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Measuring the administrative costs of tax
compliance in Hungary

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Introduction

The Directorate-General for Structural Reform Support (DG REFORM) of the European Commission has issued a call for tenders on 21 May 2019 for “Measuring tax compliance cost and adapting automatic performance measurement of the Hungarian tax Authority” (SRSS/SC2019/032). Ernst & Young (EY) submitted its proposal for the opportunity on 16 June 2019, and subsequently won the engagement.

The project was funded by the European Union via the Structural Reform Support Programme and implemented by the Ministry of Finance (MoF) and the National Tax and Customs Administration (NTCA), in cooperation with the European Commission's Directorate-General for Structural Reform Support (DG REFORM).

The present document covers Deliverable 2, entitled “Compliance cost survey for Hungary”, prepared with the cooperation with the Budapest Institute.

The main structure of the report is as follows:

- ▶ Chapter 1 presents the methodological background of the project.
- ▶ Chapter 2 gives an overview of tax administration systems and reforms both in Hungary and in international comparison.
- ▶ We present the results of the compliance cost survey in Chapter 3, focusing on time spent on tax administration activities and related costs, the related macroeconomic cost based on the Standard Cost Model approach, as well as other aspects covered by our business survey.
- ▶ We compile our conclusions recommendations in Chapter 4.
- ▶ Chapter 5 presents the details of the closing workshops while the annexes presents further insights in terms of methodology and results.

Executive summary

Background and approach of our compliance cost survey

According to international assessments, the time required for the companies registered in Hungary to meet their primary tax obligations exceeds the EU average as well as the global average. Provided the political commitment to ease the tax information and reporting burden levied on Hungarian firms, the first steps to elaborate an effective policy reform in this field is the thorough mapping of current tax information and reporting obligations and the determination of corresponding compliance costs.

This study presents the main results of the assessment and estimation for the tax administration and compliance costs both at micro/firm-level and macroeconomic level in Hungary. The assessment is based on a business survey engaging sole entrepreneurs, representatives of micro, small, medium and large enterprises as well as external experts involved in the tax administration processes. The survey focuses on three specific tax types: the corporate income tax (CIT), the value-added tax (VAT) as well as taxes, contributions and costs related to employment in Hungary.

The business survey was conducted in the period between November 2019 and early February 2020. The survey covers all the tax administrative obligations linked to the above-mentioned tax forms (cf. hours spent on collecting data/information, processing, recording/checking, and submission) and also maps the business perceptions on complying with the corresponding information obligations (cf. hours spent on legal monitoring, tax optimisation/consultation, factors of irritation, and satisfaction with recent policy reform steps). The survey is based on a stratified sample of registered companies in Hungary – representative in company size (and covering five main sector groups).

The final sample contains records of business respondents representing 1,117 companies. The database includes 1,038 records where both the owners or the chief executive officers and the internal or external colleagues in charge of the tax administration have been contacted. The sample size, however, is smaller in case of the SCM-based estimations of the total tax compliance costs (957 companies in total) and varies between 452 (VAT) and 257 (employment-related taxes and obligations) companies or across the various descriptive statistics on the tax administration hours per tax types due to missing / zero data and data cleaning.

The representative company in our sample (median) has 13 employees, an annual turnover of 212.8 million HUF (634,590 EUR).

We below present the main conclusions of our survey.

Assessment of tax administration and compliance costs (based on hours spent on these obligations)

- ▶ **Time (hours) spent on tax administration vary significantly both across tax types and companies:** This variation is smaller in case of CIT, but significantly larger in case of employment-related taxes. The larger the companies are, the less time per employee they spend meeting their tax obligations concerning employment-related

taxes. VAT-related administration is more extensive for companies with a dominant (more than 50%) share stemming from export-based revenue.

- ▶ **In our survey, the various phases of the tax administration process do not differ as far as time spent on them is concerned:** companies on average say they spend more or less the same time for the collection of tax data/information, for the processing, than for all the other phases (recording, review, and submission). It is possible that business respondents could not differentiate these various steps in terms of hours spent.
- ▶ **The total tax administration costs (TTAC) and the total tax compliance costs (TTCC) at firm level vary significantly across company size segments, and partly also depend on the export share of their annual turnover.** Regression models explaining the change in the total tax administration/compliance costs at firm level with company characteristics, such as size, sector group, type of settlement of the company residence, export share in annual turnover show the following:
 - ▶ Significant positive size-effects across all size segments in case of the TTAC: the larger the company, the more it spends on tax administration (in terms of time and external/outsourcing costs) as compared to microenterprises. Also, companies with a dominant (more than 50%) export-driven revenue share face higher costs while reporting to the authorities. The other company characteristics (e.g. sector, location) do not seem to play a role.
 - ▶ In case of the TTCC, we find a similar pattern (significant size-effects and a significant role of export-orientation). Nonetheless, export shares seem to matter if and only if we look at the nominal sums of the total compliance costs at the firm level. All other company features (sector, location) do not prove to be significant in shaping the related business hours and costs.
- ▶ **The larger the company, however, the smaller the *relative costs of tax administration and compliance*.** As our regression results show, the company size has a significant negative effect on the TTAC / TTCC per annual turnover. The share of export-oriented revenues does not have a significant effect upon the variation of the relative cost measures - along with all the other firm characteristics.
- ▶ **The macroeconomic estimates for the relative tax compliance costs (i.e. the total tax compliance costs per annual turnover) for 2018 vary in dependence of the calculation base of these costs (from 1.72% median cost-based through 4.85% average cost-based) and the corresponding sample (companies with at least 1 or 2 employees).** This takes into account all the information obligations linked to CIT/VAT/employment-related taxes. Variation is due to the way we calculate the central tendency (median versus mean-based estimation) and the data cleaning method.
- ▶ **In an international comparison, the macroeconomic estimate for the total compliance costs to annual turnover ratio (3.66%)** puts Hungary above the EU average (2.5%), but below the corresponding figure for Poland (3.8%), as indicated by the 2018 KPMG study. This estimate goes for a sample of Hungarian companies with at least 1 employee and it is based on the mean of the relative compliance costs per size segments and on Hungarian payroll data from 2014. Notably, this comparison calculates with the CIT and VAT burden only and does not include administrative costs due to employment-related taxes and obligations.

Governance of tax administration at firm level

- ▶ **Outsourcing is relatively high**: The share of companies in our sample delegating parts of tax administration to external (accounting) firms is high (52%). The shares of companies handling tax compliance outside of the firm (fully outsourcing) remains also relatively high across all the size groups (between 37% and 40%). In EU comparison it seems that Hungarian companies use outsourcing, like their Czech peers, but less frequently than companies in Slovakia or Poland.
- ▶ **The direct involvement of CEOs is considerable**: A large proportion (42%) of the sampled CEOs/entrepreneurs are heavily engaged in the tax administration tasks. Based on the reported data, while the share of CEOs involved is definitely higher among micro/small enterprises than among medium-sized and large companies, their involvement is especially typical as far as VAT-related obligations are concerned. 11% of those contacted first from the companies were CFOs. Further analysis of the reasons and of the patterns of CEO engagement would be necessary to better understand both the firm-level decision on outsourcing and the CEO engagement in tax administration and compliance.

Business perceptions and attitudes on tax administration and compliance

- ▶ **Legal monitoring takes up considerable time for all companies, following changes in VAT regulation is especially time-consuming** (45.5 hours per year on average). Less time is spent on the monitoring of CIT provisions and on employment-related changes in the regulatory framework (34 hours). Based on the regression results, respondents coming from medium-size and larger companies spend significantly more time on the legal monitoring in case of all tax types than respondents representing smaller firms, because in the latter case we assume that legal monitoring is part of the task of external / outsourced accountants.
- ▶ **Digitalisation of tax administration in the business sector is fully or partly complete**: Close to 60% of the sampled companies reported that their tax administration is partly or fully digitalised. The size of the companies does not determine the level of digitalisation – a surprisingly high share small- and medium-sized companies have completely digitalised their internal process while there are still large companies with partly paper-based internal accounting and controlling systems.
- ▶ **Time spent on tax optimisation increases significantly as the size of the company grows**. While in case of micro and small enterprises the average is 20 hours per year (with a median of 6 hours per year), large companies spend definitely more time on these tasks (on average 34 hours, with a median of 20 hours). Based on regressions, we did not find any sectoral effect to highlight.
- ▶ **Additional costs due to tax compliance vary across firms but are not negligible**: Around a quarter (24%) of the respondents said that they have additional costs related to tax obligations. The most frequently cited sources for these additional costs are linked to getting more detailed information on taxation (e.g. subscribing to periodic tax reviews, tax magazines, and taxation-related databases). Further expenditures are due to the investments in necessary IT solutions and software updates, and to consultation with external experts (tax consultancy companies and/ or auditors).
- ▶ **The majority of company representatives are not (or rather not) irritated with tax administration**: The share of respondents who are very irritated by the obligations vary between 9.6 and 11.7 percent when it comes to different tax forms. On the other

hand, the share of respondents who are not at all irritated by the obligations vary between 43 and 46.3 percent. There are no major differences between the levels of irritation across tax types and the intensity of irritation is usually decreasing with the company size. Among other factors, the complexity of tax rules and the lack of clarity in the tax regulations are the most frequent reasons for irritation.

- ▶ **The larger the companies are, the more satisfied they seem to be with recent tax reforms:** While 36% of the respondents does not seem to perceive any substantial change in the information obligations linked to taxation, a slightly larger share (38%) of company representatives found that tax administration in general is getting more complicated. Respondents' view representing companies registered before 2010 do not significantly differ from those coming from younger companies.
- ▶ **Continuing efforts towards more simplified data requirements, templates, more predictable and transparent regulatory framework, and speeding up the development of e-taxation solutions are recommended.** As per the respondents, the following policy measures (proposed by the survey) would be welcome: changing tax legislation once a year (single, pre-announced date); simplifying the forms and templates, eliminating the duplication of data requests (reducing reporting burden/duplications); speeding up the development on fully electronic submission of all returns to the tax authority.

1. Methodological background of the project

The primary objective of the project was to design, deploy and analyse a survey covering Hungarian micro, small, medium and large enterprises to measure the costs of complying with information obligations attached to some particular tax forms in Hungary – the corporate income tax (CIT), the simplified taxes in the business income tax regime (*KATA*, *KIVA*, *EVA*), the value-added tax (VAT), as well as taxes, contributions and costs related to employment.

Thus we conducted a tax administration and compliance-focused business survey based on the so-called Standard Cost Model approach.¹ The Standard Cost Model (SCM) is an internationally accepted methodological approach to measure the costs of private sector stakeholders related to complying with information and reporting obligations rooted in local legislation and regulations. The SCM does not take into consideration the goals of regulation, legislation, or policy, it is merely used to collect data on the administrative activities that must be undertaken in order to comply with the particular information obligations. Nevertheless, the model's strength lies in the fact that it is designed to collect detailed information at firm level and can thus be used for more nuanced analysis that may better match and inform the policy makers' preferences, when applied correctly. We listed the most important limitations of the SCM approach and our solutions to these challenges in the [Methodological Annex](#).

Our business survey was based on computer-assisted telephone interviewing (CATI) and it was conducted in the period between November 2019 and early February 2020. The survey covers all tax administration related obligations linked to tax compliance related to the above-mentioned tax forms and collects data (especially hours spent) broken down by the administrative phases: collecting data/information, processing, recording, and revising/submission.

In addition, it also maps the business perceptions on complying with the corresponding information obligations (cf. hours spent on legal monitoring, tax optimisation/consultation, factors of irritation, and satisfaction with past /recent policy reform steps). The survey is based on a stratified sample of registered companies in Hungary – representative in terms of company size and categorizing them into five main sector groups (agriculture, industry, trade, services, others).

For additional information on the methodology of the survey, please refer to the [Methodological Annex](#).

The survey methodology was agreed to be in line with the strategic and policy priorities of the Ministry of Finance in Hungary. Since the effectiveness of any reform steps hinges on the design and the targeting of the consecutive measures, the ultimate goal of this project to support evidence-based policy making in taxation policy and to enhance the Hungarian government's understanding of existing tax compliance costs in Hungary.

The project is unique in the Hungarian policy context in its ambition to gather firm-level data and use this data-driven analysis for the quantification of the statutory compliance obligations

¹ EC 2004. The Standard Cost Model – A Framework for defining and quantifying administrative burdens for businesses. Downloaded at 10 October 2019: <https://ec.europa.eu/eurostat/documents/64157/4374310/11-STANDARD-COST-MODEL-DK-SE-NO-BE-UK-NL-2004-EN-1.pdf/e703a6d8-42b8-48c8-bdd9-572ab4484dd3>

based on a large sample of Hungarian companies. It is also a pioneer project with regard to its scope (covering three different tax forms and differentiating the administrative phases) and with its aim to gather evidence for comparing the real and the perceived level of tax compliance costs at the same time (cf. hours spent for the various tax obligations *versus* tapping the perceptions on the irritation with these same obligations).

Consequently, the results and lessons shared by this project can provide a proper baseline and benchmark for any future policy considerations in the arena of tax policy reform in Hungary.

2. Overview of tax administration systems and reforms

2.1 Tax administration and compliance in international comparison

At first blush, business environment in Hungary is no worse than in its peers. Indeed, according to the OECD's product market regulation index that measures the degree to which policies promote or inhibit competition in areas of the product market where competition is viable, the country's score for 2018 was better than any of the other Visegrád countries but the Czech Republic.²

Once we concentrate on the most recent (2018) "Government Effectiveness" or "Regulatory Quality" sub-indicators of the World Governance Indicator dataset of the World Bank, however, the picture is more sombre: with respect to both, Hungary scores lower not just than comparably sized Austria and Portugal, but lower than all the other Visegrád countries.³ In the "public-sector performance" sub-index of the World Economic Forum's Global Competitiveness Index for 2017-2018, out of its peers, only Slovakia scores worse.⁴

The administrative burden on businesses is high. In Hungary the last business survey-based study was carried out in 2009 by Deloitte.⁵ It concludes that administrative burdens on business are equivalent to 4.3% of GDP. Secondary analysis of their data by Reszkető and Váradi in 2011 found that, in line with international studies, proportionally, smaller firms bear a heavier administrative burden in general than larger ones do, with the only difference that the relative administrative burden on smaller businesses in Hungary is even larger than their EU peers: a 2006 EU-wide study found the per employee administrative burden to be 10 times as high for small as for large enterprises; in Hungary that factor was found to be more than 16.⁶

Small taxes impose big administrative costs and burden. Hungary's tax system has over 60 different taxes, many of which generate little revenue but impose a significant administrative costs on those subject to them.⁷ According to World Bank Paying Taxes data, a medium size company has to spend 277 hours yearly on paying taxes, while the OECD high income average is merely 158.8 hours.⁸ While some of these taxes have been eliminated (e.g. cultural tax) or merged, most of them remain in place.

² OECD 2018. indicators of Product Market Regulation – Economy-Wide Indicators 2118. Available: <https://www.oecd.org/economy/reform/indicators-of-product-market-regulation/>

³ World Bank 2019. Worldwide Governance Indicators Database, Available: <https://info.worldbank.org/governance/wgi/>

⁴ World Economic Forum 2019. The Global Competitiveness Report 2018. Available: <https://wef.ch/2Px5Veo>

⁵ Deloitte 2009. Zárótanulmány - Áttekintő vizsgálat az államigazgatási szabályozásból fakadó vállalkozói adminisztratív terhek teljes köréről, illetve egyes fókuszterületekkel kapcsolatosan részletes felmérések elkészítése.

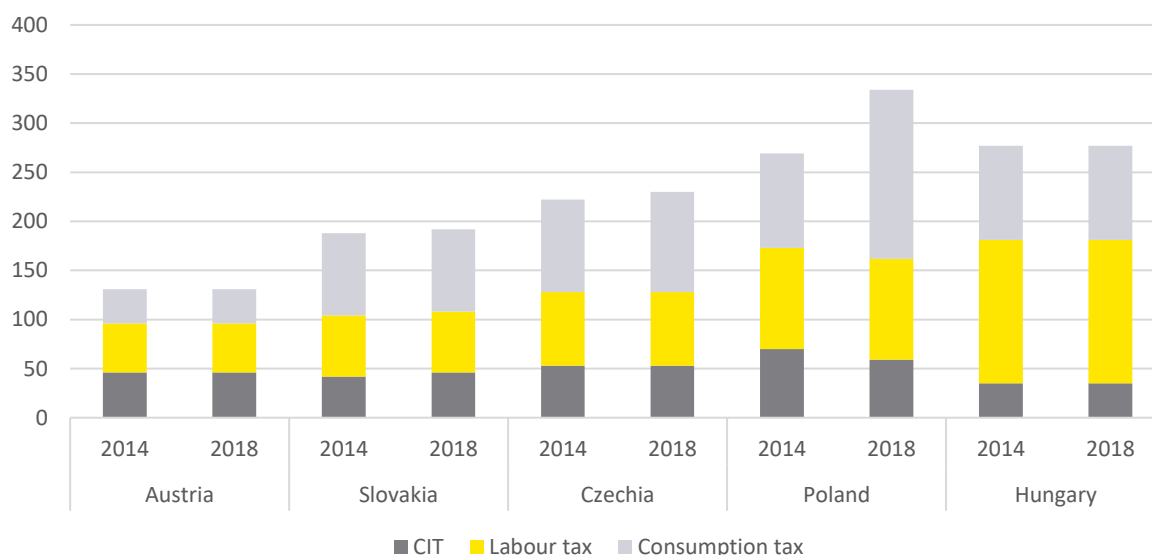
⁶ Reszkető, P. Váradi, B. 2011. Vállalati adminisztratív terhek specifikus elemzése. Budapest Intézet. 2011. http://budapestinstitute.eu/index.php/projektek/adatlap/specific_analysis_of_administrative_burden_in_the_business_sector/hu

⁷ European Commission 2019. 2019 European Semester – Country Report Hungary. Available: https://ec.europa.eu/info/sites/info/files/file_import/2019-european-semester-country-report-hungary_en.pdf

⁸ It should be noted that this assessment uses a different method than the SCM-based estimation applied in this study. So comparison of the results across these assessments is rather limited (cf. difference in assessment method, in the measurement unit, and in the data collection method). For the references and further information on the methodology, see World Bank

If we focus exclusively on tax administration and compliance of the tax forms covered by the current survey, the big picture is very similar. Referring to the World Bank Paying Taxes database, the figures show that the average time required for an SME in Hungary to meet the primary tax obligations related to CIT, social contributions and labour taxes, and consumption taxes was 277 hours annually in 2018 (just like in 2014), considerably exceeding the EU average and the time spent by representative companies in peer countries – like the Czech Republic (230) and Slovakia (188).⁹

Figure 1 Time to prepare and pay taxes (2014/2018, CIT and labour taxes)



Source: World Bank Paying taxes 2018.

Available: <https://www.doingbusiness.org/en/reports/thematic-reports/paying-taxes-2020>

2.2 International trends and good practices of tax administration reforms

Compliance with tax rules can be challenging for all types of businesses. Tax legislation is often complex and the high frequency of changes in the regulatory environment can be the source of both extra efforts (hours spent on legal monitoring) and additional costs (expertise required). Application of the statutory obligations, including also adjustments in the intra-firm accounting and controlling procedures in line with the changing regulatory environment may divert firm-level capacities and resources from productive activities. Information obligations required by governments may easily go beyond the business-as-usual scope of the management control systems, thereby challenging the firm-level capacities.

-PWC 2020. Paying Taxes - Interactive Data Explorer. Available at: https://www.pwc.com/gx/en/services/tax/publications/paying-taxes-2019/explorer-tool.html?WT.mc_id=CT13-PL1300-DM2-TR2-LS1-ND30-TTA4-CN_payingtaxes-2019-data-explorer-button

⁹ World Bank 2018. Doing Business - Paying taxes. Available: <https://www.doingbusiness.org/en/reports/thematic-reports/paying-taxes-2020>

Consequently, government reforms in tax administration emerged over the past decades across the globe. These reform steps follow three main trends:

- ▶ Granting increased autonomy to tax administrations;
- ▶ Setting up a unified integrated revenue authority (charged with administering both tax/customs rules and social security);
- ▶ Testing the tax legislation by keeping an eye on SMEs ex ante.

The European Commission, along with other international organisations (OECD, World Bank), have paid attention to mapping country-level efforts and reforms aimed at simplification of both the tax compliance procedures and the taxation framework in general.¹⁰

International studies mapping good practices in this field pay a particular attention to corporate income and payroll taxes and stress the need for simplifications targeted especially at SMEs. While a comprehensive overview of the measures that countries have taken to reduce tax compliance costs in the last decade is beyond the scope of this study, we highlight here the most important aspects which we found both relevant and feasible for the Hungarian case.

