STUDY

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Tax Barriers and Cross-Border Workers: Tackling the Fragmentation of the EU Tax Framework

Policy Department for Economy and Growth
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Abstract

This interdisciplinary report focuses on tax barriers to cross-border mobility of workers in the EU. Tax fragmentation creates multiple negative impacts on the EU Internal Market, and compliance costs vary considerably across size, industries and countries. Further, employees' choice of host country may be distorted by the tax differential. The report concludes with specific policy recommendations for more tax harmonisation and coordination, and for simplified compliance requirements.

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CONTENTS

LIST OF ABBREVIATIONS

ACC	Additional compliance costs
ATAD	Anti-Tax Avoidance Directive
BEPS	Base erosion and profit shifting
CJEU	Court of Justice of the European Union
DAC	Directive on Administrative Cooperation
DTT	Double Tax Treaty
EC	European Commission
EFTA	European Free Trade Association
EU	European Union
OECD	Organisation for Economic Co-operation and Development
PIT	Personal Income Taxation
PE	Permanent establishment
SSC	Social Security Contribution
WHT	Withholding Taxes

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EXECUTIVE SUMMARY

Background

Since the COVID-19 pandemic, the number of cross-border workers, including frontier workers, posted workers, self-employed and remote working individuals, and digital nomads has increased significantly. Frontier workers, remote and posted workers abroad, and self-employed persons are individuals who live in one country but work or operate a business in another. Their situation is often similar to that of highly mobile workers, who face tax obstacles when acting across borders. Such obstacles had been identified ten years ago by a group of experts appointed by the EU Commission (hereinafter: the 2015 EU Commission Expert Report)[1] and have not been solved until now. Digital nomads, by contrast, regularly telework from a location or country different from where their income originates, often from multiple or constantly changing locations around the world. In 2022, approximately 1.8 million workers in the EU and EFTA countries were reported as living in one Member State while working in another, and the figure is likely higher after COVID-19. Cross-border commuters exercise their right to move freely for work within the EU, benefiting from diverse professional opportunities. Cross-border work can also stimulate economic growth and strengthen cohesion in EU border regions, covering around 40% of the EU's territory.

All groups of mobile workers are confronted with diverse and sometimes conflicting tax regulations across European Union (EU) Member States. This creates cross-border tax barriers and contributes to the fragmentation of the EU's tax framework. This fragmentation stems from the lack of a unified EU tax policy and exposes the Internal Market to persistent structural tax disparities. It may result in multiple negative consequences, particularly regarding tax compliance. These challenges can discourage employers from hiring foreign-based workers and prevent employees from accepting jobs in other EU countries—even when remote working would make such arrangements feasible.

The EU Parliament's awareness of the tax barriers is reflected in the resolution of 10 March 2022[2] and the hearing of the EP Subcommittee on Tax Matters (FISC) on 9 January 2023[3], which follow prior legal and policy studies of the Reports presented by the EU Commission Expert Group, presented in 2015.

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1 Pistone, P. et al., 2015, *Ways to tackle cross-border tax obstacles facing individuals within the EU*, EU Commission Expert Report, EU Commission – Directorate General for Taxation and Customs Union, Luxembourg and Pistone, P. et al., 2015, *Ways to tackle inheritance cross-border tax obstacles facing individuals within the EU*, EU Commission Expert Report, EU Commission – Directorate General for Taxation and Customs Union, Luxembourg.

2 European Parliament resolution of 10 March 2022 with recommendations to the Commission on fair and simple taxation supporting the recovery strategy (EP follow-up to the July Commission's Action Plan and its 25 initiatives in the area of VAT, business and individual taxation) (2020/2254(INL)).

3 Public hearing on "*Potential Distortions of the Single Market due to Personal Income Tax*".

Aim

This interdisciplinary study examines tax-related barriers to the cross-border mobility of workers within the EU. It approaches these challenges from legal, economic, and business perspectives, identifying key problem areas and exploring potential solutions to ensure fair taxation of workers both at the national and EU levels. The study provides a structured overview of the legal tax fragmentation affecting various categories of mobile workers operating across national borders within the EU Internal Market. It also assesses the compliance burden for employers and employees, including employees' implicit costs.

The scope of the study is strictly limited to tax barriers faced by workers in cross-border contexts. It explicitly excludes other areas such as inheritance taxation, income taxation of non-worker individuals (e.g., artists, sportspersons, freelancers and directors), social security, labour law, unemployment and pension issues, capital income, and other contributing factors that may also play a role in the broader landscape.

Key Findings

The legal, business, and economic analysis come to the same conclusion: existing cross-border tax disparities in the EU make it more difficult for individuals to exercise the right of free movement.

From a legal perspective, as there is evidence of an impact on the Internal Market, positive tax integration should be considered in the form of coordination or harmonisation. Positive integration is needed in all areas where critical issues in cross-border income taxation arise and generate tax disparities. This includes workers who relocate, even on a short-term basis, to another EU Member State, and those who are not obliged to, but are nevertheless suffering a less favourable treatment than other workers operating in a purely domestic scenario. Frontier workers might require dedicated solutions, which can be addressed by allocating exclusive taxing rights to the State of residence or through other bilateral agreements that better reflect the specific context. The latter is the case of the Öresund region, which may serve as an example of good tax policy. In that region, a bilateral agreement has removed tax barriers between Sweden and Denmark, securing specific answers to a specific problem.

The impact of additional compliance costs on businesses varies considerably across size, country, and industry. Small firms are particularly vulnerable. Firms in Luxembourg and Slovenia, and companies operating in the construction industry, are disproportionately affected, with profitability suffering more than in other countries or industries. From the employees' perspective, both explicit and implicit costs of cross-border mobility also differ by country. For example, Belgium tends to be attractive for low-income earners. In contrast, Bulgaria presents the opposite pattern: it is more favourable for high-income individuals than for those earning less. Moreover, relevant tax disparities concerning compliance dissuade workers from exercising their right to free movement and employers from recruiting individuals in a cross-border context.

The study makes several explicit policy recommendations, including "split-year rules" regarding the timing of relocation; coordination of the definition of tax residence among Member States; harmonization of exit tax; a switch to exclusive allocation of taxing rights with the state of residence for frontier workers and highly mobile workers, except in the presence of specific reasons that make other options preferable; differentiated approach to remote workers and digital nomads; and strict simplification of tax compliance requirements.

1. INTRODUCTION

The EU Parliament addressed tax barriers in the resolution of 10 March 2022[4] and in several recent Public Hearings of the EP Subcommittee on Tax Matters (FISC).[5] They follow prior legal and policy studies of the Reports presented by the EU Commission Expert Group in 2015 (hereinafter: the 2015 EU Commission Expert Report).[6]

Building on prior work, this interdisciplinary study focuses on the tax barriers for cross-border mobility of workers within the EU, from a legal, business, and economic perspective, showcasing critical issues and outlining possible solutions to promote fair taxation of workers at the national and EU level. Cross-border mobility of workers includes a variety of working arrangements. Highly mobile individuals working across borders face relevant tax obstacles in terms of tax and compliance burden. Frontier workers live in one country and commute to another country to work on a daily or weekly basis. Workers posted abroad are sent to another country by their employer to work. When relocating to another country, also on a short-term basis, their tax issues do not differ from those of all other workers in similar circumstances. However, different tax obstacles arise for posted workers when working remotely. Remote workers exercise their activity at a different place from that of the main premises of the employer, which might also be in a different country of the European Union. Self-employed individuals live in one country but operate a business in another. Digital nomads regularly telework from a location or country different from where their income originates, often from multiple or constantly changing locations around the world. Finally, long-term relocation may also face considerable tax barriers, which also affect all other workers in the year in which they relocate to another EU Member State for exercising their employment.

The number of mobile workers is increasing. In 2022, approximately 1.8 million workers in the EU and EFTA countries were reported as living in one Member State while working in another, and the figure is likely higher after COVID-19. Cross-border work can also stimulate economic growth and strengthen cohesion in EU border regions, covering around 40% of the EU's territory.

Due to the absence of a common tax policy at the EU level, taxation of individuals, including cross-border workers, is fragmented and creates a structural exposure to cross-border tax disparities, which may result in multiple negative impacts on the EU Internal Market. Such tax disparities are reflected in divergent domestic tax laws and double tax treaties, tax rate differentials, and additional compliance costs for firms and individuals from cross-border engagement. These factors might dissuade employers from recruiting foreign-based staff and workers from taking up positions in other EU Member States, even when remote working would otherwise make it possible.

The study focuses exclusively on tax barriers for workers, which implies that non-tax barriers and non-workers are omitted. Specifically, the study carves out inheritance taxes, income taxes derived by individuals other than workers (such as artists, sportspersons, freelance & self-employed persons, directors, etc.), social security, questions of labour, unemployment, and pensions, and capital income.

[4] European Parliament resolution of 10 March 2022 with recommendations to the Commission on fair and simple taxation supporting the recovery strategy (EP follow-up to the July Commission's Action Plan and its 25 initiatives in the area of VAT, business and individual taxation (2020/2254(INL)).

[5] In particular Public hearing on "*Potential Distortions of the Single Market due to Personal Income Tax*"; Public Hearing on "*Tackling tax obstacles in the internal market and the role of tax policies in promoting economic growth*"; Public Hearing on "*Simplification and Transparency*".

[6] Pistone, P. et al., 2015, *Ways to tackle cross-border tax obstacles facing individuals within the EU*, EU Commission Expert Report, EU Commission – Directorate General for Taxation and Customs Union, Luxembourg and Pistone, P. et al, 2015, *Ways to tackle inheritance cross-border tax obstacles facing individuals within the EU*, EU Commission Expert Report, EU Commission – Directorate General for Taxation and Customs Union, Luxembourg.

These and other considerations may also establish barriers for working abroad, but must be excluded from scope.

The study first discusses legal aspects of tax fragmentation relevant to the different types of cross-border workers in the EU (Section 2). The study continues with a focus on employers' additional compliance costs which arise specifically in a cross-border setting, and with employees' explicit and implicit costs of working abroad (Section 3). Section 4 discusses case studies. Section 5 concludes and offers policy recommendations.

2. TAX AND WORKER MOBILITY IN THE EU

KEY FINDINGS

The taxation of cross border workers in the EU raises complex legal issues. Existing cross-border tax disparities make it more difficult for individuals to exercise the right of free movement. Negative integration can remain where it has successfully operated until now, for example in cases of income tax discrimination. However, if there is evidence of a direct or indirect impact on the Internal Market, tax harmonisation should be considered. Positive integration is needed in all areas where critical issues in cross-border income taxation arise and generate tax disparities.

2.1. The Legal Causes of Tax Fragmentation

There might be various causes for the fragmentation of cross-border workers' income taxation within the EU. However, one is undoubtedly intrinsic to the foundational rules of European integration. When establishing the European Economic Community, its founding members decided to keep taxing powers as a national prerogative, thus excluding any common tax policy at the supranational level.

This decision was never reconsidered on a structural basis. Still, exceptions were made in those areas where the absence of a consistent approach to cross-border issues clearly negatively impacts the EU Internal Market. Even in such cases, primary EU law only allows for the introduction of secondary law of the EU in tax matters ("tax harmonisation") on a subsidiary basis, i.e. when a qualitatively equivalent result cannot be achieved by coordinating national tax rules ("tax coordination"), and with the unanimous agreement of all Member States.

The combination of tax harmonisation and coordination (generally known as positive tax integration) could remove several income tax barriers, most of which relate to cross-border business. The need to secure a harmonised treatment of multi-national enterprises recently prompted a new impetus for tax harmonisation, which pursues fair and effective taxation in the EU by introducing some measures that tightened up tax coordination of corporate entities and have sketched some form of supranational policy for taxing large multinational enterprises.

By contrast, hardly any measures have ever been adopted at the EU level for workers, except for remote marginal interventions involving non-binding measures.[7] The main reason for this structural *impasse* is that EU institutions find it extremely hard on a legal basis to justify the power to introduce secondary law on these matters, given the non-immediate impact of these tax obstacles on the functioning of the EU Internal Market. This hardship comes on top of the political difficulties to obtain the unanimous approval of Member States required for adopting a tax directive under Article 115 TFEU, Member States are usually reluctant to surrender their national prerogatives to the Union institutions.

In essence, during the past (almost) forty years, cross-border tax obstacles to the free movement of workers were only removed by the Court of Justice of the European Union (CJEU) in those areas where national Courts or the EU Commission asked to secure the effectiveness of EU law. In its over four hundred judgments on direct taxation, the CJEU acknowledged national tax prerogatives but required their exercise to conform to the primacy of EU law, excluding that this area could constitute a reserved domain for EU Member States.

[7] This is, for instance, the case of the EU recommendation adopted in 1993 on frontier workers. See C(1993)3702 – 94/79/EC: Commission Recommendation of 21.12.1993 on the taxation of certain items of income received by non-residents in a member State other than that in which they are resident.

This approach to the obstacles (also known as negative integration) allowed the Court to strike down a relevant number of procedural and substantive tax discriminations to free movement of workers, including some of those regarded as particularly problematic by the 2015 EU Commission Expert Report. This is, for instance, the case of the entitlement to personal deductions in some specific cross-border situations, and the obligation to indicate bank accounts held in other EU Member States.[8]

However, negative integration also showed its structural deficiencies. First, it creates a patchwork effect, intervening only in those areas where the jurisdiction of the Court is activated. The lack of a systematic approach to the critical issues might increase tax fragmentation, thus showing its shortcomings and underlining the absence of an EU-consistent tax policy framework. Second, it might require further intervention by the EU Commission at the level of enforcement when EU Member States that are not directly involved in a procedure before the Court fail to (timely) adjust their national legislation. Third, at least insofar as EU fundamental freedoms are concerned, negative integration fails to address cross-border tax disparities and only occasionally manages to solve cases of non-discriminatory tax restrictions.[9]

In short, the Court of Justice's almost exclusive reliance on negative integration has generated a patchwork approach to removing such obstacles without the possibility of introducing some systematic approach to the cross-border tax issues of worker mobility, for which positive integration is instead required.

Moreover, settled CJEU case law excludes any action on cross-border tax disparities, which it considers as an unavoidable consequence of the exercise in parallel of taxing jurisdiction by two or more States, none of which might have a clear priority. When recording a disparity as the cause of a cross-border tax obstacle, the CJEU ignores the pejorative effects resulting from the combined tax burden between the two States involved,[10] so far even in cases where such treatment might be close to confiscatory effects.[11] In such cases, the CJEU essentially pleads for positive integration by the Member States, which, until the present, has never occurred to remove disparities affecting the cross-border taxation of workers.

This study submits that, regarding fair tax treatment, cross-border workers may not be neglected in effectively protecting their right of movement when the tax obstacle arises from a disparity between the measures applicable in two or more Member States. In such circumstances, this study considers that, at the current stage of tax integration within the EU, the absence of a common supranational tax policy is no valid reason for inaction by the EU institutions.

From a legal perspective, the income tax obstacles to the free movement of workers, arising from differences in the national legislation of EU Member States, negatively impact the Internal Market. They undermine the right of workers to accept a job in a different country from the one of their origin or residence and the interest of employers to offer a job to workers established in another country, including in cases when the activity does not require workers' relocation. Income tax obstacles further affect the right of an employer to send their employees to a different EU country to carry out work on a contract, often at a construction site. Firms and posted workers may face unintended tax and compliance consequences.

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8 CJEU, Judgment 27.1.2022, case C-788/19, *Commission vs Spain*, in ECLI:EU:C:2022:55.

9 CJEU case law seems to strike them down only in clear cut cases of tax measures that were really targeting some specific cross-border situations, thus setting some very high thresholds of intervention. See for instance CJEU, 24.2.2015, case C-512/13, *Sopora*, ECLI:EU:C:2015:108.

10 See CJEU, 14.11.2006, case C-513/04, *Kerckhaert-Morres*, ECLI:EU:C:2006:713; CJEU, 16.7.2009, case C-128/08, *Damseaux*, ECLI:EU:C:2009:471.

11 See CJEU, 12.2.2009, case C-67/08, *Block*, ECLI:EU:C:2009:92.

Before analysing the concrete scenarios in which such issues arise, the authors of this study stress three relevant legal points to frame the type of action envisaged for a possible solution.

First, the comprehensive network of bilateral income tax treaties available throughout the EU always includes measures on income from employment and sometimes additional clauses that address special cases, such as frontier workers. However, it would be a mistake to assume that the existence of such measures eliminates, per se, all cross-border tax obstacles. As explained more specifically below, problems arise from the effective and consistent enforcement of those clauses in the States involved, as well as from the possible different characterisation of income, the mismatching application of measures that pursue anti-abuse goals, and the failure to apply them. The adoption of the EU cross-border tax dispute settlement Directive proves that EU Member States perceive such issues as problematic and, therefore, have consented to adopting secondary EU legislation that also applies to the tax treatment of income derived by workers.

Second, a solution to the tax problems of cross-border tax workers does not necessarily require exclusive taxation in one EU Member State. Even though an exclusive allocation of taxing powers to one EU Member State would improve the overall picture, what truly matters is that the exercise of powers by the States functions properly in procedural and substantial terms, i.e. that workers are not burdened by overwhelming compliance requirements or by uncoordinated taxation in either State with taxing jurisdiction.

Third, from a legal perspective, a solution to tax barriers created by tax fragmentation does not necessarily require the introduction of secondary law of the EU. What matters for tax fairness in the treatment of income derived by workers in the EU is a coordinated intervention to remove the existing disparities. This study submits that such coordination can be introduced through measures that do not necessarily require the issuing of secondary EU law. Instead, binding and/or non-binding coordination can be introduced. Binding coordination already operates for the EU Tax Arbitration Convention.[12] Non-binding cooperation includes issuing soft law by EU institutions, which EU Member States would then implement voluntarily in their own national law.

2.2. The Right of Workers to Relocate: Migration of Workers

2.2.1. Tax Disparities Connected with Relocation of Workers

The right of workers to take up a job in another EU Member State may, in some cases, imply relocation to such a country. From a tax law perspective, as long as the worker relocates to a different EU Member State to exercise the activity, similar issues arise in other cases, including workers posted abroad by their employers.

For this reason, the legal analysis of those issues does not include a separate section of posted workers. It rather addresses their tax law issues according to whether posted workers relocate to a different EU Member State for reasons that are connected to their employment. When this is the case, posted workers will likely find the same tax law obstacles as all other persons who relocate to another EU Member State for reasons connected to their work. When their relocation is not required, posted workers will find the same tax law obstacles that are addressed later in this study.[13]

Migration and long-term mobility, as such, do not fall within the specific focus of this study. However, from a legal perspective, what might at some moment become a long-term mobility often starts along

[12] See Convention on the elimination of double taxation in connection with the adjustment of profits between associated enterprises 90/436/EEC of 23.7,1990, in OJ 20.8.1990 L 225.

[13] See section 2.3.

similar lines to the ones that characterise short-time mobility of workers that require physical relocation, thus raising issues that are partly similar. These issues will therefore be addressed in this section and apply to all situations where the right to take up a job in a different EU Member State requires relocation, be it on a long-, short- or temporary basis.

In line with the overall methodology followed in this study, the issues addressed in this section will focus only on those that cannot be addressed at the level of interpretation and therefore be limited to cross-border tax disparities affecting the mobility of workers.

Tax disparities can arise in connection with the time of relocation, the liability of income and gains to taxing jurisdiction in the countries of emigration and immigration, but also when a given taxpayer changes the nature of their nexus with the taxing jurisdiction of the State of emigration.

2.2.2. Tax Disparities Connected with the Taxable Year

All EU Member States determine the tax year by referencing the calendar year.[14] Therefore, tax disparities do not usually arise in this context. However, when relocation to another EU Member State occurs at a moment other than the end of the year, tax disparities might arise between countries whose tax system applies the "split-year rules"[15] and those that determine the liability to tax based on the majority of days in the tax year,[16] generating forms of double taxation and double non-taxation, which impact the mobility of the worker. This type of issue is more frequently affecting posted workers who relocate on a short-term basis to another EU Member State.

2.2.3. Tax Disparities Connected with the Personal Tax Nexus

Rules determining the unlimited liability to a tax jurisdiction (personal tax nexus) are another major source of tax disparity. Even though, in principle, all EU Member States apply personal tax nexus based on the residence concept, which relies on various proxies that might detect the personal link of the individual with the country (and its infrastructures) from various perspectives. Accordingly, even though they directly or indirectly refer to the physical presence of the individual, sometimes they are also influenced by the physical presence of the family or other personal elements, which influence the social relations of the taxpayer.

In some countries, the economic dimension of the taxpayer is relevant to determining the tax residence. Moreover, the personal and economic dimensions often influence the concept of a centre of vital interests, which also operates as a key criterion for establishing the tax residence. Further criteria, such as the availability of a personal dwelling or homes in more than one country, also contribute to workers' exposure to having multiple personal tax nexus for the same year. These issues might be particularly problematic in connection with the time of emigration, especially when the workers do not cut their personal links at a very precise moment of the year or in a single year.

This study acknowledges the importance of the so-called tie-breaker rules, which are commonly available in bilateral tax treaties on income and capital of EU Member States. Such rules almost always reflect those in Art. 4 (2) of the OECD Model Double Taxation Convention. They establish a set of proxies that apply in a precise order of priority and provide agreed-upon criteria that determine a

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14 Issues might arise in relations with third countries, such for instance the United Kingdom, whose tax year for individuals starts each year on 6 April. More tax systems in the world apply a tax year not aligned with the calendar year.

15 Split-year rules determine the liability to tax by reference to the actual days of the year in which tax nexus exists.

16 This type of rule determines the annual liability to tax based on whether the taxpayer has a personal nexus with the country for most days of the year. For this study, the relevant corollary of this rule is that, when emigration occurs after the 183rd day of the year/immigration occurs before the 183rd day of the year, the personal liability to tax applies to income derived in the entire year. Obviously, the opposite corollary is that, when emigration occurs before the 183rd day of the year/immigration occurs after the 183rd day of the year, no personal liability to tax arises for the entire year.

second-level concept of treaty residence that makes the personal tax nexus in a Contracting EU Member State prevail over that of another. In particular, such criteria are the permanent home, the centre of vital interest, the habitual abode, and nationality. Even though a more precise analysis of the actual type of tax disparities in respect of the actual boundaries of each of these criteria exceeds the scope of this study, the likelihood of factual and conceptual discrepancies that can create tax disparities is a source of concern from the perspective of free movement of workers, especially in the context of a long-term or permanent relocation and in the year(s) when this mobility concretely occur(s). The exposure to this type of issues might be particular problematic for short-term relocation and for posted workers, who might have several types of nexus in different countries. Even though the mechanism of tie-breaker rules includes the determination by mutual agreement of the competent tax authorities of the Contracting States, this solution is not immune to problems when addressed from the perspective of securing an effective exercise of fundamental freedoms. The potential application of the EU Tax Dispute Settlement Directive should reduce possible problems of taxpayers' rights, especially in respect of a non-duly motivated or non-transparent exercise of powers by the tax authorities, which would address the tax disparity in a discretionary way that might otherwise be questioned from the perspective of primary EU law. However, such problems remain hard to address without a coordinated set of rules determining when personal tax nexus commences or ends.

It is hard to conceive that positive tax integration within the EU achieves the goal of coordinating rules that determine the tax nexus. The second-best option might be either to strengthen the functioning of mutual agreement procedures in the EU or leave the matter to the interpretation of the European Court of Justice. The solution based on mutual agreement procedures would require the involvement of an independent authority at an earlier stage than the one at which the EU Dispute Tax Settlement Directive currently allows engaging independent persons of standing. The solution based on the interpretation by CJEU might find the same limits of negative integration, i.e. that the Court of Justice, even in the presence of secondary law with rules on cross-border tax dispute settlement, might not have jurisdiction to address all relevant types of tax disparities arising in connection with the emigration of workers.

Some additional considerations might be required for tax disparities concerning the personal tax nexus and specifically involving the relevance of physical presence as a connecting factor. In a growing number of countries, physical presence plays a direct function in such a context, usually for reasons connected with the higher likelihood that the individual uses the public infrastructures of the country. For such reasons, nudging - for instance, through non-binding measures (such as a recommendation or other form of soft law with technical persuasive content) – a stronger relevance of physical presence as a criterion for establishing the tax nexus, even up to a point of giving it a stronger weight over the other applicable ones, might help to reduce the existing tax disparities. This might work even better if combined with a shift to split-year rules envisaged above.[17]

2.2.4. Other Tax Disparities in Connection with Relocation

Three more sets of tax measures require attention in connection with long-term mobility as sources of potential disparities, namely exit taxes, trailing taxes and the tax rules that apply in connection with the

[17] For the sake of completeness, this section should also mention the case of multiple transfers in a year, which is less likely to arise in connection with emigration than in the scenario of short-term mobility, but that can still arise when workers accept jobs requiring their relocation and then, still in the same year, decide to relocate to yet another country for taking up yet another job. The case of multiple transfers in a year shows once more the qualitative superior nature of split-year rules to address the potential tax disparities arising in connection with individuals' relocation to different EU countries.

change from unlimited to limited tax obligation, i.e. when a worker emigrates but keeps some connection with the State of emigration.

