [b] Indonesia, Malaysia, Philippines, Thailand, and Vietnam.

Source: IMF.

In the advanced economies group, growth is expected to reach 3.3 percent in 2022. Most economies in this group will continue to recover this year, including the United States (3.7 percent), Japan (2.4 percent), the United Kingdom (3.7 percent), Germany (2.1 percent), France (2.9 percent), Italy (2.3 percent), and Spain (4.8 percent). The emerging and developing economies group will grow at a rate of 3.8 percent overall in 2022 (see in particular the growth forecast for India at 8.2 percent, and that for China at 4.4 percent in the same year). However, the pace and strength of the recovery will vary in other sub-regions of this group in 2022: Middle East and Central Asia (4.6 percent), Sub-Saharan Africa (3.8 percent), Latin America (2.5 percent), and emerging and developing Europe (– 2.9 percent).

For 2022 inflation is projected at 5.7 percent in advanced economies and 8.7 percent in emerging market and developing economies. Worsening supply-demand imbalances – including war-related imbalances – and a further increase in commodity prices could also lead to persistently high inflation, rising inflation expectations, and stronger wage growth. In particular, fuel and food prices have increased rapidly, hitting vulnerable populations in low-income countries. Increased inflation will force central banks to face the trade-offs between containing price pressures and safeguarding growth. Interest rates will rise as central banks tighten the monetary policy, exerting more pressure on emerging market and developing economies.

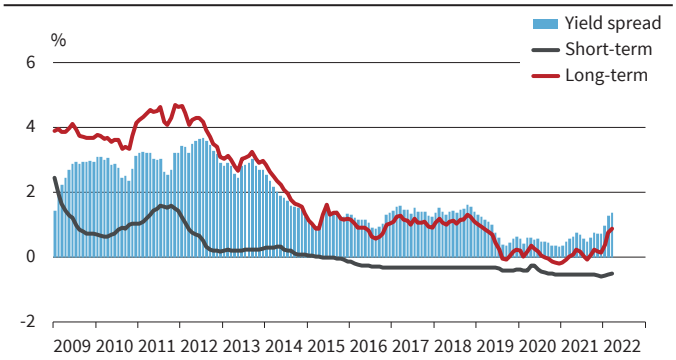
Fiscal policy should depend on the threat of war, the status of the pandemic, and the strength of the recovery. After a huge and necessary fiscal expansion in many countries during the pandemic, debt is higher than ever, and governments are more exposed than ever to higher interest rates. Yet, the need for consolidation should not prevent governments from prioritizing spending and targeting support to the vulnerable - including refugees, those struggling with high commodity prices, and those affected by the pandemic. When fiscal space permits and monetary policy is constrained at the national level – for example, by the effective lower bound or in a monetary union – more extensive fiscal support may be warranted, depending on the severity of the decline in aggregate demand. However, such support should be used in a way that does not exacerbate existing supply-demand imbalances and price pressures. Moreover, a large number of countries have limited fiscal policy scope to cushion the negative impact of the war on their economies.

In addition to the current challenges of war and pandemic, policymakers should also aim for longer-term goals. The disruption caused by the pandemic has revealed the productivity of new types of work. Governments should continually drive structural change and support digital transformation, as well as retooling and retraining of workers to meet the challenges it presents. Carbon pricing and fossil fuel subsidy reform seem necessary for the rapid transition to green energy and clean production that is less dependent on fossil fuel prices, which is more important than ever given the impact of war on the global energy market.

Statistics Update

Financial Conditions in the Euro Area

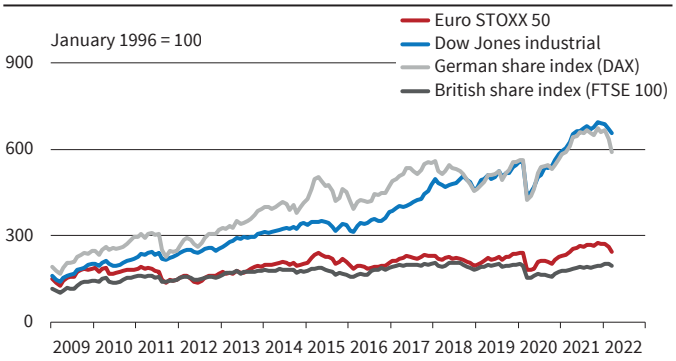
Nominal Interest Rates [a]



[a] Weighted average (GDP weights).
Source: European Central Bank; calculations by the ifo Institute. © ifo Institute

In the three-month period from January 2022 to March 2022 short-term interest rates increased: the three-month EURIBOR rate was – 0.56% in January 2022 and reached – 0.50% in March 2022. The ten-year bond yields increased from 0.40% in January 2022 to 0.88% in March 2022, while the yield spread also increased from 0.96% to 1.38% between January 2022 and March 2022.