- ▶ A **stable and predictable legislative framework** is one avenue to minimise the firm-level time and costs required by compliance efforts. The 'think small first' principle¹¹ gains importance in the field of taxation, especially within the European Union.
- ▶ **Binding interpretations of existing tax laws and rulings** reduce uncertainty and help business stakeholders better understand the statutory provisions, thereby also reducing the costs of adjustments in their own (intra-firm) reporting systems.
- ▶ The **integration of registration and reporting obligations for tax purposes** is strongly recommended and piloted across the developed countries. The transformation of the national tax authorities into a sort of one-stop shops can significantly reduce time and costs spent for proper compliance. The shift of competences to a unified integrated revenue administration authority (charged also with integrated data collector function) can only be a success story if it goes along with the consistent and simultaneous capacity-building in the tax policy making process and the revenue administration as well as with an improved level of intra-governmental coordination.
- ▶ The **provision of timely and tailor-made information on taxation** is important for all businesses, but especially for small businesses. In practice, it implies a user-friendly, easy-to-navigate and state-of-the-art online platform (website, portal) of the government tax agencies and the constant development of its online presence in line with feedbacks collected from and surveyed regularly among taxpayers and other non-government stakeholders in the field (e.g. accountants, auditors, consultancies).
- ▶ **Simplifications both in the reporting procedures and in tax accounting methods** benefit particularly smaller businesses. Tax forms / templates and reporting requirements can also be tested from the small business perspective (cf. in accordance

¹⁰ For the main references, see:

EC 2006. Simplified tax compliance procedures for SMEs. Final Report of the Expert Group. European Commission. Brussels.
World Bank Group 2019. Thinking strategically about revenue administration reform: The creation of integrated autonomous revenue bodies. *Discussion Paper*: No.4. November 2019

World Bank 2011. An integrated assessment model for tax administration. *Public Sector and Governance Group* 2011.

¹¹ The 'Think Small First' principle promotes the SMEs' interests across the policy making cycle both at the community and the country level within the European Union. The 2008 small business act (SBA) stresses the need for policy and legislation to be designed with SMEs in mind and emphasises the importance of this principle. For further information on the use and effectiveness of this principle, see: <https://ec.europa.eu/growth/smes/business-friendly-environment/small-business-act/>

with the ‘think small first’ principle) and these can be adjusted to the business reality of small enterprises. The extension of the possibility of electronic filing of tax reports/ tax returns can definitely speed up procedures and reduce compliance costs in the long term. Payment reminders and individual tax accounts can speed up payment and refund procedures.

- ▶ **Open and collaborative relationship between the tax policy makers, revenue administrators and other government agencies** plays an important role in improving the coherence of tax policy with other public policies and in being able to reap the benefits of all the institutional and legislative reforms mentioned above. Clear communication of the government goals (cf. simplification objectives), systematic, open and regular consultations with both the government and non-government stakeholders are also the key factors in perception management.

2.3 Cutting red tape and tax administration reforms in Hungary

In 2008, in line with EU goals, the Government Decree 1058/2008 (IX.9.) set a highly ambitious target: decreasing the costs deriving from administrative burdens resulting from national regulation by 25% by 2012, for public and private sector stakeholders within the Hungarian context. The document identified specific short- and long-term actions to be taken to achieve this goal; however, the impact and progress of these actions have remained unclear due to the lack of annual monitoring reports or assessment of results.¹²

As part of efforts to cut red tape levied on Hungarian companies, the Ministry of Economy and Development assigned Deloitte Hungary to run a standard-cost-model (SCM) based business survey in 2009. Their survey focused on several business regulatory areas and one survey module concentrated on VAT and payroll taxes. Their results showed that the administrative costs of Hungarian enterprises totalled 8.75 billion EUR. According to the study, the aforementioned 25% reduction target could have saved companies in Hungary 650 million EUR, concluding that the alleviation of reporting obligations could provide a considerable impetus to economic growth.

From the 20 information obligations with the highest administrative costs associated, most were directly related to tax administration.¹³ While the study established a baseline to work with a decade ago, no comparably comprehensive study has been produced since, necessitating the conduct of a similarly diligent but more sophisticated examination to determine the current tax compliance costs. In 2018, KPMG launched a cross-country survey on tax compliance costs for SMEs in 20 out of 28 Member States, but Hungary was not included in the sample.¹⁴

Political willingness to decrease the regulatory compliance costs incurred by private sector stakeholders was once again reinforced in 2011 by the Széll Kálmán Plan (with targets to be achieved by 2014) and the subsequent Government Decree 1133/2011 (presenting 114 measures under 19 priority areas).

¹² Budapest Institute, 2011. Available at: http://www.budapestinstitute.eu/uploads/Foglalkoztatas_admininterhe_2011.pdf

¹³ Hétfa Kutatóintézet, 2010. Available at: http://hetfa.hu/wp-content/uploads/HSZH04_Admininterhek_Magyarországon_ISSN.pdf

¹⁴ KPMG 2018. Study on Tax Compliance Cost for SMEs Final Report. November 2018.

As a result, an estimated decrease of 1.06-1.22 billion EUR was claimed to have been achieved.¹⁵ Moreover, an entire priority axis of the Public Administration and Public Service Development Operational Programme was devoted to decreasing administrative burden. This programme was launched in 2013 and aimed at a cost-reduction of 400 million EUR in total across all the business, public and civil sector. The evaluation of the results and impacts of this programme is not delivered, yet; but could definitely contribute to the design of the future policy reform steps.

In relation to the tax policy reforms, over recent years the Hungarian government has also made efforts to decrease other employment-related taxes, like the social security contributions. Hungary also slashed its statutory corporate tax rate (from 19 percent for large companies and 10 percent for small ones) to a uniform 9 percent in 2017, and currently has the lowest rate in the European Union. The government sees this is a boost to competitiveness that would encourage foreign investment and spur economic growth.¹⁶

While these steps have been acknowledged by peers and international organisations, recommendations coming from the European Council and from the OECD have repeatedly urged Hungary to further simplify its tax system and to ensure predictability of the tax policy framework.¹⁷ The most recent recommendations continue to highlight the complexity of the tax system (mainly due to the high number of small taxes) and put emphasis on the need to decrease the compliance costs, specifically when it comes to costs levied on small enterprises.¹⁸ In line with these recommendations, the Ministry of Finance (MoF) recently announced plans to eliminate 20 of the smaller tax forms and to further cut the administrative costs due to tax compliance.¹⁹

In sum, despite improvements in the overall macroeconomic context, the existence of numerous small taxes and the general complexity of tax regulation altogether probably still pose a significant burden on businesses and might easily lead to suboptimal business decisions and outcomes in the labour market. Thus, the government's apparent commitment to simplify the administrative tasks can effectively contribute to the decrease of the red tape in tax administration and to the improvement of business perception on taxation and regulatory policies in general.

¹⁵ Ministry of Public Administration and Justice, 2014. Available at: <https://kimitud.atlatszo.hu/request/a-kim-januar-10-i-negyedevol-cso#incoming-3832>

¹⁶ Hungary 2018. European Semester – Country Report Hungary. Available at: <https://ec.europa.eu/info/sites/info/files/2018-european-semester-country-report-hungary-en.pdf>

¹⁷ European Council, 2018. Available at: <https://ec.europa.eu/info/sites/info/files/2018-european-semester-country-specific-recommendation-commission-recommendation-hungary-en.pdf>

¹⁸ European Council, 2019. Available at: https://ec.europa.eu/info/sites/info/files/file_import/2019-european-semester-country-specific-recommendation-commission-recommendation-hungary_en.pdf

¹⁹ Index, 2019. Available at: <https://index.hu/gazdasag/2019/06/11/kata-kiva-eva-koltsegetes-adopolitika-ado-adofajtak-koltsegetes-2022-megszunik-adoteher/>

3. Tax administration costs in Hungary

3.1 Description of the business sample

In this section, we provide information on the characteristics of the companies covered by our survey sample. All information presented below is based on the SCM database compiled from four different (CATI) surveys conducted on a randomly stratified sample of registered Hungarian companies. The target groups of these various surveys were as follows:

- ▶ (sole) entrepreneurs / CEOs;
- ▶ internal management in charge of the tax administration tasks (e.g. CEOs, CFOs, colleagues from the in-house accounting units);
- ▶ external accounting/financial experts contracted by the selected companies.

The focus of the surveys was on the following aspects:

- ▶ The tax administration-relevant business characteristics (e.g. the identification of the business-specific tax forms, delegation of tax administrative tasks);
- ▶ The time spent for complying with information obligations related to CIT, VAT and employment-related taxes (measured in working hours and annual frequency);
- ▶ The business perceptions and attitudes on the level and sources of irritation due to tax administration, on the corresponding government reform steps, and on some potential future reform steps.

The SCM database also includes basic operational and financial information on the sampled companies, and some personal characteristics of the respondents (for example, level of education, their business position, experience with tax administration and compliance abroad). For the various questionnaires and for the sampling and data cleaning methods, see the [Annex III](#) (Survey questionnaires) and [Annex I](#) (Methodological Annex).

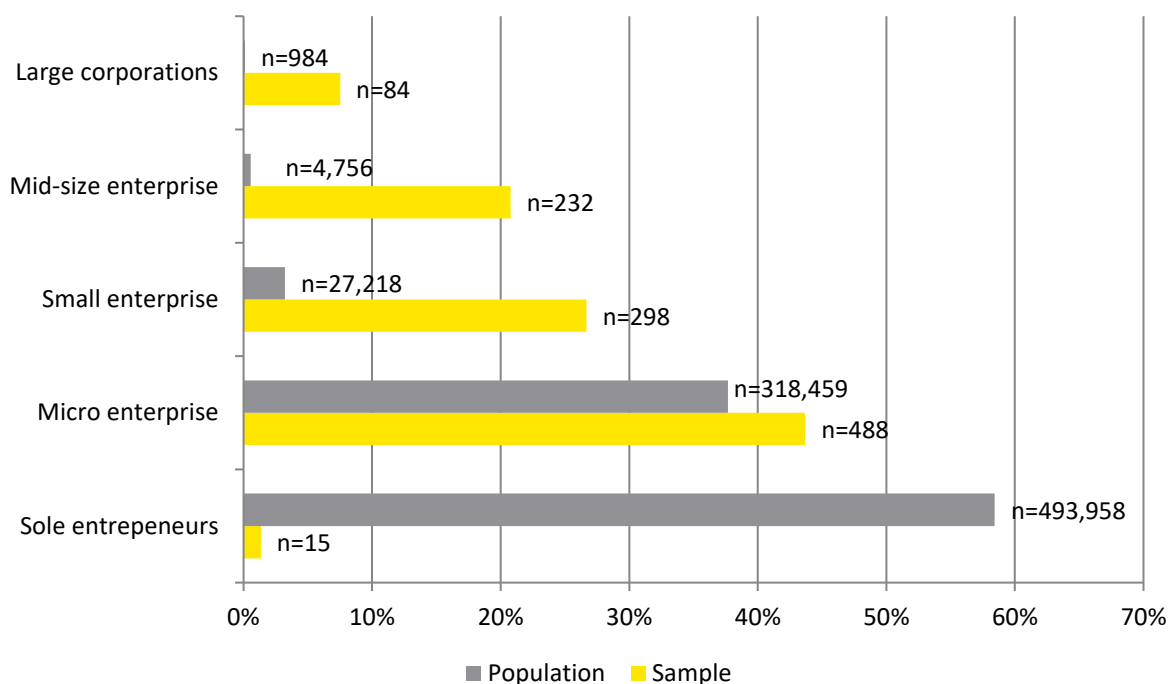
The final cleaned sample contains records of business respondents representing 1,117 companies. The database includes 1,038 records where both the owners / chief executive officers and the internal or external colleagues in charge of the tax administration have been contacted. The sample size, however, is smaller in case of the SCM-based estimations of the total tax compliance costs (957 companies in total) and varies between 452 (VAT) and 257 (employment-related taxes and obligations) companies or across the various descriptive statistics on the tax administration hours per tax types due to missing / zero data and data cleaning. For the overview of the various (sub)sample sizes, see [Table 9](#) in the Methodological Annex.

The breakdown of the sample regarding the size of companies is as follows:

- ▶ 15 sole entrepreneurs;
- ▶ 488 micro enterprises;
- ▶ 298 small enterprises;
- ▶ 232 mid-sized enterprises;
- ▶ 84 large corporations.

This segmentation follows the recommendation of the European Commission (2006/361/EC) and the corresponding provisions of the Hungarian SME Act (XXIV/2004 Act on SMEs). For the specific definition of the size segments, see [Table 7](#) in the Methodological Annex. As the graphs below show, in our sample the microenterprises are largely underrepresented, while all the other types of companies are overrepresented.

Figure 2 Distribution of sampled companies based on the company size



Source: Hungarian Central Statistical Office 2018,²⁰ own calculation (n=1,117)

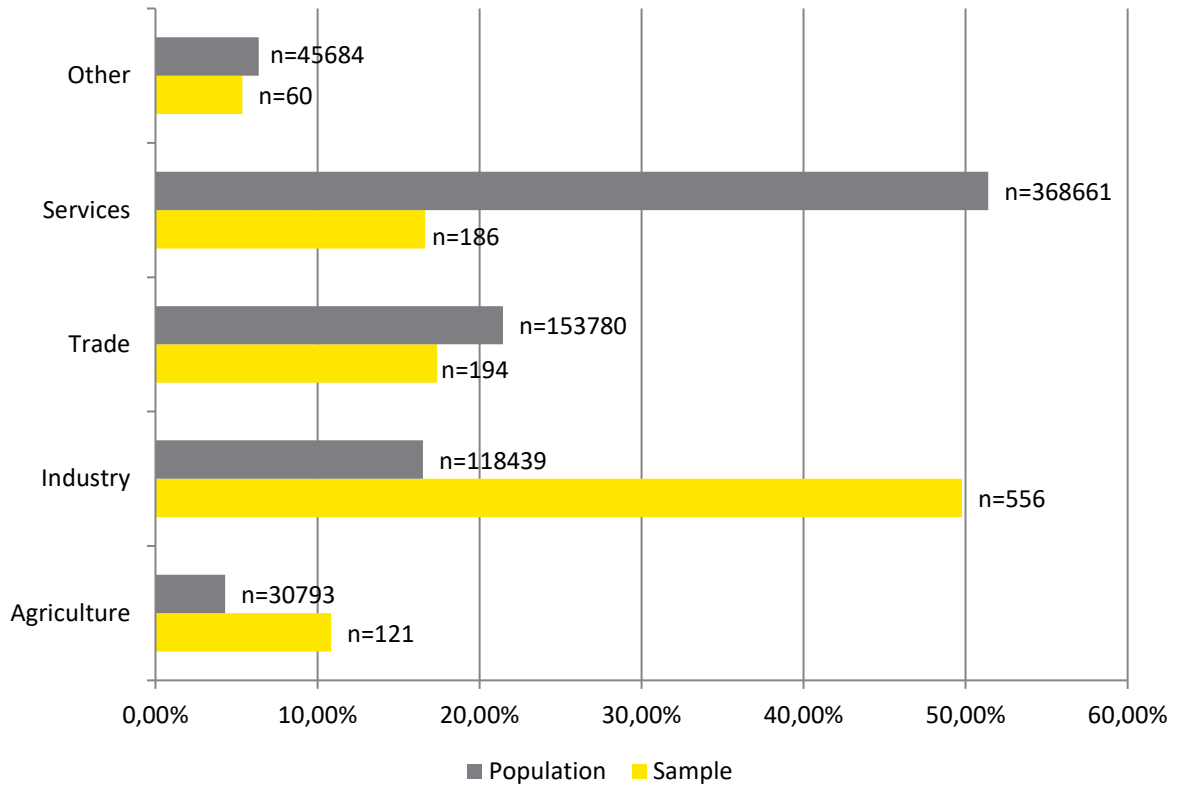
Note: Population data reflects companies registered in Hungary in 2018.

The representative (median) company in our sample has 13 employees, and an annual turnover of 212.8 million HUF (634,590 EUR).

²⁰ https://www.ksh.hu/docs/hun/xstadat/xstadat_eves/i_qvd010.html

With regard to sectoral distribution, half of the sampled firms operates in the industrial sector, a third of them (34%) in trade and services, 11% in agriculture, and some fraction (5%) in all the other sectors.

Figure 3 Distribution of sampled companies based on economic sector groups



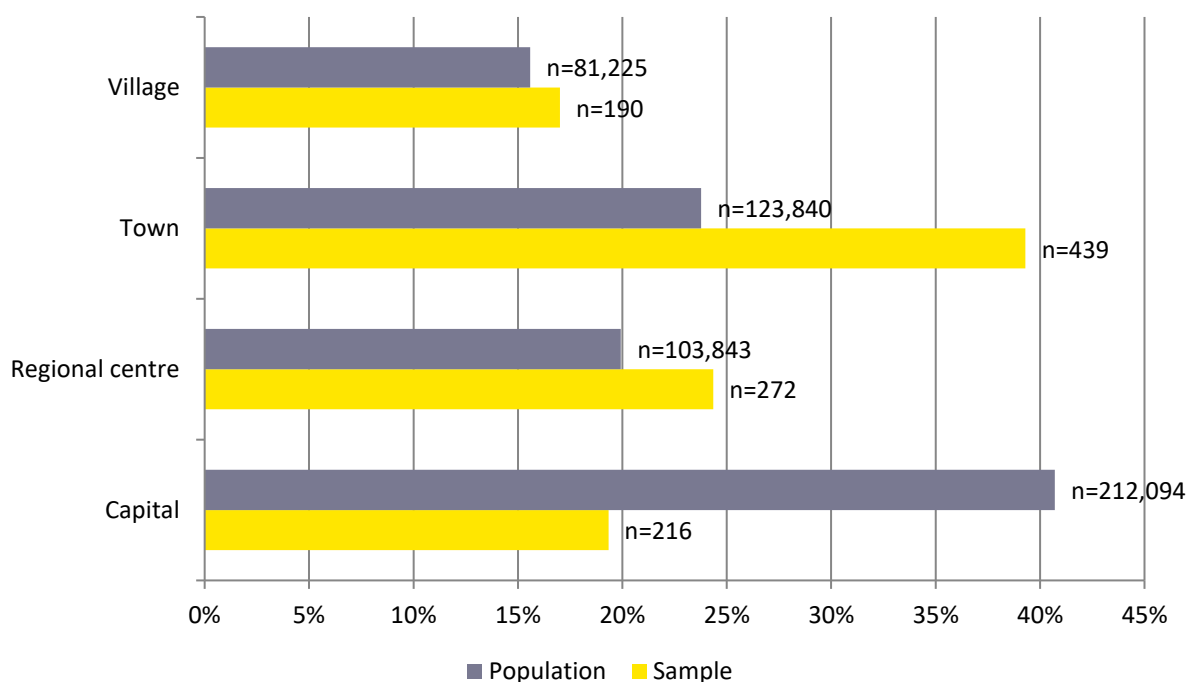
Sources: Hungarian Central Statistical Office 2017,²¹ own calculation (n=1,117)

Note: Population data reflects companies operating in Hungary in 2017.

²¹ https://www.ksh.hu/docs/hun/xstadat/xstadat_eves/i_qpg008b.html

Companies with a headquarter in the capital city (19%), or in the regional/county centres (24%) dominate along with companies operating in other cities (39%). 17% of the sampled businesses focus with their main products and services on the villages. A considerable share of the sampled companies have cross-border transactions (25%), on average with an export-related share of the annual turnover amounting to 31% in the total sample (obviously with lower shares among micro/small-sized companies – 18% and 28%, respectively; and higher ones among larger companies – above 40%).