Exit taxes are levied at the last moment before emigration. Exit taxes look backwards at all income and gains accrued during prior years to ensure the taxpayer settles all tax dues before terminating the personal tax nexus upon emigration. Moreover, they also apply to previously granted income-related deductions, such as, in the case of workers, the ones connected with the payment of social security and other similar measures. In such a context, critical issues may not only arise for taxing accrued gains but also in cases of deferred remunerations, severance pay, covenant-not-to-compete, and other similar forms of income that present an exposure to different characterisation or time recording.

The negative impact of such tax obstacles is proven by CJEU case law, which has removed restrictions on the outgoing movements in various cases,[18] and by the introduction of secondary law applicable to corporate entities through Art. 5 of the EU Anti-Tax Avoidance Directive (ATAD). Since negative integration cannot address tax disparities and ATAD only applies to corporate taxpayers, this study invites the EU Parliament to step into the no man's land where Member States have remained inactive.

Whether through common rules of tax harmonisation or coordination, positive integration in this context is necessary to achieve consistent tax treatment between the countries of emigration and immigration so that the right of a worker to relocate to a jurisdiction might not be impaired by considerations related to the exposure of cases of double taxation that are difficult to address. The possible content of such rules might, for instance, crystallise the liability to tax in the country of emigration, subjecting the payment to a non-discriminatory condition that allows such country to collect its tax at a later moment, but only in the presence of an actual realised gain. Moreover, they can introduce the right of the immigration state to exercise its taxing jurisdiction only on the post-immigration gains and the obligation for this country to give relief for losses accrued post-immigration, except when the existence of a final loss might not allow the levying of a tax even by the country of emigration.

Further issues might arise in connection with a specific type of exit tax, also known as clawback of tax deductions, considering that these measures operate in an area where social security disparities might arise. The specific problem is that some countries allow for the deduction of social security payments from wages to support the funding of future pension payments that will then be taxed. A balanced solution to such problems might require action and positive integration. This study considers with great interest the types of measures that already operate in some bilateral treaties and allow the emigration country to preserve exclusive taxing rights on a pension paid to its former residents. A refined version of this solution, for instance, also by splitting the allocation of taxing rights for payments made before and after emigration, might achieve a closer connection of nexus in terms of coherence of the tax treatment, remove disparities and prevent the occurrence of unjustifiable discrimination.

Trailing taxes are a second cluster of tax measures triggered by emigration. Trailing taxes go beyond mere exit taxes: trailing taxes extend the tax nexus in the country of emigration for some years after the taxpayer has transferred their residence to another country. Until now, trailing taxes have not been the object of secondary law and were only once brought to the Court of Justice of the EU.[19] A treaty-based solution, providing for a different allocation of taxing rights, might represent the most proportionate solution to prevent cases of double taxation that would otherwise be difficult to address and dissuade workers from relocating to another jurisdiction. This solution might allow the country of

[18] There have been several CJEU judgments on exit taxes. Among the ones involving individuals, see CJEU, 11.3.2004, case C-9/02, *De Lasteyrie du Saillant*, in ECLI:EU:C:2004:72; CJEU, 7.9.2006, case C-470/04, N, ECLI:EU:C:2006:525.

[19] CJEU, Judgment of 26.1.2006, case C-513/03, *Van Hilten-van der Heijden*, in ECLI:EU:C:2006:131.

emigration to preserve exclusive taxing rights on some types of income paid to the worker after emigration and go as far as preserving exclusive taxing rights on the workers' pensions.

The third cluster of issues connected with taxes triggered upon emigration concerns the transformation of a personal into an objective tax nexus with the EU Member State of emigration. This means concretely that a worker changing her/his residence to another EU Member State keeps liability to tax based on the source of income in the EU State of emigration. Such issues essentially resemble those addressed for exit and trailing taxes and, therefore, require no separate analysis hereby.

For these tax disparities, the exposure of posted workers might be greater than for other categories of workers and have a stronger negative impact on their mobility. This might also directly affect the employer, especially in cases of individuals who are seconded to work for a foreign subsidiary of the same group, or on a contract or a construction site.

2.3. The Right of Workers to Take Up a Job in Another EU Member State: Mobility without Necessary Relocation

2.3.1. Identifying the Critical Areas Requiring Intervention

The free movement of workers should also ensure the right to take up a job in another EU Member State without necessarily relocating to such a State. In such a context, the worker might be present in a different EU Member State on a non-stable basis and/or without an actual obligation to change her/his residence to such a State. This section supplements the prior one (i.e. mobility with relocation) and focuses on specific cross-border tax issues in this context. Posted workers who exercise the employment without relocating may also fall under this category.

Once again, the main source of concern remains tax disparities, which CJEU case law cannot address. The potential for such disparities might have increased further during the past few years due to the profound structural transformation that modes of employment have experienced, particularly since the COVID-19 crisis boosted remote working. A deeper insight into such issues is necessary to formulate possible strategies to address the tax disparities that dissuade workers from accepting jobs in other countries and employers from recruiting workers from other EU Member States.

This section analyses cross-border tax obstacles affecting the free movement of workers along two main areas, involving employment activities primarily conducted on-site and more frequently conducted remotely. Both areas have seen the exponential growth of a problem connected with the repercussions of cross-border remote working on the exercise of business by the employer, namely the fact that the latter might have a permanent establishment (PE) in the place from which the employee remotely operates. These issues also arise (even though to a minor extent) in the case of the mobility of workers with relocation. They are usually framed within the concept of the home office PE, considering that remotely working employees often work directly from their homes. Considering their relevance, even though such issues more directly affect cross-border business, this study shall briefly address them because of remote working.

This dissuasive effect of all those tax obstacles conflicts with the functioning of the EU Internal Market. It is not satisfactorily addressed by the comprehensive network of bilateral tax treaties in force within the EU. Such treaties reduce the occurrence of tax disparities. However, when they arise, such disparities generate cases of double taxation that are not easily solved in all situations. In particular, a relevant potential for interpretative mismatches and disparities arises as to different characterisations of expressions used but not defined by clauses applicable to income from employment or the identification of the place of exercise of the employment, especially in cases connected with income from inaction.

Approximating the wording of such clauses, nudging common interpretative treaty practice or introducing common rules, also based on the OECD Commentaries, might be solutions to further explore for narrowing down such disparities[20] or facilitating a solution to their problems in specific cases under the EU Dispute Settlement Directive.

2.3.2. Income Tax Issues of Employment Primarily Conducted on-site

a. Frontier Workers

Several bilateral treaties between EU Member States include a frontier workers' clause[21]. However, the wording of such clauses and the allocation of taxing powers do not reflect a common pattern. Nevertheless, their unitary rationale acknowledges the higher exposure of such workers to cross-border issues capable of generating interpretation mismatches and disparities that might yield potential cases of unresolved double taxation. The concrete implication of these issues shall be addressed more concretely with a case study.[22]

This study confirms the relevance of frontier workers' clauses in tax treaties. Since they contain specific rules that regulate how EU Member States exercise their taxing powers in respect of workers exercising their employment in this specific situation, it is appropriate to have them included in the same legal source that contains a comprehensive regulation of how income from employment is taxed across the borders. For their specific features, bilateral regulation is generally regarded as preferable to address the specific needs that may arise in each context.

As already indicated in the Expert Study for the EU Commission,[23] the factual situation of frontier workers differs, in general, from that of all other on-site workers, due to their commuting between two countries. However, this study also invites the EU Parliament to consider the opportunity of prompting positive integration that determines the content of such clauses and the allocation of taxing powers at the EU level. The need for intervention might reflect the goal of creating a level playing field in the job market, removing tax disparities that might affect the decisions of workers and employers. Various reasons might justify this intervention, including the growth of the number of frontier workers and the fragmentation that can be recorded in the EU,[24] as to the content of these clauses and their uneven diffusion in the bilateral treaty networks of EU Member States. Moreover, it might be useful to consider that remote workers and highly mobile workers nowadays share to a great extent the same type of issues and might also require the same type of intervention to remove exposure to legal uncertainty in connection with the applicable tax treaty rules.

Positive integration might operate through non-binding or binding instruments of tax coordination or even by issuing dedicated secondary law. The EU Commission already issued non-binding coordination on the taxation of frontier workers after withdrawing the initial 1979 proposal for an EEC Directive

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[20] See further on this in Section 4 with a case study analysis combined with a proposal for introducing common rules within the European Union by means of positive integration.

[21] For a comprehensive list of treaties with a frontier workers' clause in Europe and their analysis see Pistone, P., 2025, *Article 15: Income from Employment*, IBFD Global Tax Treaty Commentaries, IBFD Publications. Available at: https://www.ibfd.org/.

[22] See case study 2 in sec. 4 of this document.

[23] Pistone, P. et al., 2015, *Ways to tackle cross-border tax obstacles facing individuals within the EU*, EU Commission Expert Report, EU Commission – Directorate General for Taxation and Customs Union, Luxembourg, p. 25 and ff.

[24] A precise assessment of the size of frontier workers in the European Union is extremely difficult, also considering the absence of formal requirements for crossing the intra-EU borders and the removal of several labour law related barriers. For a more comprehensive analysis of those issues, see the EU Parliament report available at: https://www.europarl.europa.eu/workingpapers/soci/w16/summary_en.htm, consulted on 5 May 2025.

requiring the exclusive allocation of taxing powers to the EU Member State of residence.[25] From a conceptual perspective, this allocation might best reflect the close personal connection with the State, whose public infrastructures the worker mostly uses. Moreover, it can overcome fragmentation and dramatically reduce the potential for interpretative mismatches and tax disparities.[26]

However, from a compliance perspective, not levying a withholding tax (WHT) at source might weaken effective compliance even when, as is currently the case for income from employment, the automatic exchange of information has become fully operational. A possible compromise solution might thus also be to levy a fully refundable WHT in the country of activity. This mechanism allows the latter country to keep a portion of collected income along the concept of the service fee that has operated for some years under the transitional regime of the EU savings directive and agreement with Switzerland.[27] Moreover, it might help partly compensate for the loss of revenue for the deduction of employment from the business income of the employer. Nevertheless, full automatic exchange of information for cross-border income from employment under the DAC – Directive on Administrative Cooperation within the European Union now also allows efficient income tracking in case of exclusive allocation of taxing powers to the State of residence.

b. Highly Mobile Individuals

Highly mobile individuals derive a significant portion of their income from employment exercised in two or more EU Member States. This situation is common to short-term posted workers, who are required by their employer to exercise their activity in various countries without relocating to either of them. The potential for interpretative mismatches and tax disparities grows in proportion to the involvement of more tax jurisdictions. The relevance of this category of workers in some fields of operation (especially high-salary earners) has grown in line with the enhanced travelling within the EU and the relevance of weekly commuting or recurrent mobility.

The absence of dedicated clauses for highly mobile individuals in bilateral tax treaties between EU Member States puts their right to free movement at a clear disadvantage compared to the legal framework applicable to income taxation of frontier workers. When frontier workers clauses include geographical limitations calculated in the distance from the border of the residence of the worker and/or the place of exercise of the employment, such different legal frameworks can turn into a source of tax distortion to the bilateral relations between EU Member States and within the EU Internal Market.

The authors of this study concur with the 2015 EU Commission Expert Report in that highly mobile individuals present no lesser exposure to risks of interpretation mismatches and tax disparities than frontier workers in the absence of a dedicated treaty clause. For the same reasons indicated in the 2015 EU Commission Expert Report, the authors of this study consider that such situations essentially raise the same exposure to cases of double taxation that might raise delicate problems and that share the potential for tax disparities to arise.

Therefore, as a general recommendation, the authors suggest bundling highly mobile individuals with frontier workers within the same form of positive integration, applying exclusive allocation of taxing powers to the State of residence or a mechanism of fully refundable WHT, as indicated earlier in this study.

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25 This is the Recommendation 94/79/EEC, cit.

26 For similar reasons, the 2017 Update to the OECD Model Tax Convention on Income and Capital has amended Art. 15 (3) to allocate exclusive taxing powers to the State of residence of workers who exercise their activity as regular complement of ships and aircrafts.

27 This regime has been applicable between 1.7.2005 and 31.12.2016 under the EU-Switzerland Agreement on the Taxation of Savings, in OJ L 385 of 29.12.2004.

2.3.3. Income Tax Issues of Employment That May Be Exercised Remotely

a. The Various Scenarios of Remote Work

Remote workers might be defined differently, but they share the common core element of exercising their activity outside the employer's business premises. This definition might also include posted workers who exercise their employment in such a scenario.

A more precise definition of remote workers from a legal perspective is neither an easy challenge nor a meaningful exercise, given the enormous potential for discrepancies in labour, social security and tax law, as well as the extreme flexibility of contractual arrangements that have developed, especially since the COVID-19 pandemic. Moreover, this broad definition also makes it possible to address the critical tax issues of digital nomads related to remote working.[28]

This context presents a significant exposure to interpretative mismatches and disparities as to the applicable national, supranational and treaty measures, which frequently causes employers to deny cross-border remote working or workers to find such an exposure a risk that may dissuade them from exercising their right to cross-border remote working, thus showing a clear impact on their EU fundamental freedoms.

Since tax treaties were designed when remote working was extremely rare, their clauses on income from employment are mostly not fit to apply to activities not exercised at the business premises, thus creating a much higher potential for cross-border interpretative mismatches and disparities than the one that can be recorded for frontier and highly mobile workers. For this reason, intervention is extremely important and urgent to secure effective protection of workers' free movement in the EU.

From a legal perspective, permanent remote working implies that the employer's business premises cannot be regarded as the place of exercise of employment for treaty purposes. In such cases, interpretative mismatches and disparities do not frequently arise when the contract indicates the place of exercise of employment, but rather when such a place remains uncertain. This type of problem increases when the employee is entitled to remote work, especially when remote work might be recurrent. These situations are examples of common practice and cases that make it virtually impossible to apply the tax treaty clause on income from employment due to the difficulty in determining the place of exercise of activity with a sufficient degree of certainty. These issues do not arise for frontier workers who exercise their activity remotely, given that the special clauses applicable to this category of workers often allocate exclusive taxing powers to the State of residence of the frontier worker.

Intervention to overcome the room for potential interpretative mismatches and disparities is especially required in these cases, as well as in those related to income from inaction, such as the covenant-not-to-compete, garden leaves, etc.

Possible solutions should consider whether an amendment of the bilateral treaty clauses on income from employment is needed in the EU and, in the affirmative, in which form.

Considering the structure of Art. 15 of bilateral tax treaties that follow the OECD Model Convention, exclusive taxation in the country of residence under the first sentence of Art. 15 (1) might be strengthened by an EU Multilateral Protocol (which might be included in a Directive, in soft law or in an EU multilateral agreement of the same kind of the EU Tax Arbitration Convention, which constitutes an expression of binding coordination) in a way that shared taxing rights could be given a more subsidiary function. Shared taxing rights might then operate pro rata, even subject to a de minimis threshold or

[28] The need for a separate subsection on digital nomads reflects the additional problems caused by the potential for frequent relocation of their home base, or the absence of one.

evidence of the place of employment in a different EU Member State from the employee's residence. The limitation of the scope to cases of intra-EU mobility of workers might be justified from a legal perspective to comply with the primacy of EU law and as an instrument to secure free movement within the Internal Market, but also help prevent the effect of relocation to non-EU tax havens or low tax jurisdiction with special tax regimes, which are becoming a source of growing concern, especially in respect of high-net-worth individuals.

Moreover, those solutions should operate structurally like those that apply to highly mobile individuals, thus also including the possibility of applying fully refundable WHT with the payment of a service fee to the employer's State of residence. Considering that remote working in some bilateral relations might unevenly affect EU Member States, it might be appropriate to evaluate also the possibility of a predetermined shared allocation of taxing powers, which, in the case of non-permanent remote workers, might vary in proportion of the time spent on-site in the country of the business premises of the employer.

Finally, the authors of this study also consider extending these solutions to cases of self-employed persons in similar circumstances, including directors. This alignment might reduce possible frictions and attempts to circumvent the treaty regime aimed at unduly securing the application of the treatment that prevents interpretative mismatches and tax disparities.

b. Digital Nomads

Digital nomads conduct activities mostly remotely and usually enjoy significant freedom to relocate their homes across different countries, often have several homes in different countries, or exercise their activities from two or more countries on a non-occasional basis. As indicated above, critical tax areas concerning digital nomads partly overlap with the general ones of cross-border remote working. Therefore, the conclusions reached earlier in this study might, in principle, apply to digital nomads too.

However, within the group of remote workers, digital nomads present the additional distinctive element of difficult identification of the State of residence, which might raise specific critical issues in cross-border tax employment. This might mean, for instance, that digital nomads might exercise their employment remotely from two or more countries in a given year, including from countries where they sojourn without having a permanent home. This might be a structural feature related to their inclination to mobility. Currently, twelve EU countries offer specific digital nomad visas.[29]

This study suggests carving out intra-EU digital nomads from the treatment normally applicable to remote workers in all cases in which the digital nomad, also for reasons not directly related to the employment, sojourns on a non-occasional basis in the country of employment. Accordingly, for instance, if the digital nomad is resident in an EU Member State, often works remotely from other EU Member States, one of which is the country of employment, the latter country will have a relevant tax connection (physical presence and employment) that cannot be ignored and that should therefore prevent the allocation of taxing powers envisaged earlier in this study for cross-border workers.

[29] These countries are Croatia, Estonia, Greece, Spain, Hungary, Italy, Latvia, Portugal: https://www.oecd.org/content/dam/oecd/en/publications/reports/2022/07/should-oecd-countries-develop-new-digital-nomad-visas_4d283d33/4d425e15-en.pdf, consulted on 14 April 2025. Cyprus: https://www.mip.gov.cy/dmmip/md.nsf/All/BF9908B541BFF7D3C22587EA003CD306?OpenDocument, consulted on 14 April 2025. Malta: https://nomad.residencymalta.gov.mt/nomad-eligibility/, consulted on 14 April 2025. Czech Republic: https://mzv.gov.cz/taipei/en/visas_and_consular_information/visa_information_for_foreigners/long_stay_visa/czech_government_fast_track_visa_program.html, consulted on 14 April 2025. Romania: https://www.mae.ro/en/node/2054?page=5, consulted on 14 April 2025.

In all other cases of intra-EU digital nomads, it is important to understand whether the personal connection of the digital nomad with a given EU Member State has a predominant nature over the presence on the territory of others. Such cases could, for instance, be detected by introducing a physical presence test with a threshold of at least 183 days.[30] In such circumstances, the predominant personal link might also stand the possible tests of treaty-based tie-breaker rules and prevail over possible claims of residence by other EU Member States. Identifying the country of residence by reference to a physical presence for most of the year could help reduce the complexity of cross-border tax issues of digital nomads, to whom the rules of all other remote workers would otherwise apply.

Alternatively, and a subordinate option - applicable also in cases where the person does not meet the physical presence test for most of the days in the year - an apportionment of taxing rights on income among all EU countries involved might represent the only viable option, notwithstanding the enormous complexity, in terms of compliance, that it would entail.

2.3.4. The Home-Office Permanent Establishment

Remote working implies, by its own definition, exercising the employment from a different location than that of the employer's premises. This might be at the premises of a related entity or at a fixed place of business of the employer in a different EU Member State, as well as at places indicated by the employer, but also at different places determined by either party of the contract or by common consent.

Changing the place of exercise of the employment across borders is certainly a situation that generates significant problems, which this study has already addressed in connection with the case of highly mobile individuals and digital nomads. However, there is one more issue that requires attention for the sake of addressing the cross-border tax issues of remote workers, also in connection with their repercussions for the employer, and that is the so-called home-office PE.

This expression generally relates to situations in which the remote worker exercises employment directly from home in a country other than that of the employer's residence or in which the main place of employment is situated.

The boundaries within which a home-office PE might exist should be interpreted consistently with the overall concept of PE as a fixed place of business through which an enterprise operates in a different country from its residence. Therefore, any potential issues of the emergence of home-office PE must be framed within the scope of Article 5 of the OECD Model Tax Convention and the clauses of bilateral tax treaties that allocate taxing powers by using this concept.

Legal uncertainty surrounding remote working often creates situations in which employers fear an exposure to tax nexus of their business income as a direct consequence of the remote worker's non-occasional presence for reasons linked to the employment. From a conceptual legal point of view, the relevant issue is that the employee's home is de facto made available to the employer and where the employee exercises the remunerated activity.

Even though it is appropriate to undertake a cautious approach to such issues, there are some cases where the risk of a home-office PE is relatively low. These cases might be determined by reference to some indicators, such as when one or more employees exercise their activity in a State without organising some productive factors other than their own personal work; when such employees do not

[30] This number reflects the majority of days in a year and is often used by tax law and treaties in connection with income from employment. Nevertheless, this study acknowledges that a different threshold has been indicated in the Opinion of the European Economic and Social Committee (i.e. 96 days), adopted on 13 July 2022. See further on this EESC, Opinion ECO/585, *Taxation of Cross-border teleworkers and their employers*.

have managerial functions, but merely execute the work as per the employment contract; when they have their own workplace in the country of the employer, etc. However, even in the presence of such indicators, the exposure might not be entirely excluded, especially if an employer has a significant number of workers exercising their activity from a given country, or when it makes workspace available for them to conduct their activity.

Moreover, it cannot be excluded that the combination of remote working of the employee with other business conducted by the employer could generate an even stronger exposure to the existence of a PE of the employer in a given EU Member State

However, from the specific perspective of taxation of income from employment, what matters is that, insofar as a home-office PE or a PE of the employer exists in the country of residence of the employee, consequences will arise for the allocation of taxing rights under Article 15 of the OECD Model Tax Convention and the bilateral tax treaties that follow such pattern. For this reason, this study finds it appropriate to address some issues connected with the exposure to the existence of a home-office PE in one of the case studies contained in Section 4.

2.4. Legal Instruments for Introducing a Reform of Cross-Border Income Taxation of Employment in the EU

As indicated earlier in this study, the analysis of cross-border taxation of workers in the EU raises complex legal issues, which require urgent intervention to overcome the numerous obstacles that currently undermine the effective exercise of the right to free movement.

This study suggests intervening with a combination of specific measures that introduce positive and negative integration where this is required.

In general terms, negative integration based on the interpretation of fundamental freedoms by the Court of Justice of the EU and their impact on the exercise of national tax measures can continue in those areas where it has successfully operated until the present, i.e. cases of income tax discrimination.

Positive integration should supplement negative integration in all areas where critical issues for cross-border income taxation from employment arise and generate exposure to interpretative mismatches and tax disparities. The legal basis for introducing positive integration in the form of secondary EU law mainly relates to the impact that such obstacles have on the EU Internal Market, by dissuading workers from taking up a job in another EU Member State or relocating to such State for job-related reasons and employers from offering a job to workers not established in that State. However, the additional requirements to introduce secondary law might also suggest that forms of binding coordination could be a valid alternative, at least on a provisional basis, to overcome the existing problems.

In most cases, non-binding coordination might also work, leaving EU Member States more flexibility to decide how to turn such coordination into hard law in their national systems.

Section 4 of this study will more extensively address these issues, taking into account the findings of the case studies.[31]

[31] See sec. 4.5 of this study.

3. BARRIERS TO WORKER MOBILITY – COMPLIANCE COSTS OF EMPLOYERS AND EMPLOYEES

KEY FINDINGS

The analysis shows that posted cross-border workers can have a significant estimated additional cost effect on employers. The median estimated additional compliance cost in relation to turnover range from 0.00064% to 0.0027%. While these estimations (measured by outsourced payroll services) have some limitations, they are used in this study for data availability and plausibility reasons. Data for companies (employing mobile workers) with up to 500 employees are not included in the analysis, but plausibility and literature suggests that they are for those enterprises higher than for those (with mobile workers) which have more than 5000 employees. Small firms seem to be the most affected by the additional-compliance-cost-turnover-ratio as well as the reduction in profitability.

Luxembourg and Slovenia are the countries that are irrespective of the level of analysis the most heavily affected, while Cyprus and Sweden are in general the least affected. The reduction in profitability is almost 400 times as high for firms in Luxembourg as compared to Cyprus. The construction industry has the highest reduction in profitability while the finance industry seems mostly unaffected.

On a country-industry level, Luxembourg shows the highest reduction in profitability in professional, scientific and technical activities. In Slovenia, the mining and quarrying industry is most affected, while financial, real estate and professional activities are least affected. Croatia shows the highest reduction in profitability in manufacturing, eater, construction, finance and real estate industries. Sweden shows the lowest ratio in industries from agriculture, forestry and fishing to construction.

Employees can face implicit as well as explicit costs resulting from cross-border mobility. The second part of this section analyses costs when maintaining or changing tax residence. Results shows that tax barriers are not uniform across income levels and countries. Belgium is one of the most attractive countries for low income, but not for high income earners. On the other hand, Bulgaria is one of the least attractive countries for low-income earners, but the most attractive for individuals earning twice the EU average.