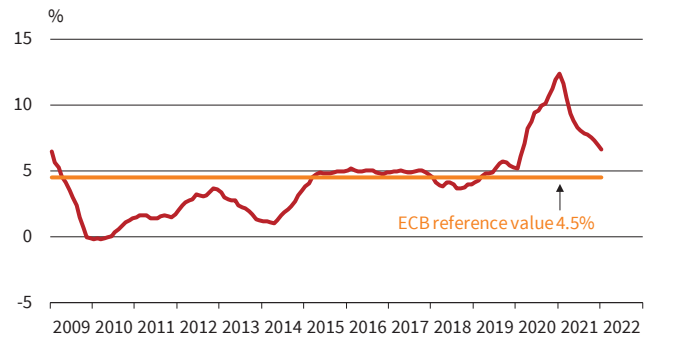
Stock Market Indices



Source: Deutsche Börse; Dow Jones; FTSE; STOXX. © ifo Institute

The global fears about the spread of the Coronavirus, oil price drops caused by an oil price war between Russia and the OPEC countries, and the possibility of a recession led to the stock market crash in March 2020, and global stocks saw a severe downturn in this month. The subsequent rise of the German stock index DAX was halted in February 2022, when the war in Ukraine began: the index continued to decrease in March 2022, averaging 14,013 points, down from 15,095 points in February 2022. The UK FTSE-100 also decreased from 7,535 to 7,314 points over the same period. The Euro STOXX amounted to 3,797 in March 2022, down from 4,084 in February 2022. Furthermore, the Dow Jones Industrial decreased, averaging 34,030 points in March 2022, compared to 34,620 points in February 2022.

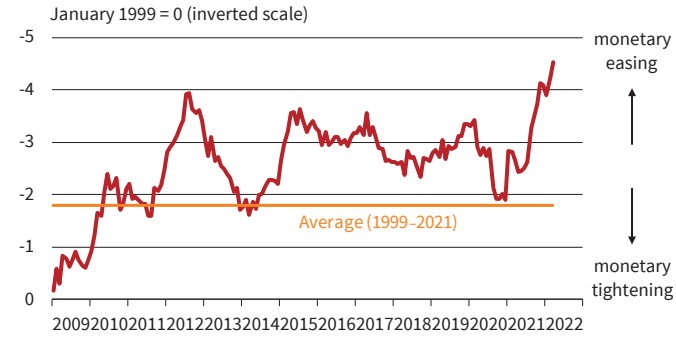
Change in M3 [a]



[a] Annual percentage change (3-month moving average).
Source: European Central Bank. © ifo Institute

The annual growth rate of M3 slightly decreased to 6.3% in February 2022, from 6.4% in January 2022. The three-month average of the annual growth rate of M3 over the period from December 2021 to February 2022 reached 6.5%.

Monetary Conditions Index

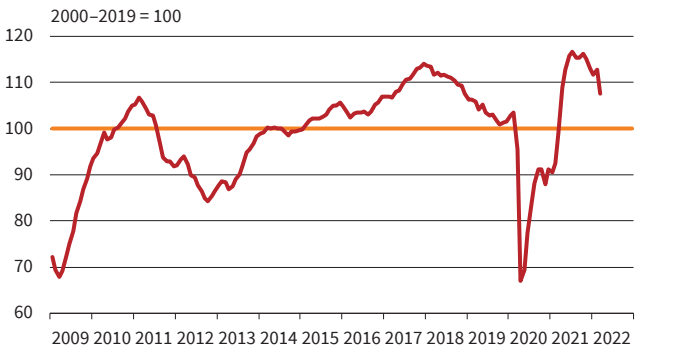


Source: European Commission. © ifo Institute

Between April 2010 and July 2011, the monetary conditions index had remained stable. Its rapid upward trend since August 2011 had led to the first peak in July 2012, signaling greater monetary easing. In particular, this was the result of decreasing real short-term interest rates. In May 2017 the index had reached one of the highest levels in the investigated period since 2007 and its slow downward trend was observed thereafter. A steady upward trend that had prevailed since October 2018 was abruptly halted in March 2020 with the onset of the Covid-19 crisis, and the index continued to decline in 2020. The rapid increase of the index in January 2021 was followed by a decline in the period February to April 2021, while a continuous increase was again recorded since May 2021.