Figure 4 Distribution of sampled companies per settlement type (based on registered headquarter)

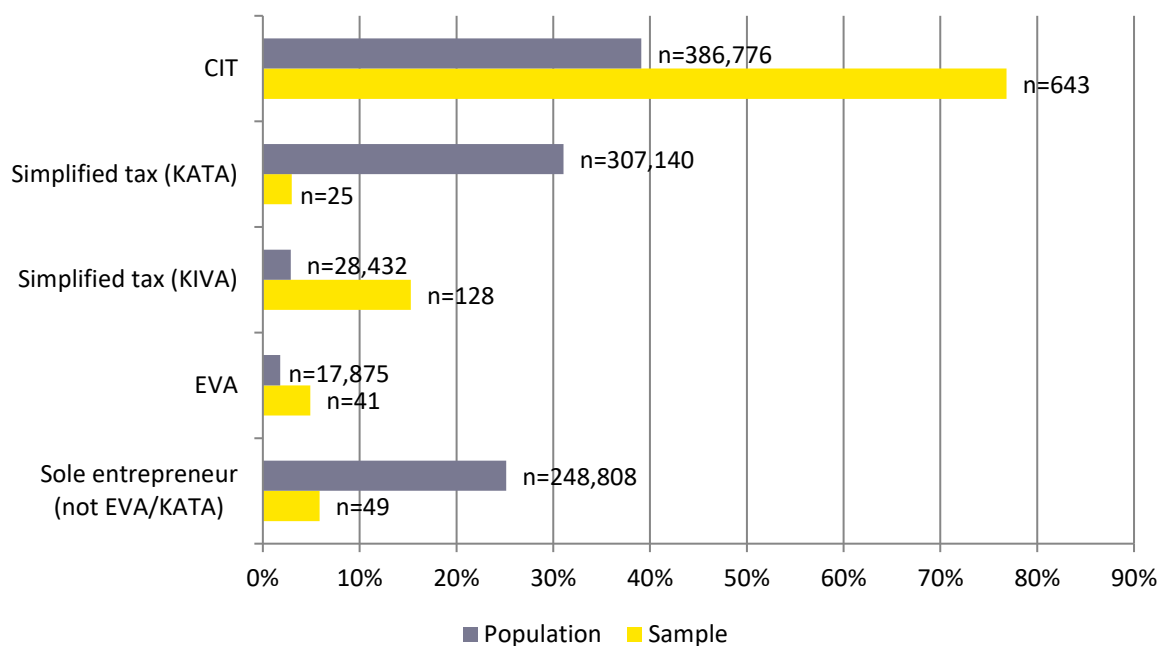


Sources: Hungarian Central Statistical Office - TSTAR 2018, own calculation (n=1,117)

Note: Population data is for companies registered in Hungary by the end of 2018.

Based on the information shared by the CEO respondents, our survey data provides information mostly on companies in the standard corporate income tax regime (n=412). We have however collected data also from companies in the simplified tax regimes (KIVA, KATA, EVA). Usually, entrepreneurs in the KATA regime are sole entrepreneurs. Our sample however show also respondents in this simplified tax form with more than one employee.

Figure 5 Number of sampled companies based on types of corporate income taxes



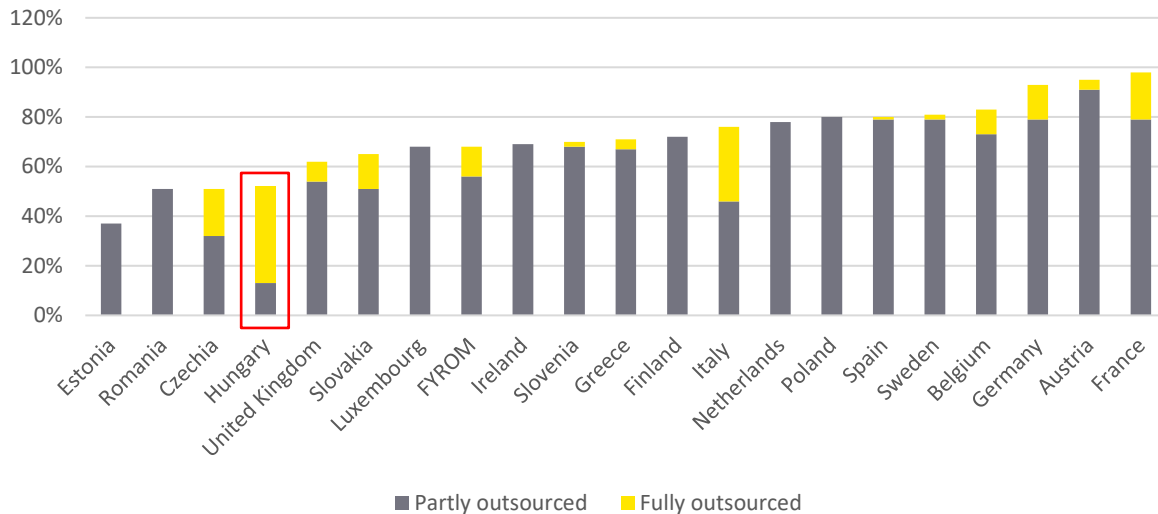
Source: National Tax and Customs Administration 2018, own calculation (n=813)

Note. The sample data presented here is based on the CEO responses cleaned but not corrected in case of missing or 'other' answer options. It should be stressed that the corresponding tax administration hours and compliance costs were calculated on reported number of hours rather than based on the CEO responses, consequently, numbers for sample sizes differ.

An intriguing result of the survey is that the delegation of the tax administration tasks in Hungary seems to have a very mixed pattern. First of all, while most company representatives in our sample (49%) indicated that they use only internal resources for tax compliance, a considerable share of companies (39%) completely outsources these tasks to an external accountant or accounting firm. 13% of the companies follows a mixed governance model, collaborating with both internal and external experts.

Outsourcing is even more frequent among those in the simplified tax schemes (EVA, KATA, KIVA) – in total, 61% of the entrepreneurs engages with external accountants. Nonetheless, the share of companies in our sample that delegates tax administration tasks to external (accounting) firms remains relatively high across all the size groups (between 37% and 40%). Hungary is in the lower range of the corresponding international ranking with all the Visegrad countries with a higher share of outsourced tax administration (see, 50 % in the Czech Republic and close to 80 % in Poland). For a rough EU comparison, see figure below. Nonetheless, it should be carefully noted that the Hungarian figures stem from the recent survey, the sampling method and the corresponding question of which is different from those used by the KPMG survey.

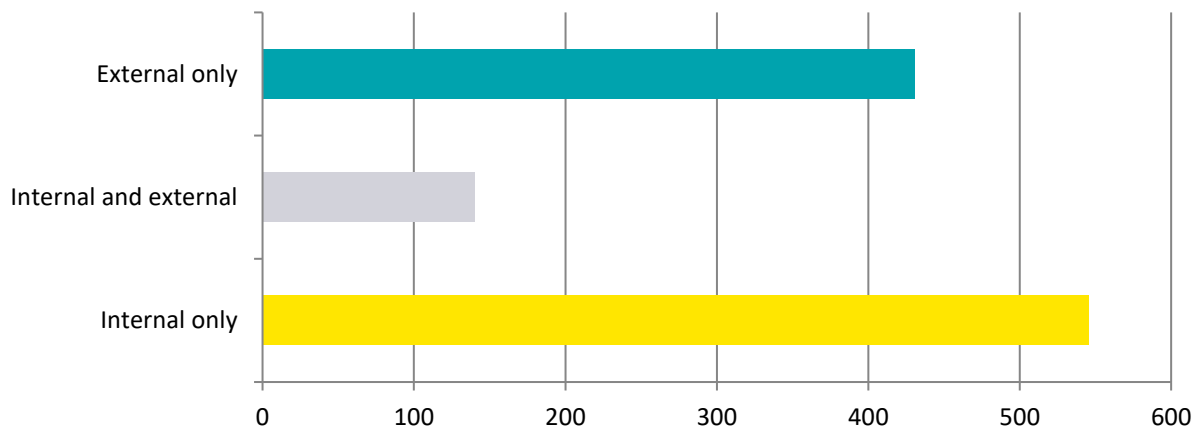
Figure 6 Share of companies delegating tax administration tasks to external (accounting) firms (2014/2018)



Source: KPMG 2018, p. 11., own calculation (n=1,117, total number of CEO/owner records)

We also found that CEOs / sole entrepreneurs themselves are heavily engaged in the tax administration tasks. This is true across all the size segments (from micro/small through medium-sized and large companies) and especially for the case of the VAT-related obligations.

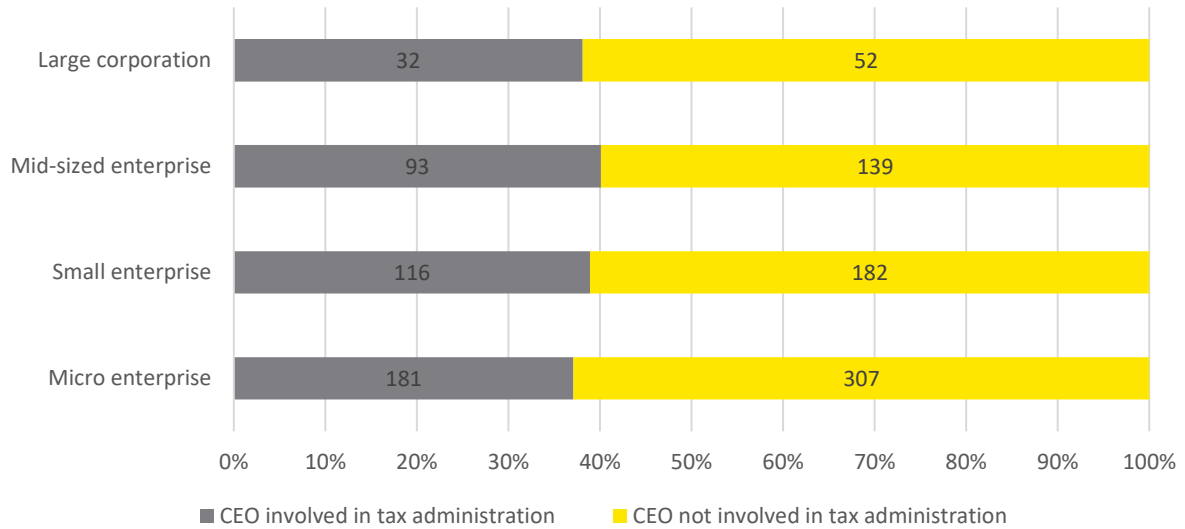
Figure 7 Number of firms in the various delegation types, based on CEO responses



Source: own calculation (n=1,117)

While about 10% of the first firm-level contacts were chief financial officers (CFOs) definitely in charge tax administration, a considerable proportion of the CEOs declared that they are actively spending time with tax administration and shared also hours spent for these activities. In addition, the involvement of owners/CEOs in tax administrative tasks on operative basis is dominant across all the size segments (closely around 40% in each segment, see Figure below). For the composition of the respondents based on their position within the firm and their level of education, see [Table 13](#) and [Table 14](#) in the Methodological Annex.

Figure 8 Engagement of CEOs in tax administration broken down by company size (%)

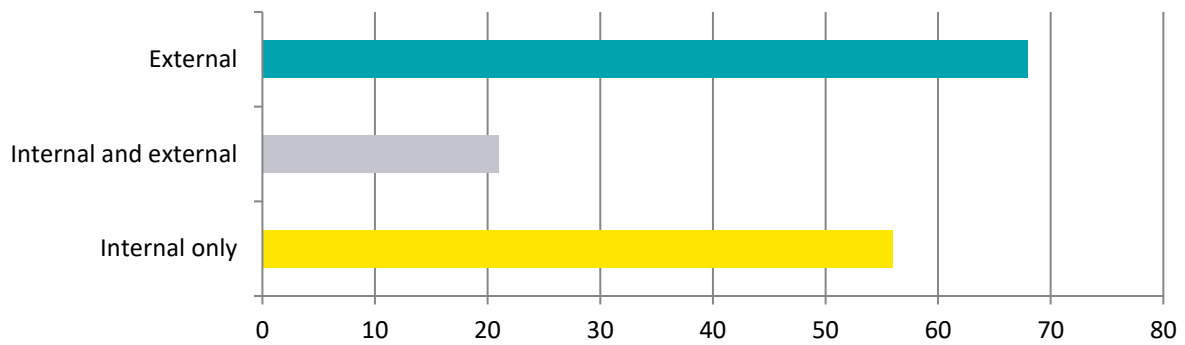


Source: own calculation (n=1,102)

Note: The total number of companies is 1,102, since the survey covered 15 sole entrepreneurs the majority of whom (n=11) are allegedly also engaged in tax administration, but not included here.

Contrary to the full sample, the dominant majority (61%) of entrepreneurs in the KATA/KIVA tax regimes tend to outsource the tax administration tasks.

Figure 9 Engagement of KATA/KIVA entrepreneurs in tax administration broken down by delegation type



Source: own calculation (n=145)

A quarter of the respondents in the business survey claimed that the share of export-driven revenues is more than 50% in their revenue structure. On average, the export-share is 30% in these firms with a great variation across companies. Evidently, the larger the companies are, the bigger is the proportion of revenues stemming from cross-border transaction. While

the average export-share is 25% in the case of micro- and small enterprises, large companies in our sample get close to 60% of their revenue out of export.

3.2 Time spent on tax administration and compliance

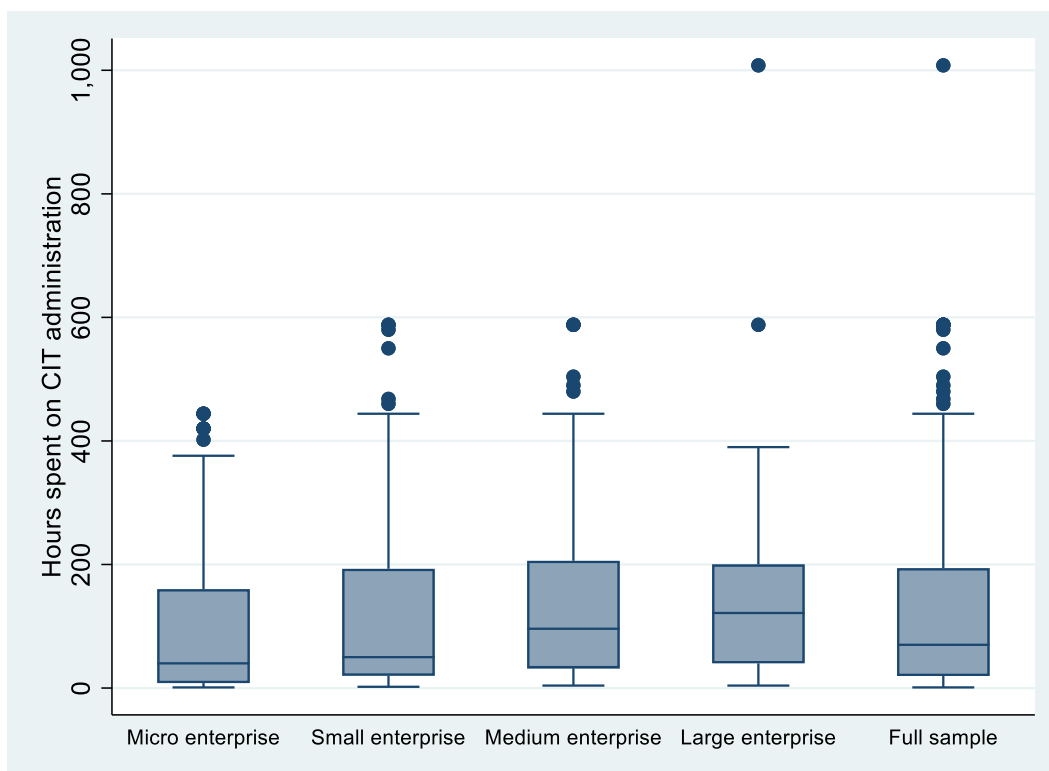
The survey results show that while time spent on tax administration vary considerably across tax types and company size segments, hours spent do not differ substantially across various administrative phases. Business representatives in our sample reported on average more or less the same hours spent for collection of tax data/information, for processing and for all the other phases (recording, review, and submission). It is difficult to know whether our respondents could not differentiate these various steps in terms of hours spent during the telephone interviews and / or wanted to speed up the recording and ignored this aspect of our inquiry.

Corporate Income Taxes

In the case of corporate income taxes, including all types (standard CIT and the simplified taxes (KATA/KIVA), the representative company (median) spends 70 hours per year and the average company 128 hours per year for tax administration. For large enterprises these hours are definitely higher (121 hours) than for the median companies in the micro (40 hours) and in the small size segment (50 hours).

At the same time, the administration of the simplified company taxes (KIVA, KATA) requires the least time (20 hours for the median and ca 60 hours for the average company) and this savings in time are also observable if break down the KATA/KIVA sub-sample by size (e.g. 22 hours for median micro enterprise and 18 hours for the median small enterprise in the simplified regime). This result, however, should be carefully interpreted and we take them only as 'demonstrative' examples due to the rather low number of KATA/KIVA companies with cleaned data on hours in our sample (in total n=45 companies). To draw more in-depth conclusions a representative sample of these companies should be covered by future investigations.

Figure 10 Distribution of hours spent on corporate income taxes (all types) administration per year, broken down by size segments



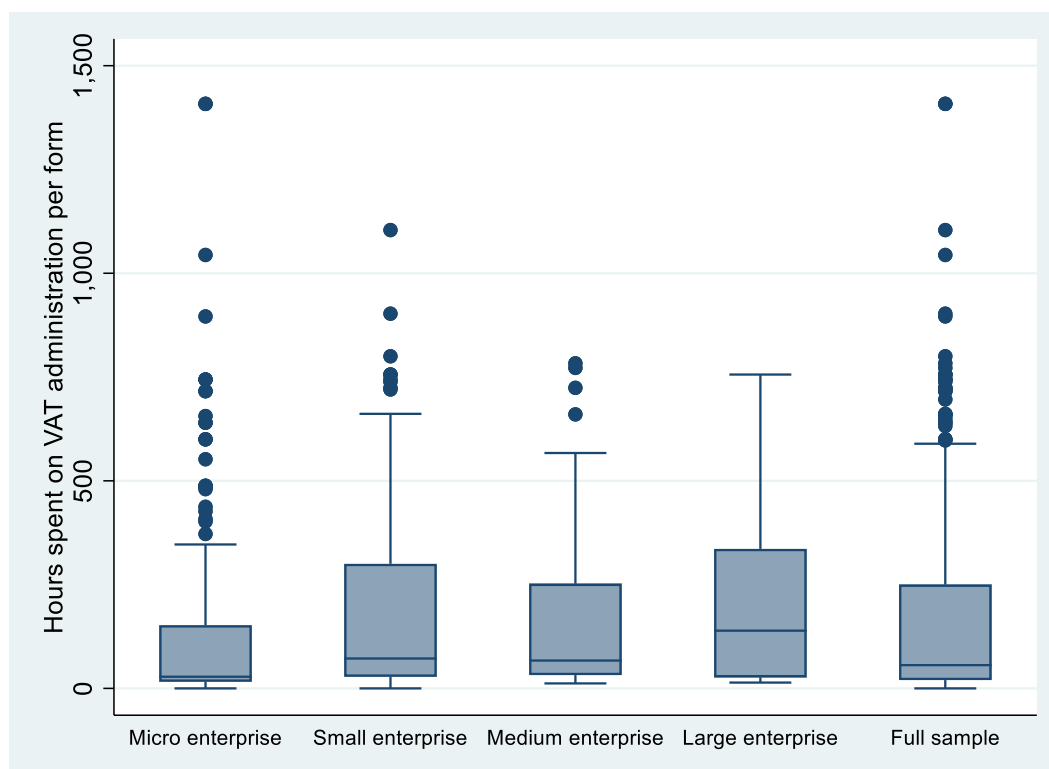
Source: own calculation (n=424)

For the descriptive statistics on hours spent on the various types of corporate income tax, refer to [Table 15](#) in the Statistical Annex.

Value Added Tax

The gap in terms of hours between the size segments shrinks if we look at the VAT administration. While the representative company (median) in the large size segment spends still more time (139 hours) for tax administration per form than a small enterprise (72 hours), the difference is smaller. Notably, these hours indicate time spent per one VAT-related information obligation relevant for the given company in the corresponding size group.

Figure 11 Distribution of hours spent on VAT administration per form per year, broken down by size segments



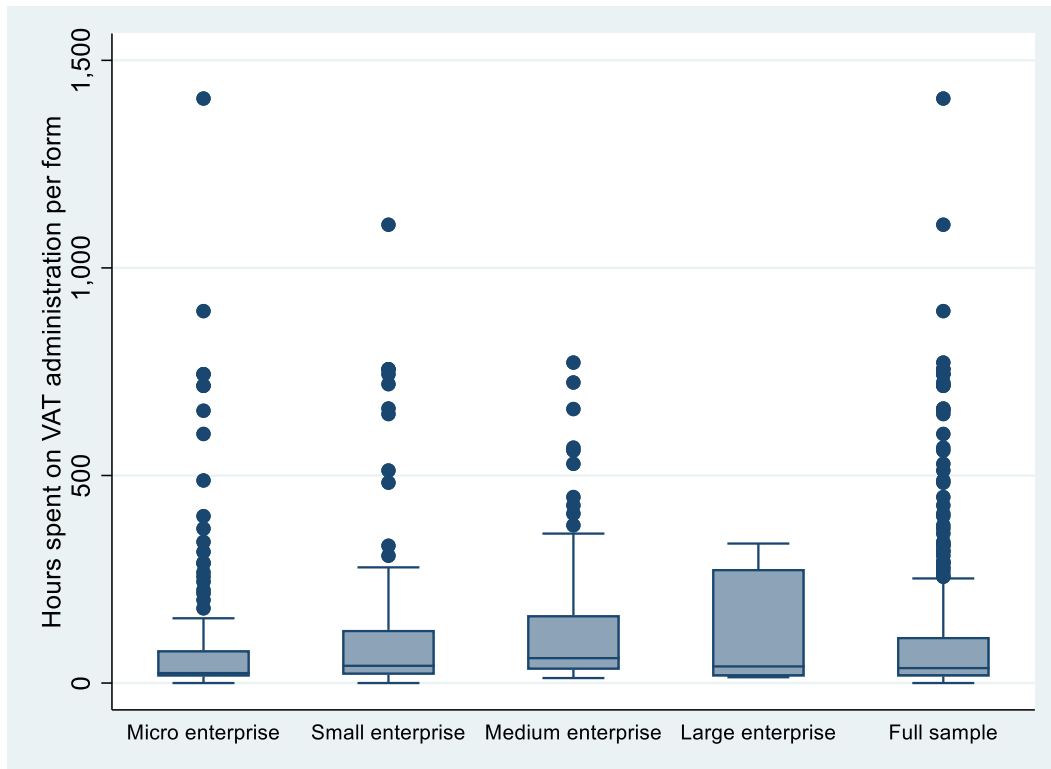
Source: own calculation (n=452)

For the descriptive statistics on hours per form, refer to [Table 17](#) and for the total annual numbers of VAT hours [Table 16](#) in the Statistical Annex.