3.1. Barriers to Worker Mobility of Posted Cross-Border Workers: Compliance Costs of Employers

The following section aims at quantifying the additional compliance costs for employers resulting from **posted cross-border workers**. In general, employment of a mobile worker leads to additional compliance costs and administrative burdens for firms. This is mostly due to a more difficult payroll process, resulting from tax law disparities, as described above in Section 2, and consequently from the additional compliance requirements for cross-border workers.

3.1.1. Data and Assumptions

We use the PD A1 Statistical database[32] to estimate the percentage of posted cross-border workers. According to the regulation (EC) No 883/2004 and 987/2009 any economic activity that is related to cross-border work, including business trips and short-term activities, needs an A1 certificate to prove that a posted person pays social security contributions in another Member State (typically the home country). Typically, an A1 certificate is issued when an employee is posted by their employer to work for the employer (or an associated enterprise) in another EU Member State. The maximum valid period of an A1 certificate is 24 months. Accordingly, for the purpose of this analysis, individuals covered by Article 12 of the regulation[33] are considered as cross-border workers. This includes individuals who are employed by an employer that carries out their business in another Member State and who are posted by that employer, in another Member State. A1 data indicates that in 2022, for instance, approximately 1.8 million individuals are posted abroad.[34]

To estimate additional compliance costs (ACC) incurred by posting workers abroad we use Deloitte Global Payroll Benchmarking Survey[35]. The survey reveals that cost for managed services per employee amount from $ 1,133 for small firms to $ 80 for very large firms. Cost for payroll services per employee are approx. 1.5 times the costs if the payroll service is managed by an outside expert, as compared to in-house payroll services. The survey distinguishes compliance costs by firm size. In line with studies by the EC,[36] payroll compliance costs decrease with the size of the firm, small firms experience particularly high compliance costs. We use these relations between outside vs. inside payroll compliance costs as an approximation for the ACC of posting workers abroad, thus reflecting additional

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32 Administrative Commission/Network Statistics FMSSFE. Available at https://ec.europa.eu/social/BlobServlet?docId=27444&langId=en, consulted on 9 January 2025.
The data is collected within the framework of the Administrative Commission and then analysed by the Network Statistics on Free Movement of Workers, Social Security Coordination and Fraud and Error. The data is broken down by posting of workers according to Art. 12 and 13 of the basic regulation (Regulation (EC) No 883/2004, cit.). For Art. 12 the data is provided for the period of 2012-2022 for the EU/EEA-region as well as the United Kingdom and Switzerland. The number of A1 documents issued as well as received per country is available. The database provides further breakdowns by sending and receiving countries, self-employed or employed individuals, the sector of activity, the number of individuals involved and the average duration of the posting period.

33 Regulation (EC) No 883/2004 on the coordination of social security systems in OJ L 166 of 30.4.2004.

34 De Wispelaera, F., De Smedt, L. and Pacolet, J., 2023, *Posting of workers Report on A1 Portable Documents issued in 2022*, Policy Department for Employment, Social Affairs and Inclusion, European Parliament, Luxembourg. Available at: https://op.europa.eu/en/publication-detail/-/publication/1a08dc43-9026-11ef-a130-01aa75ed71a1/language-en, 36, estimated total individuals involved amount to 1.8 Mio, total reported 1.5 Mio.

35 The survey provides estimates on costs per employee for managed and in-house and outsourced sourced payroll services. To approximate additional compliance costs resulting from cross-border workers from the perspective of an employer, we assume that the payroll process needs to be outsourced as it is more complicated. The costs for managed services are split by employee population. Available at: https://www2.deloitte.com/content/dam/Deloitte/us/Documents/human-capital/us-apa-payroll-congress-survey-report.pdf, consulted on 5 May 2025.

36 d'Andria, D., and Heinemann, M., 2023, *Overview on the tax compliance costs faced by European enterprises – with a focus on SMEs*, European Parliament, Luxembourg. Available at: https://www.europarl.europa.eu/RegData/etudes/STUD/2023/642353/IPOL_STU(2023)642353_EN.pdf, consulted on 29 April 2025, as well as European Commission: Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs, European Innovation Council and SMEs Executive Agency, KPMG, VVA, Di Legge, A. et al., 2022, *Tax compliance costs for SMEs – An update and a complement – Final report*, European Parliament, Luxembourg. Available at: https://data.europa.eu/doi/10.2873/180570, consulted on 29 April 2025.

expertise, legal requirements, forms, language barriers, and ultimately time to comply with a different set of rules. In a simplified approach we assume that firms who are unfamiliar with these rules hire an expert firm, and that the difference between the cost of in- and outsourcing the payroll process reflects ACC of posting workers abroad.

Our data does not allow for analysis of employer's ACC for traditional frontier workers (i.e. people working in one country, but returning every day to their home in another country). We discuss frontier workers further below. Our data does not include digital nomads who are often self-employed, and who are a rather recent phenomenon where data is missing or of low quality. Our results thus underestimate ACC.

Our assumption of ACC is plausible and in line with a study commissioned by the EC from EY to estimate average tax related compliance costs. This study shows as well that cross border activities lead to a significant average increase in compliance burden.[37] Nonetheless, our approximation may underestimate ACC, especially in case of high frequency and multiple foreign countries. Also, our measure does not reflect a higher likelihood of penalty payments from unintentional errors which the firm may face in foreign payroll systems. Our approximation may also be an overestimation, especially when the firm is experienced and has acquired in-house expert knowledge of foreign payroll processes over time. Further, our analysis does not distinguish country specific payroll service cost, we use the value provided by the surveyed firms across different countries.

In addition, we use Orbis (Bureau van Dijk) for firm-level financial statement data and firm data. We identify 74,918 firms over the period of 2015-2019 with more than 500 employees in the EU/EEA-region as well as the United Kingdom and Switzerland. For the profitability analysis we use a sample of 59,460 firms. We exclude the period post 2019 to exclude distortions from the COVID-19 pandemic. For the analysis only unconsolidated annual financial statements were considered. Annual financial statements that did not provide turnover or a turnover of 1 or less were excluded from the calculations. Further, we exclude not profitable firms (profit before tax over turnover < 0) to measure the effect of ACC on profitability. We use Eurostat[38] for employment data.

3.1.2. Average Effects by Firm Size[39]

The first analysis of this section aims to quantify the average ACC resulting from cross-border workers. Therefore, an average percentage of mobile workers was calculated separately for each year of the observation period by dividing the average number of A1 certificates issued in a country by full- and part time employment in that country. To estimate the number of mobile workers in each firm, the average percentage of each year was multiplied with the firm-specific number employees as available from financial statement information.

Figure 1 below shows the median number of mobile workers per firm size, which is determined by the total number of employees in the firm. While a firm with 500-900 employees has a median of 3 cross-border employees, a firm with over 25,000 employees has almost 180 cross-border workers. We exclude very small firms with less than 500 employees, who on average have an even smaller number of cross-border workers, most firms are likely to have no cross-border workers.

[37] European Commission: Directorate-General for Taxation and Customs Union and EY, 2014, *Compliance costs related to cross-border activity – Final report*, European Parliament, Luxembourg. Available at: https://op.europa.eu/en/publication-detail/-/publication/098fa11d-98fc-40ce-91f0-f23ad48ee14e, consulted on 14 April 2025.

[38] Employment data from Eurostat was used to put the A1 documents into perspective.

[39] For the calculations the number of individual persons issued an A1 document for all available countries was divided by full-time and part-time employment from Eurostat (lfsa_epgaed). Belgium provided only the number of employed persons. For the reference year 2019 Cyprus reported 2018 figures.

Figure 1: Mobile Workers per Firm Size (Measured by Total Number of Employees)

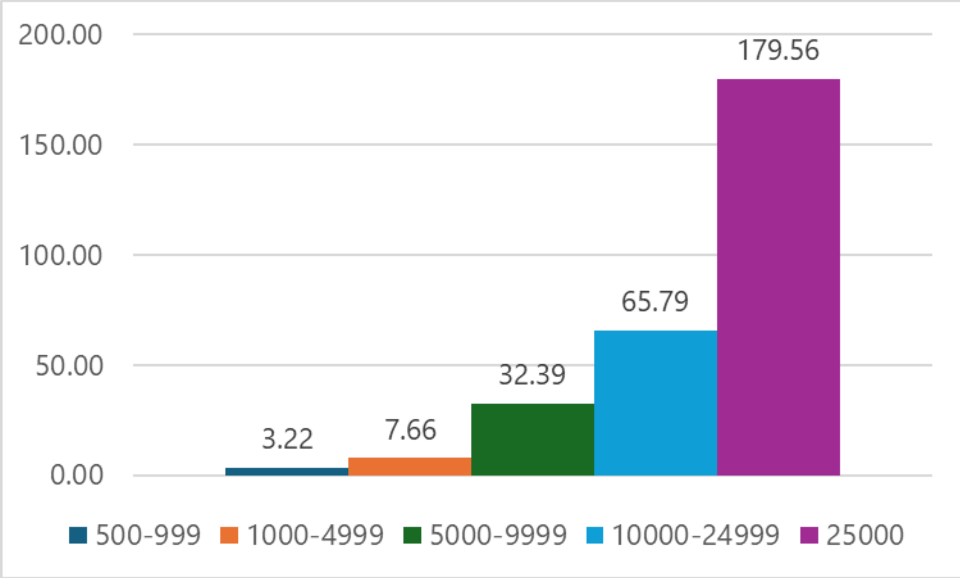

Figure 1 presents the average number of mobile employees per firm, based on average A1 data. Different bars represent different firm sizes, measured by total number of employees. Source: Authors' calculation on the basis of the ORBIS Database (period 2015-2019 to exclude distortions from COVID pandemic).

To allow comparability across firm size we first relate the firm-specific ACC to each firm's annual turnover and calculate the median additional-compliance-cost-to-turnover-ratio pooled over all firm-year observations. On average firms face ACC resulting from cross-border workers amounting to a median of 0.0012%[40] of their turnover. Second, Figure 2 below presents the median additional-compliance-cost-to-turnover-ratio for employers depending on firm size. Because payroll services are more costly for smaller firms,[41] large firms are less affected than smaller firms. Firms with more than 25,000 employees have less than tenth of the ratio than a firm with 500-999 employees. Small firms with less than 500 employees have fewer or likely no mobile workers, but their marginal relative additional compliance costs will likely be even higher.[42]

[40] The mean is considerably higher at 0.21% of the turnover, resulting from companies with a high number of employees but relatively small turnover. The standard deviation of the additional-compliance-costs-ratio amounts to 21.53 %. By using a sensitivity analysis of the difference between outside vs. inside payroll cost, the ratio ranges from 0.00067 % to 0.0014 %.

[41] Deloitte Global Payroll Benchmarking Survey: https://www2.deloitte.com/content/dam/Deloitte/us/Documents/human-capital/us-apa-payroll-congress-survey-report.pdf, consulted on 5 May 2025, in line with d'Andria, D., and Heinemann, M., 2023, *Overview on the tax compliance costs faced by European enterprises – with a focus on SMEs*, European Parliament, Luxembourg. Available at: https://www.europarl.europa.eu/RegData/etudes/STUD/2023/642353/IPOL_STU(2023)642353_EN.pdf, consulted on 29 April 2025, as well as European Commission: Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs, European Innovation Council and SMEs Executive Agency, KPMG, VVA, Di Legge, A. et al., 2022, *Tax compliance costs for SMEs – An update and a complement – Final report*, European Parliament, Luxembourg. Available at: https://data.europa.eu/doi/10.2873/180570, consulted on 29 April 2025.

[42] VVA and KPMG, 2022, *Tax compliance costs for SMEs: An update and a complement Final Report*, Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs, European Innovation Council and SMEs Executive Agency, European Parliament, Luxembourg. Available at: https://op.europa.eu/en/publication-detail/-/publication/70a486a9-b61d-11ec-b6f4-01aa75ed71a1, consulted on 14 April 2025.

Figure 2: ACC-TO-Ratio per Firm Size

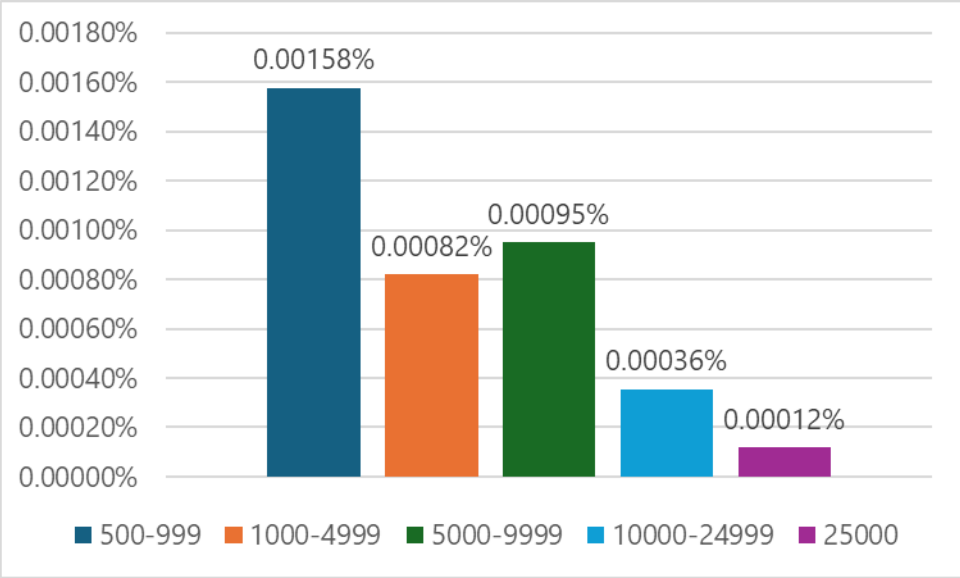

Figure 2 presents the median ACC-TO-ratio per firm size, measured by total number of employees, based on average A1 data. ACC are measured as the difference between in- and outsource payroll service costs, per firm size. Source: Authors' calculation on the basis of the ORBIS Database (period 2015-2019 to exclude distortions from COVID pandemic.

Average effects of ACC relative to turnover may appear minimal, because turnover by nature is comparatively large. The effect of compliance costs on profitability depends largely on country and industry. In a separate analysis, we estimate the reduction in profitability from ACC.[43] Over all years, profitability of firms in our sample is 4.34% (median), with little variation across firm size (Figure 3).

Figure 3: Average Profitability Ratio per Firm Size

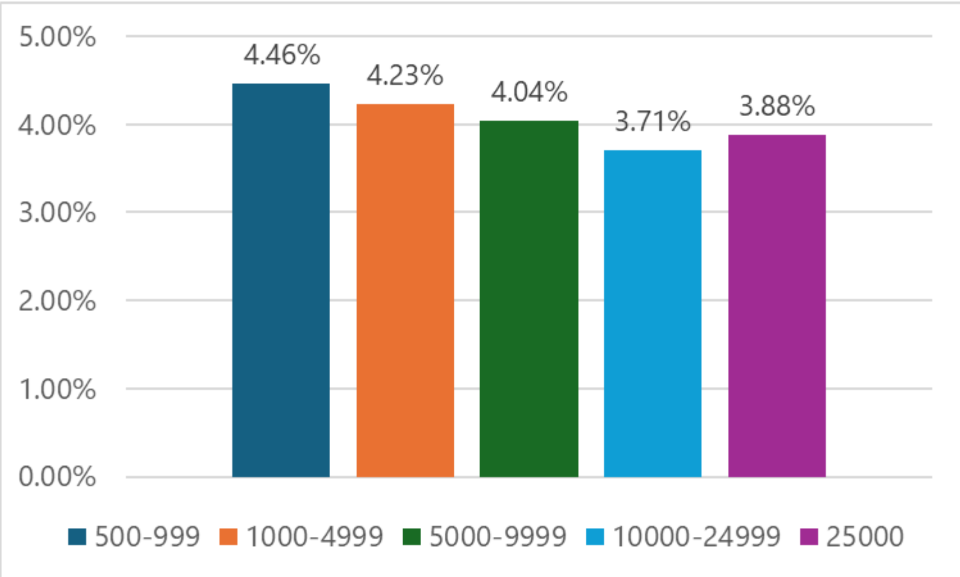

Figure 3 presents the median profitability ratio (profit before tax over turnover) per firm size, measured by total number of employees. Source: Authors' calculation on the basis of the ORBIS Database (period 2015-2019 to exclude distortions from COVID pandemic.

[43] In this analysis, we include only firms with profit before tax > 0. Our number of observations is therefore reduced to 59,460. We simulate on a ceteris paribus assumption, which implies that companies cannot increase their earnings to cover their additional compliance costs, and that our additional compliance costs are not already part of their respective profit and loss statements.

The reduction in profitability due to ACC again displays disproportionate burden on small firms (Figure 4). While ACC reduce the profitability of small firms (500-999 employees) by 0.03% (equivalent 0.0016 percentage points), large firms (more than 25.000 employees) are much less affected. Their profitability ratio declines by only about 0.006%. Again, these numbers may appear small. Yet, especially for small firms, ACC may impose a burden which hinders them from extending their business to other countries.

Figure 4: Average Reduction of Profitability Ratio from ACC in %, per Firm Size

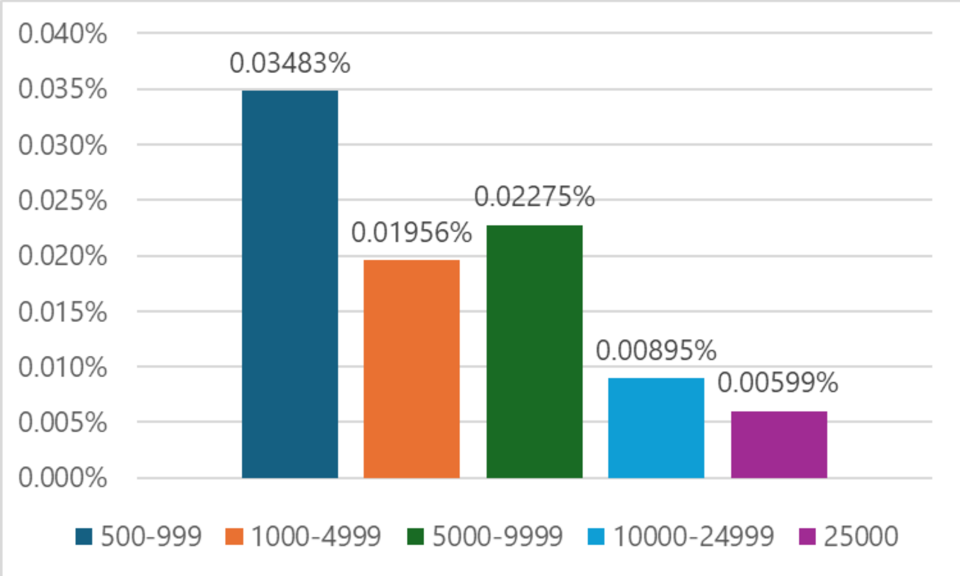

Figure 4 presents the % average reduction of firms' profitability ratio (profit before tax over turnover) from their respective additional compliance costs per firm size, measured by total number of employees, based on average A1 data. ACC are measured as the difference between in- and outsource payroll service costs, per firm size. Source: Authors' calculation on the basis of the ORBIS Database (period 2015-2019 to exclude distortions from COVID pandemic.

3.1.3. Country Specific Analysis[44]

By using country specific A1 Data, we can estimate the additional administrative burden of firms in a specific country. To estimate the number of mobile workers, we use the year and country specific number of A1 certificates issued to individuals divided by the employment of the country in the specific year of the observation period. To quantify the number of mobile workers the percentage was multiplied with the total number of employees from the ORBIS data of the specific country in the specific year.

We again estimate the ACC for cross-border workers as the difference between in- and outsourcing of the payroll process and calculate the firm-specific reduction in profitability and determine the country average for all firms located in that country.

Figure 5 presents the average profitability of firms per country; Figure 6 presents the reduction of profitability in % per country from ACC.[45] While Luxemburg (LU) and Slovenian (SI) corporations have average profitability (Figure 5), their profitability suffers most from ACC from mobile employees, whereas firms in other countries seem mostly unaffected, especially in Sweden (SE) and Cyprus (CY). We therefore observe a large disparity across countries, the spread is considerable. The effect from

[44] For the calculations the number of individual persons issued an A1 certificate per country is divided by country specific full-time and part-time employment from Eurostat (lfsa_epgaed). Belgium provided only the number of employed person and for the reference year 2019 Cyprus reported 2018 figures.

[45] Results are largely consistent when using the ACC-TO-ratio.

ACC on profitability is almost 400 (200) times higher for Luxembourg (Slovenia) as compared to Cyprus.

Figure 5: Country-Specific Average Profitability Ratios

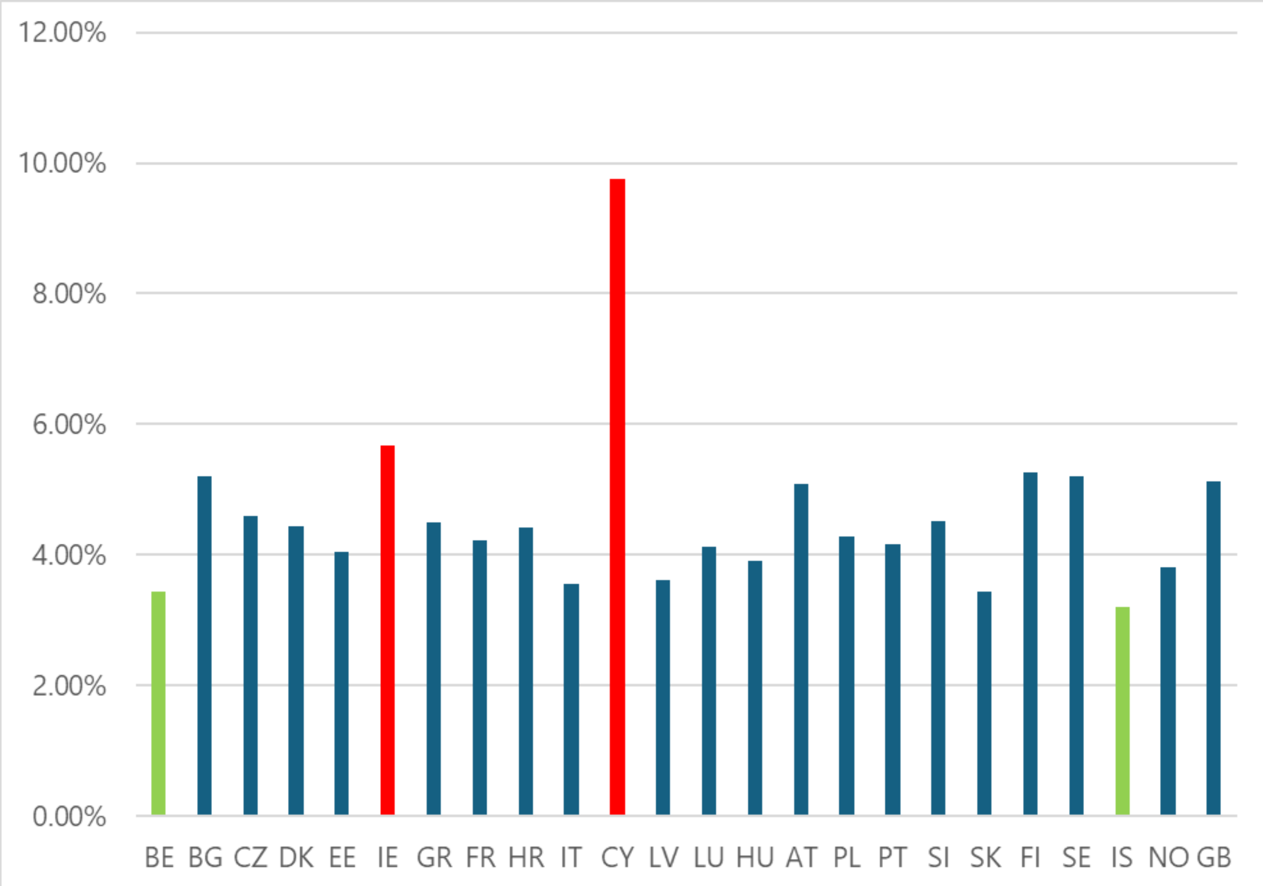

Figure 5 presents the average profitability ratio (profit before tax over turnover) of firms located in a country. Source: Authors' calculation on the basis of the ORBIS Database (period 2015-2019 to exclude distortions from COVID pandemic).