EU Survey Results

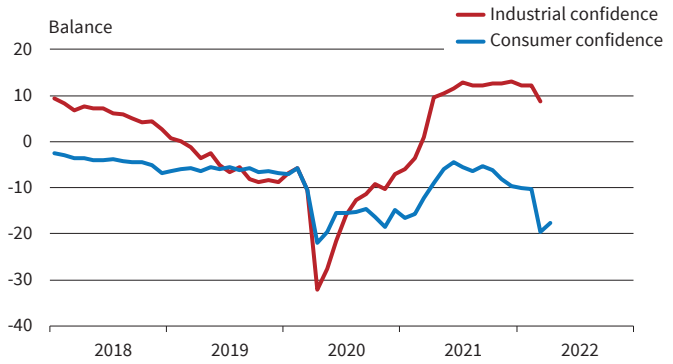
EU27 Economic Sentiment Indicator
Seasonally adjusted



Source: European Commission. © ifo Institute

In March 2022, the *Economic Sentiment Indicator* (ESI) dropped substantially in both the EU (– 5.3 points to 107.5) and the euro area (– 5.4 points to 108.5). In the EU, the decline in the ESI in March was mostly due to plummeting consumer confidence, accompanied by marked losses also in retail trade and industry confidence; by contrast, confidence improved slightly in services and remained broadly unchanged in construction.

EU27 Industrial and Consumer Confidence Indicators
Percentage balance, seasonally adjusted

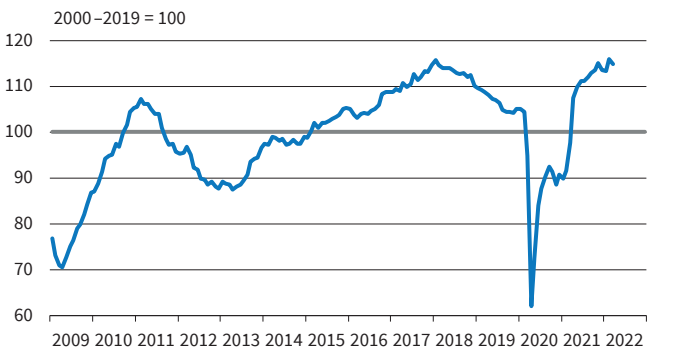


Source: European Commision. © ifo Institute

* The industrial confidence indicator is an average of responses (balances) to the questions on production expectations, order-books and stocks (the latter with inverted sign).
** New consumer confidence indicators, calculated as an arithmetic average of the following questions: financial and general economic situation (over the next 12 months), unemployment expectations (over the next 12 months) and savings (over the next 12 months). Seasonally adjusted data.

In March 2022, the *industrial confidence indicator* decreased by 3.4 points in the EU and by 3.7 points in the euro area, compared to February 2022. The *consumer confidence indicator* edged up in April 2022 in both the EU (2.0 points up from March 2022) and the euro area (1.8 points up).

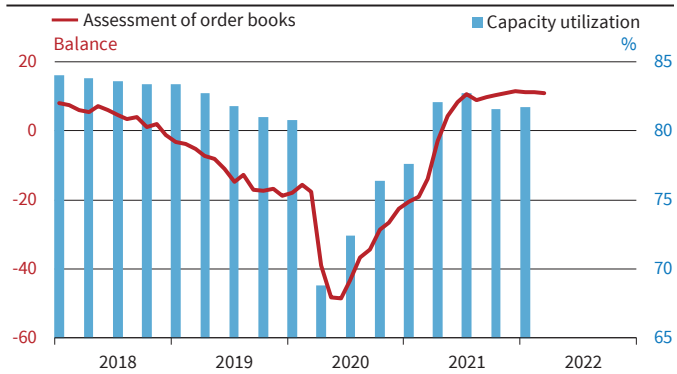
EU27 Employment Expectations Indicator
Seasonally adjusted



Source: European Commission. © ifo Institute

In February 2022, *Employment Expectations Indicator* (EEI) decreased by 1.1 points to 114.9 in the EU and by 0.9 points to 115.5 in the euro area.

EU27 Capacity Utilisation and Order Books in the Manufacturing Industry
Seasonally adjusted

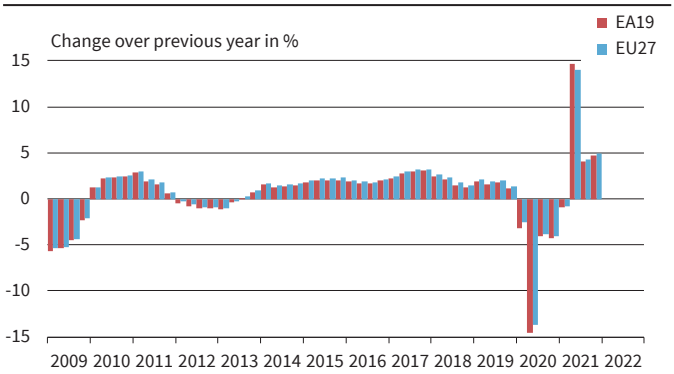


Source: European Commission. © ifo Institute

Managers' assessment of *order books* reached 10.8 in March 2022, compared to 11.2 in February 2022. In January 2022 the indicator had amounted to 11.1. *Capacity utilization* stood at 81.7 in the first quarter of 2022, slightly up from 81.6 in the fourth quarter of 2021.