The administrative hours are definitely lower for companies with less than 50 percent share of revenues coming from export activities across all segments (with a median between 24 and 41 hours for micro- and small enterprises; 60 hours for medium-sized and even less hours for large enterprises).²²

²² Zero VAT hours are treated as missing data in general, but we used 0 hours for VAT administration in case of companies that are exempt from VAT according to their tax number.

Figure 12 Distribution of hours spent on VAT administration per form per year (companies with an export ratio below 50 percent), broken down by size segments



Source: own calculation (n=303)

For the descriptive statistics, see [Table 16](#) and for the total number of VAT hours per year [Table 17](#) in the Statistical Annex.

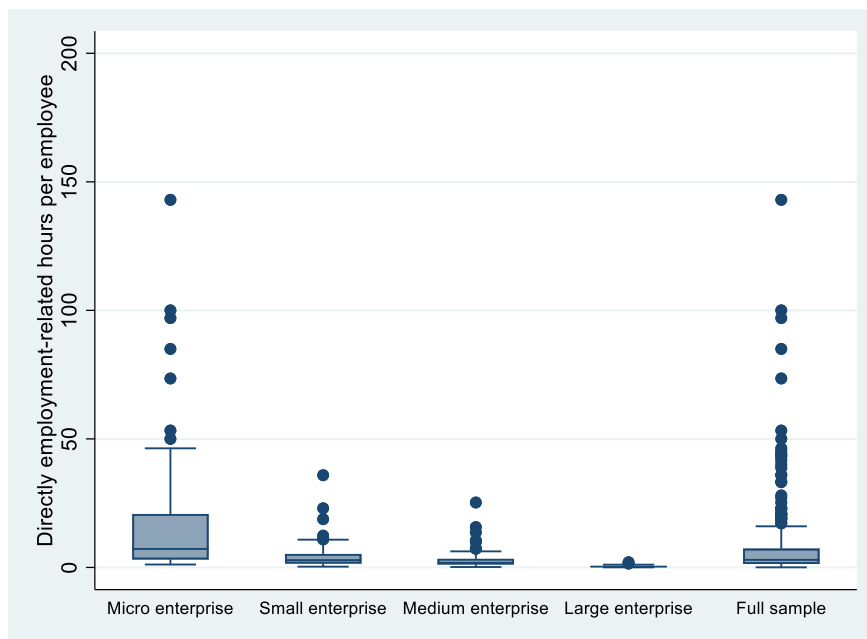
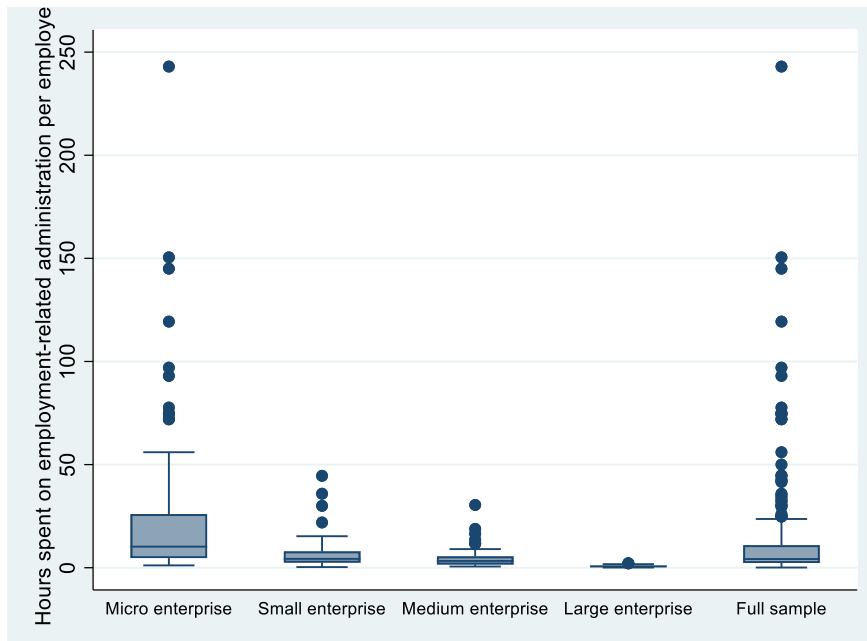
Employment-related taxes

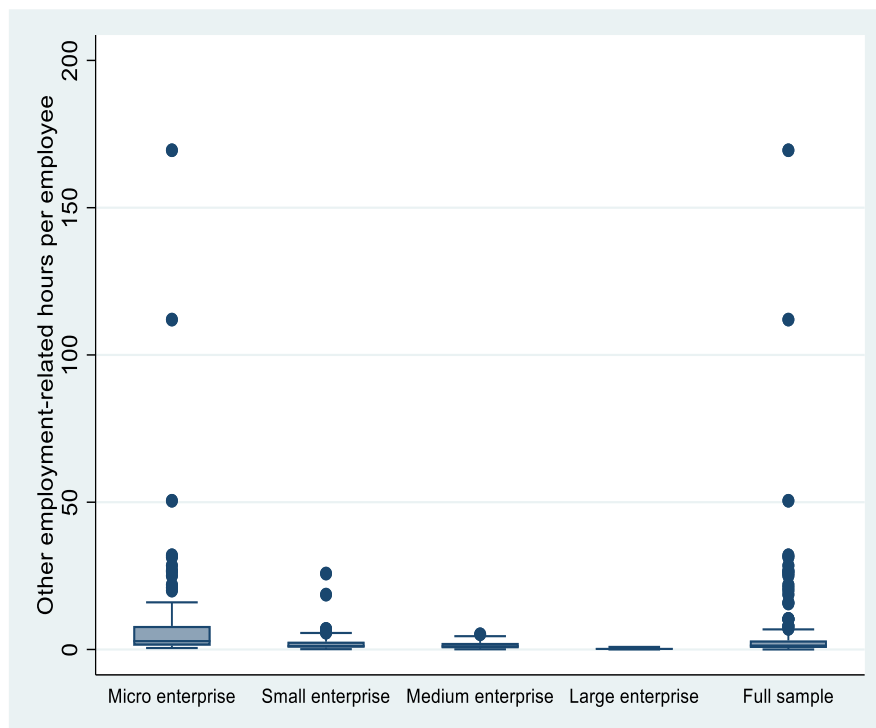
In case of employment-related taxes, time spent on tax administration increases in line with the growth of the company size.

If we account, however, for the relative costs (the time spent per employee) of these administrative tasks, then the burden seems to be definitely larger in the smaller size segments. The relative cost gap of administering the taxes in our focus is the largest for employment-related taxes and almost dwindles away in the case of the corporate income taxes.

In case of the employment-related information obligations, it should be noted that the variation within and across size segments is definitely smaller for the administrative tasks required by government agencies other than the tax authority (c.f. social securities and national statistics).

Figure 13 Distribution of hours spent on the administration of employment-related taxes and obligations per employee in 2018, broken down by size segments





Source: own calculation (n=257)

For the descriptive statistics on the hours normalized with the number of respective employees at the firm-level, see [Table 19](#) and for the total hours, [Table 18](#) in the Statistical Annex.

Ordinary Least Squares models

To gain a better understanding to the associations underlying in the dataset, we ran different types of regressions to test hypotheses on the (potential) effects of various firm characteristics on the tax administration hours, on the level of digitalization and on the likelihood of outsourcing the tax administration tasks (partly or fully). We stress that the results of such models cannot be interpreted as causal relationships; instead, they are best used for uncovering statistical association on average. Due to lack of full-fledged models on the corresponding governance and management decisions at firm level, the regression results can be interpreted as statistical proof on correlation, at best.

In the **first model**, we examined firm characteristics that correlate with a higher number of hours spent on tax administration per employee, on average (see, [Table 26](#) in the Statistical Annex). We did this for the three main tax types separately. We used the following explanatory variables: sector, firm category, region, settlement type, and the percentage of sales income from export sales. As baseline, we used micro enterprises, agriculture, Central Hungary and Budapest. We excluded firms that have less than two employees as we expect them to exhibit different patterns from the bulk of our sample.

We found the most significant results in the model where the dependent variable is the number of hours spent on administration of employment-related taxes per employee. Here, we found that, compared to micro enterprises, the other segment sizes (small enterprises, mid-size enterprises and large corporations) spend significantly less time on these tasks. We also found that firms with more sales income from export sales tend to spend significantly more time on VAT-related administration.

In the **second model**, we studied firm characteristics that are associated with the tendency to outsource tax administration-related tasks to an external accounting firm (see, [Table 21](#) in the Statistical Annex). In this model, the dependent variable is a dummy, which takes the value of 1 if the CEO indicated at the beginning of the survey that an external accounting firm is involved, and 0 if not. Here, too, the baselines were: micro enterprises, agriculture, Central Hungary and Budapest, and we excluded firms that have less than two employees.

We found that, compared to agriculture, firms in the industrial sector, trade and 'other' sector are significantly more likely to use an external accounting firm. Compared to micro enterprises, small enterprises, mid-sized enterprises and large corporations are significantly less likely to do so. Compared to Central Hungary, firms with headquarters in the region of Transdanubia are also significantly less likely to do so.

If we check the reverse correlation, i.e. if we test to what extent does (partial or complete) outsourcing influence hours spent on tax administration, we find that the number of hours definitely decreases in case of companies which opted for outsourcing – just like the total compliance costs (see [Table 30](#) and [Table 31](#) in the Statistical Annex).

In the **third model**, we studied firm characteristics that correlate with higher levels of digitalized operations (see [Table 27](#) through [Table 29](#) in the Statistical Annex). This variable has a range of 1 to 4, where 1 refers to administration that is done completely manually and where 4 refers to entirely digital processes. The variable comes from the self-evaluation of the CEO and/or an employee, and the evaluation of the external accounting firm.

Significant results come from the model where the dependent variable is the evaluation given by the external accounting firm, which we hypothesize to be more impartial. (This is not surprising, since company representatives – CEO or staff member, tend to over-evaluate their own business model than the external accountants of the same company.) The specification of the model is the same as above. We found that compared to micro enterprises, the digitalization levels of large corporations are assessed to be higher. Compared to the capital, firms with headquarters in regional centres have slightly higher levels, too. We also found that external accounting firms with a bit higher number of clients tend to slightly raise the assessments of digitalization they provide. (for more details, see [Table 29](#) in the Statistical Annex).

Testing the hypothesis on whether the higher level of digitalisation reduces the hours spent on tax administration – did not produce significant results, except for a significant negative effect in hours for the group of companies with *mostly* as opposed to those with *fully* electronic internal administration. There could be several explanations behind these results the investigations of which needs further, mostly qualitative analysis. It should also be noted here that using outsourcing as control variable does not modify this conclusion (for more details, see [Table 27](#) in the Statistical Annex). If we assess the effects of digitalisation on the relative costs of tax compliance (dependent variable: firm-level total tax compliance costs per turnover) we find no significant effect of the level of digitalisation, neither any cross-correlational effect of outsourcing (see [Table 28](#) in the Statistical Annex – notably outsourcing keeps its significant negative impact on the tax compliance costs measured in absolute terms).

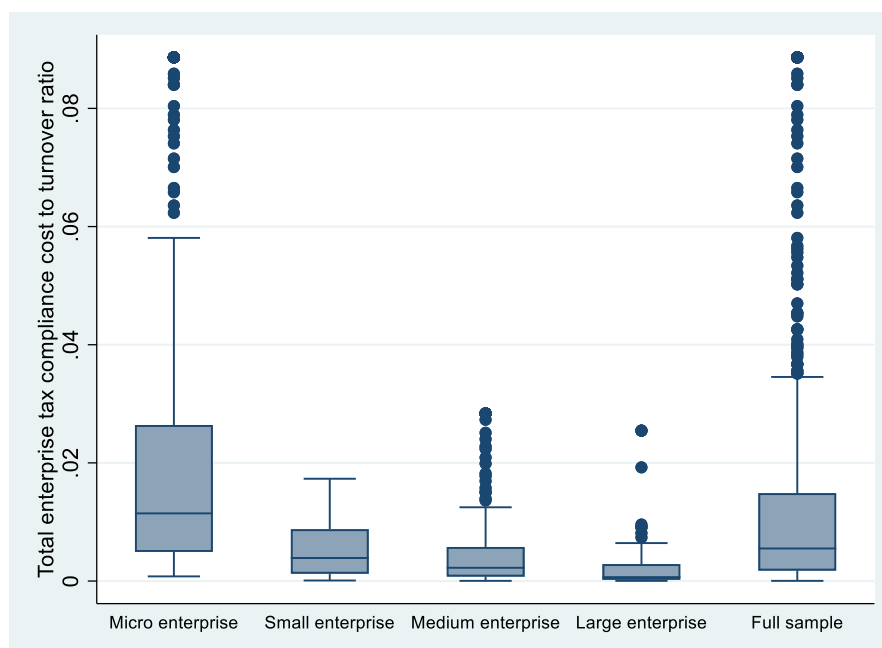
3.3 Determinants of the tax administration and compliance costs at firm level

In line with the variance of the time spent on the tax administrative tasks, the tax administration costs and, consequently, the tax compliance costs vary also across the size segments and the different tax types. Here, the total tax compliance costs also include all the additional costs in terms of time or additional tax administration-related spending.

Obviously, the total tax compliance costs at firm level do increase with the size of the company. If we compare, however, the total compliance cost per turnover (that means, the relative costs of complying with tax obligations), we see that these information obligations are more severe for micro/small-sized companies.

For companies in Hungary the average total tax compliance costs account to 1.2% of the annual turnover and it definitely varies across the size segments and tax regimes (cf. CIT, simplified regimes). This ratio is the largest for microenterprises independently from the fact whether the given company / entrepreneur operates under standard CIT or the simplified tax (KATA /KIVA) regimes, while the relative burden of tax compliance is the lowest for large enterprises.

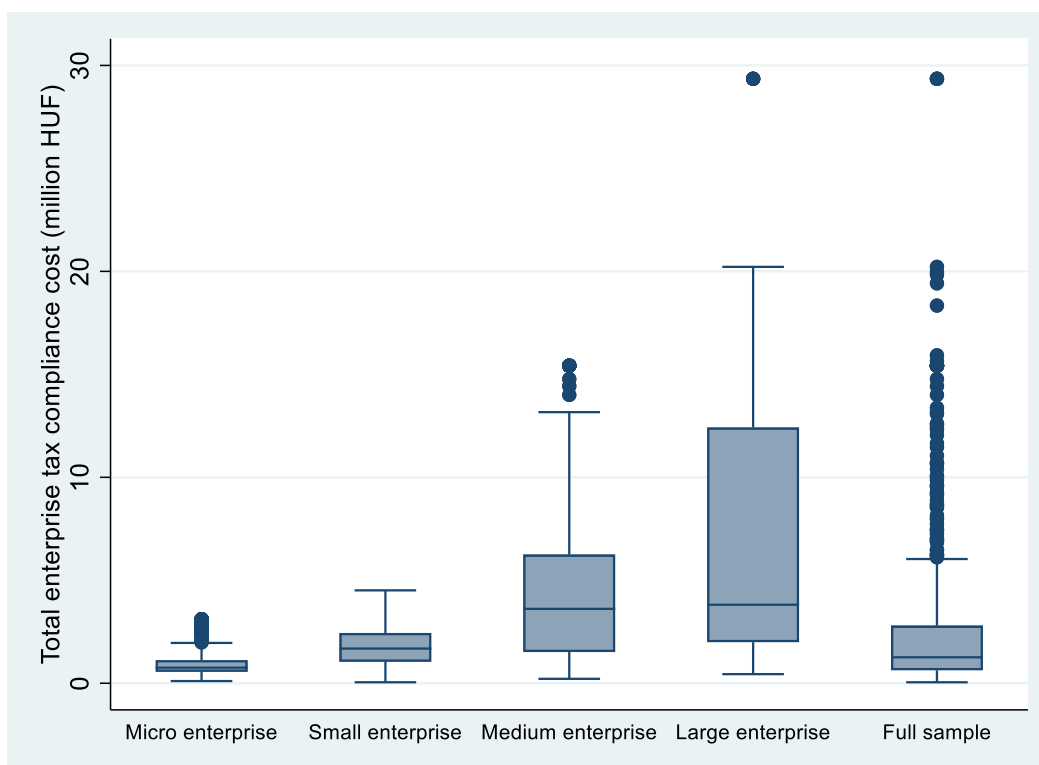
Figure 14 Total tax compliance cost per turnover at firm level, broken down per size segment (%)



Source: own calculation (n=957)

Note: Sub-sample of companies with at least 2 employees (n=957). Cost data are winsorised at 5p and at 95p for the relevant cost and size segment. 0 VAT hours are treated as missing data in general, but we used 0 hours for VAT administration in case of companies that are exempt from VAT according to their tax number. We dropped companies if they have hours for all types of CIT, if data on hours is missing from the person who works the most on tax administration according to the CEO, if data on annual turnover is missing or is inferior to 10 million HUF in case of large companies. Data on additional costs related to local taxes or other obligations outside the scope of this study are treated as 0. Data on hours are winsorised at p90 for each type of tax and each segment.

Figure 15 Total tax compliance cost at firm level, broken down per size segment (million HUF)



Source: own calculation (n=957)

Note: Sub-sample of companies with at least 2 employees (n=957). Cost data are winsorised at 5p and at 95p for the relevant cost and size segment. 0 VAT hours are treated as missing data in general, but we used 0 hours for VAT administration in case of companies that are exempt from VAT according to their tax number. We dropped companies if they have hours for all types of CIT, if data on hours is missing from the person who works the most on tax administration according to the CEO, if data on annual turnover is missing or is inferior to 10 million HUF in case of large companies. Data on additional costs related to local taxes or other obligations outside the scope of this study are treated as 0. Data on hours are winsorised at p90 for each type of tax and each segment.

To see the impact of the various variables on administrative costs, we used OLS regressions, where the dependent variables were the total administrative costs of the company (based on hours spent on tax administration for all types of taxes, weighted by the relevant average wages), the total compliance cost (including the administrative costs plus the costs of time spent on tax optimization, following changes in tax regulation and other costs), and the total outsourcing costs of companies related to tax administration, each of these relative to the company's annual turnover (see, [Table 25](#) in the Statistical Annex).

In all regressions, the independent variables included company size (the baseline category was micro enterprise), sector (the baseline category was agriculture), the type of settlement where the company is seated (the baseline category is Budapest capital), and the share of exports in the annual revenue.

We see a significantly negative size-effect across all size segments on administration and compliance costs – the larger the company, the less it spends on tax administration relative to its annual revenue. Companies with a dominant (more than 50%) export-driven revenue share face also higher costs while reporting to the authorities in the relevant tax types. With the

exception of a few categories, such as manufacturing and commerce having significantly lower outsourcing costs than companies in the agricultural sector, or companies seated in villages having significantly higher relative compliance costs than companies based in Budapest, other company characteristics do not seem to play a significant role. These estimates remain robust in the regressions run across all the various data cleaning methods (trimmed vs. winsorised sample – for further information on these methods, please refer to [Section 4.4](#)).

With regard to the marginal effect of outsourcing, those handling tax administration fully or partially with external capacities face significantly lower tax compliance costs (see, regression results in [Table 31](#) in the Statistical Annex).