Figure 6: Average Reduction of Profitability Ratio from ACC in %, per Country

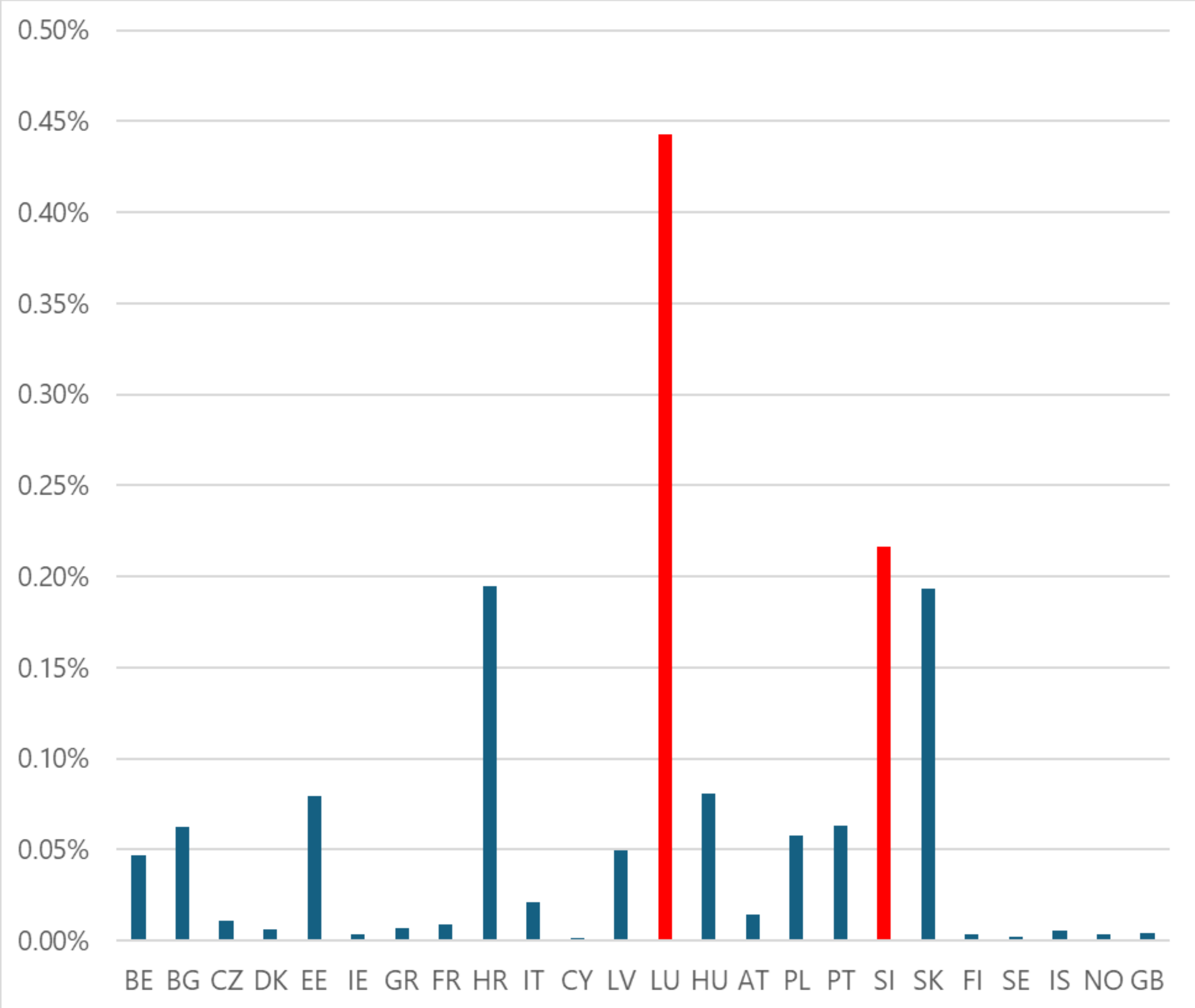

Figure 6 presents the average reduction of firms' profitability ratio (profit before tax over turnover) in percent from their respective additional compliance costs per country, based on average country-specific A1 data. ACC are measured as the difference between in- and outsource payroll service costs, per firm size. Source: Authors' calculation on the basis of the ORBIS Database (period 2015-2019 to exclude distortions from COVID pandemic).

3.1.4. Industry Specific Analysis[46]

To quantify the industry specific ACC we divide the number of issued A1 certificates per industry and year by the annual total industry specific employment. To quantify the number of mobile workers we multiply this percentage with the total number of employees in the specific industry per year in a firm. We again assume the ACC for cross-border workers to be the difference between in- and outsourcing of the payroll process and estimate the effect of ACC on profitability.

Due to data restrictions, we analyse the following industries:

A agriculture, forestry and fishing,
B mining and quarrying
C manufacturing
D electricity, gas, steam and air conditioning supply
E water supply, sewerage, waste management and remediation activities
F construction
K financial and insurance activities
L real estate activities
M professional, scientific and technical activities
N administrative and support service activities.

Figure 7 illustrates particularly high profitability for the financial industry (K), and lowest profitability for agriculture (A). Irrespective, the effect of ACC on profitability is largest in the construction industry (F), which is plausible when placing workers on construction sites abroad (Figure 8). ACC reduce the average profitability in the construction industry of 3.72% by 0.27% (equivalent to 0.01 percentage points). In comparison, the profitability in the finance industry (K), which is particularly high (13.33%), remains largely unaffected. The compliance burden on the construction industry is about 33 times higher.[47]

[46] For the calculations the number of A1 documents issued per industry was divided by industry specific employment data from Eurostat (nama_10_a10_e__custom_14885275). A1 data for industries B-E as well as K-N is not available separately. Due to inconsistencies in reporting of the industry sector A1 data Portugal in 2019 and Iceland in 2016 as well as 2017 were not considered for the industries B-E.

[47] Results are largely consistent when using the ACC-TO-ratio.

Figure 7: Industry-Specific Average Profitability Ratios

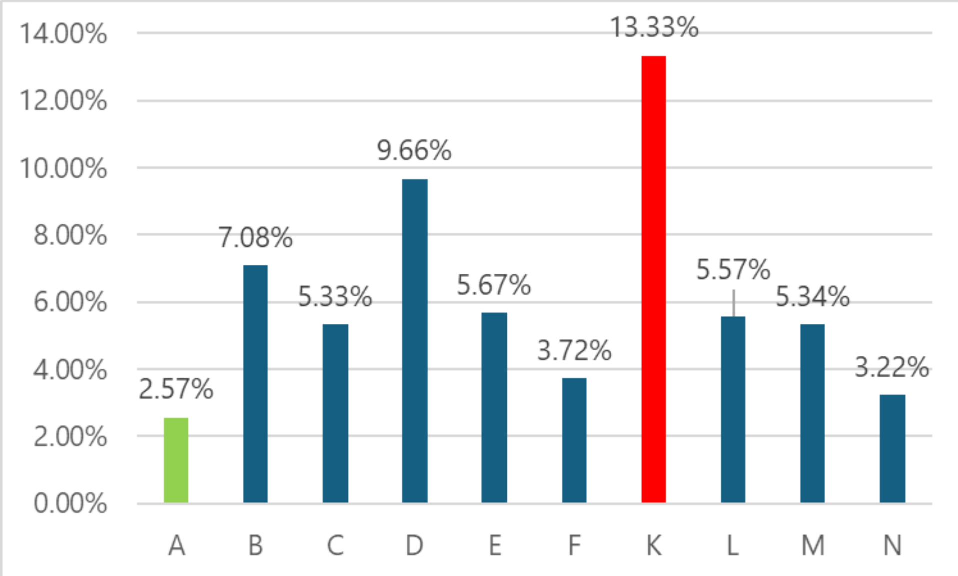

Figure 7 presents the average profitability ratio (profit before tax over turnover) of firms per industry. Source: Authors' calculation on the basis of the ORBIS Database (period 2015-2019 to exclude distortions from COVID pandemic).

Figure 8: Average Reduction of Profitability Ratio from ACC in %, per Industry

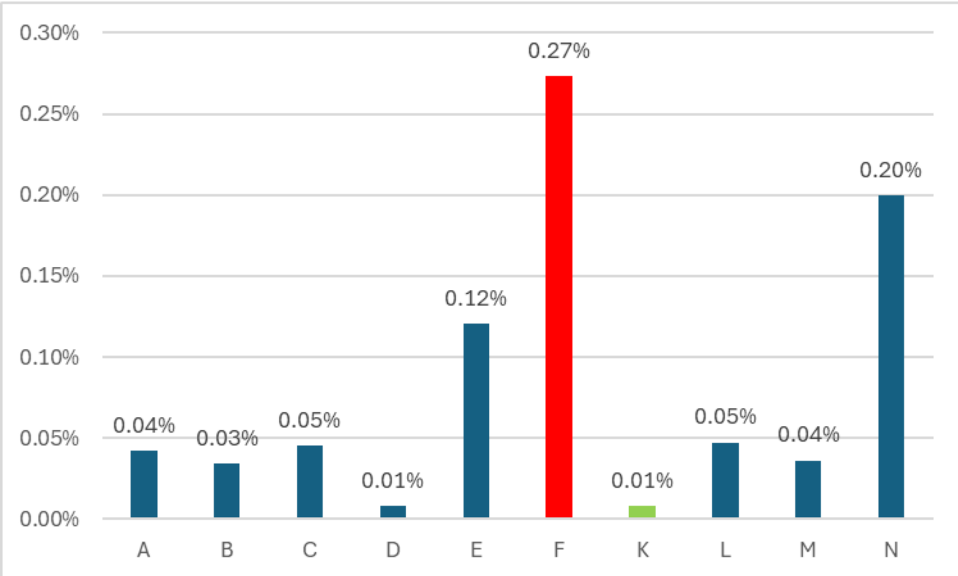

Figure 8 presents the average reduction of firms' profitability ratio (profit before tax over turnover) in percent from their respective additional compliance costs per industry, based on average industry-specific A1 data. ACC are measured as the difference between in- and outsource payroll service costs, per firm size. Source: Authors' calculation on the basis of the ORBIS Database (period 2015-2019 to exclude distortions from COVID pandemic).

3.1.5. Industry & Country Specific Analysis[48]

The analyses above indicate large industry and country biases. To further detail the results, we use industry and country specific A1 Data. To estimate the number of mobile workers, we use the year,

[48] For the calculations the number of A1 documents issued per industry and country was divided by industry and country specific employment data from Eurostat (nama_10_a10_e__custom_14885275). A1 data for industries B-E as well as K-N is not available

country and industry specific number of A1 certificates issued divided by the total employment of the specific industry within a country in a specific year of the observation period. We use again the difference between in- and outsourcing of payroll services and estimate the effect of ACC on firm-specific profitability. We then calculate the country-industry effect on profitability. Again, for data availability reasons we limit our analysis to the industries above.

Figure 9 and Figure 10 illustrate the results of this analysis.[49] Figure 9 shows the industries and countries which suffer only very little from ACC. These include administrative industries in Cyprus (N; CY), financial, real estate and professional activities in Slovenia (K, L, M; SI), and all other industries in Sweden (A, B, C, D, E, F; SE). In these cases, profitability decreases by 0.004% maximum (construction in Sweden).

Figure 9: Lowest Average Reduction of Profitability Ratio from ACC in %, per Industry, per Country

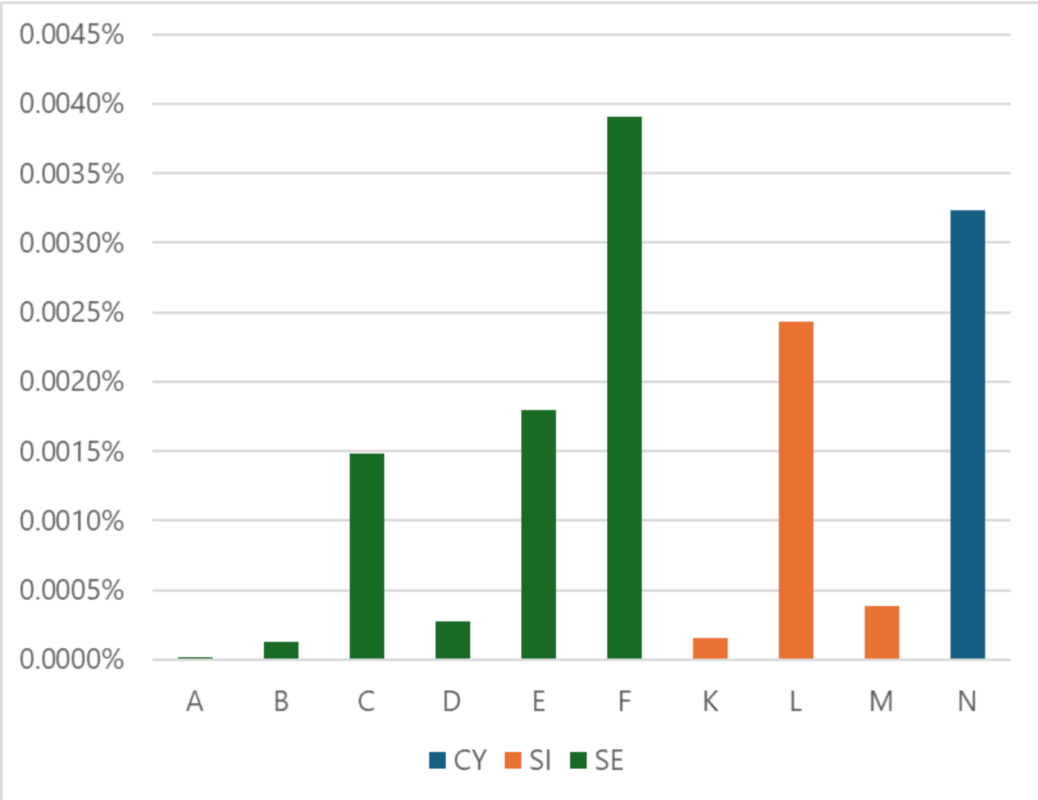

Figure 9 presents the lowest average reduction of firms' profitability ratio (profit before tax over turnover) in percent from their respective additional compliance costs per industry and country, based on average industry- and country-specific A1 data. ACC are measured as the difference between in- and outsource payroll service costs, per firm size. Source: Authors' calculation on the basis of the ORBIS Database (period 2015-2019 to exclude distortions from COVID pandemic.

separately. One observation per country and industry and observations less than 5 % of the median of the industry were not included in the analysis. Due to inconsistencies in reporting of the industry sector A1 data Portugal in 2019 and Iceland in 2016 as well as 2017 were not considered for the industries B-E.

49 Results are largely consistent when using the ACC-TO-ratio.

Figure 10 shows, vice versa, the countries and industries with the largest reduction in profitability. We do not want to overemphasize the large reduction by almost 10% in Luxemburg's professional, scientific and technical activities (M; LU) because the result is based on two firms only and may not be representative. But also, a reduction of profitability of up to 3.5% in Croatian industries (manufacturing, water, construction, finance, real estate: C, E, F, K, L; HR) is considerable. Also the mining industry in Slovenia (B; SI) and administrative services in Portugal (N; PT) stand out.

Figure 10: Highest Average Reduction of Profitability Ratio from ACC in %, per Industry, per Country

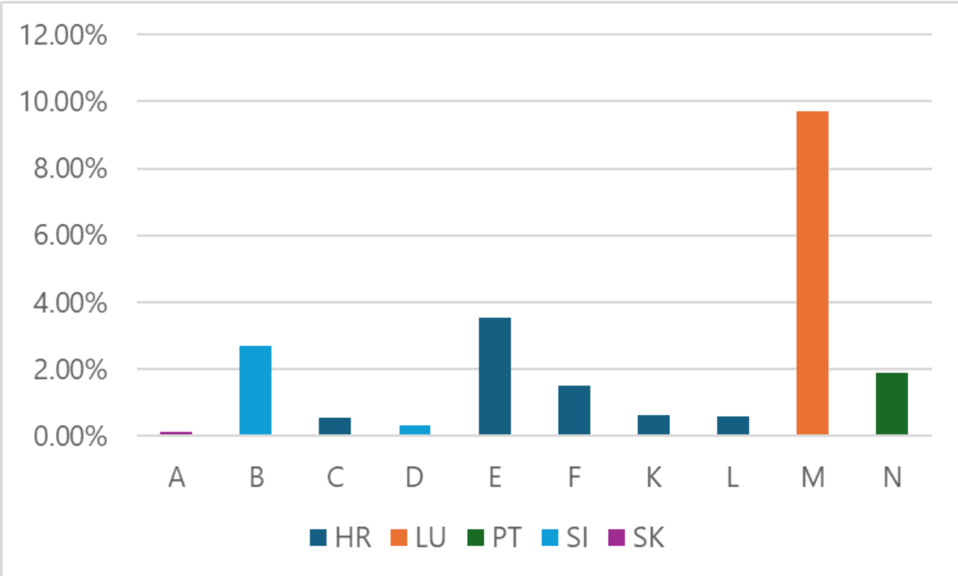

Figure 10 presents the highest average reduction of companies' profitability ratio (profit before tax over turnover) in percent from their respective additional compliance costs per industry and country, based on average industry- and country-specific A1 data. ACC are measured as the difference between in- and outsource payroll service costs, per company size. Source: Authors' calculation on the basis of the ORBIS Database (period 2015-2019 to exclude distortions from COVID pandemic.

3.1.6. Frontier Workers

The analysis above captures posted workers, but not the large group of frontier workers, who are not included in our data. Therefore, the analysis underestimates the additional compliance costs caused by worker mobility.

A considerable number of employees can be classified as cross-border workers. In other words, in addition to approx. 1.9 million (2022) workers posted abroad, roughly the same number of individuals works across borders (1.8 million cross-border workers in 2022, similar to pre-pandemic levels, according to the report "Cross-border work in the EU and EFTA countries"[50] by the EC). Switzerland and Luxembourg are the primary hosts of cross-border workers, by taking in approximately 368,000 respectively 222,000 workers in 2022. Most cross-border workers come from France, especially the Grand Est and Auvergne-Rhône-Alpes region.

However, the assumption that firms' payroll service costs are a multiple for frontier workers is weak, because presumably firms who are active close to the border and who employ frontier workers, have established a routine in their payment services which reduces their compliance costs. While we acknowledge that compliance costs are higher for frontier workers, we refrain from detailed

[50] European Commission: Directorate-General for Employment, Social Affairs and Inclusion, 2024, *Cross-border work in EU and EFTA countries*. Available at: https://data.europa.eu/doi/10.2767/826498, consulted on 14 April 2025.

calculations for lack of reliable data. Further, we point to Subsection 3.2 below which discusses costs for the employee.

3.1.7. Summary and Limitations

The estimation of ACC and their effect on firms' profitability, based on data from Deloitte survey, Orbis financial data, and A1 worker mobility data, shows that also regarding worker mobility, small firms bear the largest ACC, and that results vary considerably across countries and industries.

When interpreting the results of these analyses one needs to bear in mind that mostly due to data availability our estimations have several limitations.

First, it is difficult to observe compliance costs. Our approximation assumes that the ACC resulting from worker mobility are reflected in the cost difference, as reflected in survey results, between in-house and outsourced payroll services. Such approximation may result in an overestimation because firms may well be able to address challenges of foreign compliance requirements in their in-house services at lower cost. Further it is reasonable to assume that over time, expertise increases and costs decline. On the other hand, we may underestimate cost for payroll services, especially for firms who send their employees frequently, short-term, in a variety of countries. Also, our approximation does not include differences in country-specific wage levels or payroll service cost levels. Our analysis does, however, include higher compliance costs for smaller firms.

Second, we base our estimation on data on issued A1 certificates. Not every issued A1 certificate necessarily leads to an actual posting abroad. The number of issued A1 certificates thus does not need to result in the same number of individuals involved. An A1 certificate can also be issued for a self-employed person; however, the percentage is minimal.

Third, our data does not cover all types of worker mobility, which likely also results in an underestimation of compliance costs for mobile workers. Especially frontier workers are not included, we try to overcome this limitation by our discussion above. Neither could we include digital nomads, due to data restrictions. Ultimately it is not clear whether the over- or underestimating other factors prevail.

Fourth, the analysis does not capture very small entities with less than 500 employees. Nonetheless, the results show that (very) small companies face (even) higher additional compliance costs. Interview evidence[51] indicates that SMEs find the lack of harmonization of posting rules and procedures within the European Union to be the largest burden faced with posted workers. Companies further mention administrative requirements such as the frequency of required notifications, for each worker and for each posting period, as well as the notification of changes due to for instance illness, protection of personal data, data availability during the work assignment and the scope of documents. According to the companies surveyed, the regulations have a high effect on their entrepreneurial flexibility and response options.

Finally, our data does not indicate to which extent firms, especially small firms, avoid extending their business across borders for high compliance costs or for fear of unintended non-compliance and penalty payments. We can only observe worker mobility as it materialized in the past. It seems reasonable however to assume that compliance costs can act as a deterrent.

[51] Holz, M and Icks, A., 2023. *Influence of administrative burdens on the cross-border posting of employees by SMEs in border regions.* Available at https://www.researchgate.net/publication/372646638, consulted on 14 April 2025.

3.2. Barriers to Worker Mobility: Compliance costs of Employees

Individuals face manifold non-tariff tax barriers when engaging in remunerated activities in another country. These costs can be both explicit and implicit costs, which both depend on the particular circumstances of the person in question. Implicit costs – or opportunity costs – in this context typically involve time spent on tax declarations that could otherwise be invested into remunerated work or leisure activities.[52] We need to distinguish between two types of mobility here, individuals that change their tax residence along with their employment, and individuals that maintain their previous tax residence.

3.2.1. Maintaining Tax Residence

For occasional activities in another country, even within the EU, or when individuals have good reason (e.g. family ties, property ownership) to maintain their current residence, the following non-tariff tax burdens may arise:

a) Registering with the new tax authority: This is a bureaucratic process that involves collecting documents and requesting a new foreign tax identification number (in person or – if available – online).
b) Certificate of Residence: Cross-border workers need to procure an "EU EEA Form" from their residence tax authority. The form itself is simple, it is issued from the country of employment but requires the signature of the tax authority in the country of residence to guarantee that the worker has their residence in that country.[53.] This form ensures that wages will be taxed according to the residence country's personal income taxation and an eventual double tax treaty (DTT) between the two involved states.[54] Employers must then be willing to accommodate the request and pay out gross wages without deducting a wage tax. Wage payments will be withheld until the form is presented, and this causes a liquidity cost for cross-border workers.
c) WHT: In case the foreign worker does not provide a valid EU EEA form, or the employer refuses to accept it, some countries will apply a WHT on gross income. Table 1 indicates WHTs across the EU according to domestic law.[55] The employee must then declare their income in their country of residence, where it will be fully taxed without the possibility to deduct the WHT. This presents the clearest explicit cost for cross-border workers.
d) Tax Declaration: As opposed to workers with only domestic income, inserting foreign income into the tax return can be very complex and time consuming. As opposed to domestic workers, foreign workers may need to rely on a tax accountant.
e) Translation: Foreign pay slips may be in a different language from the residence country's tax authority. The tax authority may demand an official translation by a professional, which incurs a cost.
f) Audits: Many countries apply an explicit or implicit lower probability of audit to taxpayers that have not changed their precompiled tax returns. As workers with foreign income are denied this benefit, they are more likely to be audited, which might cause a great deal of psychological stress, as nobody can completely exclude an error in their tax declaration, even if done without any intent. Depending on the particular individual, this mental burden presents an additional cost to cross-border workers. The more risk averse the individual, the higher will that burden

[52] Pope, J., 1989, *The Compliance Costs of Personal Income Taxation – A Review of Issues*, Australian Tax Forum, Vol. 6(2), 125 – 142.
[53] For a reference, the German EU EEA Form can be downloaded at www.formulare-bfinv.de/ffw/.
[54] Obtaining the signature may in some cases be cumbersome and take several weeks.
[55] Note that in many cases, a DTT will reduce or eliminate the WHT.

be. As women are typically more risk averse than men, this constitutes a gender bias in the non-tariff tax burden.

Table 1: Withholding Tax Rates on Personal Income in the EU

COUNTRIES	WHT
Czech Republic, Slovakia	35%
Belgium	30%
Italy	26%
Portugal	25%
Denmark	22%
Ireland, Poland	20%
Spain	19%
Romania	16%
Croatia, Greece, Slovenia	15%
Bulgaria, Lithuania	10%
Austria, Cyprus, Estonia, Finland, France, Germany, Hungary, Latvia, Luxemburg, Malta, Netherlands, Sweden	0%

Table 1 represents the WHT on personal income in the EU. Data correspond to latest available (December 2024). Source: Trading Economics[56]

3.2.2. Change of Tax Residency

Individuals that migrate and move their tax residency to their new country essentially face five types of costs:

g) Registering with the new tax authority: As above, this is a bureaucratic process that involves collecting documents and requesting a new foreign tax identification number (in person or – if available – online).

h) Tax code: A new country implies a new tax code, and therefore an individual must learn how to declare taxes (again). This involves new deadlines, different forms, and most importantly different types of tax deductions. Individuals are less acquainted with the new tax code, which may also be in a different language, so they may be more likely to seek (costly) advice from a tax advisor.

i) Transfer costs of tax residence: An individual moving to another country will have to declare to both tax authorities their intent to change the tax residence. Whilst the new country of residence will probably not create any hurdles, the emigration country will lose tax base and may therefore attempt to retain the person. As described above countries apply different interpretations of tax residence, all revolving around the "centre of vital interests" which might cause distortions.

j) Transitional costs: Unless the migration occurs exactly at the beginning of the fiscal year, a mobile worker will have income in both countries. This implies that tax declarations will be

[56] Trading Economics. Available at: https://tradingeconomics.com/country-list/withholding-tax-rate, consulted on 30 March 2025.

necessary in both countries, and bureaucratic obstacles to exempt taxation in the country without residence in that particular fiscal year will have to be overcome.

k) Exit tax: Some countries may charge a tax when residents want to leave, a so-called exit tax (see Section 2.2.4).