Euro Area Indicators

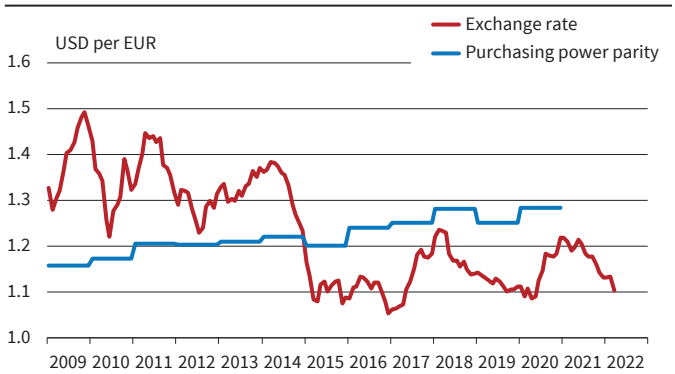
Gross Domestic Product in Constant 2015 Prices



Source: Eurostat. © ifo Institute

According to the Eurostat estimates, seasonally adjusted GDP increased by 0.3% in the euro area and by 0.4% in the EU during the fourth quarter of 2021, compared to the previous quarter. Compared to the fourth quarter of 2020, i.e., year over year, (seasonally adjusted) GDP increased by 4.6% in the EA19 and by 4.8% in the EU27 in the fourth quarter of 2021.

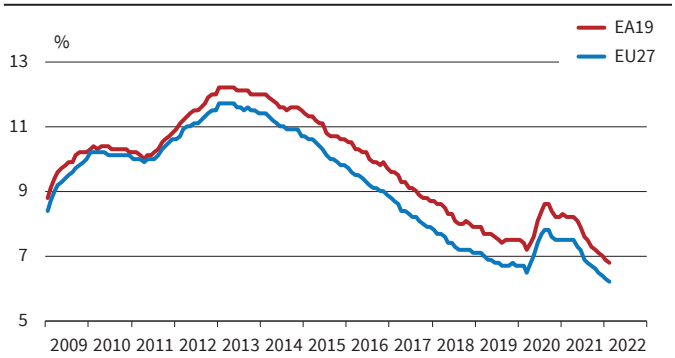
Exchange Rate of the Euro and Purchasing Power Parity



Source: European Central Bank; OECD. © ifo Institute

The exchange rate of the euro against the US dollar averaged approximately 1.12 $/€ between January 2022 and March 2022. (In December 2021 the rate had also amounted to around 1.13 $/€.)

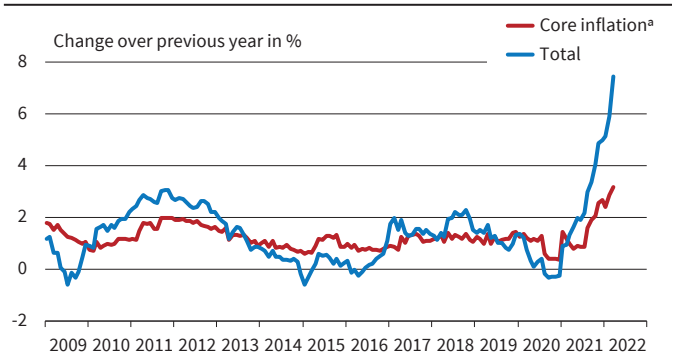
Unemployment Rate



Source: Eurostat. © ifo Institute

Euro area unemployment (seasonally adjusted) amounted to 6.8% in February 2022, down from 6.9% in January 2022. The EU27 unemployment rate was 6.2% in February 2022, down from 6.3% in January 2022. In February 2022 the lowest unemployment rate was recorded in Czechia (2.4%), Poland (3.0%), as well as Germany and Malta (both 3.1%), while the rate was highest in Spain (12.6%), Greece (11.9%), and Italy (8.5%).

Euro Area Inflation Rate (HICP)



[a] Total excl. energy and unprocessed food.
Source: Eurostat. © ifo Institute

Euro area annual inflation (HICP) amounted to 7.4% in March 2022, up from 5.9% in February 2021. Year-on-year EA19 core inflation (excluding energy and unprocessed foods) was 3.2% in March 2022, up from 2.9% in February 2022.

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