3.4 SCM calculation

The Standard Cost Model (SCM) is the accepted way to calculate the tax compliance cost of an enterprise as a monetary value (for details, see [Methodological Annex](#)). A ratio of the SCM compliance cost, so defined, to relevant financial measures of the economic activity of the enterprise (such as turnover) can serve as the economic measure of the relative burden: how onerous tax administration is in the economy in general, and for different segments or sectors of the economy in particular. The core idea behind the SCM-based macroeconomic estimate is using company size-segment population data as appropriate weights to the assessment.

In addition to the statistically necessary data preparation and data cleaning measures (which are described in detail in the [Methodological Annex](#)), there are several non-trivial methodological choices to be made that affect the headline numbers to be presented. These chiefly depend on the use to which our results will be put. Since there are three main such avenues of utilization of our calculations for policy makers, we present these three sets of headline results. One use to put our findings to is identifying and using a reference case (a case study company) to compare our assessment, an alternative to this is cross-country comparison. The final one is to use our results as ex-ante baseline values towards the future evaluation of policy interventions aimed at reducing the enterprise compliance costs in question. We present those results separately, explaining the rationale behind our respective modelling choices, as well.

The Time to Comply indicators developed and used by the World Bank rely on a very specific methodology.²³ This inquiry records the taxes and mandatory contributions that a medium-size company must pay in a given year. Among the taxes and contributions measured by the World Bank there are two taxes that overlap with our survey: the profit or corporate income tax, and social contributions and labour taxes paid by the employer.

In line with our assessment, the World Bank methodology pays attention to the annual frequency of paying and recording the time required to prepare, file, and pay the corresponding taxes. In addition, they collect information on the time taken to comply with tax laws in general.

Nonetheless, all the further steps of their assessment methodology differ from ours. In order to get data comparable across countries, they use several assumptions about the business profile of their benchmark case, the taxes and contributions. So, it is not based on a representative sample of firm-level data, but accounts for a very specific. Moreover, in each country tax experts (mostly from auditing companies, like PwC) are invited to compute the taxes and mandatory contributions due to their legislation. The key input data (time and

²³ World Bank 2020. Paying Taxes methodology. Available: <https://www.doingbusiness.org/en/methodology/paying-taxes>

frequency) are reported by tax experts based on their judgement of the standardized company case defined by the WB.²⁴

Table 1 Time to Comply indicators and tax administration hours for Hungary

	Current study	WB Time to Comply
Corporate income tax	96	35
Value added tax per form / VAT return	80	98
Employment related taxes	162	146

Sources: World Bank 2020 Paying taxes database, own calculation (n=138 for medium-sized companies in the industry sector, n=69 for CIT hours, n=75 for VAT hours and n=32 for employment-related hours)

Note: The employment related taxes calculated based on the current survey do also include information obligations beyond the strictly social contributions and labour taxes-related administrative tasks. Therefore, it indicates a relative overestimated figure for the medium-sized enterprises. It should be noted that the strictly non-payroll-related administrative hours amount to ca. 30% across the size segments in our sample and we calculated here with a company with 60 employees. Proper matching of the standard business case used by the WB Paying Taxes methodology is also limited due to the lack of access of necessary company characteristics (e.g. data on specific business transactions).

SCM results for cross-country comparison

One of the reasons for surveying tax compliance costs in Hungarian enterprises is to learn how those compare with equivalent costs in other European states. Information on that can contribute to a better understanding of the competitiveness of the country. This requires a comparison with the most recent results obtained by KPMG (2018) for the year 2014 for enterprises in 20 countries (not including Hungary).

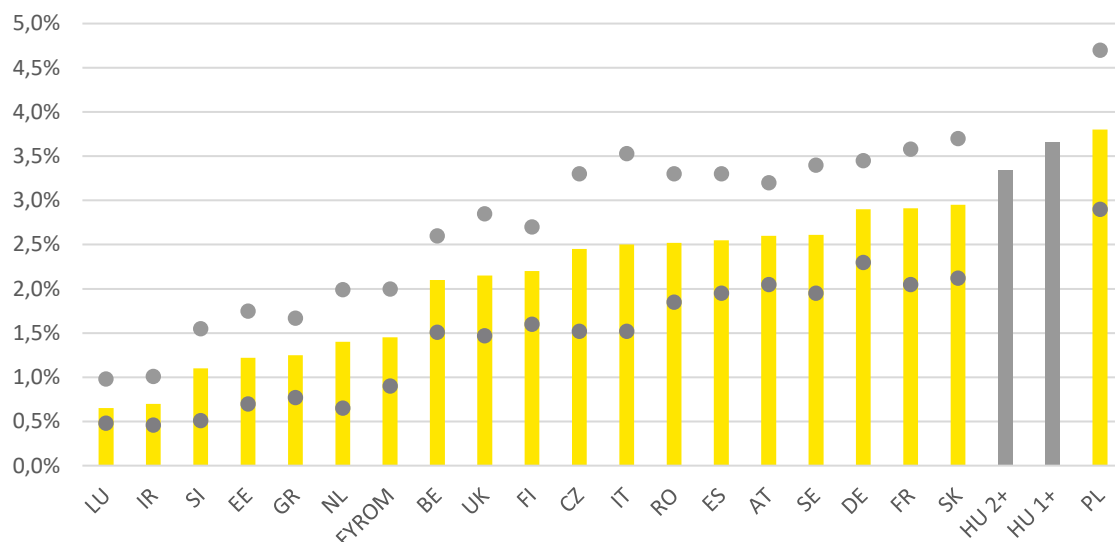
To do that, we put our statistical preferences aside and followed the calculations of that study as closely as possible. To reproduce what they call “Total Enterprise Tax Compliance Cost to turnover ratio (TETCC to turnover)”, we calculated the trimmed means used wage data for the year 2014, and concentrated on CIT and VAT costs, disregarding the costs of complying with employment-related information obligations, but building in indirect costs and the costs of outsourcing (except for outsourcing tax administration related to employment). Given the simplified tax regimes that can be chosen by self-employers and other micro enterprises in Hungary, we carried out these calculations for the set of all enterprises employing at least one person (1+) as well as for the set of enterprises employing more than one person (2+).

The value of total tax compliance costs to turnover ratio for Hungary we obtained was 3.66% (1+) and 3.34% (2+), respectively – provided the assumption that there was no significant shift in the pattern of tax administration hours in the Hungarian business sector, since these figures are based on the hours reported in our 2018 survey.

²⁴ For more information on the specific company characteristics (i.a. limited liability company, residence in the country’s largest business city, full domestic ownership, operates in industry or trade, operating in its second financial year/fresh start up), consult: <https://www.doingbusiness.org/en/methodology/paying-taxes>

How do these results compare with the corporate tax compliance burden in the other 20 countries? Since those range from 0.7% (Luxemburg) to 3.8% (Poland), Hungary can be said to be at the more burdensome end of the distribution, but our values are roughly in the range spanned by the Member States surveyed by KPMG (2018).

Figure 16 Tax compliance cost estimations in EU comparison (based on estimation method used by KPMG, CIT- and VAT-related trimmed mean, 2014)



Source: KPMG (2018:32), own calculation (n=962)

Note: For Hungary the lower 2014 SCM estimate for companies with at least 2 employees and the higher estimate is for companies with at least 1 employee, based on 2014 wage data and 2018 hours reported in the survey, and it includes administrative hours linked to CIT- and VAT-related administrative obligations (with an eye on VAT exemptions in the latter case). The data for the other EU countries is from 2014, estimation method (trimmed mean), dots indicate the confidence interval (for Hungary it was not possible to replicate a confidence interval in an analogous way to the KPMG calculation).

If we transform these figures into comparable EUR-based nominal data, we find that administration of CIT- and VAT-related taxes takes more time and is consequently more costly for the average Hungarian company in all size segments but small enterprises than for its peer in the Visegrad countries. For a comprehensive overview of the KPMG estimations for all the 20 EU countries, see [Table 34](#) in the Methodological Annex.

Table 2 Total (enterprise) tax compliance costs broken down by company size segment (2014, mean, EUR)

T(E)TCC	HU	SK	CZ	PL	AT	KPMG average*
Micro-sized enterprises	5,267	4,980	4,252	4,240	8,562	2,427
Small-sized enterprises	9,919	11,008	12,390	11,823	24,927	6,143
Medium-sized enterprises	28,686	19,092	15,736	20,853	22,732	5,378
LSEs	31,449	37,605	20,845	93,326	100,019	12,285

Sources: KPMG (2018), own calculation (n=962) based on the annual average EUR currency exchange rate for 2014 published by the Hungarian National Bank (HUF/EUR 308, <http://www.mnbkozeparfolyam.hu/arfolyam-2014.html>).

Note: Comparison based on SCM estimates for companies with at least 1 employee, based on 2014 wage data and 2018 hours reported, and with attention paid to VAT exemption in case of Hungary. The data for the other EU countries is from 2014, estimation method (trimmed mean).

* KPMG average data accounts for the average of the mean values calculated for the 20 European countries covered by KPMG (2018).

SCM results to be used as an ex-ante baseline

When identifying the specification of the baseline results that are the most useful as ex-ante baseline, we suggest looking at different numbers. The goal here is to choose the version that is most reliable to spot meaningful changes over time, if we repeat the same survey with the same methods in a few years' time to learn whether policy interventions in the meantime have indeed succeeded in improving the TTCC to turnover ratio. We suggest the following considerations for the country-specific estimation:

- ▶ In the Hungarian context it is important to include the costs linked to administering employment-related taxes and information obligations as this is an integral part of the tax burden enterprises face.
- ▶ Instead of trimming the outliers in the sample when calculating our estimators, it makes more statistical sense to winsorize them (cf. Hastings et al. 1947)²⁵.
- ▶ Given the skewed distributions of TTCC (see the graph below) and the fact that, even upon winsorization/trimming, the median of the TTCC to turnover ratio is much more sensitive to a few atypical responses than the mean, we suggest concentrating on the median, not the mean ratio.

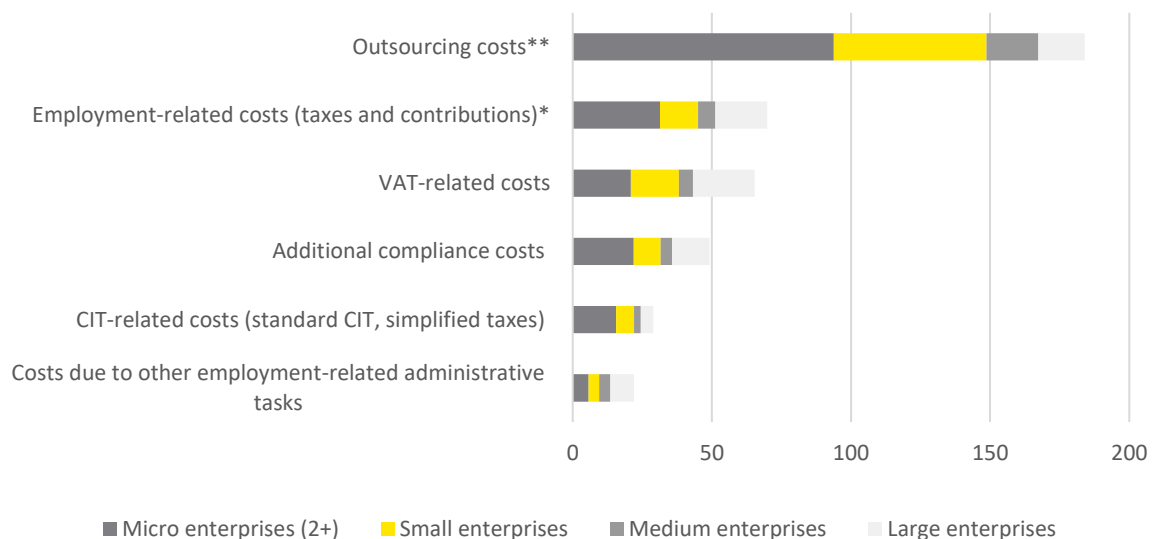
²⁵ Hastings, Jr., Cecil; Mosteller, Frederick; Tukey, John W.; Winsor, Charles P. (1947). "Low moments for small samples: a comparative study of order statistics". *Annals of Mathematical Statistics*. 18 (3): 413–426. doi:10.1214/aoms/1177730388

- ▶ We find the estimates concentrating on the universe of enterprises employing at least two people (2+) more reliable than the broader set of all enterprises employing at least one person (1+).

Thus, the headline result suggested to be used in the future as benchmark is the winsorized median TTCC to turnover ratio for the 2+ employee companies, including employment-related costs and indirect costs. This amounts to HUF 419.3 billion, which is 1.72% of the total turnover.

It is worth stressing the sheer social order of magnitude of these results by the following back-of-the-envelope calculation: a minor simplification of the tax forms that would affect just 17% of this (e.g. just direct employment-related taxation, for which see below), by decreasing the burden connected to working on that form by a mere 1%, would produce annual social savings worth HUF 698 million. The compliance costs due to further employment-related administrative obligations amount to 5% of the total tax compliance costs (with a variation across size segments, i.e. between 3-4% for micro- and small enterprises, and 10% for medium and large companies).

Figure 17 Total tax compliance costs broken down by cost types (2018, billion HUF)



Source: own calculation based on 2018 payroll data in Hungarian Standard Classification of Occupation (FEOR18)

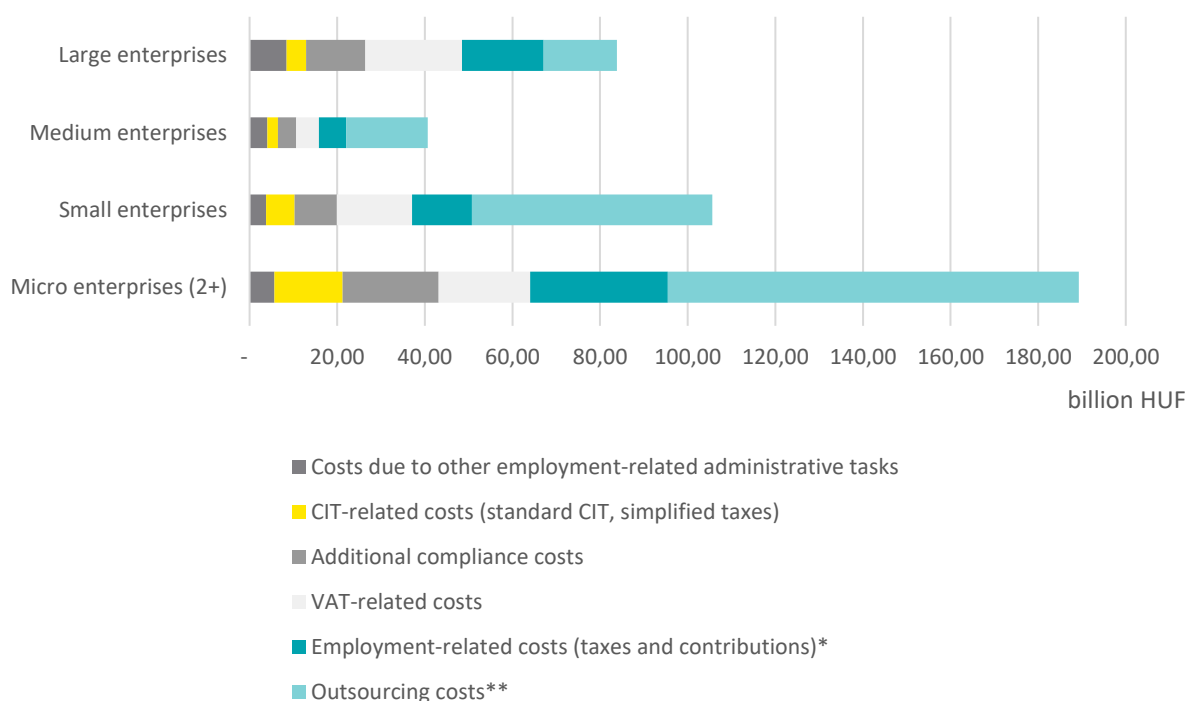
Note: SCM estimation is based on median firm level aggregates of companies with at least 2 employees (cleaned, 90% winsorised, n=957).

**The employment-related costs include also the costs stemming from outsourcing the corresponding administration to external actors (based on the ratio of employment tax and contributions-related administrative hours reported by external accountants), but it does not cover compliance costs emerging due other, employment-related information obligations.*

*** Consequently, the outsourcing costs presented here are reduced figures – not including the employment-related part of outsourcing costs.*

If we look at the ranking of the various cost sources, it is clear that with regard to the tax types in our focus the administration of the corporate income taxes (7% across all types, 28.9 billion HUF) followed by VAT-related information obligations (16%, 65.36 billion HUF) take off the least time from Hungarian companies. Next, the biggest ticket direct item is employment-related taxes (22%, 91.84 billion HUF). The compliance costs due to other employment-related administrative obligations (such as, reporting to government agencies other than the tax authority, e.g. the National Statistical Office or the National Health Insurance Fund) amount to 5% of the total costs. Another 12% (50 billion HUF) of the total tax compliance costs is due to additional, indirectly linked activities – such as, need for investment in IT tools, consultations on tax administration issues, auditing and all other expenses which companies are paying for getting and checking information on tax administration. These additional costs should not be ignored either since these are part of the firm-level compliance activities and emerge due to the necessity to adapt to the statutory provisions.

Figure 18 Total tax compliance costs broken down by company size (2018, billion HUF)



Source: own calculation based on payroll data in Hungarian Standard Classification of Occupation (FEOR18)

Note: SCM estimation is based on median firm level aggregates of companies with at least 2 employees (cleaned, 90% winsorised, n=957)

*The employment-related costs include also the costs stemming from outsourcing the corresponding administration to external actors (based on the ratio of employment tax and contributions-related administrative hours reported by external accountants), but it does not cover compliance costs emerging due other, employment-related information obligations.

** Consequently, the outsourcing costs presented here are reduced figures – not including the employment-related part of outsourcing costs.

What groups of enterprises bear this burden? As far as enterprise size is concerned, HUF 189.2 billion (45% of the full cost) is borne by micro enterprises, HUF 105.6 billion (25%) by small enterprises, and only the remaining 30% by medium and large ones.

For an overview and decomposition of all these various types of compliance costs, see table below.

**Table 3 Results of the macro-level SCM estimation
broken down by tax types and company size segments (billion HUF, 2018, median-based)**

	Micro enterprises (2+)	Small enterprises	Medium enterprises	Large enterprises	Total
<i>Costs due to other employment-related administrative tasks</i>	5.68	3.76	4.08	8.48	22.01
CIT-related costs (standard CIT, simplified taxes)	15.58	6.51	2.41	4.42	28.91
Additional compliance costs	21.92	9.61	4.18	13.50	49.22
VAT-related costs	20.89	17.21	5.13	22.12	65.36
Employment-related costs (taxes and contributions)*	31.36	13.67	6.21	18.63	69.86
Outsourcing costs**	93.83	54.86	18.65	16.69	184.02
Total	189.26	105.63	40.66	83.83	419.38

Source: own calculation (n=957)

Note: SCM estimation is based on median firm level aggregates of companies with at least 2 employees (cleaned, 90% winsorised).

*The employment-related costs include also the costs stemming from outsourcing the corresponding administration to external actors (based on the ratio of employment tax and contributions-related administrative hours reported by external accountants), but it does not cover compliance costs emerging due other, employment-related information obligations.

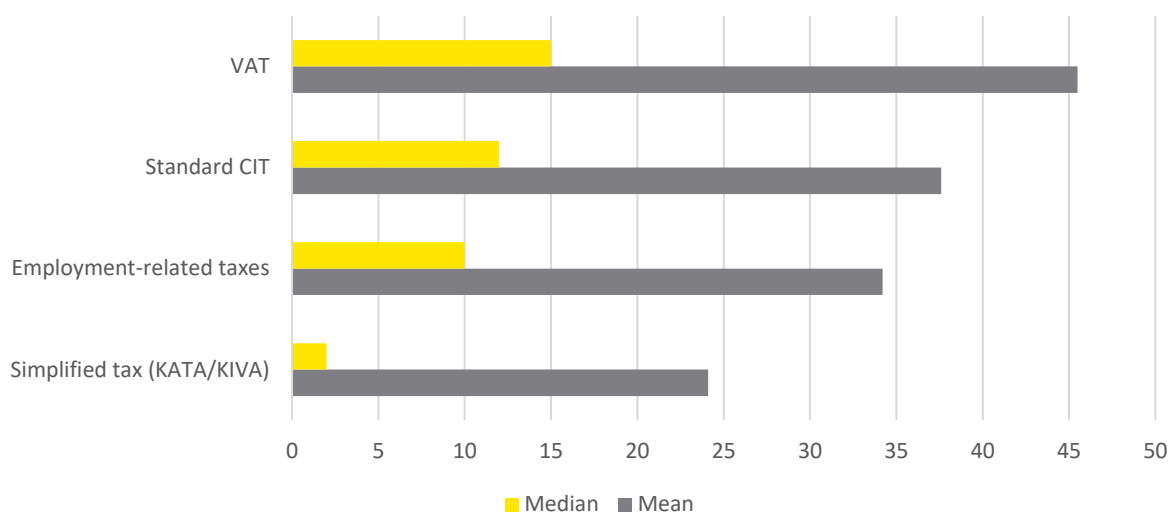
** Consequently, the outsourcing costs presented here are reduced figures – not including the employment-related part of outsourcing costs.