3.2.3. Regressivity of Opportunity Costs

Some of the costs identified above are proportional (a) to income. Most costs are independent of the amount of income (F). They may however increase in the complexity of the tax declaration (e.g. for gig workers who operate in several countries). Figure 11 below shows theoretical total costs (TC) relative to income (left Panel) and theoretical average costs (AC) relative to income (right Panel). We can infer the regressive nature of employee opportunity costs in Panel (b).

Figure 11: Total and Average Employee Costs for Cross-Border Worker Mobility

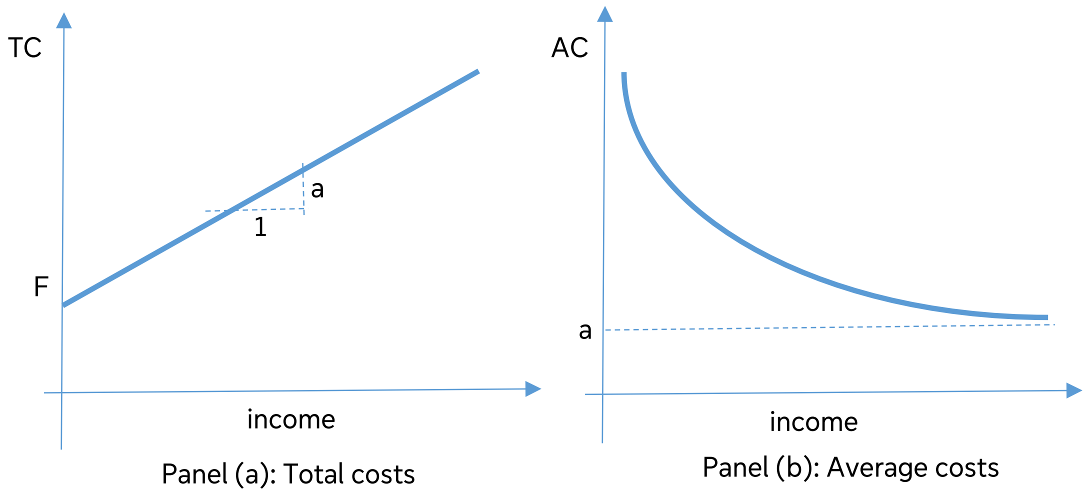

Figure 11 describes the theoretical total costs/average costs relative to income. Source: Authors` illustration.

In addition to non-tariff tax barriers, an individual might also face a different fiscal treatment under the new tax regime. We will discuss this in detail in the next section (3.3).

3.3. Barriers to Worker Mobility: Tax Differentials

Following *Mincer* (1974),[57] income can be explained through the characteristics of an individual. In a cross-border situation, we observe specifically:

a) Transferability of Skills: When moving to another country, some skills may be transferable, others (like language) less. In addition, foreigners may be subject to pure discrimination due to ethnicity or nationality, even within the EU (Gabszewicz et al 2016[58]). Estimating the wage penalty is beyond the scope of this study, as mentioned in the preamble. We will assume from now on that p equals zero.

b) Labour Market Integration: If we assume a fully integrated labour market within the EU, the remuneration for the same qualifications should be identical across all Member States. Gross wages would be identical, and differences in net wages would be only due to differences in personal income taxation (PIT) and social security contributions (SSCs). We will refer to this

57 Mincer, J., 1974, *Schooling, Experience and Earnings*. New York: National Bureau of Economic Research.

58 Gabszewicz, J., Tarola., O. Zanaj. S., 2016, *Migration, wages and income taxes*. International Tax and Public Finance 23(3). 434 – 453.

case as absolute transferability. By contrast, if we assume perfectly separable labour markets, an individual with a given set of skills should find themselves in the same position in the income distribution. We will refer to this case as relative transferability. Differences in net wages will be due to both differences in wage levels between the two countries and differences in PIT and SSC.

We will adopt the following assumptions for the ensuing analysis:

(1) As this study focuses on obstacles to mobility due to tax barriers, we will analyse full transferability of skills in the absence of pure discrimination and a fully integrated EU labour market (absolute transferability) here. This allows us to refrain from an analysis of EU labour markets.

(2) In order to avoid bias due to different socio-demographic characteristics and the welfare policies implemented through PIT and SSC, we will focus on one type of family, single person households, as they are the most mobile.[59]

(3) We simulate taxes, contributions and benefits using the Hypothetical Household Tool[60] embedded in EUROMOD[61], the EU-wide tax-benefit microsimulation. We consider fiscal rules in place on 30 June 2023 for a single person without children, 40 years old, working 40 hours per week and 12 months per year, with 10 years of working history. We will look at different levels of income, namely individuals who earn the EU weighted average annual salary of € 32,526 (100%), those earning half (€ 16,263), a quarter (€ 8,138), fifty percent above the average (€ 48,789), and those earning twice (€ 65,052).

(4) We will only consider the situation where an individual assumes a job in another country of the Union and move its tax residency there. We will not consider commuters, and this also excludes the analysis of any preferential treatment for cross-border workers.[62] Note however that there is one special case where the following analysis would fit perfectly, individuals remaining in their current job but permanently moving their tax residence across borders. A concrete example is Kittsee, an Austrian town (3,700 inhabitants) close to Bratislava, where one third of the population is Slovak, still working in Slovakia.

In the following (based on the methodology outlined in Box 1), we calculate the differences in the tax and contribution ratio (D) for an identical gross labour income (Y-N) between any two EU Member States i and j due to differences in PIT, SSC and benefits (in % of gross labour income). We do not include employer contributions to social security in this analysis. The results are presented in Table 2.

BOX 1: Methodology used to calculate differences in tax and contributions ratios

Formal derivation of the difference in the tax and contribution ratio (D):

We define this difference D as:

$$D_{ij} = T_i/Y_i - T_j/Y_j = (Y_i - N_i)/Y_i - (Y_j - N_j)/Y_j$$

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59 Heinz, F. F. and Ward-Warmedinger, M., 2006, *Cross-border labour mobility within an enlarged EU*, ECB Occasional Paper, No. 52.

60 Gasior, K. and Recchia, P., 2019, *The Use of Hypothetical Household Data for Policy Learning: Comparative Tax-Benefit Indicators Using EUROMOD HHoT*, Journal of Comparative Policy Analysis: Research and Practice 22(2), 170 – 189.

61 Sutherland, H. and Figari, F., 2013, *EUROMOD: The European Union tax-benefit microsimulation model*, International Journal of Microsimulation 1(6), 4 –26.

62 Kleven, H., Landais, C., Munoz, M. and Stantcheva, S., 2020, *Taxation and Migration: Evidence and Policy Implications*, Journal of Economic Perspectives 34(2), 119 – 142.

where the net income is defined as $N_i = Y_i - T_i$, and T equals personal income tax plus social security contributions minus welfare benefits. With $Y_i = Y_j = Y$, we obtain

$$D_{ij} = (T_i - T_j)/Y = (N_j - N_i)/Y = N_j/Y - N_i/Y.$$

If $D_{ij} > 0$, income is taxed more in country i with respect to j, and net income is higher in country j with respect to country i. Figure 12 gives the rank of every EU member state in terms of tax and contribution burden (T_i/Y) for five different levels of income, as indicated above (3), with the lowest on top and the highest at the bottom. When moving from a country further up in the graph to a country further down, taxes and contributions will increase, thus leading to a barrier in worker mobility.

Figure 12: Rank of EU Countries by Tax Burden for Different Levels of Income

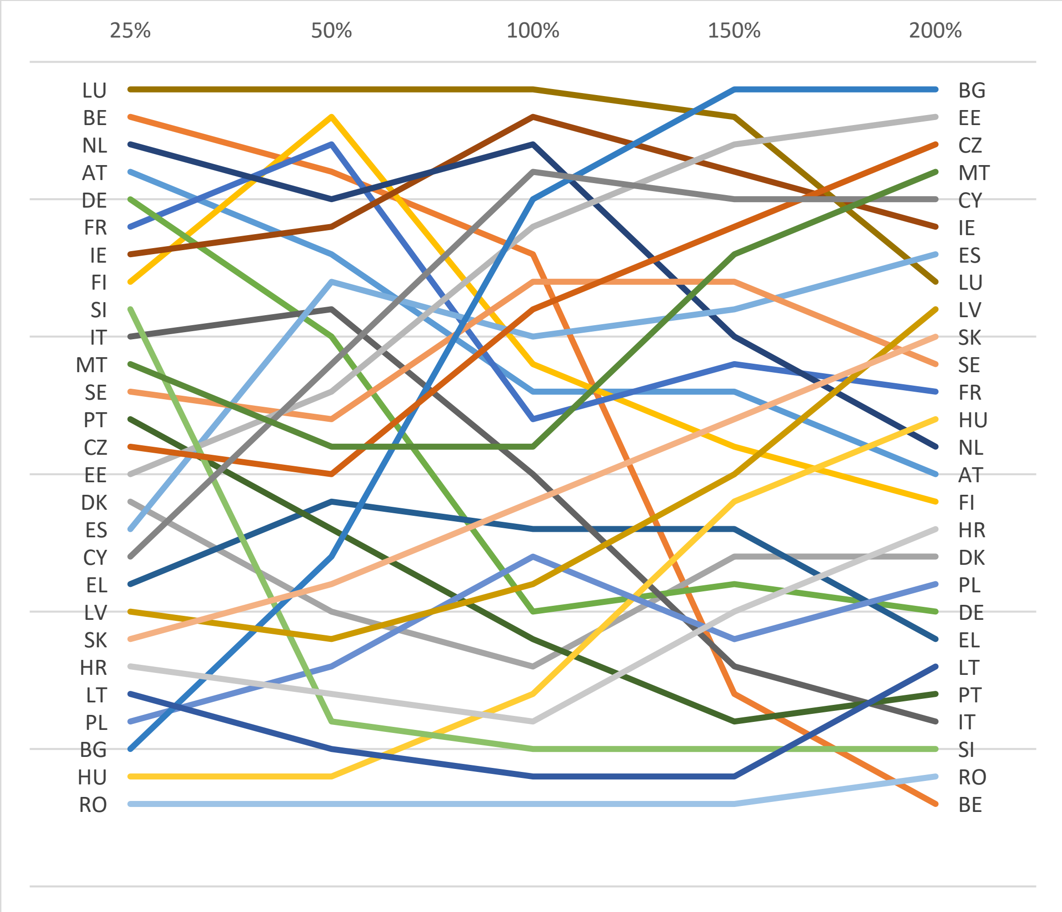

Figure 12 presents the tax burden of EU countries for different levels of income. The countries at the top of the vertical axis indicate low tax burden while countries at the bottom show high tax burden. Source: Authors' calculation. Data are for 2023 from the EURMOD database.

We find that tax barriers are not uniform across income levels. Some countries have "tax barriers" (in the form of higher taxes and social contributions of employer contributions to social security compared to another Member State) for low-income workers but are generous for high income workers. It is the opposite for other countries, in particular those with mature welfare states, like Belgium, the Netherlands, Austria, Germany or France. Some countries move through the ranks. For instance, Belgium is one of the most attractive countries for low income (#2), but least attractive for high income earners. By contrast, Bulgaria is one of the least attractive countries for low-income earners, but the most attractive for individuals earning twice the EU average. Note that in some countries an annual income of € 8,136 (25% of average) may be considered a low income, so welfare benefits kick in, whereas in other countries the same level of income may be considered normal. This may impact the tax burden between EU Member States.

Table 2 presents the results for the differences in the tax and contribution ratio (D_{ij}) for every country pair. We list the emigration country (i) in the rows, and the immigration country (j) in the columns. To give an example, moving from Belgium to Austria leads to a 1.1 percentage point (pp) increase in the tax and contribution ratio (higher taxes) and a lower net income. By contrast, moving from Denmark to Austria leads to reduction in taxes by 9.9 pp. Migrating in the opposite direction (from Austria to Denmark) obviously implies leads to an increase in taxes and contributions. Table 2 assumes a mean income level. Find further information on income levels below or above the mean in the Annex.

Table 2: Tax Burden Differences for Gross Labour Income Across EU Member States (Mean)

	AT	BE	DK	FI	FR	DE	EL	IE	IT	LU	NL	PT	ES
AT		-1.1	9.9	-0.4	1.6	8.0	6.2	-9.0	3.4	-15.0	-5.9	8.3	-0.5
BE	1.1		11.0	0.7	2.7	9.1	7.3	-7.9	4.5	-13.9	-4.7	9.4	0.6
DK	-9.9	-11.0		-10.3	-8.3	-1.9	-3.7	-18.9	-6.5	-24.9	-15.8	-1.6	-10.4
FI	0.4	-0.7	10.3		2.0	8.3	6.5	-8.6	3.8	-14.6	-5.5	8.7	-0.1
FR	-1.6	-2.7	8.3	-2.0		6.4	4.6	-10.6	1.8	-16.6	-7.5	6.7	-2.1
DE	-8.0	-9.1	1.9	-8.3	-6.4		-1.8	-16.9	-4.6	-23.0	-13.8	0.4	-8.5
EL	-6.2	-7.3	3.7	-6.5	-4.6	1.8		-15.2	-2.8	-21.2	-12.0	2.1	-6.7
IE	9.0	7.9	18.9	8.6	10.6	16.9	15.2		12.4	-6.0	3.1	17.3	8.5
IT	-3.4	-4.5	6.5	-3.8	-1.8	4.6	2.8	-12.4		-18.4	-9.2	4.9	-3.9
LU	15.0	13.9	24.9	14.6	16.6	23.0	21.2	6.0	18.4		9.1	23.3	14.5
NL	5.9	4.7	15.8	5.5	7.5	13.8	12.0	-3.1	9.2	-9.1		14.2	5.4
PT	-8.3	-9.4	1.6	-8.7	-6.7	-0.4	-2.1	-17.3	-4.9	-23.3	-14.2		-8.8
ES	0.5	-0.6	10.4	0.1	2.1	8.5	6.7	-8.5	3.9	-14.5	-5.4	8.8	
SE	0.9	-0.2	10.8	0.5	2.5	8.9	7.1	-8.1	4.3	-14.1	-4.9	9.2	0.4
EE	1.4	0.3	11.3	1.1	3.0	9.4	7.6	-7.5	4.8	-13.6	-4.4	9.8	0.9
HU	-10.8	-11.9	-0.9	-11.1	-9.2	-2.8	-4.6	-19.8	-7.4	-25.8	-16.6	-2.5	-11.3
PL	-6.6	-7.7	3.3	-7.0	-5.0	1.4	-0.4	-15.6	-3.2	-21.6	-12.4	1.7	-7.1
SI	-12.9	-14.1	-3.0	-13.3	-11.3	-5.0	-6.8	-21.9	-9.6	-27.9	-18.8	-4.6	-13.5
BG	4.8	3.7	14.7	4.4	6.4	12.7	10.9	-4.2	8.2	-10.2	-1.1	13.1	4.3
CZ	0.7	-0.4	10.6	0.3	2.3	8.7	6.9	-8.3	4.1	-14.3	-5.1	9.0	0.2
CY	5.8	4.7	15.7	5.4	7.4	13.8	12.0	-3.2	9.2	-9.2	-0.1	14.1	5.3
LV	-6.8	-8.0	3.1	-7.2	-5.2	1.1	-0.7	-15.8	-3.4	-21.8	-12.7	1.5	-7.3
LT	-16.6	-17.7	-6.7	-16.9	-15.0	-8.6	-10.4	-25.6	-13.2	-31.6	-22.4	-8.3	-17.1
MT	-2.0	-3.1	7.9	-2.4	-0.4	6.0	4.2	-11.0	1.4	-17.0	-7.8	6.3	-2.5
RO	-18.8	-19.9	-8.9	-19.1	-17.2	-10.8	-12.6	-27.8	-15.4	-33.8	-24.6	-10.5	-19.3
SK	-5.2	-6.3	4.7	-5.6	-3.6	2.8	1.0	-14.2	-1.8	-20.2	-11.1	3.1	-5.7
HR	-11.3	-12.5	-1.5	-11.7	-9.8	-3.4	-5.2	-20.3	-8.0	-26.4	-17.2	-3.0	-11.9

Table 2 presents the difference in the tax and contribution ratio between the emigration country (row) and the immigration country (column). Source: Authors' calculation. Data are for 2023 from the EURMOD database.

Taxes and social security contributions pose a significant obstacle to the free movement of labour across the EU, resulting to as much as a third of gross income (moving from Romania to Luxemburg). In general, we find that Luxembourg, Ireland, the Netherlands, Cyprus and interestingly Bulgaria from a pure tax perspective (i.e. disregarding differences in wage levels) are favourable countries to migrate to, whereas Hungary, Croatia, Slovakia, Lithuania and Romania have high tax barriers for cross-border workers.

Table 2 (ctd): Tax Burden Differences for Gross Labour Income Across EU Member States (Mean)(continued)

	SE	EE	HU	PL	SI	BG	CZ	CY	LV	LT	MT	RO	SK	HR
AT	-0.9	-1.4	10.8	6.6	12.9	-4.8	-0.7	-5.8	6.8	16.6	2.0	18.8	5.2	11.3
BE	0.2	-0.3	11.9	7.7	14.1	-3.7	0.4	-4.7	8.0	17.7	3.1	19.9	6.3	12.5
DK	-10.8	-11.3	0.9	-3.3	3.0	-14.7	-10.6	-15.7	-3.1	6.7	-7.9	8.9	-4.7	1.5
FI	-0.5	-1.1	11.1	7.0	13.3	-4.4	-0.3	-5.4	7.2	16.9	2.4	19.1	5.6	11.7
FR	-2.5	-3.0	9.2	5.0	11.3	-6.4	-2.3	-7.4	5.2	15.0	0.4	17.2	3.6	9.8
DE	-8.9	-9.4	2.8	-1.4	5.0	-12.7	-8.7	-13.8	-1.1	8.6	-6.0	10.8	-2.8	3.4
EL	-7.1	-7.6	4.6	0.4	6.8	-10.9	-6.9	-12.0	0.7	10.4	-4.2	12.6	-1.0	5.2
IE	8.1	7.5	19.8	15.6	21.9	4.2	8.3	3.2	15.8	25.6	11.0	27.8	14.2	20.3
IT	-4.3	-4.8	7.4	3.2	9.6	-8.2	-4.1	-9.2	3.4	13.2	-1.4	15.4	1.8	8.0
LU	14.1	13.6	25.8	21.6	27.9	10.2	14.3	9.2	21.8	31.6	17.0	33.8	20.2	26.4
NL	4.9	4.4	16.6	12.4	18.8	1.1	5.1	0.1	12.7	22.4	7.8	24.6	11.1	17.2
PT	-9.2	-9.8	2.5	-1.7	4.6	-13.1	-9.0	-14.1	-1.5	8.3	-6.3	10.5	-3.1	3.0
ES	-0.4	-0.9	11.3	7.1	13.5	-4.3	-0.2	-5.3	7.3	17.1	2.5	19.3	5.7	11.9
SE		-0.5	11.7	7.5	13.9	-3.9	0.2	-4.9	7.8	17.5	2.9	19.7	6.1	12.3
EE	0.5		12.2	8.0	14.4	-3.3	0.7	-4.4	8.3	18.0	3.4	20.2	6.6	12.8
HU	-11.7	-12.2		-4.2	2.2	-15.5	-11.5	-16.6	-3.9	5.8	-8.8	8.0	-5.6	0.6
PL	-7.5	-8.0	4.2		6.4	-11.4	-7.3	-12.4	0.2	10.0	-4.6	12.2	-1.4	4.8
SI	-13.9	-14.4	-2.2	-6.4		-17.7	-13.7	-18.7	-6.1	3.6	-11.0	5.8	-7.8	-1.6
BG	3.9	3.3	15.5	11.4	17.7		4.1	-1.0	11.6	21.3	6.8	23.5	10.0	16.1
CZ	-0.2	-0.7	11.5	7.3	13.7	-4.1		-5.1	7.5	17.3	2.7	19.5	5.9	12.1
CY	4.9	4.4	16.6	12.4	18.7	1.0	5.1		12.6	22.4	7.8	24.6	11.0	17.2
LV	-7.8	-8.3	3.9	-0.2	6.1	-11.6	-7.5	-12.6		9.7	-4.8	11.9	-1.6	4.5
LT	-17.5	-18.0	-5.8	-10.0	-3.6	-21.3	-17.3	-22.4	-9.7		-14.6	2.2	-11.4	-5.2
MT	-2.9	-3.4	8.8	4.6	11.0	-6.8	-2.7	-7.8	4.8	14.6		16.8	3.2	9.4
RO	-19.7	-20.2	-8.0	-12.2	-5.8	-23.5	-19.5	-24.6	-11.9	-2.2	-16.8		-13.6	-7.4
SK	-6.1	-6.6	5.6	1.4	7.8	-10.0	-5.9	-11.0	1.6	11.4	-3.2	13.6		6.2
HR	-12.3	-12.8	-0.6	-4.8	1.6	-16.1	-12.1	-17.2	-4.5	5.2	-9.4	7.4	-6.2	

Table 2 presents the difference in the tax and contribution ratio between the emigration country (row) and the immigration country (column). Source: Authors' calculation. Data are for 2023 from the EURMOD database.

4. CASE STUDIES

KEY FINDINGS

The three case studies contained in this section give a more concrete perception of the consequences of cross-border tax disparities that affect the mobility of workers within the European Union. The first two case-studies can raise relevant issues in the relations between various countries of the European Union; the third one addresses the specific rules applicable within the Öresund region.

Case study 1 concerns the situation of a highly mobile worker, active in several EU Member States and working remotely for the employer. The case shows the difficulties in applying Article 15 of tax treaties following the pattern of the OECD Model Convention in the presence of remote working.

Case study 2 involves a frontier worker providing services to a statutory body of a different EU Member State. The case, also involving remote exercise of the activity, shows the potential for different characterisation of income under the bilateral tax treaty between Article 15 and 19 of the OECD Model Convention with an exposure to unresolved double taxation. The analysis considers both the tax treatment in the presence and absence of frontier workers clauses in the applicable treaty.

Case study 3 concerns the bilateral Öresund Agreement between Denmark and Sweden, which is an interesting case for collaboration between countries on taxing cross-border workers. It introduces several important measures to modernise and clarify cross-border taxation for individuals working and living in the Öresund region. The treaty ensures that income is taxed in the country where work is normally performed, even if part of the work is done remotely. Overall, the treaty strengthens legal certainty and promotes labour mobility within the region.

4.1. Introduction

Taxing powers remain, in principle, a national prerogative of EU Member States, but their exercise must comply with the primacy of EU law. However, the EU Council might adopt common measures that approximate national legislation and are necessary to remove cross-border obstacles that directly affect the establishment or functioning of the Internal Market. In such circumstances, the legal basis for adopting such measures is Article 115 TFEU, which requires evidence of the obstacles on the direct impact on the Internal Market, requires adherence to the principle of subsidiarity, and necessitates unanimity for adopting EU Directives.

Without an EU common tax policy, the strict conditions for adopting secondary law in direct taxes have significantly limited positive integration of direct taxes, mostly confining it within the boundaries of the treatment of corporate entities. However, cross-border tax treatment of workers shows significant disparities and a general framework of legal uncertainty, which becomes particularly visible in the case of remote working, as the case studies in this section will more clearly show. This domain requires urgent intervention to facilitate a smooth exercise of fundamental freedoms.

Almost all tax treaties in force within the EU are bilateral, and their clauses follow the OECD Model Convention. This also applies to income from employment, though some differences might arise, such as frontier workers' clauses. After outlining how tax treaty clauses on income from employment apply under the OECD Model Convention, this section will also bring additional insight on the treatment applicable in the presence of specific clauses that deviate from this pattern. The selection of EU

Member States considers the countries whose bilateral tax treaties present some relevant deviations from the pattern of the OECD Model Convention.

These issues will be addressed more specifically in two case studies, which elaborate on the challenges of remote work for tax treaties within the EU. Those case studies will also include some variations to show the relevant differences across some bilateral treaties and their potential implications for the free movement of workers in the EU. The third case study will specifically address the solutions that Sweden and Denmark found in the Öresund region. This solution shows that the context of frontier workers might raise specific circumstances in which ad hoc criteria should apply.

Tax treaty clauses are generally unfit to operate in a remote work scenario, especially when it is unclear beforehand in which country the worker exercises the employment. Uncertainty on these facts usually prevents the correct levying of WHT at source. Additional issues might arise according to the law that regulates the employment contract, but they fall outside the scope of this study and have been addressed in prior studies.[63]

Tax nexus on income from employment follows two main criteria, namely the residence of the worker (personal nexus) and the place of exercise of the employment (objective nexus). From the perspective of tax treaties, when the two criteria match in one country, Art. 15 of the OECD Model Convention keeps exclusive taxing rights in such a country, preventing cross-border juridical double taxation. However, exclusive allocation can also apply under tax treaties when Art. 15 (2) of the OECD Model Convention records a weak objective nexus with the Contracting State other than that of residence. This occurs based on a triple negative condition, i.e. a) the physical presence of the worker in the State other than that of residence does not exceed 183 days in the aggregate in the period or periods commencing or ending in a tax year; b) the remuneration is not paid by, or on behalf of, an employer who is a resident of that State; and c) the remuneration is not borne by a PE of the employer in that State. When either of the three conditions fails, the objective tax nexus with the Contracting State other than that of the employee's residence will apply and give rise to cross-border juridical double taxation, which the State of residence will then give relief for at the conditions applicable in the convention.

As the first two case studies will demonstrate more clearly, the nexus based on the place of employment raises critical issues when remote work makes the place of exercise of employment uncertain. Traditionally, it might be assumed that such a place matches that of the company's premises except where otherwise indicated in the contract or otherwise proved. However, the spread of remote work after the COVID-19 crisis shows a changed employment practice, which might de facto tolerate remote work, including in the framework of a specific employer policy or where the worker's mobility otherwise applies.

This legal uncertainty might prompt some employers to limit the remote exercise of employment within national boundaries as a possible means to prevent tax and social security difficulties. These issues are in addition to the structural exposure to cross-border tax disparities highlighted in other sections of this study.

However, the compatibility of such practice with the free movement of workers might be questioned, which emphasises the importance of establishing a normative and regulatory EU framework that establishes clear rules to ensure free movement without such obstacles.

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[63] See, for instance, European Commission: Directorate-General for Employment, Social Affairs and Inclusion, Notus, Visionary Analytics, Martinaitis, Ž., Sadauskaitė, A. et al., 2024, *Study exploring the social, economic and legal context and trends of telework and the right to disconnect, in the context of digitalisation and the future of work, during and beyond the COVID-19 pandemic – Executive summary*, European Parliament, Luxembourg. Available at: https://data.europa.eu/doi/10.2767/265683, consulted on 29 April 2025.

The subsequent case studies 1 and 2, including remote work elements, show the complexity of cross-border tax rules. The main emphasis on tax treaties does not imply that no issue arises at the level of domestic tax law but rather reflects the impossibility of satisfactorily addressing them, given the size and scope of this study.

The first case study focuses on highly mobile workers. This category of workers has unquestionably greater exposure to issues related to cross-border tax obstacles, which might increase when employment is exercised remotely. Accordingly, a highly mobile worker might be physically present in one country for work-related reasons that are not connected to that country. Even though case study 1 expressly refers to a highly mobile worker, the tax obstacles arising in that context might also affected posted workers who exercise their activity in similar circumstances.

The second case study concerns a frontier worker and will be addressed in a context that includes or does not include a frontier workers' clause in the applicable tax treaty. This case study sheds some light on the treaty characterisation issues, which are currently not always satisfactorily addressed in the presence or absence of specific clauses on frontier workers.

The first two case studies are presented in their fact pattern, then addressed in the light of how the OECD Model Tax Convention would apply, and finally analysed in the light of the bilateral tax treaties in force between a selection of EU countries.[64] Both cases will present variations to give more insight into tax treaty clauses that deviate from the pattern of the OECD Model Convention and on different fact patterns, such as the presence or absence of a dedicated workspace at the employer's premises.[65] The third case study will address the Öresund region and follows a different pattern, which better highlights on the specific nature that frontier workers of this region raises.

4.2. Case Study 1 – The Highly Mobile Worker

4.2.1. Facts

Mr X, a resident of EU Member State R, is an employee working 100% (full-time) for company A, a resident of EU Member State K, with an employment contract regulated by the law of EU Member State K that indicates the company's premises as the main place of exercise of employment. Company A allows Mr X to work remotely, including from his home in EU Member State R. Moreover, the company requires Mr X to carry out some activities at the premises of the subsidiaries of company A, established in EU Member States L, M, N and O.

In year 1, Mr X, in fact, only spends 10 days working at the premises of company A. He works remotely from different EU Member States, including more than 200 days from his home office in EU Member State R and about 30 days each in EU Member States L, M, N and O.

The facts indicate that Mr X has worked remotely for almost the entire year 1, and that, for a non-negligible part of his working time (namely 120 days, i.e. more than one-third of the annual working time), he has exercised employment from four different EU Member States other than K and R.

64 The selection includes bilateral tax treaties of EU Member States that more frequently include cases of cross-border workers, frontier workers clauses, or clauses on income from employment that deviate from the standard of Article 15 of the OECD Model Convention. Austria, Belgium, France, Germany, Italy, Luxembourg, and the Netherlands are those countries. For the sake of assuring a systematic analysis of the treaties of such countries all their bilateral relations have been covered in this study.

65 In the absence of a dedicated workspace for the employee, the case study assumes the need to book the use of flexspace at the employer's premises.

4.2.2. The Applicable Treatment under the OECD Model Tax Convention

Since it is assumed that Mr X's income can be characterised as income from employment for tax treaty purposes, Art. 15 of the OECD Model Convention is in principle applicable.[66] Determining the applicable tax treaty to the facts of the case requires the identification of the State of residence and that in which the employment is exercised.

On the one hand, the applicable tax treaty clause on income from employment, reflecting the pattern of Article 15 of the OECD Model Convention, clearly keeps the taxing rights of EU Member State R as the State of residence of Mr X; on the other hand, the place of employment is harder to determine with absolute certainty. This produces repercussions on the identification of the applicable tax treaties.

Various views can be held.

First, the main place of exercise of activity is in country R, as the employee is physically present in that country for most of year 1 and has a full-time contract with the employer. Therefore, insofar as the bilateral tax treaty between EU Member States K and R applies, Art. 15 (1) might apply to the case in a way that prevents double taxation by allocating exclusive taxing powers to State R. However, the wording of Art. 15 (1) first sentence is subject to the exception that employment is exercised also in the other Contracting State. When reading the K-R tax treaty, this clause might be met in respect of the sole 10 working days spent by Mr X in State K. When applying this reasoning, the consequence is that, for all the remaining working days, Mr X might have exercised the employment in countries other than K and R. Therefore, insofar as EU Member State K considers that the 10 days of the exercise of the employment combined with the indication in the contract that the main place of the employment is at the company's premises, it might regard the condition of Art. 15 (1) first sentence, second part as being met, and apply the consequences indicated in Art. 15 (1) second sentence, i.e. tax the remuneration of the employee as derived therefrom. A different line of reasoning might lead to the conclusion that the exercise of employment in EU Member State K has, in fact, a mere ancillary nature. Therefore, Article 15 (1) first sentence only applies in its first part and keeps exclusive taxing rights with the EU Member State R.

Similar issues might arise with some variations when applying the treaties of EU Member State R with EU Member States L, M, N and O to the facts of the case. In either of the latter four states, the argument related to the main place of exercise of employment is not met. However, Mr X might be held to exercise the activity for 30 days in their territory. In such circumstances, the criteria included in Art. 15 (2) of the OECD Model Convention, as applied to the facts of the case, might lead to the conclusion of a weak connection with the tax jurisdiction of countries L, M, N and O, unless the subsidiaries at which Mr X works are regarded as meeting either the condition of Art. 15 (2) (b) or (c), i.e. that either of those subsidiaries is regarded as the de facto employer of as giving rise to a PE of the employer that bears the burden of the remuneration.

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[66] The first two paragraphs of Article 15 OECD Model Tax Convention read as follows:

Article 15 - Income from Employment

1. Subject to the provisions of Articles 16, 18 and 19, salaries, wages and other similar remuneration derived by a resident of a Contracting State in respect of an employment shall be taxable only in that State unless the employment is exercised in the other Contracting State. If the employment is so exercised, such remuneration as is derived therefrom may be taxed in that other State.

2. Notwithstanding the provisions of paragraph 1, remuneration derived by a resident of a Contracting State in respect of an employment exercised in the other Contracting State shall be taxable only in the first-mentioned State if:

a) the recipient is present in the other State for a period or periods not exceeding in the aggregate 183 days in any twelve month period commencing or ending in the fiscal year concerned, and

b) the remuneration is paid by, or on behalf of, an employer who is not a resident of the other State, and

c) the remuneration is not borne by a permanent establishment which the employer has in the other State.

Should that be the case, such countries would have shared taxing rights proportional to the respective remuneration. In such circumstances, the traditionally bilateral nature of the tax treaties would require parallel application of the ones that EU Member State R has concluded with each EU Member State in which the employer has a PE. On top of these treaties, the tax treaty between EU Member State R and EU Member State K would also apply. The parallel application of those treaties might raise the need for EU Member State R to give relief for taxes levied in all other countries of exercise of the employment, i.e. EU Member State K and the other EU Member States. When relief is given by the exemption method, this raises less critical issues than when the ordinary credit method applies. In the latter circumstances, excess credit might be likely to arise from the combined application of taxes in the various countries of exercise of employment, i.e. EU Member State K and all other EU Member States in which the employer has a PE that bears in part or full the remuneration paid to Mr X.

In these circumstances, be it as an official short-term secondment or simply in line with a specific mission in the employer's interest or of its subsidiaries in those countries, it seems hard to exclude triggering the objective tax nexus in EU Member States L, M, N and O. Should the employment arrangements or the fact pattern show clear evidence of criteria to split the remuneration in proportion to the work conducted in those countries, then an apportionment of the taxing rights based on the place of exercise of the employment might reduce the exposure to disparities and mismatches.

Second, the main place of exercise of employment might be deemed to coincide with the company's premises and the official main place of employment. Even though this view might be formally met, it is hard to ignore the fact that the employee has only spent 10 days physically in EU Member State K. Accordingly, EU Member State R might challenge this view when determining whether and to what extent it should give relief for taxes levied in EU Member State K as the State of the activity. More complex issues might arise insofar as EU Member States L, M, N and O stick to the first view and exercise their taxing rights as States of exercise of the employment, even though just for the days the employee has worked on their territory, except when the triple negative condition contained in Art. 15 (2) is met.

A variation of this case study might show how remote work gives rise to additional issues for tax treaties. In this case, it is assumed that in year 2, Mr X becomes a EU Member State K resident. However, he keeps sojourning in State R for the same period. In these circumstances, regardless of whether EU Member State R might still regard Mr X as a resident taxpayer, remote working from the apartment where Mr X sojourns in State R might raise the issue as to whether it constitutes a PE of company A in State R. This might particularly be the case when the function of Mr X might actually engage in the company's business, i.e. when he participates to managerial decisions, and/or has the power to negotiate and/or bind the company.

In such circumstances, remote working might also expose company A to having a portion of its profits, namely that attributable to the home office PE, taxable in State R. Moreover, as indicated above, there would be problems of dual residence for Mr X and repercussions on the interpretation and application of the treaty with respect to Art. 15 (2) (c).

4.2.3. Treatment under Bilateral Tax Treaties between Selected EU Member States

The case of Mr X would not present relevant differences from the context analysed in respect of Article 15 of the OECD Model Convention under the following bilateral tax treaties of the seven EU Member States surveyed: Austria-France; Austria-Italy; Austria-Luxembourg; Belgium-Germany; Belgium-Italy; France-Italy; France-Luxembourg; France-Netherlands; Germany-Italy; Italy-Netherlands; Luxembourg-Netherlands.

Art. 13 (1) of the bilateral tax treaty between France and Germany allocates exclusive taxing rights to the State of the activity, but switches to exclusive taxation in the State of residence when the triple negative condition of Art. 13 (4), which is formulated like the one contained in Art. 15 (2) of the OECD Model Convention, is not met. Therefore, under this bilateral treaty, Mr X would be taxable only in the EU Member State R to the extent that tax authorities conclude that the activity has been exercised on the territory of the EU Member State K. The wording of this treaty, when applicable in the relations between EU Member States R and EU Member States L, M, N, and O would also prevent shared allocation of taxing rights. However, insofar as the employer had a PE or fixed place in any of those States, it might give rise to exclusive taxation in those countries.

Some bilateral treaties of the EU Member States surveyed include a definition of the place of exercise of employment. This helps solve the legal uncertainty described. In particular, even though Art. 15 of the Belgium-Luxembourg tax treaty reflects the general pattern of the clause contained in the OECD Model Convention, Art. 8 of the Protocol to the Belgium-Luxembourg tax treaty, concluded in 11.12.2002 has introduced a new paragraph 8, according to which the exercise of the employment is deemed to occur in the country of physical presence of the employee. In the case of Mr X, this means that for most of year 1, the place of exercise of the employment is in EU Member State R. Moreover, Art. 8 (2) of the 1970 Final Protocol to the Belgium-Luxembourg tax treaty includes a de minimis time threshold of physical presence. According to such a clause, periods of physical presence in another State not exceeding 34 working days in one year are, in principle, irrelevant. This means that if a clause of this kind applies to the presence of Mr X on the territories of EU Member States L, M, N, and O are irrelevant for the allocation of taxing powers.

Also, Art. 15 (1a) of the Germany-Luxembourg tax treaty includes a de minimis time threshold of 35 working days, thus allowing for similar conclusions on the taxing rights of EU Member States L, M, N, and O as the ones that have been outlined above.

4.3. Case Study 2 – The Frontier Worker

4.3.1. Facts

Mrs Y, a resident of EU Member State S, works in EU Member State H for one of its statutory bodies (a local authority with separate legal personality from the State, monitoring education). She is a dual national of EU Member States S and H, has the status as civil servant under State H, and lives in State S near the border with State H. The public employment contract allows Mrs Y to exercise her work remotely for a maximum of two days per week. In year 1 she is present in State H for 250 days and works remotely from State S for the remainder of the year. In year 2, she is in State H for 100 days and works remotely from State S for the remainder of the year. However, with effects as of year 2, EU Member States H and S decide to repeal, by common consent, the frontier workers' clause in the treaty that otherwise resembles the OECD Model Convention for all other purposes Articles 15 and 19.

4.3.2. The Applicable Treatment under the OECD Model Convention

States H and S have different views as to the applicable treaty clause to the services supplied in the framework of a public contract to a statutory body. In particular, State S claims that Article 15 applies to such income for not being a State and its political subdivisions the direct recipients of the services supplied by Mrs Y. By contrast, State H holds that Article 19 applies to such income because those services are connected with essential public functions. According to State H, it is up for each country to determine the exact boundaries of the meaning of "local authority" under the applicable tax treaty. Therefore, even in the absence of a specific application of Art. 19 to statutory bodies, interpretation of this treaty clause can allow the State to receive the services to include them under its local authorities.

This situation generates a conflict of characterization for tax treaty purposes, making Mrs Y's income taxable in both countries and creating problems of unresolved double taxation that present different features in year 1 and year 2.

From the EU Member State S's perspective, in year 1, the frontier workers' clause applies under Art. 15 allows this country to keep exclusive taxing jurisdiction on Mrs Y's income. In year 2, removing the frontier workers' clause from Art. 15 brings the case of Mrs Y's income back into the main clause on income from employment. Since Mrs Y exercises her employment in the Contracting State other than that of her residence for the employer of the latter State, such a country has shared taxing rights as a consequence of the application of Art. 15 (1) second sentence and Art. 15 (2) (b). State S will therefore have to relieve international juridical double taxation under Article 23 of the OECD Model Convention.

From the EU Member State H's perspective, Art. 19 always applies, giving such a country exclusive taxing rights. This is based upon the consideration that Art. 19 always prevails over Art. 15 of the OECD Model Convention, except in the specific case of Art. 19 (3) for engagement of States in business, which is clearly not met here. The termination of the frontiers' workers clause in year 2 partly addresses the problems, as taxes levied in EU Member State H would be relieved by EU Member State S.

Unlike in case study 1, remote working in this case study is of minor relevance compared to the mismatching characterization, which might require instead intervention through the adoption of common rules.

4.3.3. Treatment under Bilateral Tax Treaties between Selected EU Member States

The case of Mrs Y raises controversies in several countries as to whether Article 19 can apply to remuneration derived by individuals working for a statutory body, i.e. a public body with separate legal personality from the State, its political subdivisions and local authorities. The argument to support the application of Article 19 relies on the possibility of characterizing the employer as a local authority under the law of the State receiving the service. The argument to support the application of Article 15 relies on the fact that, in the absence of an express specific extension of Article 19 to the remuneration that individuals receive from those bodies, Article 15 should apply instead. This controversial matter does not frequently arise in the treaties concluded by France, which usually include an express reference to statutory bodies, such as in the French treaties with Austria and Germany. However, also several treaties of Austria, Germany, Luxembourg and the Netherlands include an express extension of this clause to bodies incorporated under public law and exercising public functions.

Insofar as Article 15 applies, the relevant issue is determining whether there is a frontier workers clause. The information available in the factual pattern indicates a proximity of her residence to the national border. In this sense, even in those bilateral treaties that do not provide a precise definition of the territorial scope of the frontier workers clause, such a clause would apply. This is, for instance, the case of the clause included in Protocol 9 to the France-Italy tax treaty, which refers such scope to the area "adjacent to the border", or the equivalent expression "near the border", contained in Article 15 (4) of the Austria-Italy tax treaty. By contrast, most treaties, including a frontiers workers clause, define it by reference to a specific number of kilometres. According to the Protocol 8 to the Austria-Germany tax treaty a 30 km radius from the border applies; Article 2 of the Frontier Workers Protocol to the Belgium-France treaty narrows it down to 20 km; Art. 13(5) of the France-Germany tax treaty also applies the same distance from the border and requires daily crossing of the border itself. All frontier workers clauses included in the bilateral tax treaties of the EU Member States surveyed apply exclusive taxation in the country of residence. This might be in recognition that the tax nexus with this State and its public infrastructure is particularly strong. Therefore, in the presence of these types of clauses, Mrs Y's income in year 1 would be taxable in EU Member State S, with the possible exception of the France-Germany treaty, for meeting the daily crossing conditions only for 250 days in year 1.

If Article 15 applies and there is no frontier workers clause, such as in year 2, Mrs Y's income would raise no different issues from those that have already been analysed in case study 1 with respect to the basic fact pattern.

4.4. Case Study 3 – Öresund

This case study addresses the specific cross-border tax issues of frontier workers in the Öresund region. This region comprises eastern Denmark (notably Copenhagen) and southern Sweden (notably Malmö) and is one of the most integrated cross-border metropolitan regions in Europe. With approx. 22.000 daily commuters crossing the Öresund Bridge or using the ferry,[67] tax coordination is essential to avoid double taxation, administrative burdens, and distorted labour incentives.

The Öresund tax agreement signed by Sweden and Denmark in 2003 was designed specifically to regulate the taxation of cross-border workers. However, over time it became increasingly inadequate in light of evolving work patterns—particularly the rise of remote work. To address these challenges, the two countries signed a new bilateral tax treaty in June 2024. This updated agreement, known as the 2024 Öresund Agreement, entered into force on January 1, 2025, replacing the 2003 version. It operates within the broader framework of the Nordic Convention on the Avoidance of Double Taxation, a multilateral agreement based on the OECD Model Tax Convention and binding Sweden, Denmark, the Faroe Islands, Finland, Iceland, and Norway. The revised treaty aims to simplify tax administration and provide more predictable tax outcomes for both employers and employees. Notably, it also extends its scope to include public sector employees, who were previously excluded.

As a general rule in the Öresund Agreement, individuals are required to pay taxes in the country where they perform their work. While differences in income levels and tax rates exist between Sweden and Denmark, the net income is typically balanced—higher wages and higher tax rates in Denmark tend to offset the lower wages and lower tax rates in Sweden. However, other factors influence the actual economic outcome. Living costs are generally higher in Denmark than in Sweden, making it challenging to sustain a Danish standard of living on a Swedish wage.[68] This imbalance is also reflected in commuter patterns: as of 2023, approximately 20,000 individuals residing in Sweden commute to work in Denmark, whereas only about 1,300 Danes travel in the opposite direction for employment.[69]

[67] Öresundindex/Trafikstatistik Q4 2024, 4. Available at: https://assets.ctfassets.net/20drd9bf6f7p/40KYkmzbzaCFsk0ay8qqtf/b295ae55e1d014c53c89c344b69e5f12/20250312_Oresundsindex_trafik_Q4_2024_SE.pdf, consulted on 15 April 2025.

[68] Hansen, P., A. and Serin, G., 2007, *Integration strategies and barriers to co-operation in cross-border regions: Case study of the Øresund region*, Journal of Borderlands Studies, 22(2), 39-56.

[69] Oresund Statbank. Available at: https://oresund.statbank.dk/statbank5a/default.asp?w=1920, consulted on 5 May 2025.

Figure 13: Number of Commuters between Denmark and Sweden by Workplace Municipality

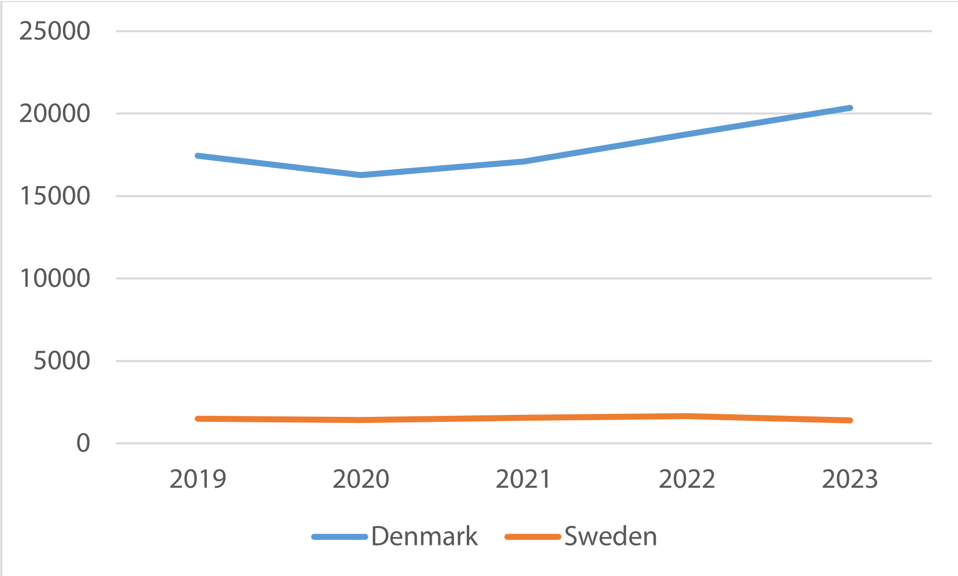

Figure 13 presents the number of commuters between Denmark and Sweden by workplace municipality over time. Source: Oresund Statbank[70]

A central provision of the treaty addresses the taxation of employment income. If a person works in one country but resides in the other, their salary is taxable in the country where the work is normally performed—provided that at least half of the working time (including holidays and sick days) within any twelve-month period is spent there.[71] This applies even if part of the work is conducted remotely, including from a third country. The treaty distinguishes between employers located within and outside the working country and introduces a simplified tax withholding rule: no obligation arises in the residence country if no corresponding tax liability exists.

If the requirements are not met, taxation will be split by the number of active working hours in each country. Therefore, the employer must register as an employer also in the other country and deduct and report preliminary taxes there.

In extraordinary situations, such as public health emergencies (COVID-19), the treaty allows both countries to agree that remote work shall be treated as if performed in the usual country of work. This ensures consistent tax treatment during periods of restricted mobility. Pension contributions are addressed with cross-border fairness in mind. Individuals taxed in one country but affiliated with a pension scheme in the other may continue to deduct contributions, either as personal payments or employer contributions, subject to specific limitations. Another practical element is the deductibility of commuting costs over the Öresund Bridge. Commuters can deduct these expenses if they represent daily travel between home and workplace and satisfy national requirements, such as minimum time-saving thresholds. Educational and cultural exchanges are also safeguarded. Student aid and artist stipends paid by one state to a resident of the other are exempt from tax, provided they would also be tax-free if paid domestically in the source state. This ensures equitable treatment of cross-border grants.

A unique equalization mechanism has been established to address municipal tax imbalances. When a resident of one country earns over DKK 210,000 (2023 price level, indexed) in the other country, the taxing country must transfer a standard municipal tax equivalent to the residence country. This applies

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[70] Oresund Statbank. Available at: https://oresund.statbank.dk/statbank5a/default.asp?w=1920, consulted on 5 May 2025.

[71] Until 2024 the period was 3 months.

only to land-based workers, not maritime employment. Authorities may refine the implementation via mutual agreement.

The treaty replaces the 2003 agreement and takes effect from January 1 of the year following ratification. Its provisions can be reassessed after five years, and the agreement remains in force as long as the Nordic Convention applies, unless terminated with six months' notice.

4.5. Assessment of Treatment under Bilateral Tax Treaties and Proposal

The overall assessment of tax treaties in force in the EU, based on the 21 bilateral tax treaties in force between seven EU Member States (Austria, Belgium, France, Germany, Italy, Luxembourg, The Netherlands) that this section has analysed, confirms the picture that remote working makes their application very difficult and creates legal uncertainty.