3.5 Legal monitoring

The frequency and lack of predictability of changes in the tax regulations may also contribute to high tax compliance costs. In our sample, companies spend the most time on monitoring the VAT regulation – 45.5 hours per year on average, though the variance is relatively high (the median is at 15 hours). Less time is spent on the monitoring of the corporate income tax regulations and the employment related regulatory changes (34 hours on average, again with a significantly lower median value, 10 hours per year). It should be noted that VAT-related monitoring consumes the most time for all company types but microenterprises which spend

the most time for monitoring and understanding changes in regulations linked to employment-related taxes.

Figure 19 Average time spent on legal monitoring - per tax type (hours, 2018)



Source: own calculation

Based on the regression results, respondents coming from medium-sized and larger companies spend significantly more time on the legal monitoring of the tax obligations in case of all tax types than respondents representing smaller firms.

Figure 20 Average time spent on legal monitoring - per company size (hours, 2018)



Source: own calculation

Other regression results do not suggest clear tendencies. CEOs with vocational education spend significantly less, while CEOs with primary education spend significantly more time on legal monitoring than those with tertiary education. In general, companies in cities spend

significantly more time on tax monitoring than companies in the capital. Nonetheless, being located in a village or in a county centre does not have a significant impact.

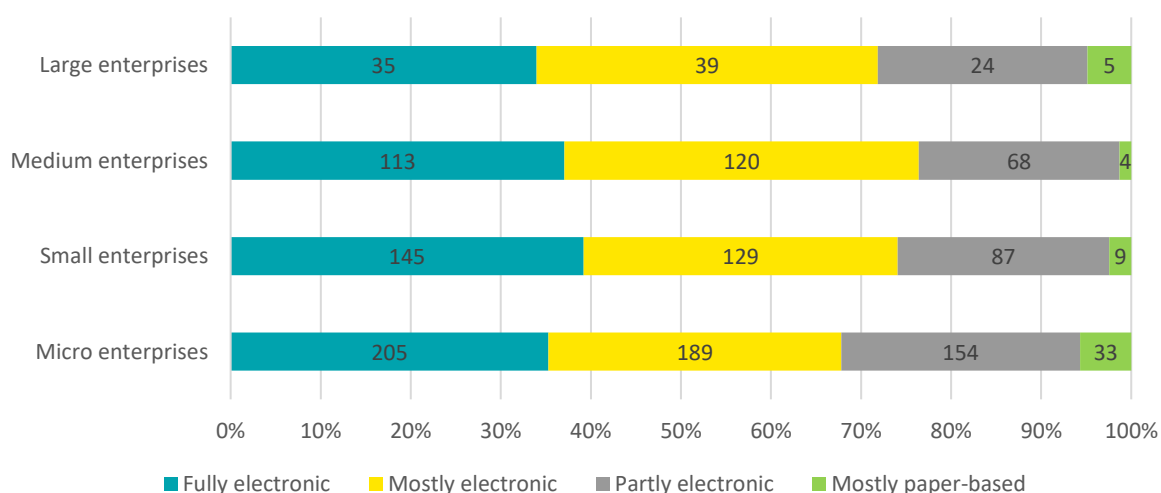
As opposed to companies in the agricultural sector, those in manufacturing, commerce and the residual ('other') sectors spend significantly less time on CIT monitoring, and those in manufacturing and in the 'other' sectors significantly less time on VAT monitoring. In case of employment-related taxes, again taking time spent in the agriculture as a baseline, legal monitoring takes off less time from company representatives coming only from manufacturing and commerce.

3.6 Digitalisation of tax administration

Around 37 percent of the respondents answered that their tax administration processes are fully digitalised, both internally and towards the tax authority. 35 percent has a system that is mostly digitalised, 24 percent responded that their system is partly digitalised, and merely 4 percent has a dominantly paper-based tax administration system.

As it seems, the level of digitalisation cannot be explained by company size – even if a larger share of small companies has a fully digitalised system than medium or larger companies.

Figure 21 Level of digitalisation by company size



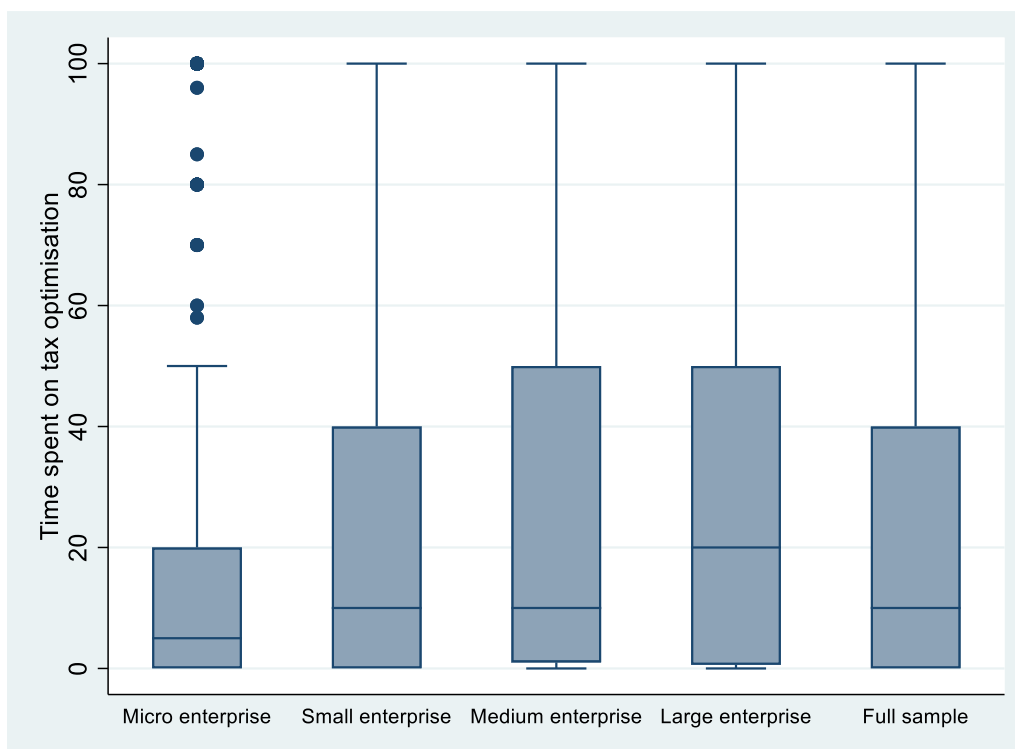
Source: own calculation

The sector of the company, the location, the number of operating sites or the share of export in company revenue has no significant impact on the level of digitalisation. However, the self-assessment of the CEOs with regard to their own e-business solutions is better (on average, 1.94 in case of companies with an external accountant; and 1.83 in case of companies with an internal accountant) than the corresponding assessments shared either by the external accountants (2.46) or by their own internal staff members (1.97, on the assessment scale from 1 – fully electronic through 4 – mostly paper-based).

3.7 Tax optimisation

The respondents of our survey spend annually an average of 24 hours (and a median of 10 hours) on planning and optimising taxes, including all the hours spent on consulting with the accounting units / firm. Time spent on tax optimisation increases significantly as the size of the company grows; while in case of micro and small enterprises the average is 20 hours (and the median is 6 hours), large companies spend definitely more time on these tasks (on average 34 hours, with a median of 20 hours).

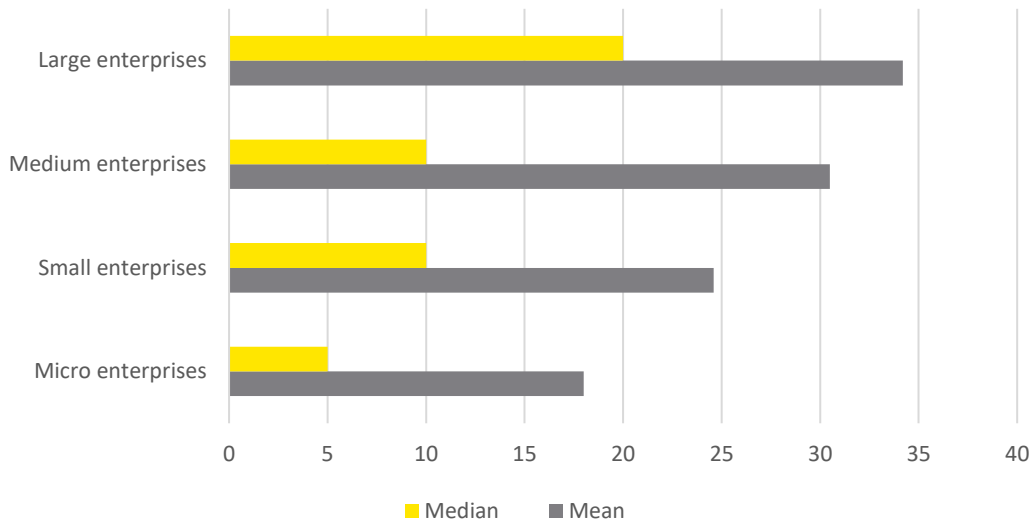
Figure 22 Average time spent on tax optimisation (hours yearly per respondent)



Source: own calculation

For the descriptive statistics, see [Table 23](#) in the Statistical Annex.

Figure 23 Average time spent on tax optimization (hours yearly per respondent)



Source: own calculation

Based on regressions, we did not find any sectoral effect – except that companies in the residual ('Other') sectors spend less time on tax optimisation than the baseline agricultural ones. Tax optimisation seems to be less important for companies based in villages, but definitely more important for export-oriented companies than for those with less frequent or no cross-border transactions.

Around a quarter (24%) of the respondents said that they have additional costs related to tax obligations. The most frequently cited sources for these additional costs are related to getting information on tax changes, subscribing periodic tax reviews, tax magazines, and taxation-related databases. Further spending is linked to the necessary IT solutions and software updates, and to consultation with external experts (tax consultancy companies) and auditors as well. Some of the respondents have also referred to costs stemming from external or internal training programmes provided to employees (see table below).

Table 4 Number and share of respondents mentioning the most frequent additional costs

	Information sources	IT and software	Consultation, audit	Training and education
<i>Micro and small enterprises</i>	52%	66%	60%	58%
<i>Medium enterprises</i>	28%	25%	24%	32%
<i>Large enterprises</i>	20%	9%	16%	10%
Number of respondents	97	60	63	77
<i>Share of total responses</i>	<i>27%</i>	<i>17%</i>	<i>18%</i>	<i>22%</i>

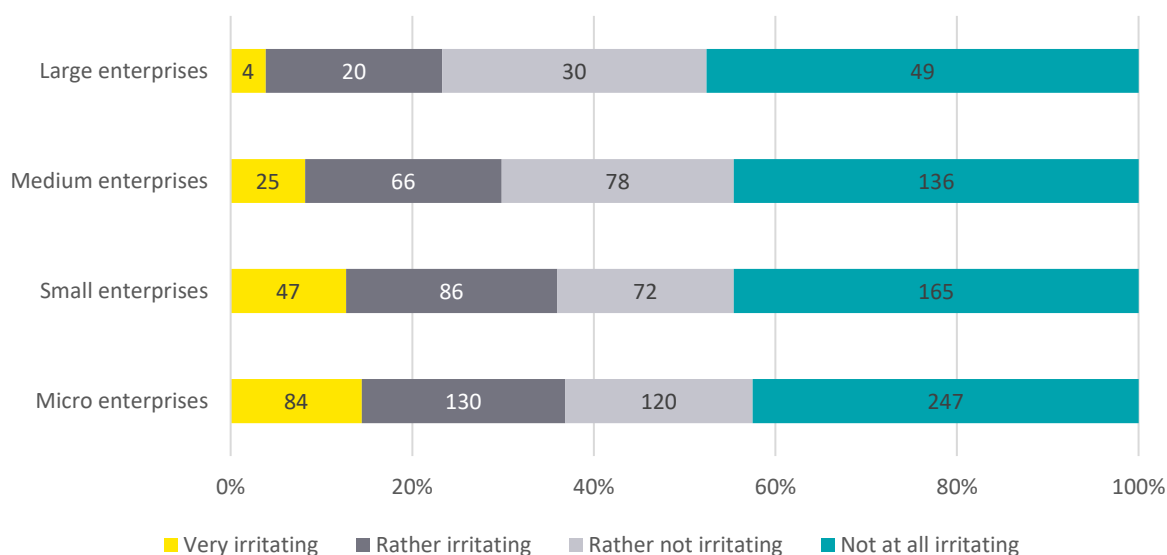
Source: own calculation

3.8 Irritation of tax compliance

We measured the irritation of respondents with obligations related to VAT, CIT, and employment related taxes on a scale of 1 to 4, where 1 meant that they are very irritated by the given obligation and 4 meant that they are not irritated at all. There are no major differences between the levels of irritation by tax type, the share of respondents who are very irritated by the obligations is 10.8 percent for CIT, 11.7 percent for VAT and 9.6 percent for employment related taxes, while the share of respondents who are not at all irritated by the obligations is 43 percent for CIT, 43.9 percent for VAT and 46.3 percent for employment related taxes.

If we compare irritation related to VAT, the tax form which differs most in company size, we see that the share of respondents who finds the obligations very irritating decreases with company size. Regression results also confirm that irritation by any kind of tax obligation (VAT, CIT or employment related taxes) is significantly and negatively correlated with company size; larger companies are less irritated by any of these obligations.

Figure 24 Irritation related to VAT (percent of answers by company size)



Source: own calculation

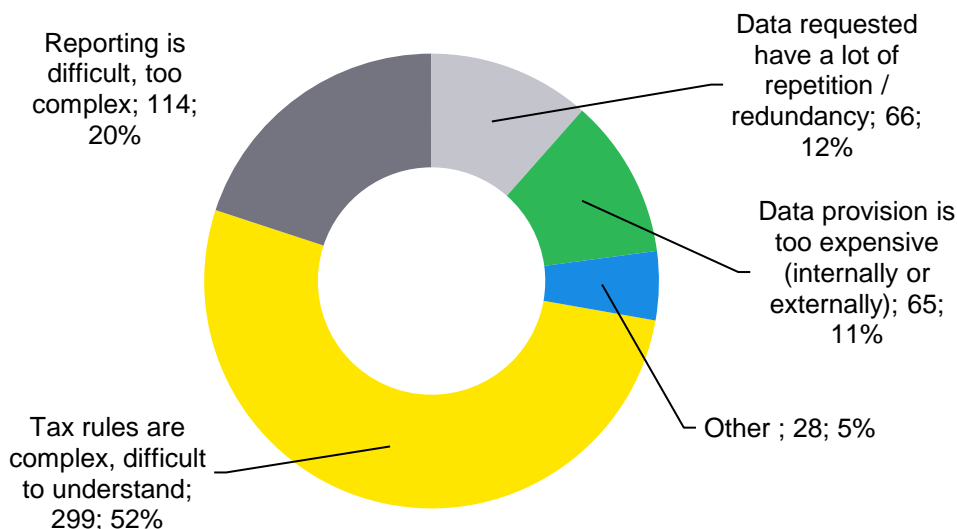
At the same time, export-oriented companies are significantly more irritated by information obligations related to VAT, which might be a sign of additional difficulties related to international trade.

We did not find, however, any significant sectoral or geographic effect; CEOs with tax administration experience from abroad are definitely more irritated by these obligations than the rest – again, at least in case of VAT-related tax obligation. We should also note that those respondents who are satisfied with the taxation reforms implemented since 2010 (see more on this in [Section 4.9](#)) are significantly less irritated by any of the tax obligations; and lower level of digitalisation contributes more to the level of irritation. The time (hours) spent for tax administration and the fact that the given company is outsourcing the tax administration tasks

do not seem to have any effect on the level of irritation. For the regression tables, please refer to [Table 34](#) in the Statistical Annex.

Most of the respondents said that the main source of their irritation was the complexity of tax rules and the difficulty of understanding them. A smaller proportion of respondents said that reporting itself is too complex, the requested data is often repetitive, or data provision is too expensive.

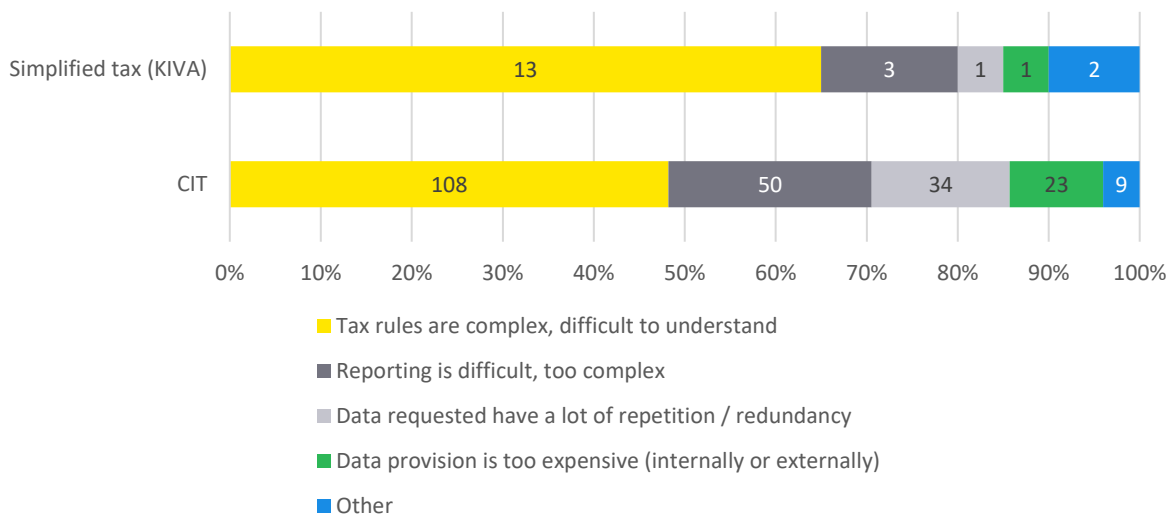
Figure 25 Factors of irritation while tax administration



Source: own calculation

If we distinguish the CIT-based and the simplified tax regimes, we find that firm representatives refer to more heterogeneous factors if asked about the sources of their irritation than those in the simplified tax regimes (KIVA, and notably, the only one KATA respondent referred to the complexity of tax rules). Nonetheless, it should be noted that the number of respondents in this latter group is not representative in our sample.

Figure 26 Factors of irritation while tax administration, broken down by CIT/KATA/KIVA taxpayers

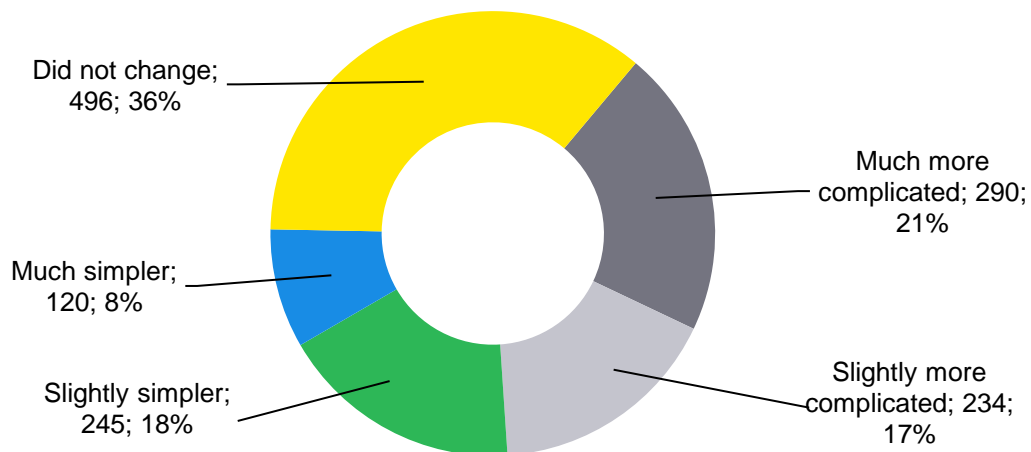


Source: own calculation

3.9 Satisfaction with tax administration reforms

For a large group of respondents (36%), the tax simplification reforms of the last decade do not seem to have made any difference. According to their views, there was no significant change in the tax administrative obligations since 2010. While a smaller fraction of the respondents (26%) answered that tax administration in general became slightly or much simpler since 2010, 38% of the respondents found that tax administration is slightly or even much more complicated than before the reform initiatives.