The relevance of the place of exercise of employment for tax treaties was conceived at a time in which remote working was no more than an exception. This might also be the reason why tax treaty clauses on income from employment present some relevant deviations from the pattern of the OECD Model Convention in older treaties between neighbour countries, possibly reflecting the concrete issues of physical mobility of workers. This might have also justified including several frontier workers clauses.

As indicated at the beginning of this section, urgent intervention is required to adjust tax treaty clauses to remote working, remove the existing legal uncertainty concerning the place of exercise of employment and address the fragmentation arising from uncoordinated bilateralism of those clauses within the EU. Cross-border remote working within the EU operates beyond the bilateral boundaries. It requires an EU-coordinated approach by positive integration (not necessarily implying the issuing of secondary law) to the extent that negative integration cannot address the existing problems at the interpretative level. This intervention is also very important to address the issues of highly mobile individuals, who are more frequently exposed to the problems of the tax treatment of remote work, and to overcome some treaty characterisation, such as the one addressed in case study 2.

A possible concrete intervention might be introducing a commonly agreed-upon definition of the place of exercise of employment, which might be adopted with an EU Protocol (or Convention) amending all existing bilateral tax treaties within the EU. This Protocol (or Convention) would aim to coordinate and steer the existing bilateral treaties towards common ground that removes the existing biases and legal uncertainty. Even though this might be the first instrument of this kind required to enhance the functioning of the Internal Market in tax matters, its structure resembles, in some aspects, that of the BEPS Multilateral Instrument of the OECD and, in some others, the EU Tax Arbitration Convention. The latter is the only instrument of binding tax coordination applicable in the EU falling within the boundaries of the EU *acquis* in tax matters.

This commonly agreed definition might converge towards the core relevance of the place of physical presence and exclude possible forms of home office PE for all employees that are not directly involved in the top management of the company. This might prompt a shift towards exclusive taxation in the country of residence for remote workers that would approximate the situation of remote to frontier workers. Moreover, it would also positively affect the situation of highly mobile workers, who are more frequently exposed to disparities and problems of interpretation.

The sound nature of the proposed shift is indirectly confirmed by the fact that in a situation of unclear place of exercise of employment, such as the case of the employees operating as regular complement of ships and aircraft in international traffic, the OECD Model Convention 2017 has changed the allocation of taxing rights under Article 15 (3), giving exclusive taxing rights to the State of residence.

It might be meaningful to include in the EU Protocol (Convention) also some measures that facilitate the compliance framework and create legal certainty on an ex ante basis as to the place of exercise of employment. This might also create positive effects for highly mobile workers and posted workers, given that both might be asked to exercise the employment in more than one country.

A meaningful solution might be to request the employer and employee to determine the planned remote working in advance and to request them to amend it at year's end. Considering that automatic exchange of tax information is already fully operational within the EU under the DAC system, an amendment to the latter system through a possible DAC10 might prompt the introduction of dedicated mandatory reporting that facilitates tracking, prevents possible violations and secures free movement of workers and remote working in line with the principle of proportionality.

Moreover, some mechanisms might simplify the functioning of this mechanism in line with the concept of safe harbour rules and apply to remote work, singling out cases of work from a different EU Member State than that indicated as the main place of exercise of the employment in the work contract. Accordingly, on the one hand, de minimis rules might, for instance, indicate that the remote work will not exceed 30 working days in a year and exclude taxing rights of one or more EU Member States other than that of the main place of exercise of the employment. This rule might also apply, with some adaptations, to highly mobile and posted workers. On the other hand, de maximis rules might, for instance, indicate that the remote work will not be below 250 working days in a year and exclude taxing rights of the EU Member State indicated in the work contract as the main place of employment. The latter rules might also identify criteria for coordinating the exercise of taxing rights on an ex ante basis. Also this rule might apply, with some adaptations, to highly mobile and posted workers.

The issuing of an EU Protocol could also be an opportunity to introduce additional measures of multilateral coordination that address some common and frequent problems of characterization affecting the tax treatment of cross-border employment within the EU, such as the ones presented in case study 2 at the crossroads between Articles 15 and 19.

From the perspective of EU law those case studies show one more relevant that the EU Parliament should seriously consider to state upon. Even though taxing powers have remained mainly at the national level, EU Member States may not exercise their prerogatives in a way that makes the exercise of free movement of persons more difficult than it would be for individuals subject to the tax jurisdiction of a single EU Member States. When an obstacle on free movement of workers arises and cannot be addressed at the level of interpretation by the Court of Justice of the European Union, EU Member States should remove it by means of positive integration and also in the form of tax coordination, i.e. without introducing secondary EU legislation. This is not only desirable from a policy perspective, but it is important to remove such obstacles, which indirectly also affect economic cross-border relations within the EU Internal Market.

5. POLICY RECOMMENDATIONS AND ACTION POINTS

KEY FINDINGS

The following chapter gives explicit policy recommendations for the timing of relocation, the definition of tax residence, exit tax, frontier, highly mobile and remote workers as well as digital nomads and tax compliance necessities.

In this section we present several policy recommendations that are based on the necessity to reduce tax driven direct and indirect barriers to workers mobility within the EU while also acknowledging potential political obstacles to such harmonization. We base our recommendations on the analysis above, where Section 2 identifies tax obstacles to cross-border worker mobility from a legal perspective, Section 3 presents evidence regarding additional compliance and direct tax costs for internationally mobile employees and their employers, and Section 4 discusses specific cases.

Our main recommendation is to remove those existing cross-border tax disparities, which make it more difficult for individuals to exercise rights across the borders within the European Union. These difficulties have their roots in tax laws and administrative requirements, and consist of a significantly higher tax burden and cost of compliance that is not attributable to one State only.

These issues affect a broad number of workers who relocate on a short-term basis to another EU Member State to exercise employment or otherwise work across borders. Remote working across borders has unquestionably increased the number of tax obstacles. Earlier sections of this study have given concrete reasons to intervene with positive tax integration to remove the disparities in the tax treatment applicable to highly mobile, posted and remote workers, as well as to digital nomads.

Tax disparities are essentially a no man's land for cross-border tax problems of workers, which have so far remained in a limbo that has not been addressed by tax coordination among EU Member States. The authors of this study consider that this situation ought to change in the future, especially to the extent that the failure to take action creates dissuasive effects on the exercise of free movement of workers. This study suggests intervening with a combination of specific measures that introduce positive and negative integration where this is required.

In general terms, negative integration based on the interpretation of fundamental freedoms by the Court of Justice of the EU and their impact on the exercise of national tax measures can continue in those areas where it has successfully operated until the present, i.e. cases of income tax discrimination.

If there is evidence of a direct or indirect impact on the Internal Market, it should constitute a potentially valid reason for adopting measures of tax harmonisation based on Art. 115 TFEU. Even the absence of such impact should not release EU Member States and the EU Commission from the obligation to promote other forms of positive tax integration that do not result in producing secondary law of the EU, such as those based on binding and non-binding measures of tax coordination.

Positive integration should supplement negative integration in all areas where critical issues for cross-border income taxation from employment arise and generate exposure to interpretative mismatches and tax disparities. The legal basis for introducing positive integration in the form of secondary EU law mainly relates to the impact that such obstacles have on the EU Internal Market, by dissuading workers from taking up a job in another EU Member State or relocating to such State for job-related reasons and employers from offering a job to workers not established in that State.

However, the additional requirements to introduce secondary law might also suggest that forms of binding coordination could be a valid alternative, at least on a provisional basis, to overcome the existing problems. The form of binding coordination should be an international convention similar to the EU Tax Arbitration Convention, i.e. compulsory for all EU Member States, not open to other Contracting States and forming part of the acquis of the Union and thus prevailing over all other treaties at least due to its object and purpose. Binding coordination should not necessarily take the form of a single convention but could also be implemented through several instruments. Section 4 of this study has proposed a possible measure of binding tax coordination that could be adopted to address the problems of remote workers and highly mobile workers. Such a measure might take the form of an EU Protocol or Convention and introduce common definitions, including of remote work and of place of exercise of employment, and provide commonly agreed solutions to treaty characterisation problems.

The specific interventions envisaged in this section might be supplemented by measures that introduce EU common notions of concepts currently not defined by the OECD Model Conventions, such as that of employer, exercise of employment, place of exercise of employment, etc.

1) **Timing of Relocation:** From a policy perspective, adopting a coordinated application of "split-year rules" might be advisable, as it increases tax neutrality, preventing unintended tax advantages and disadvantages. The precise date of a worker's relocation within a specific year should be irrelevant and should not trigger such unintended tax advantages and disadvantages. Action to remove this disparity might apply to all individuals, thus further enhancing their mobility within the EU.

2) **Definition of Tax Residence:** This study acknowledges the importance of the so-called tie-breaker rules, which establish a set of proxies that apply in a precise order of priority and provide agreed-upon criteria that determine a concept of treaty residence. Yet, the likelihood of factual and conceptual discrepancies that can create tax disparities is a source of concern from the perspective of the free movement of workers. Such problems remain hard to address without a coordinated set of rules determining when personal tax nexus commences or ends. A better coordination of domestic and treaty-based rules determining tax residence seems to be the first-best solution. The second-best options might be either to strengthen the functioning of mutual agreement procedures in the EU, or leaving the matter to the interpretation of the European Court of Justice.

3) **Exit Tax:** Since negative integration cannot address tax disparities and ATAD only applies to corporate taxpayers, this study invites the EU Parliament to step into the no man's land where Member States have remained inactive. Whether through common rules of tax harmonisation or coordination, positive integration in this context is necessary to achieve consistent tax treatment between the countries of emigration and immigration so that the right of a worker to relocate to a jurisdiction might not be impaired by considerations related to the exposure of cases of double taxation that are difficult to address.

4) **Frontier Workers:** The authors of this study invite the EU Parliament to re-examine the 1979 EU Commission withdrawn proposal and support an intervention in this specific domain. This is also based on the authors' perception that the economic integration process within the EU has exponentially increased the opportunities for cross-border work, thus even more so for frontier workers. From a legal perspective, the exclusive allocation of taxing powers to the State of residence is a sound solution, also considering that the frontier worker mostly uses the infrastructure of that country. However, to the extent that such allocation is not feasible or generates unreasonable consequences in a specific context, exclusive allocation of taxing

powers and reduction of administrative burden to the State where work is performed may be adequate, drawing from the Öresund example.

Additionally, the EU Parliament should ponder whether a true structural difference exists for cross-border tax purposes between highly mobile and frontier workers might be helpful. In other words, is it any different if workers commute daily or weekly? Or if they live near the national border and cross it by car or train to work in the immediate proximity of such border, or if they live far away from the national border and commute by plane instead, or work further away from the national border?

5) **Highly Mobile Workers:** The absence of dedicated clauses for highly mobile individuals in bilateral tax treaties between EU Member States puts their right to free movement at a clear disadvantage compared to the legal framework applicable to income taxation of frontier workers. Therefore, as a general recommendation, the authors suggest bundling highly mobile individuals with frontier workers within the same form of positive integration, applying exclusive allocation of taxing powers to the State of residence or a mechanism of fully refundable WHT. Drawing the dividing line between highly mobile workers falling within the scope of EU intervention might be done by reference to various criteria, which also relate to the proportion of income derived from employment in other EU Member States. This might be determined by reference to the incidence of income from employment in a different EU Member State on the workers' total income in the prior year[72] or, with a prospective function, evidence that income from work in one or more EU Member States for the following year might constitute a large portion of the worker's total income.[73]

6) **Remote Workers:** Since tax treaties were designed when remote working was extremely rare, their clauses on income from employment are mostly not fit to apply to activities not exercised at the business premises. Thus, there is a much higher potential for cross-border interpretative mismatches and disparities than the one that can be recorded for frontier and highly mobile workers. For this reason, intervention is extremely important and urgent to secure effective protection of workers' free movement in the EU.

    - Considering the structure of Art. 15 of bilateral tax treaties that follow the OECD Model Convention, exclusive taxation in the country of residence under the first sentence of Art. 15 (1) might be strengthened by an EU Multilateral Protocol (which might be included in a Directive, in soft law or in an EU multilateral agreement, which constitutes an expression of binding coordination) in a way that shared taxing rights could be given a more subsidiary function. The Protocol might also introduce common definitions that are relevant to address this kind of problems, such as for instance on remote workers and on the place of exercise of employment.
    - Considering that remote working in some bilateral relations might unevenly affect EU Member States, it might be appropriate to evaluate also the possibility of a predetermined shared allocation of taxing powers, which, in the case of non-permanent

72 This mechanism might reflect the one used by Art. 146 of the VAT Directive 2006/112/EU for exemptions on exportations from the European Union.

73 It might be meaningful to set this threshold at rather high levels to ensure a proportionate approach to issues that truly require it. The authors consider that a 75% threshold might be appropriate, also considering that such a threshold was identified as suitable in Art. 2 (2) of the EU 1993 recommendation on frontier workers (94/79/EC Commission Recommendation on the taxation of certain items of income received by non-residents in a Member State other than that in which they are resident, in OJ L 39/22 of 10 February 1994) and that, already in 1997, the EU Parliament acknowledged that many EU Member States had complied with it (see EP, Frontier Workers in the European Union, Directorate General for Research, Working Paper Social Affairs Series – W 16A – Summary, sec. 2, available at https://www.europarl.europa.eu/workingpapers/soci/w16/summary_en.htm, consulted on 12 January 2025).

remote workers, might vary in proportion of the time spent on-site in the country of the business premises of the employer.

- Finally, the authors of this study also consider extending these solutions to cases of self-employed persons in similar circumstances, including directors. This alignment might reduce possible frictions and attempts to circumvent the treaty regime aimed at unduly securing the application of the treatment that prevents interpretative mismatches and tax disparities.

7) **Posted Workers:** The situation of posted workers across the borders raises significant tax disparities, which have dissuasive effects on both free movement of workers and the business choices of employers to engage their staff in a different EU Member State on a short- or long-term perspective. This study recommends urgent intervention for changing the applicable tax rules to this category of workers. However, this study has given reasons for which, from the legal perspective, the tax disparities of posted workers share common grounds with other categories of workers requiring positive tax integration. For this reason, this study does not recommend a single solution to the problems of posted workers, but rather including them within the scope of the required changes applicable to workers relocating to another EU Member State and workers exercise their work across borders without an actual relocation to a different EU Member State.

8) **Digital Nomads:** The complexity of their international tax law issues suggests focusing the intervention on the sole cases of intra-EU digital nomads. This study suggests carving out intra-EU digital nomads from the treatment normally applicable to remote workers in all cases in which the digital nomad sojourns on a non-occasional basis in the country of employment. In all other cases of intra-EU digital nomads, it is important to understand whether the personal connection of the digital nomad to one EU Member State has a predominant nature over the presence on the territory of others. Such cases could, for instance, can be detected by introducing a physical presence test with a threshold of at least 183 days. Alternatively, and a subordinate option – applicable also in cases where the person does not meet the physical presence test – an apportionment of taxing rights on income among all EU countries involved might represent the only viable option, notwithstanding the enormous complexity, in terms of compliance, that it would entail. Finally, introducing such a regime might also require a prior limitation of EU Member States' right to apply particularly advantageous income tax regimes ring-fenced or specially designed for digital nomads.

9) **Tax Compliance Necessities:** As addressed above, internationally mobile workers and their employees face additional compliance costs from various sources. Standardizing and harmonizing the necessary disclosure requirements could diminish these costs. This would include standardized certificates of residence, standardized information returns, standardized forms to reclaim WHT, etc. Moreover, some mechanisms, such as the ones identified in Section 4, could facilitate the identification of the place of exercise of employment and be tracked through dedicated adjustments to the DAC with the issuing of DAC10. Requirements to translate official documents and certificates issued by other Member States should in any case be abolished.

6. ANNEX

The tables below include the simulation results from Table 2 for different income levels: 25%, 50%, 150%, and 200% of the mean income level.

Table A1: Tax Burden Differences for Gross Labour Income Across EU Member States at the 25% mean income level

25%	AT	BE	DK	FI	FR	DE	EL	IE	IT	LU	NL	PT	ES
AT		-10.0	87.2	39.4	19.8	16.6	88.2	36.7	65.8	-141.1	-5.8	72.9	87.4
BE	10.0		97.2	49.5	29.8	26.7	98.2	46.8	75.9	-131.0	4.2	82.9	97.4
DK	-87.2	-97.2		-47.7	-67.4	-70.5	1.0	-50.4	-21.3	-228.2	-92.9	-14.2	0.2
FI	-39.4	-49.5	47.7		-19.7	-22.8	48.7	-2.7	26.4	-180.5	-45.2	33.5	47.9
FR	-19.8	-29.8	67.4	19.7		-3.1	68.4	17.0	46.1	-160.8	-25.6	53.1	67.6
DE	-16.6	-26.7	70.5	22.8	3.1		71.5	20.1	49.2	-157.7	-22.4	56.3	70.8
EL	-88.2	-98.2	-1.0	-48.7	-68.4	-71.5		-51.4	-22.3	-229.2	-93.9	-15.2	-0.8
IE	-36.7	-46.8	50.4	2.7	-17.0	-20.1	51.4		29.1	-177.8	-42.5	36.2	50.6
IT	-65.8	-75.9	21.3	-26.4	-46.1	-49.2	22.3	-29.1		-206.9	-71.6	7.1	21.5
LU	141.1	131.0	228.2	180.5	160.8	157.7	229.2	177.8	206.9		135.3	214.0	228.4
NL	5.8	-4.2	92.9	45.2	25.6	22.4	93.9	42.5	71.6	-135.3		78.7	93.2
PT	-72.9	-82.9	14.2	-33.5	-53.1	-56.3	15.2	-36.2	-7.1	-214.0	-78.7		14.5
ES	-87.4	-97.4	-0.2	-47.9	-67.6	-70.8	0.8	-50.6	-21.5	-228.4	-93.2	-14.5	
SE	-69.4	-79.4	17.8	-29.9	-49.6	-52.7	18.8	-32.6	-3.5	-210.4	-75.1	3.6	18.0
EE	-78.4	-88.5	8.7	-39.0	-58.7	-61.8	9.7	-41.7	-12.6	-219.5	-84.2	-5.5	8.9
HU	-109.9	-120.0	-22.8	-70.5	-90.2	-93.3	-21.8	-73.2	-44.1	-251.0	-115.7	-37.0	-22.6
PL	-97.9	-108.0	-10.8	-58.5	-78.2	-81.3	-9.8	-61.2	-32.1	-239.0	-103.7	-25.0	-10.5
SI	-56.9	-66.9	30.2	-17.5	-37.1	-40.3	31.2	-20.2	8.9	-198.0	-62.7	16.0	30.5
BG	-98.9	-108.9	-11.7	-59.4	-79.1	-82.2	-10.7	-62.1	-33.0	-239.9	-104.6	-25.9	-11.5
CZ	-78.0	-88.0	9.2	-38.6	-58.2	-61.4	10.2	-41.2	-12.2	-219.1	-83.8	-5.1	9.4
CY	-87.4	-97.4	-0.2	-48.0	-67.6	-70.8	0.8	-50.7	-21.6	-228.5	-93.2	-14.5	0.0
LV	-92.1	-102.1	-5.0	-52.7	-72.3	-75.5	-4.0	-55.4	-26.3	-233.2	-97.9	-19.2	-4.7
LT	-97.5	-107.5	-10.4	-58.1	-77.7	-80.9	-9.4	-60.8	-31.7	-238.6	-103.3	-24.6	-10.1
MT	-66.8	-76.8	20.4	-27.3	-47.0	-50.1	21.4	-30.0	-0.9	-207.8	-72.5	6.2	20.6
RO	-116.5	-126.5	-29.3	-77.1	-96.7	-99.9	-28.3	-79.8	-50.7	-257.6	-122.3	-43.6	-29.1
SK	-94.8	-104.8	-7.6	-55.4	-75.0	-78.2	-6.7	-58.1	-29.0	-235.9	-100.6	-21.9	-7.4
HR	-96.8	-106.9	-9.7	-57.4	-77.1	-80.2	-8.7	-60.1	-31.0	-237.9	-102.6	-23.9	-9.5

Table A1 (ctd): Tax Burden Differences for Gross Labour Income Across EU Member States at the 25% mean income level

25%	SE	EE	HU	PL	SI	BG	CZ	CY	LV	LT	MT	RO	SK	HR
AT	69.4	78.4	109.9	97.9	56.9	98.9	78.0	87.4	92.1	97.5	66.8	116.5	94.8	96.8
BE	79.4	88.5	120.0	108.0	66.9	108.9	88.0	97.4	102.1	107.5	76.8	126.5	104.8	106.9
DK	-17.8	-8.7	22.8	10.8	-30.2	11.7	-9.2	0.2	5.0	10.4	-20.4	29.3	7.6	9.7
FI	29.9	39.0	70.5	58.5	17.5	59.4	38.6	48.0	52.7	58.1	27.3	77.1	55.4	57.4
FR	49.6	58.7	90.2	78.2	37.1	79.1	58.2	67.6	72.3	77.7	47.0	96.7	75.0	77.1
DE	52.7	61.8	93.3	81.3	40.3	82.2	61.4	70.8	75.5	80.9	50.1	99.9	78.2	80.2
EL	-18.8	-9.7	21.8	9.8	-31.2	10.7	-10.2	-0.8	4.0	9.4	-21.4	28.3	6.7	8.7
IE	32.6	41.7	73.2	61.2	20.2	62.1	41.2	50.7	55.4	60.8	30.0	79.8	58.1	60.1
IT	3.5	12.6	44.1	32.1	-8.9	33.0	12.2	21.6	26.3	31.7	0.9	50.7	29.0	31.0
LU	210.4	219.5	251.0	239.0	198.0	239.9	219.1	228.5	233.2	238.6	207.8	257.6	235.9	237.9
NL	75.1	84.2	115.7	103.7	62.7	104.6	83.8	93.2	97.9	103.3	72.5	122.3	100.6	102.6
PT	-3.6	5.5	37.0	25.0	-16.0	25.9	5.1	14.5	19.2	24.6	-6.2	43.6	21.9	23.9
ES	-18.0	-8.9	22.6	10.5	-30.5	11.5	-9.4	0.0	4.7	10.1	-20.6	29.1	7.4	9.5
SE		9.1	40.6	28.6	-12.4	29.5	8.6	18.0	22.8	28.2	-2.6	47.1	25.5	27.5
EE	-9.1		31.5	19.5	-21.5	20.4	-0.5	9.0	13.7	19.1	-11.7	38.1	16.4	18.4
HU	-40.6	-31.5		-12.0	-53.0	-11.1	-32.0	-22.6	-17.8	-12.4	-43.2	6.5	-15.1	-13.1
PL	-28.6	-19.5	12.0		-41.0	0.9	-19.9	-10.5	-5.8	-0.4	-31.2	18.6	-3.1	-1.1
SI	12.4	21.5	53.0	41.0		41.9	21.1	30.5	35.2	40.6	9.8	59.6	37.9	39.9
BG	-29.5	-20.4	11.1	-0.9	-41.9		-20.9	-11.5	-6.7	-1.3	-32.1	17.6	-4.0	-2.0
CZ	-8.6	0.5	32.0	19.9	-21.1	20.9		9.4	14.1	19.5	-11.2	38.5	16.8	18.9
CY	-18.0	-9.0	22.6	10.5	-30.5	11.5	-9.4		4.7	10.1	-20.6	29.1	7.4	9.4
LV	-22.8	-13.7	17.8	5.8	-35.2	6.7	-14.1	-4.7		5.4	-25.4	24.4	2.7	4.7
LT	-28.2	-19.1	12.4	0.4	-40.6	1.3	-19.5	-10.1	-5.4		-30.8	19.0	-2.7	-0.7
MT	2.6	11.7	43.2	31.2	-9.8	32.1	11.2	20.6	25.4	30.8		49.7	28.0	30.1
RO	-47.1	-38.1	-6.5	-18.6	-59.6	-17.6	-38.5	-29.1	-24.4	-19.0	-49.7		-21.7	-19.6
SK	-25.5	-16.4	15.1	3.1	-37.9	4.0	-16.8	-7.4	-2.7	2.7	-28.0	21.7		2.0
HR	-27.5	-18.4	13.1	1.1	-39.9	2.0	-18.9	-9.4	-4.7	0.7	-30.1	19.6	-2.0	

Table A2: Tax Burden Differences for Gross Labour Income Across EU Member States at the 50% mean income level