Figure 27 Business perceptions on the changes in tax administration since 2010



Source: own calculation

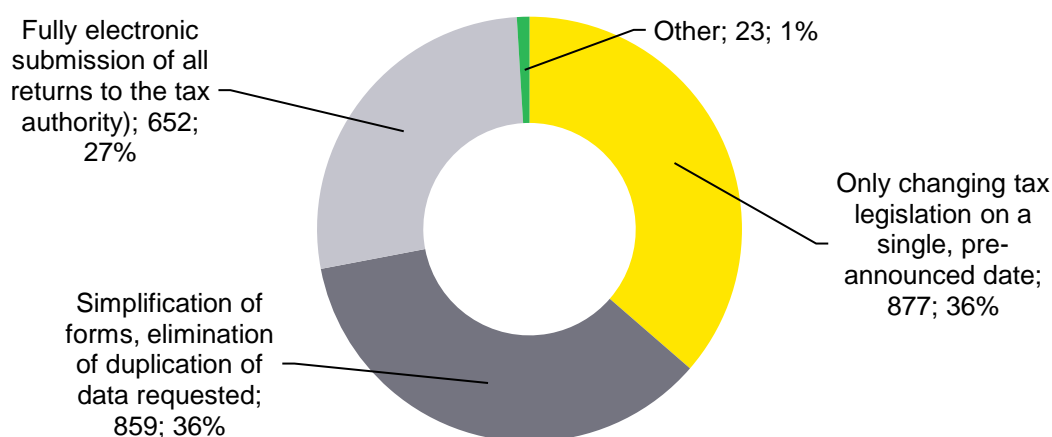
The share of respondents who found that tax obligations became simpler since 2010 grows with company size; while in case of micro and small enterprises merely 24% found that the

situation became better, this share almost reached 37% for respondents working for large companies. It should be noted that the presumed winners of the ongoing simplification efforts are those opted for the simplified tax regimes (KATA, KIVA). Nevertheless, their perceptions in this respect does not differ from the sample proportions (notably, their numbers among respondents to this part of the questionnaire is very low, n=2).

3.10 Preferences concerning future policy steps

When asked about recommendations for the tax authorities, respondents mentioned most frequently their need for predictable tax legislation changes that would need to happen on a single, pre-announced date once a year. The second most frequent answer was that they would encourage the simplification of forms and the elimination of duplications of data requested. Less respondents indicated that they would prefer the possibility of a fully electronic submission of all returns, data and forms to the tax authority.

Figure 28 Business preferences on potential policy reform steps



Source: own calculation

The share of those who suggested the full digitalisation of all submissions was lower among respondents working at large companies (17.5 percent versus 27 percent in the whole sample), and the share of those who would prefer legal changes only once a year at a pre-announced date was the highest among respondents working for medium enterprises. Among the answers of those who chose the 'other' answer (this was only chosen by respondents working at micro or small enterprises) were the suggestion of having one single login to all tax-related surfaces and submissions, the elimination of duplications and a suggestion that submissions should stay paper-based.

4. Conclusions and recommendations

Hungarian companies spent close to 420 billion HUF for complying with all the information obligations linked to the administration of the corporate income tax, the value-added tax, all the payroll taxes and the further employment-related reporting duties. This is a considerable amount of spending which all in all amounts to 1.79% of their total annual revenues.

Cutting these costs, for example reducing the employment-related costs just by 10% would result in 918 million HUF savings in the pockets of the Hungarian companies. These resources could be devoted for example for investments in IT and/ or human resources. This could also be used as investments in technology, or it may just benefit the management and staff members in a way by using the underlying time saved for other type of productivity-enhancing activities. Alternative costs of any hour, any Hungarian forint spent for tax administration add up to a substantial figure as we see.

There are several assessments on the time spent to comply with tax administration duties and on the related costs companies have to take on. We think that comparison across these assessments should be avoided due to the fact that they apply very different approaches and estimation methods. Nonetheless, it is useful to pay attention to the longitudinal changes, the dynamics of the Hungarian scores or to the country's relative position in all of these rankings and assessments. None of these aspects suggest that there is no need for policy intervention. Hungary is not close to the EU average in either of these rankings and in a historical comparison the dynamics of the Hungarian figures do not reflect great improvements, either. It is intriguing to observe that the perceptions of domestic businesses do not go against this observation. There are as many company representatives who are satisfied with the tax administration reform steps already launched as those who are critical in this field. The share of those perceiving no substantial change is also considerable (one third).

Based on the estimations, the survey results, and also on the international experiences, there are several avenues to be offered for considering and for confirming future tax administration reforms. Any reform steps aimed at reducing these types of compliance costs should however be well designed, carefully communicated and consistently implemented. Otherwise all the measures aimed at reducing firm-level administrative hours and thereby changing perceptions might be lost due to government failure in reform.

Although our job was to map the amount of time and to assess the related costs spent for tax compliance, we share here some considerations on what kind of direction tax administration reform could take. We suggest thinking about potential reform steps along two aspects:

- ▶ Timeline: it is worth to consider what can be implemented in the **short** versus **long(er)** term
- ▶ Degree of influence / administrative control: it is useful to distinguish what measures can be fully or mostly controlled by the Ministry of Finance and / or the National Tax and Custom Authority (**high influence / control**) and what measures necessitate intra-government coordination and intensive collaboration with other government agencies and authorities – in particular, with line ministries, the National Statistical Office, and agencies in charge of sectoral regulations and social security (**low influence / control**).

Table 5 Types of potential tax administration reform measures

<i>Admin.influence/ control -</i>	<i>Short term</i>	<i>Long term</i>
<i>Direct (MoF, NTCA)</i>	Low hanging fruits	Strategic reform steps
<i>Indirect (social securities, National Statistical Office, EU agencies)</i>	Targeted reforms	Structural / institutional reforms

Low hanging fruits - these are measures which we think can be launched already in the short term and could be directly implemented and controlled by the MoF or the NTCA (these are potentially also low-cost solutions):

- ▶ **Further simplification of tax reporting templates:** data duplications should be cut and in general, revision of data requested per form (in particular, in case of employment-related taxes and obligations and CIT) could be made;
- ▶ **Introduction of a ‘value-added test’:** streamlining and utility-checking the requested data with the eye of an SME (What data is requested? Why it is requested? What is the purpose of that type of data?). This test could be implemented as a sort of cost-benefit analysis and can be easily part of the regulatory impact assessment framework stipulated by the Act on Law making in Hungary;
- ▶ **Clarification on the value-added content of data / info requested from companies,** building ownership in companies on the social benefit (utility) tax data collection;
- ▶ **Re-design of the NTCA website,** improving its user-friendliness (clear structure, plain language, etc.).

Strategic reform steps - while the implementation of these types of reform steps could be still be controlled by MoF and NTCA, they are feasible first in the long(er) term:

- ▶ **Complex rationalisation of data reporting requested from taxpayers via data linking with line ministries and agencies;** and modernisation of social security administration
- ▶ **Re-strengthening the predictability of changes in taxation rules:** fixing dates of changes in the regulatory provisions, e.g. early January each year);
- ▶ **Incorporation of the social costs of tax administration:** before any policy (tax regulatory) change, there could be a check on the changes in the compliance costs (the obligation to run an RIA assessment on each amendments to the taxation rules);
- ▶ **Online solutions through the website of the NTCA:** develop and extend smart applications, taxpayer-tailored solutions (e.g. ‘Favourites’ for registered visitors, online invoicing on the website directly);
- ▶ **Repeat SCM-based surveying in 2-3 years’ time** (regular checking & monitoring);
- ▶ **Exploitation and adding value to Public Sector Information:** e.g. data assets utilisation, or simply providing data-tracking options for taxpayers (tax/social security history).

Targeted reforms: this is the most challenging type of potential reform steps, since it necessitates a close cooperation between MoF/NTCA and other government agencies.

- ▶ **Integrating tax administration reform steps into ongoing institutional / capacity-building projects run by partner agencies** – in particular, by the National Statistical Office or by the National Health Insurance Fund. The aim could be to pilot tax administration-reduction measures in the framework of the ongoing project (e.g. capacity-building projects co-financed by the Public Administration Operational Programme or by any other ESIF co-financed programme).

Structural / institutional reforms: these types of measures are typically those which require good preparation and high-level intra-government cooperation with a consistent and effective coordinating body.

- ▶ **Rationalising payroll-administration**, improving the data management at the social security administration (partly still paper-based);
- ▶ **Stepping up efforts to turn the NTCA into an integrated ('one-stop shop'-type) data and revenue collecting agency:** becoming the sole data interface / collector not just in case of social security data, but versus all the other government stakeholders / agencies;
- ▶ **Continuing the simplification of the tax structure** (cutting further down the number of taxes)
- ▶ **Paying attention to changing market environment** (e.g. blockchain-based B2B solutions) by first piloting and then adapting new data reporting solutions.

5. Closing workshops

As the conclusion of the project, we organized a number of workshops with the aim of presenting both the methodology and the results of the KPI dashboard organized. For the respective agenda and participants, please see below. For the workshop presentations, please refer to the [Annex IV](#) and [Annex V](#).

5.1 Transfer of knowledge on compliance cost survey

Date of the workshop: 28 May 2020

Agenda of the workshop:

- ▶ Project background and scope
- ▶ Methodological approach
- ▶ The sample of the survey
- ▶ Presentation of the survey
- ▶ Time spent on tax administration
- ▶ Tax administration and compliance costs
- ▶ Results of the SCM-based calculation
- ▶ Practical aspects of tax administration
- ▶ Business perceptions on tax administration
- ▶ Potential future reform steps

Participants of the workshop:

- ▶ Ministry of Finance
 - Benedek Nobilis, Head of the Tax Policy and International Taxation Department
 - Péter Tóth, Head of the Tax Policy and Research Unit
 - András Svraka, Tax Policy and Research Unit
 - Bálint Ván, Tax Policy and Research Unit
 - Tibor Keresztély, Tax Policy and Research Unit
 - István Szabó, Head of the Tax Analysis Unit
 - Nándor Marmoly, Tax Analysis Unit
 - Zsuzsa Varga, Tax Analysis Unit
 - Péter Henger, Department of Competitiveness
 - Ádám Santora, Department of Competitiveness
 - Gergely Pál, Department of Competitiveness
 - Ádám Kerényi, Department of Competitiveness
- ▶ Ministry of Innovation and Technology
 - Balázs Szepesi, Deputy State Secretary for Economic Development
- ▶ National Tax and Customs Administration
 - Balázs Kertész, Deputy Head of Department, Central Management - Planning and Analysis
- ▶ National University of Public Service
 - Sándor Csuha, Measurement and Methodology Office
 - Mihály Csótó, Measurement and Methodology Office
 - Anita Fibinger, Measurement and Methodology Office
 - Gábor Bozsó, Measurement and Methodology Office

- ▶ Central Statistical Office
 - Csaba Gilyán, Head of the Business Statistics Department
 - Márta Kímle, Business Statistics Department
 - Orsolya Szabó, Business Statistics Department
 - Ildikó Lonczkor, Business Statistics Department
 - Roland Kadlecik, Head of the Earnings Statistics Section
 - Gyöngyi Nagy, Business Statistics Department
- ▶ Hungarian National Bank
 - Dóra Novák
 - Zsolt Szabics, analyst
- ▶ Corvinus University of Budapest
 - Krisztián Kádár, Department of Public Finance and Public Policy
- ▶ Fiscal Responsibility Institute
 - Balázs Romhányi, president
- ▶ KPMG Hungary
 - Marcell Németh, senior consultant
- ▶ EY Hungary
 - Miklós Tóth, Advisory Manager
- ▶ Budapest Institute
 - Petra Reszkető, executive partner, senior researcher
 - Balázs Váradi, executive partner, senior researcher
 - Tamás Molnár, researcher
- ▶ eNET Internet Research and Consulting Ltd.
 - Tünde Hack-Handa, senior researcher

5.2 Closing executive presentation for Hungarian stakeholders

Date of the workshop: 15 May 2020

Agenda of the workshop:

- ▶ Project background and scope
- ▶ Methodological approach
- ▶ The sample of the survey
- ▶ Time spent on tax administration
- ▶ Tax administration and compliance costs
- ▶ Results of the SCM-based calculation
- ▶ Practical aspects of tax administration
- ▶ Business perceptions on tax administration
- ▶ Potential future reform steps

Participants of the workshop:

- ▶ Ministry of Finance
 - Norbert Izer, State Secretary for Tax Affairs
 - Botond Besesek, Deputy State Secretary for Accounting and Tax Regulation
 - Péter Tóth, Head of the Tax Policy and Research Unit
 - Bálint Ván, Tax Policy and Research Unit
- ▶ National Tax and Customs Administration

- László Sors, Secretary of State responsible for the NTCA
- Csilla Tamásné Czinege, Deputy State Secretary for Taxation Issues
- Ágnes Sinkáné dr. Csendes, Director General of Taxation
- Attila Czinege Director General of Audit Activity
- Gabriella Luklider Head of Department of Tax Returns
- Zsolt Funtek Deputy Head of Customer Service and Information
- Andrea Bognár, Head of Department, Central Management - Planning and Analysis
- Balázs Kertész, Deputy Head of Department, Central Management - Planning and Analysis
- ▶ EY Hungary
 - Róbert Heinczinger, Tax Partner
 - Miklós Tóth, Advisory Manager, Project Manager
- ▶ Budapest Institute
 - Petra Reszkető, executive partner, senior researcher
 - Balázs Váradi, executive partner, senior researcher
 - Tamás Molnár, researcher

5.3 Closing executive presentation for DG REFORM and international stakeholders

Date of the workshop: 18 May 2020

Agenda of the workshop:

- ▶ Project background and scope
- ▶ Methodological approach
- ▶ The sample of the survey
- ▶ Time spent on tax administration
- ▶ Tax administration and compliance costs
- ▶ Results of the SCM-based calculation
- ▶ Practical aspects of tax administration
- ▶ Business perceptions on tax administration
- ▶ Potential future reform steps

Participants of the workshop:

- ▶ European Commission
 - Riikka Torppa, acting Head of Unit, Revenue Administration and PFM, Directorate-General for Structural Reform Support
 - Elka Ilyova, Policy Officer, Revenue Administration, Directorate-General for Structural Reform Support
 - Barbara Bernardi, Economic Analyst, Desk Officer Hungary, Directorate-General for Economic and Financial Affairs
 - Ágnes Fekete, Policy Officer, VAT legislation, Directorate-General for Taxation and Customs Union
- ▶ OECD
 - Peter Green, Head of Forum on Tax Administration Secretariat
 - Oliver Petzold, Advisor at Forum on Tax Administration Secretariat
- ▶ Ministry of Finance
 - Péter Tóth, Head of the Tax Policy and Research Unit
 - Bálint Ván, Tax Policy and Research Unit

- ▶ National Tax and Customs Administration of Hungary
 - Balázs Kertész, Deputy Head of Department, Central Management - Planning and Analysis
 - Zsófia Fejős Kiss, Senior Officer, International Relations Department
- ▶ EY Hungary
 - Miklós Tóth, Advisory Manager, Project Manager
 - Gergely Sera, Tax Senior Manager
- ▶ Budapest Institute
 - Petra Reszkető, executive partner, senior researcher
 - Balázs Váradi, executive partner, senior researcher
 - Tamás Molnár, researcher

Annex I. Methodological Annex

The present section aims to outline the details of the methodology we applied for measuring tax compliance cost. The details of the methodological approach were finalised based on meetings held with the Ministry of Finance (MoF) and the National Tax and Customs Administration (NTCA) following the kick-off meetings.

Methodological baseline

We organised two expert meetings with the MoF representatives to map the strategic goals of the Hungarian government regarding the survey on tax compliance costs, and thus regarding the simplification of the tax administration framework in general. The key aspects of the survey agreed on are the following:

- ▶ Prioritising specific tax forms (VAT, CIT, employment related IOs);
- ▶ Focus on potential reform steps on the national level, without sectoral targeting;
- ▶ Paying attention to both objective (SCM-based) and subjective (irritation-based) factors of potential reform steps;
- ▶ Mapping business perceptions on the historical change of reform perceptions in the area of tax administration.

This resulted in a cost-assessment strategy we referred to as optimal assessment strategy as depicted below.

Table 6 Alternative cost assessment strategies

		Scope of information obligations	
		<i>Strategically selective</i>	<i>Comprehensive</i>
Diversity of the company population	<i>Representative</i>	Optimal assessment	Ideal baseline assessment
	<i>Strategically selective</i>	Pilot assessment	Strategic comprehensive assessment

The optimal assessment strategy strives to collect firm-level data in a representative way (in terms of firm size) and controls for the sectors and export activity. The strategy also optimizes the coverage of tax administrative tasks and delivers recommendations of the highest policy relevance, since it focuses on the strategic set of tax forms and information obligations selected in collaboration with the ministry-level policy stakeholders. It also proved to be the most cost-effective approach given the fact that close to 75-80% of the administrative costs stem from around 25-30% of the statutory obligations (as per EY tax experts' estimation). Finally, this strategy led us to a sampling method that produced a historically unique, added-value, firm-level dataset that can be further utilised both by policy makers and policy analysts in the future.

While finalising the survey design, we payed attention to produce results comparable with the benchmark studies (the 2018 EU-level KPMG study and the 2009 Deloitte assessment on administrative costs in Hungary). In line with the MoF preferences, we focused on the macro level comparability of the estimated compliance costs related to tax forms covered by these studies (i.e. VAT and taxes and contributions related to employment).

For the sake of comparability, we also followed the EU definition, consequently, the definition stipulated by the Hungarian act on SMEs on company size segments – preferring the number of employees (staff headcount) as the key segmentation variable. For the EU definition on SMEs, see table below.

Table 7 The size segment categories of SMEs (EU definition)

Size segments	Staff headcount	Turnover	Or Balance Sheet
Medium-sized enterprise	< 250	≤ EUR 50mill	≤ EUR 43mill
Small-sized enterprise	< 50	≤ EUR 10mill	≤ EUR 10mill
Micro-sized enterprise	< 10	≤ EUR 2mill	≤ EUR 2mill

Source: 2003/361/EC recommendation

Notably, large enterprises are not defined by the EC recommendation but are taken to be any enterprise exceeding the criteria above.

Table 8 Limitations of the SCM approach and our solutions

Limitation	Potential solution
The model assumes that surveyed stakeholders will always (aim to) comply with regulations, instead of strategically disobeying them.	<ul style="list-style-type: none"> ▶ While the SCM methodology may overestimate the compliance costs, including administrative costs, it will still indicate which of the administrative tasks may (or may not) divert the most time from productive activities at the company level. ▶ Systematic data cleaning of the business survey-based database was done in order to eliminate outlying data entries (e.g. underreporting of the frequency of the given administrative task).
The model only considers average firms that operate efficiently, missing outlier companies that may under- or overperform compared to the rest of the sample.	<ul style="list-style-type: none"> ▶ Use of versions of the survey questionnaire (business representatives, accountants). ▶ Controlling for the variation in financial performance of the sampled companies while analysing the results.

Limitation	Potential solution
There are major differences between the costs associated with administrative burdens between SMEs and larger enterprises.	<ul style="list-style-type: none"> ▶ Mitigation of firm-size biases by using a properly stratified company sample and large enough sample size.
The SCM does not control for stakeholders entering or exiting the market, potentially paying significant one-off costs.	<ul style="list-style-type: none"> ▶ The scope agreed with the MoF does not cover the one-off costs.
The model does not consider how the companies would make use of the decreased costs.	<ul style="list-style-type: none"> ▶ SCM-based monetisation of the administrative simplifications can be interpreted and presented by government authorities in business trade-offs – such as, number of potentially new employees (hired due to saved internal costs), number of working hours potentially used for productivity-inducing human capital investment at firm level.

Mapping the relevant information obligations and compiling the firm-level SCM dataset

Following the SCM principles, our aim was to build a comprehensive, firm-level dataset containing information obligations related to tax forms, covering the following aspects of the individual information obligations for each tax form:

- ▶ Reference (number and name) of the form to be submitted to the relevant authority;
- ▶ Location (online or otherwise) of the relevant form;
- ▶ Specific data/information required to be submitted;
- ▶ Frequency of submission;
- ▶ Recipient of the information obligation;
- ▶ Manual / automated process;

We mapped all the tax forms and procedures related to the compliance of statutory tax information obligation (IO) in case of CIT, VAT, and employment-related taxes.

This IO-map lists information on all the relevant tax forms and reporting duties in a comprehensive way. The preparation of this map was the first step in the process to design the firm-level questionnaire of the survey.