50%	AT	BE	DK	FI	FR	DE	EL	IE	IT	LU	NL	PT	ES
AT		-7.0	20.8	-7.3	-7.1	5.8	14.6	-3.7	4.9	-71.0	-5.0	15.1	3.7
BE	7.0		27.9	-0.3	-0.1	12.8	21.7	3.4	11.9	-63.9	2.0	22.2	10.7
DK	-20.8	-27.9		-28.1	-28.0	-15.1	-6.2	-24.5	-16.0	-91.8	-25.9	-5.7	-17.1
FI	7.3	0.3	28.1		0.2	13.1	21.9	3.6	12.2	-63.7	2.3	22.4	11.0
FR	7.1	0.1	28.0	-0.2		12.9	21.8	3.5	12.0	-63.8	2.1	22.3	10.8
DE	-5.8	-12.8	15.1	-13.1	-12.9		8.9	-9.5	-0.9	-76.7	-10.8	9.4	-2.1
EL	-14.6	-21.7	6.2	-21.9	-21.8	-8.9		-18.3	-9.7	-85.6	-19.7	0.5	-10.9
IE	3.7	-3.4	24.5	-3.6	-3.5	9.5	18.3		8.6	-67.3	-1.4	18.8	7.4
IT	-4.9	-11.9	16.0	-12.2	-12.0	0.9	9.7	-8.6		-75.8	-9.9	10.2	-1.2
LU	71.0	63.9	91.8	63.7	63.8	76.7	85.6	67.3	75.8		65.9	86.1	74.6
NL	5.0	-2.0	25.9	-2.3	-2.1	10.8	19.7	1.4	9.9	-65.9		20.2	8.7
PT	-15.1	-22.2	5.7	-22.4	-22.3	-9.4	-0.5	-18.8	-10.2	-86.1	-20.2		-11.4
ES	-3.7	-10.7	17.1	-11.0	-10.8	2.1	10.9	-7.4	1.2	-74.6	-8.7	11.4	
SE	-11.0	-18.0	9.9	-18.3	-18.1	-5.2	3.7	-14.7	-6.1	-81.9	-16.0	4.2	-7.3
EE	-8.5	-15.5	12.4	-15.8	-15.6	-2.7	6.2	-12.2	-3.6	-79.4	-13.5	6.6	-4.8
HU	-28.9	-36.0	-8.1	-36.2	-36.1	-23.2	-14.3	-32.6	-24.0	-99.9	-34.0	-13.8	-25.2
PL	-21.8	-28.8	-0.9	-29.1	-28.9	-16.0	-7.1	-25.5	-16.9	-92.7	-26.8	-6.6	-18.1
SI	-25.1	-32.1	-4.2	-32.4	-32.2	-19.3	-10.4	-28.8	-20.2	-96.0	-30.1	-9.9	-21.4
BG	-17.8	-24.9	3.0	-25.1	-25.0	-12.1	-3.2	-21.5	-12.9	-88.8	-22.9	-2.7	-14.1
CZ	-13.4	-20.5	7.4	-20.7	-20.6	-7.7	1.2	-17.1	-8.6	-84.4	-18.5	1.7	-9.7
CY	-6.4	-13.4	14.5	-13.7	-13.5	-0.6	8.3	-10.1	-1.5	-77.3	-11.4	8.7	-2.7
LV	-21.3	-28.3	-0.5	-28.6	-28.4	-15.5	-6.7	-25.0	-16.4	-92.3	-26.3	-6.2	-17.6
LT	-28.9	-35.9	-8.1	-36.2	-36.0	-23.1	-14.3	-32.6	-24.0	-99.9	-33.9	-13.8	-25.2
MT	-12.5	-19.6	8.3	-19.8	-19.7	-6.8	2.1	-16.2	-7.6	-83.5	-17.6	2.6	-8.8
RO	-36.9	-44.0	-16.1	-44.2	-44.1	-31.2	-22.3	-40.6	-32.0	-107.9	-42.0	-21.8	-33.2
SK	-19.5	-26.6	1.3	-26.8	-26.7	-13.8	-4.9	-23.2	-14.6	-90.5	-24.6	-4.4	-15.8
HR	-24.9	-32.0	-4.1	-32.2	-32.1	-19.2	-10.3	-28.6	-20.1	-95.9	-30.0	-9.8	-21.2

Table A2 (ctd): Tax Burden Differences for Gross Labour Income Across EU Member States at the 50% mean income level

50%	SE	EE	HU	PL	SI	BG	CZ	CY	LV	LT	MT	RO	SK	HR
AT	11.0	8.5	28.9	21.8	25.1	17.8	13.4	6.4	21.3	28.9	12.5	36.9	19.5	24.9
BE	18.0	15.5	36.0	28.8	32.1	24.9	20.5	13.4	28.3	35.9	19.6	44.0	26.6	32.0
DK	-9.9	-12.4	8.1	0.9	4.2	-3.0	-7.4	-14.5	0.5	8.1	-8.3	16.1	-1.3	4.1
FI	18.3	15.8	36.2	29.1	32.4	25.1	20.7	13.7	28.6	36.2	19.8	44.2	26.8	32.2
FR	18.1	15.6	36.1	28.9	32.2	25.0	20.6	13.5	28.4	36.0	19.7	44.1	26.7	32.1
DE	5.2	2.7	23.2	16.0	19.3	12.1	7.7	0.6	15.5	23.1	6.8	31.2	13.8	19.2
EL	-3.7	-6.2	14.3	7.1	10.4	3.2	-1.2	-8.3	6.7	14.3	-2.1	22.3	4.9	10.3
IE	14.7	12.2	32.6	25.5	28.8	21.5	17.1	10.1	25.0	32.6	16.2	40.6	23.2	28.6
IT	6.1	3.6	24.0	16.9	20.2	12.9	8.6	1.5	16.4	24.0	7.6	32.0	14.6	20.1
LU	81.9	79.4	99.9	92.7	96.0	88.8	84.4	77.3	92.3	99.9	83.5	107.9	90.5	95.9
NL	16.0	13.5	34.0	26.8	30.1	22.9	18.5	11.4	26.3	33.9	17.6	42.0	24.6	30.0
PT	-4.2	-6.6	13.8	6.6	9.9	2.7	-1.7	-8.7	6.2	13.8	-2.6	21.8	4.4	9.8
ES	7.3	4.8	25.2	18.1	21.4	14.1	9.7	2.7	17.6	25.2	8.8	33.2	15.8	21.2
SE		-2.5	18.0	10.8	14.1	6.9	2.5	-4.6	10.3	17.9	1.6	26.0	8.6	14.0
EE	2.5		20.4	13.3	16.6	9.3	5.0	-2.1	12.8	20.4	4.0	28.4	11.0	16.5
HU	-18.0	-20.4		-7.2	-3.9	-11.1	-15.5	-22.5	-7.6	0.0	-16.4	8.0	-9.4	-4.0
PL	-10.8	-13.3	7.2		3.3	-3.9	-8.3	-15.4	-0.5	7.1	-9.2	15.2	-2.2	3.2
SI	-14.1	-16.6	3.9	-3.3		-7.2	-11.6	-18.7	-3.8	3.8	-12.5	11.9	-5.5	-0.1
BG	-6.9	-9.3	11.1	3.9	7.2		-4.4	-11.5	3.5	11.1	-5.3	19.1	1.7	7.1
CZ	-2.5	-5.0	15.5	8.3	11.6	4.4		-7.1	7.9	15.5	-0.9	23.5	6.1	11.5
CY	4.6	2.1	22.5	15.4	18.7	11.5	7.1		14.9	22.5	6.2	30.6	13.2	18.6
LV	-10.3	-12.8	7.6	0.5	3.8	-3.5	-7.9	-14.9		7.6	-8.8	15.6	-1.8	3.6
LT	-17.9	-20.4	0.0	-7.1	-3.8	-11.1	-15.5	-22.5	-7.6		-16.4	8.0	-9.4	-4.0
MT	-1.6	-4.0	16.4	9.2	12.5	5.3	0.9	-6.2	8.8	16.4		24.4	7.0	12.4
RO	-26.0	-28.4	-8.0	-15.2	-11.9	-19.1	-23.5	-30.6	-15.6	-8.0	-24.4		-17.4	-12.0
SK	-8.6	-11.0	9.4	2.2	5.5	-1.7	-6.1	-13.2	1.8	9.4	-7.0	17.4		5.4
HR	-14.0	-16.5	4.0	-3.2	0.1	-7.1	-11.5	-18.6	-3.6	4.0	-12.4	12.0	-5.4	

Table A3: Tax Burden Differences for Gross Labour Income Across EU Member States at the 150% mean income level

150%	AT	BE	DK	FI	FR	DE	EL	IE	IT	LU	NL	PT	ES
AT		7.0	5.8	0.7	0.0	6.0	5.5	-7.1	7.0	-10.1	-0.9	7.0	-2.3
BE	-7.0		-1.2	-6.3	-7.0	-1.0	-1.6	-14.1	-0.1	-17.1	-7.9	0.0	-9.4
DK	-5.8	1.2		-5.1	-5.8	0.3	-0.3	-12.9	1.2	-15.9	-6.7	1.3	-8.1
FI	-0.7	6.3	5.1		-0.7	5.3	4.8	-7.8	6.3	-10.8	-1.6	6.3	-3.1
FR	0.0	7.0	5.8	0.7		6.1	5.5	-7.1	7.0	-10.1	-0.9	7.0	-2.3
DE	-6.0	1.0	-0.3	-5.3	-6.1		-0.6	-13.1	0.9	-16.1	-6.9	1.0	-8.4
EL	-5.5	1.6	0.3	-4.8	-5.5	0.6		-12.5	1.5	-15.5	-6.4	1.6	-7.8
IE	7.1	14.1	12.9	7.8	7.1	13.1	12.5		14.0	-3.0	6.2	14.1	4.7
IT	-7.0	0.1	-1.2	-6.3	-7.0	-0.9	-1.5	-14.0		-17.0	-7.9	0.1	-9.3
LU	10.1	17.1	15.9	10.8	10.1	16.1	15.5	3.0	17.0		9.2	17.1	7.7
NL	0.9	7.9	6.7	1.6	0.9	6.9	6.4	-6.2	7.9	-9.2		7.9	-1.4
PT	-7.0	0.0	-1.3	-6.3	-7.0	-1.0	-1.6	-14.1	-0.1	-17.1	-7.9		-9.4
ES	2.3	9.4	8.1	3.1	2.3	8.4	7.8	-4.7	9.3	-7.7	1.4	9.4	
SE	4.3	11.3	10.0	5.0	4.3	10.3	9.7	-2.8	11.2	-5.8	3.4	11.3	1.9
EE	8.1	15.1	13.8	8.8	8.0	14.1	13.5	1.0	15.0	-2.0	7.2	15.1	5.7
HU	-4.2	2.9	1.6	-3.5	-4.2	1.9	1.3	-11.2	2.8	-14.2	-5.1	2.9	-6.5
PL	-6.3	0.7	-0.5	-5.6	-6.3	-0.3	-0.8	-13.4	0.7	-16.4	-7.2	0.7	-8.6
SI	-9.6	-2.6	-3.8	-8.9	-9.6	-3.6	-4.1	-16.7	-2.6	-19.7	-10.5	-2.6	-11.9
BG	14.0	21.1	19.8	14.7	14.0	20.1	19.5	7.0	21.0	4.0	13.1	21.1	11.7
CZ	6.0	13.0	11.8	6.7	6.0	12.0	11.5	-1.1	13.0	-4.1	5.1	13.0	3.7
CY	6.3	13.3	12.0	7.0	6.2	12.3	11.7	-0.8	13.2	-3.8	5.4	13.3	3.9
LV	-0.8	6.2	4.9	-0.1	-0.8	5.2	4.6	-7.9	6.1	-10.9	-1.7	6.2	-3.2
LT	-10.2	-3.1	-4.4	-9.5	-10.2	-4.1	-4.7	-17.2	-3.2	-20.2	-11.1	-3.1	-12.5
MT	4.5	11.6	10.3	5.2	4.5	10.6	10.0	-2.5	11.5	-5.6	3.6	11.6	2.2
RO	-12.2	-5.1	-6.4	-11.5	-12.2	-6.1	-6.7	-19.2	-5.2	-22.2	-13.1	-5.1	-14.5
SK	-0.6	6.4	5.2	0.1	-0.6	5.4	4.9	-7.7	6.3	-10.7	-1.5	6.4	-3.0
HR	-6.3	0.8	-0.5	-5.6	-6.3	-0.2	-0.8	-13.3	0.7	-16.3	-7.2	0.8	-8.6

Table A3 (ctd): Tax Burden Differences for Gross Labour Income Across EU Member States at the 150% mean income level

150%	SE	EE	HU	PL	SI	BG	CZ	CY	LV	LT	MT	RO	SK	HR
AT	-4.3	-8.1	4.2	6.3	9.6	-14.0	-6.0	-6.3	0.8	10.2	-4.5	12.2	0.6	6.3
BE	-11.3	-15.1	-2.9	-0.7	2.6	-21.1	-13.0	-13.3	-6.2	3.1	-11.6	5.1	-6.4	-0.8
DK	-10.0	-13.8	-1.6	0.5	3.8	-19.8	-11.8	-12.0	-4.9	4.4	-10.3	6.4	-5.2	0.5
FI	-5.0	-8.8	3.5	5.6	8.9	-14.7	-6.7	-7.0	0.1	9.5	-5.2	11.5	-0.1	5.6
FR	-4.3	-8.0	4.2	6.3	9.6	-14.0	-6.0	-6.2	0.8	10.2	-4.5	12.2	0.6	6.3
DE	-10.3	-14.1	-1.9	0.3	3.6	-20.1	-12.0	-12.3	-5.2	4.1	-10.6	6.1	-5.4	0.2
EL	-9.7	-13.5	-1.3	0.8	4.1	-19.5	-11.5	-11.7	-4.6	4.7	-10.0	6.7	-4.9	0.8
IE	2.8	-1.0	11.2	13.4	16.7	-7.0	1.1	0.8	7.9	17.2	2.5	19.2	7.7	13.3
IT	-11.2	-15.0	-2.8	-0.7	2.6	-21.0	-13.0	-13.2	-6.1	3.2	-11.5	5.2	-6.3	-0.7
LU	5.8	2.0	14.2	16.4	19.7	-4.0	4.1	3.8	10.9	20.2	5.6	22.2	10.7	16.3
NL	-3.4	-7.2	5.1	7.2	10.5	-13.1	-5.1	-5.4	1.7	11.1	-3.6	13.1	1.5	7.2
PT	-11.3	-15.1	-2.9	-0.7	2.6	-21.1	-13.0	-13.3	-6.2	3.1	-11.6	5.1	-6.4	-0.8
ES	-1.9	-5.7	6.5	8.6	11.9	-11.7	-3.7	-3.9	3.2	12.5	-2.2	14.5	3.0	8.6
SE		-3.8	8.4	10.6	13.9	-9.8	-1.7	-2.0	5.1	14.4	-0.3	16.4	4.9	10.5
EE	3.8		12.2	14.4	17.7	-6.0	2.1	1.8	8.9	18.2	3.5	20.2	8.7	14.3
HU	-8.4	-12.2		2.1	5.4	-18.2	-10.2	-10.4	-3.3	6.0	-8.7	8.0	-3.5	2.1
PL	-10.6	-14.4	-2.1		3.3	-20.3	-12.3	-12.6	-5.5	3.9	-10.8	5.9	-5.7	0.0
SI	-13.9	-17.7	-5.4	-3.3		-23.6	-15.6	-15.9	-8.8	0.6	-14.1	2.6	-9.0	-3.3
BG	9.8	6.0	18.2	20.3	23.6		8.0	7.8	14.9	24.2	9.5	26.2	14.7	20.3
CZ	1.7	-2.1	10.2	12.3	15.6	-8.0		-0.3	6.8	16.2	1.5	18.2	6.6	12.3
CY	2.0	-1.8	10.4	12.6	15.9	-7.8	0.3		7.1	16.4	1.7	18.4	6.9	12.5
LV	-5.1	-8.9	3.3	5.5	8.8	-14.9	-6.8	-7.1		9.3	-5.4	11.3	-0.2	5.4
LT	-14.4	-18.2	-6.0	-3.9	-0.6	-24.2	-16.2	-16.4	-9.3		-14.7	2.0	-9.5	-3.9
MT	0.3	-3.5	8.7	10.8	14.1	-9.5	-1.5	-1.7	5.4	14.7		16.7	5.1	10.8
RO	-16.4	-20.2	-8.0	-5.9	-2.6	-26.2	-18.2	-18.4	-11.3	-2.0	-16.7		-11.5	-5.9
SK	-4.9	-8.7	3.5	5.7	9.0	-14.7	-6.6	-6.9	0.2	9.5	-5.1	11.5		5.6
HR	-10.5	-14.3	-2.1	0.0	3.3	-20.3	-12.3	-12.5	-5.4	3.9	-10.8	5.9	-5.6	

Table A4: Tax Burden Differences for Gross Labour Income Across EU Member States at the 200% mean income level

200%	AT	BE	DK	FI	FR	DE	EL	IE	IT	LU	NL	PT	ES
AT		7.2	2.2	0.5	-2.1	3.8	4.8	-5.7	5.8	-4.4	-0.8	5.4	-4.8
BE	-7.2		-5.0	-6.7	-9.3	-3.4	-2.4	-12.9	-1.4	-11.6	-8.0	-1.8	-12.0
DK	-2.2	5.0		-1.7	-4.3	1.6	2.6	-7.9	3.6	-6.6	-3.0	3.2	-7.0
FI	-0.5	6.7	1.7		-2.6	3.2	4.3	-6.2	5.2	-4.9	-1.3	4.9	-5.4
FR	2.1	9.3	4.3	2.6		5.8	6.9	-3.6	7.8	-2.4	1.3	7.5	-2.8
DE	-3.8	3.4	-1.6	-3.2	-5.8		1.1	-9.4	2.0	-8.2	-4.5	1.6	-8.6
EL	-4.8	2.4	-2.6	-4.3	-6.9	-1.1		-10.5	0.9	-9.3	-5.6	0.6	-9.7
IE	5.7	12.9	7.9	6.2	3.6	9.4	10.5		11.4	1.2	4.9	11.1	0.8
IT	-5.8	1.4	-3.6	-5.2	-7.8	-2.0	-0.9	-11.4		-10.2	-6.5	-0.4	-10.6
LU	4.4	11.6	6.6	4.9	2.4	8.2	9.3	-1.2	10.2		3.6	9.8	-0.4
NL	0.8	8.0	3.0	1.3	-1.3	4.5	5.6	-4.9	6.5	-3.6		6.2	-4.1
PT	-5.4	1.8	-3.2	-4.9	-7.5	-1.6	-0.6	-11.1	0.4	-9.8	-6.2		-10.2
ES	4.8	12.0	7.0	5.4	2.8	8.6	9.7	-0.8	10.6	0.4	4.1	10.2	
SE	3.1	10.3	5.3	3.6	1.0	6.8	7.9	-2.6	8.8	-1.3	2.3	8.5	-1.8
EE	13.2	20.4	15.4	13.7	11.1	17.0	18.0	7.5	19.0	8.8	12.4	18.6	8.4
HU	1.0	8.2	3.2	1.5	-1.1	4.8	5.8	-4.7	6.7	-3.4	0.2	6.4	-3.8
PL	-2.9	4.3	-0.6	-2.3	-4.9	0.9	2.0	-8.5	2.9	-7.3	-3.6	2.5	-7.7
SI	-6.7	0.5	-4.5	-6.1	-8.7	-2.9	-1.8	-12.3	-0.9	-11.1	-7.4	-1.3	-11.5
BG	20.5	27.7	22.7	21.0	18.4	24.3	25.3	14.8	26.3	16.1	19.7	25.9	15.7
CZ	10.5	17.7	12.7	11.0	8.4	14.2	15.3	4.8	16.2	6.1	9.7	15.9	5.6
CY	8.2	15.4	10.4	8.7	6.1	12.0	13.0	2.5	14.0	3.8	7.4	13.6	3.4
LV	4.0	11.2	6.2	4.5	1.9	7.8	8.8	-1.7	9.8	-0.4	3.2	9.4	-0.8
LT	-5.0	2.2	-2.8	-4.5	-7.1	-1.2	-0.2	-10.7	0.7	-9.4	-5.8	0.4	-9.8
MT	8.8	16.0	11.0	9.3	6.7	12.5	13.6	3.1	14.5	4.3	8.0	14.2	3.9
RO	-7.0	0.2	-4.8	-6.5	-9.1	-3.2	-2.2	-12.7	-1.3	-11.4	-7.8	-1.6	-11.8
SK	3.3	10.4	5.5	3.8	1.2	7.0	8.1	-2.4	9.0	-1.2	2.5	8.7	-1.6
HR	-1.9	5.3	0.3	-1.4	-3.9	1.9	3.0	-7.5	3.9	-6.3	-2.6	3.5	-6.7

Table A4 (ctd): Tax Burden Differences for Gross Labour Income Across EU Member States at the 200% mean income level

200%	SE	EE	HU	PL	SI	BG	CZ	CY	LV	LT	MT	RO	SK	HR
AT	-3,1	-13,2	-1,0	2,9	6,7	-20,5	-10,5	-8,2	-4,0	5,0	-8,8	7,0	-3,3	1,9
BE	-10,3	-20,4	-8,2	-4,3	-0,5	-27,7	-17,7	-15,4	-11,2	-2,2	-16,0	-0,2	-10,4	-5,3
DK	-5,3	-15,4	-3,2	0,6	4,5	-22,7	-12,7	-10,4	-6,2	2,8	-11,0	4,8	-5,5	-0,3
FI	-3,6	-13,7	-1,5	2,3	6,1	-21,0	-11,0	-8,7	-4,5	4,5	-9,3	6,5	-3,8	1,4
FR	-1,0	-11,1	1,1	4,9	8,7	-18,4	-8,4	-6,1	-1,9	7,1	-6,7	9,1	-1,2	3,9
DE	-6,8	-17,0	-4,8	-0,9	2,9	-24,3	-14,2	-12,0	-7,8	1,2	-12,5	3,2	-7,0	-1,9
EL	-7,9	-18,0	-5,8	-2,0	1,8	-25,3	-15,3	-13,0	-8,8	0,2	-13,6	2,2	-8,1	-3,0
IE	2,6	-7,5	4,7	8,5	12,3	-14,8	-4,8	-2,5	1,7	10,7	-3,1	12,7	2,4	7,5
IT	-8,8	-19,0	-6,7	-2,9	0,9	-26,3	-16,2	-14,0	-9,8	-0,7	-14,5	1,3	-9,0	-3,9
LU	1,3	-8,8	3,4	7,3	11,1	-16,1	-6,1	-3,8	0,4	9,4	-4,3	11,4	1,2	6,3
NL	-2,3	-12,4	-0,2	3,6	7,4	-19,7	-9,7	-7,4	-3,2	5,8	-8,0	7,8	-2,5	2,6
PT	-8,5	-18,6	-6,4	-2,5	1,3	-25,9	-15,9	-13,6	-9,4	-0,4	-14,2	1,6	-8,7	-3,5
ES	1,8	-8,4	3,8	7,7	11,5	-15,7	-5,6	-3,4	0,8	9,8	-3,9	11,8	1,6	6,7
SE		-10,1	2,1	5,9	9,7	-17,4	-7,4	-5,1	-0,9	8,1	-5,7	10,1	-0,2	5,0
EE	10,1		12,2	16,1	19,9	-7,3	2,7	5,0	9,2	18,2	4,4	20,2	9,9	15,1
HU	-2,1	-12,2		3,8	7,7	-19,5	-9,5	-7,2	-3,0	6,0	-7,8	8,0	-2,3	2,9
PL	-5,9	-16,1	-3,8		3,8	-23,4	-13,3	-11,1	-6,9	2,2	-11,6	4,2	-6,1	-1,0
SI	-9,7	-19,9	-7,7	-3,8		-27,2	-17,2	-14,9	-10,7	-1,7	-15,4	0,3	-9,9	-4,8
BG	17,4	7,3	19,5	23,4	27,2		10,0	12,3	16,5	25,5	11,7	27,5	17,3	22,4
CZ	7,4	-2,7	9,5	13,3	17,2	-10,0		2,3	6,5	15,5	1,7	17,5	7,2	12,4
CY	5,1	-5,0	7,2	11,1	14,9	-12,3	-2,3		4,2	13,2	-0,6	15,2	4,9	10,1
LV	0,9	-9,2	3,0	6,9	10,7	-16,5	-6,5	-4,2		9,0	-4,8	11,0	0,7	5,9
LT	-8,1	-18,2	-6,0	-2,2	1,7	-25,5	-15,5	-13,2	-9,0		-13,8	2,0	-8,3	-3,1
MT	5,7	-4,4	7,8	11,6	15,4	-11,7	-1,7	0,6	4,8	13,8		15,8	5,5	10,6
RO	-10,1	-20,2	-8,0	-4,2	-0,3	-27,5	-17,5	-15,2	-11,0	-2,0	-15,8		-10,3	-5,1
SK	0,2	-9,9	2,3	6,1	9,9	-17,3	-7,2	-4,9	-0,7	8,3	-5,5	10,3		5,1
HR	-5,0	-15,1	-2,9	1,0	4,8	-22,4	-12,4	-10,1	-5,9	3,1	-10,6	5,1	-5,1	

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This interdisciplinary report focuses on tax barriers to cross-border mobility of workers in the EU. Tax fragmentation creates multiple negative impacts on the EU Internal Market, and compliance costs vary considerably across size, industries and countries. Further, employees' choice of host country may be distorted by the tax differential. The report concludes with specific policy recommendations for more tax harmonisation and coordination, and for simplified compliance requirements.

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