The design of the company sample

In order to assess the time and consequently, the related costs of tax compliance at the company level, we launched a business survey. The survey sample was selected in line with the following sampling criteria:

- ▶ We chose the *Bisnode* company dataset consisting of firms and sole entrepreneurs registered in Hungary for at least two financial years.²⁶
- ▶ We developed a stratified sample of companies and sole entrepreneurs that have been registered in Hungary for at least the last two financial years.
- ▶ We used a stratified sample which is representative in firm size (SMEs and large enterprises). In addition, we included a demonstrative sub-sample of sole entrepreneurs (hereinafter referred to as SE). The rationale behind including sole entrepreneurs was to be able to tap information on their compliance costs, as well – even if not in a representative way.
- ▶ The secondary aim was to also distinguish the compliance costs met by regular businesses *contra* those emerging due to the simplified company tax forms (*KATA* and *KIVA*). As agreed with the MoF and NTCA representatives, the third simplified tax form (*EVA*) is out of scope as it will be ceased from January 2020.
- ▶ The final sample consists of 1,117 companies with the total number of firm-level records of 2,087. For the various statistical analyses and calculations, the relevant sample sizes differ and vary due to the result of data cleaning and missing data points. For an overview of the sizes of the specific sub-samples and the reasons for data loss, see table below.
- ▶ The sample for the SCM-based macroeconomic-level calculation consists of 957 companies, including those that:
 - have at least 2 employees
 - have data on hours spent on at least one tax obligation,
 - did not report contradictory hours in the case of the various types of corporate income taxes (standard CIT or simplified taxes *KATA/ KIVA*, and
 - have data on their annual turnover.
- ▶ It should be noted again that the SCM-based calculation goes for the various tax types and cost-elements (see, e.g. tax administration hours per tax type, additional costs) separately and with use of the appropriate weights of the corresponding population-based segment sizes so as to compensate for the variance of the sub-sample sizes.

²⁶ Bisnode is a private company with the most up-to-date, reliable and full-fledged company registry database in Hungary. For the company website, see: www.bisnode.hu

Table 9 Overview of the sub-samples relevant for the various analytical purposes

Project tasks	Relevant sample size (No. of companies)	Reasons for data loss
Data sample before data cleaning	1,117	-
Analysis of firm profiles – such as, - company size - sector group - headquarter - region - settlement type	1,117	-
Statistics on turnover	1,106	▶ Missing turnover data in the Bisnode database
Statistics on export share of annual turnover	1,038	▶ Missing response from CEOs
Analysis of tax administration hours related to corporate income taxes (standard CIT, simplified taxes)	424	<ul style="list-style-type: none"> ▶ Lack of reported hours or 0 hours in relevant tax type ▶ Inconsistent reporting of hours (e.g. hours both in KATA/KIVA and standard CIT-related IOs, accounting companies sharing irrelevant hours for all tax types) ▶ Lack of reported hours from the person (CEO/internal accountant) who works the most on tax administration according to the CEO questionnaire (cf. missing values) or recording the hours by a firm respondee not engaged with the given tax type ('0' answers)
Analysis of tax administration hours related to VAT	453	<ul style="list-style-type: none"> ▶ Lack of reported hours or 0 hours in relevant tax type ▶ Lack of reported hours from the person (CEO/internal accountant) who works the most on tax administration according to the CEO questionnaire ('0' answers) <p>Note: companies exempted from VAT are included</p>

Project tasks	Relevant sample size (No. of companies)	Reasons for data loss
Analysis of tax administration hours related to employment	259	<ul style="list-style-type: none"> ▶ Lack of reported hours or 0 hours in relevant tax type ▶ Lack of hours from the person (CEO/internal accountant) who works the most on tax administration according to the CEO questionnaire ('0' answers)
SCM-based calculation of TTCC for companies with at least 2 employees (winsorised)	957	<ul style="list-style-type: none"> ▶ Lack of reported hours or 0 hours in relevant tax type ▶ Inconsistent reporting of hours (e.g. hours both in KATA/KIVA and standard CIT-related IOs, accounting companies sharing irrelevant hours for all tax types) ▶ Lack of reported hours from the person (CEO/internal accountant) who works the most on tax administration according to the CEO questionnaire ▶ Lack of data on annual turnover or 0 HUF annual turnover (or less than 10 million HUF annual turnover in case of large enterprises)
SCM-based calculation of TTCC for companies with at least 1 employee (winsorised)	962	<ul style="list-style-type: none"> ▶ Lack of reported hours or 0 hours in relevant tax type ▶ Inconsistent reporting of hours (e.g. hours both in KATA/KIVA and standard CIT-related IOs, accounting companies sharing irrelevant hours for all tax types) ▶ Lack of reported hours from the person (CEO/internal accountant) who works the most on tax administration according to the CEO questionnaire ▶ Lack of data on annual turnover or 0 HUF annual turnover (or less than 10 million HUF annual turnover in case of large enterprises)
Analysis of business perceptions (e.g. level of digitalization, irritation)	1,117*	-
Companies with data covering all tax types –	96	<ul style="list-style-type: none"> ▶ Lack of reported hours or 0 hours in relevant tax type

Project tasks	Relevant sample size (No. of companies)	Reasons for data loss
corporate income taxes, VAT and employment-related obligations after data cleaning		<ul style="list-style-type: none"> ▶ Inconsistent reporting of hours (e.g. hours both in KATA/KIVA and standard CIT-related IOs, accounting companies sharing irrelevant hours for all tax types) ▶ Lack of reported hours from the person (CEO/internal accountant) who works the most on tax administration according to the CEO questionnaire

**The number of respondents differs mainly due to the fact that we have more than one respondent per company in several cases.*

- ▶ The IO mapping process and the consultations with the MoF and NTCA representatives resulted in the decision to diversify the survey and to develop different types of questionnaires. The reason for that was that the amount and complexity of the relevant tax compliance tasks required highly technical and detailed questionnaires that may not be completed by most of the main company owners/managers – whose perceptions, however, are of strategic importance for the MoF policy makers.
- ▶ Consequently, due to the extended scope (in fact, not three but five various tax forms) and the depth (covering all the administrative work phases – data collection, preparation, review, recording and submission) of the inquiry, we ended up developing and using four different questionnaires – that means, we conducted four different surveys at the end of the day.
- ▶ The questionnaires were diversified by the type of the respondent at firm level – cf. the owner/entrepreneur/CEO, the owner/entrepreneur/CEO actively engaged in tax administration (spending hours with the compliance of the statutory information obligations), staff members in charge of tax administration tasks, and external accountants, firm representatives to whom the contacted company delegates the tax administration tasks (outsourced).
- ▶ It should also be noted, that we first contacted the owner/CEO/entrepreneur of the sampled company and used snowball technique to reach those also involved in tax administration at the given company. This resulted in contacting most of the companies multiple times and repeated efforts to collect full data from the given firm.
- ▶ While sampling, we controlled for five sector groups (agriculture, industry, services, trade, other) and for the export-orientation of the sampled companies (selecting companies both from tradable and non-tradeable sectors, as it seems that VAT-related IOs primarily vary around export-related activities).

We opted for computer-assisted telephone interviews (CATI) as the data collection methods, as this approach often guarantees a high response rate as opposed to online surveys, and also enabled us to run a rather long and complex questionnaire, with a

diverse set of respondents (CEOs/ entrepreneurs, CFOs, internal staff members and representatives of external accounting companies in charge of the corresponding tax administration tasks). The survey covered the following areas:

- ▶ Basic company data:
 - size;
 - sector;
 - financial performance;
 - activities performed in-house vs. activities outsourced;
 - IT infrastructure supporting tax compliance activities;
- ▶ Total time spent related to tax compliance, broken down by selected tax-related procedures and corresponding main activities (data collection, preparation, review, submission);
- ▶ The frequency of the obligation / activity;
- ▶ The position of the employer charged with running the corresponding information obligation.

For the breakdown of tax administration activities covered by the survey, we developed a typology that corresponds with the 2018 KPMG breakdown, but it is also adapted to the Hungarian context. For the overview of the matching, see the table below.

Table 10 Tax administration activities covered by KPMG 2018 and by this project

Activities covered by KPMG 2018	KPMG definition	Activities covered	Suggested definition
<i>Data collection</i>	Gathering all information needed for the tax declaration	Data collection	Collection of data and information needed in order to be able to fill in the given form
<i>Preparation</i>	Preparing the tax declaration	Preparation	Download of ÁNYK (General Form Filler Application) / the given form, data export, data analysis
<i>Review</i>	Reviewing the tax declaration	Review	Review of analytical data to be recorded / submitted
<i>Submission</i>	Filing / submission of the tax declaration	Recording and submission	Data recording / data export and submission of data needed for the given form

It should be noted that the KPMG study did not rely on a coherent definition while referring to the administrative activities. As they stated: "the content of these four activities was left to the interpretation of the respondent." (KPMG 2018:18) This makes any international comparison rather questionable from a strictly methodological point of view.

In addition to the list above, we also analysed the following aspects:

- ▶ the time spent for monitoring of the national tax rules and regulations;
- ▶ the compliance with new and amended regulations (including costs related to IT tools used for tax compliance purposes),
- ▶ the irritation of business representatives with tax administration broken down by the tax forms in our focus (VAT; PIT; taxes related to simplified tax regimes; taxes, contributions and costs related to employment),
- ▶ the satisfaction with tax administration reforms launched since 2010, and identification of welcome reform steps, and finally
- ▶ We left some optional open questions to enable the provision of additional information (such as, experience in tax administration/compliance abroad.

Planned and final composition of the sample

The final cleaned sample contains survey responses from representatives of 1,117 enterprises, including 1,038 companies where either the sole entrepreneurs or the high-level managers (CEOs or CFOs) have been contacted.

The breakdown of this final sample regarding size is as follows:

- ▶ 15 sole entrepreneurs;
- ▶ 488 micro enterprises;
- ▶ 298 small enterprises;
- ▶ 232 mid-sized enterprises;
- ▶ 84 large corporations.

In comparison to the previous survey-based studies assessing tax administration costs, our sample is unique in the following features:

- ▶ the high number of companies covered
- ▶ the representativeness in company size
- ▶ the broad thematic scope of survey – see, coverage of three big tax forms (CIT, VAT, employment-related taxes) and also tapping on business attitudes and perceptions on tax compliance
- ▶ the full coverage of activities linked to tax administration (differentiation of the administrative steps: data collection, preparation, review, submission).

For a comprehensive overview of the related studies, their focuses, and methods, see the table below.

Table 11 Comparison of the main tax compliance surveys relevant for Hungary

Topic	Deloitte 2009	KPMG 2018	EY-BI 2019
Sample size	600 companies for selecting the TOP150 information obligations, all in all 1,917 records/ company-level interviews for assessing the cost	Varies across countries – ranging from 120 up to 200 records/ company-level interviews	1,117 companies and sole entrepreneurs for covering the priority areas (VAT, CIT, employment).
Coverage of countries	Hungary only	20 European countries (not including Hungary)	Hungary only
Coverage of company types (based on company size)	representative in SME and large firms (<i>not including</i> sole entrepreneurs)	Representative only in SME (<i>not including</i> sole entrepreneurs and large enterprises)	representative in micro, small, medium and large enterprises as well, and including a demonstrative sub-sample of sole entrepreneurs (aiming at differentiating regular sole entrepreneurs and ones under the

Topic	Deloitte 2009	KPMG 2018	EY-BI 2019
			simplified tax regime, KATA).
Coverage of sectors	11 key sectors	6 main sectors (not representative)	5 sector groups (not representative)
Coverage of tax forms	total of 150 information obligations, not exclusively related to tax compliance (the survey covered VAT and taxes and contributions related to employment)	CIT, VAT, -	CIT, VAT, employment-related taxes and contributions
<i>Coverage of activities</i>	total of 150 information obligations, not only related to tax compliance	Data collection, preparation, review, submission	Data collection, preparation, review, submission
<i>Regulatory monitoring and business irritation with tax administration</i>	Not covered	Not covered in detail, but included questions on the most bothersome taxes, where payroll taxes were identified as such.	Monitoring of tax regulation, use of tax administration-related IT tools (mapping business practices and costs), business irritation with tax administration
<i>Data collection method</i>	CATI, CAWI	CATI, CAWI	CATI
<i>Relevant year of data included</i>	2008	2014	2018

Source: Deloitte 2008, KPMG 2018, own calculation

Survey-based research projects have to face some obvious and less obvious risks and challenges. We have also tried to map these risks and to develop measures to mitigate them. As the table below summarizes, our risk management was fairly designed and implemented with some of the risks miscalculated (mostly, overestimated *ex ante*).

Table 12 Methodological risks & actions taken to mitigate them

Topic	Projected	Actual	Actions taken
Timing and schedule of the survey	High	Medium	The end-of-the-year period is not ideal Change of seasonality was beyond the control of the project team – nonetheless, we argued for an extended survey period (incl. January 2020, as well)
Willingness to respond	Medium	Low	Surveyors contacted firms repeatedly Clear communication of the mission and objectives of the project (evidence-based reform) Rationalising the survey questionnaire (shortening and clarification of questions during the test phase) Overall, simplification of the survey by limiting technical questions to a minimum
Snowball technique	High Only 10% of the sampled CEOs/entrepreneurs will provide further, company-level contact information	Low	Clearly communication the project objectives Tailoring the questionnaire properly – diversification of the questionnaire to the given respondent (in the end four questionnaires) In fact, 65% provided further contacts
Complex governance models in tax administration (outsourcing, intra-firm specialisation)	Medium (in case of large/medium-sized companies)	High	We expected the following trade-offs: *number of firms covered – completeness of firm-level records *number of records – data quality As responses to this we -rationalised the sample (representative in SMEs, primarily) -diversified the questionnaires so as to better fit the questions to the specific company representative contacted.
CEO/entrepreneurial engagement in tax administration	<i>Not foreseen</i>	High	As opposed to our expectations, it turned out that a high share of CEOs/entrepreneurs are actively engaged in tax administrative tasks.

We concluded the data collection with the following lessons:

- ▶ Testing the questionnaire among relevant stakeholders is crucial in improving the quality of the questionnaire and the effectiveness of the survey.
- ▶ The testing period should be long enough (at least, 4 weeks, including also the test assessment phase), so as to reach all the various types of respondents (in our case all the three stakeholder types and all the firm segments) and to make the most benefits out of the testing by running also a training for the surveyors.
- ▶ Clear communication of the mission and the objective of the survey and how responses will be used by the beneficiary of the project do definitely increase response rate.
- ▶ Allowing more time for testing and for data collection would have been more preferable for surveyors and respondents alike. Scheduling surveys to the end of the year is unfortunate and should be corrected.
- ▶ an already stretched period such as the end of the year is unfortunate for firms and can decrease willingness to participate. Longer testing period would have decreased mistakes done by surveyors. Longer data collection period altogether could have increased the number of firms and employees reached and thus full records. Furthermore, respondents did not differentiate between the four phases of tax administration-related tasks (data collection, preparation, review, submission) to the extent we expected, which does not allow us to accurately assess (i) which work phase is the most time-consuming and (ii) whether there are any patterns in this regard (e.g., with respect to firm size, sector, delegation of tasks).

The SCM calculation methods

First, we cleaned the survey data based on consistency in responses and by trimming administrative hours by 90th percentile. In order to calculate the total tax administrative costs at the firm level, first we monetized the total costs of the time spent on tax administration by the various employees. Second, we also added any further external costs related to tax administration – stemming from outsourced accounting activities or from additional spending (costs related to legal monitoring, IT investments, consultations, etc.).

Consequently, first we aggregated all the hours (cutting the outliers at p90) spent on tax-related administration per business representative at firm level (CEO, internal accountant) and by tax type (corporate income tax, VAT, employment related taxes), and we matched these with average salaries in the relevant sector and position. By multiplying the yearly hours with the relevant hourly wages, we got an estimate of the total yearly tax administration related costs of the company.

We received data on average salaries for 2018 from the Ministry of Finance, and besides matching average salaries by five large sectors (Agriculture, Industry, Services, Commerce and Others) and in the case of CEOs, by three company sizes (micro- and small companies, medium enterprises, large enterprises) we used the following matching by FEOR (occupational sector) code.

Table 13 Matching table for FEOR'18 and self-reported CEO positions

<i>Self-reported position of CEO</i>	<i>Educational attainment</i>				<i>Total number of respondents</i>
	<i>Tertiary</i>	<i>Secondary</i>	<i>Vocational</i>	<i>Primary</i>	
CEO	12XX	12XX	12XX	12XX	351
Manager	1411	36XX	36XX	36XX	65
Employee	251X	36XX	36XX	36XX	17
Total number of CEOs	332	86	11	4	433

Table 14 Matching table for FEOR'18 and self-reported positions of the internal staff members

<i>Self-reported position of internal accountant</i>	<i>Educational attainment</i>		<i>Total number of respondents</i>
	<i>Tertiary</i>	<i>Secondary</i>	
CEO	1411	1411	20
Manager	1411	36XX	105
Employee	251X	36XX	63
Total number of internal staff members	145	43	188

FEOR code 12XX corresponds to CEOs of enterprises, 1441 designates CFOs, 251X designates accountants in a position that requires tertiary education, and finally, 36XX (3611 and 3614) designates accountant positions that require at least secondary education.

For estimating the costs related to external accounting, we used the monthly cost of external accountants reported by the CEO, and we matched enterprises with missing values that reported that they work with external accountants by sector and company size, using the median of the given segment after cutting at p95 where the CEO did not report the exact external costs.

We used a sample of companies having at least two employees, we did not use data from companies with no record of annual revenue for 2018, and we also did not use the records of companies that reported hours spent on all three types of corporate income taxes (as

these are mutually exclusive), and we dropped large enterprises with reported annual revenue below HUF 10 million (ca. EUR 30,000).

List of key variables in the SCM database

Firm characteristics:

- ▶ ID: individual id assigned to firms.
- ▶ System record id: ...
- ▶ Segment: firm category based on number of employees following the recommendation of the European Commission (2006/361/EC) and Hungarian law on SMEs (2004, law no. XXIV.)
- ▶ Number of employees.
- ▶ TEAOR 2018: categorization of the main activity of the firm as per the Hungarian Central Statistical Office.
- ▶ Sector: the main economic sector which the firm belongs to (agriculture, industry, trade, services, other).
- ▶ Date of registration of the firm.
- ▶ Sales income.
- ▶ Currency of sales income.
- ▶ Address of the headquarters of the firm.
- ▶ Address of the plants of the firm.
- ▶ Number of the plants of the firm.
- ▶ Settlement type: based on the address of the headquarters of the firm (capital, regional centre, town, village).
- ▶ Region: the 7 NUTS2 regions of Hungary, based on the address of the headquarters of the firm.

Annex II. Statistical Annex

It is important to note that the descriptive statistics below followed several data cleaning steps – such as:

- ▶ '0' VAT hours are treated as missing data in general, but we incorporated 0 hours for VAT administration in case of companies exempted from VAT.
- ▶ We also dropped companies if they have hours for all types of CIT and deleted non-relevant hours recorded under the corporate taxes if the CEO answer was not ambiguous for the question on the type of corporate income tax (for example, we left KATA hours if the CEO indicated the KATA regime at the beginning of the questionnaire).
- ▶ We also cleaned CEO answers to corporate income tax type in accordance with hours reported either by himself or by other firm contacts (if these hours belonged only to one tax regime).

Data on hours were winsorised at p90 for each type of tax and each segment.

Table 15 Descriptive statistics - tax administration hours spent on corporate income taxes (all types) per year

All companies				Standard CIT				Simplified tax (KATA/KIVA)						
Full sample														
Percentiles	Smallest			Percentiles	Smallest			Percentiles	Smallest					
1%	4	1		1%	4	2		1%	1	1				
5%	4	2		5%	4	3		5%	4	4				
10%	6	3	Obs	424	10%	8	4	Obs	377	10%	4	4	Obs	45
25%	19,5	4	Sum of Wgt.	424	25%	22	4	Sum of Wgt.	377	25%	5	4	Sum of Wgt.	45
50%	70		Mean	128.8	50%	80		Mean	136.3	50%	20		Mean	61.3
		Largest	Std. Dev.	147.6734			Largest	Std. Dev.	152.4747			Largest	Std. Dev.	70.68071
75%	194	588			75%	200	588			75%	116.5	190		
90%	380	588	Variance	21,807.42	90%	390	588	Variance	23,248.53	90%	160	193	Variance	4,995.763
95%	420	588	Skewness	1.67805	95%	444	588	Skewness	1.594531	95%	193	235	Skewness	1.010558
99%	588	1,008	Kurtosis	6.415811	99%	588	1,008	Kurtosis	5.989421	99%	235	235	Kurtosis	2.78573
Micro enterprises														
Percentiles	Smallest			Percentiles	Smallest			Percentiles	Smallest					
1%	3	1		1%	4	3		1%	1	1				
5%	4	3		5%	4	4		5%	4	4				
10%	4	4	Obs	147	10%	5	4	Obs	115	10%	4	4	Obs	30
25%	8	4	Sum of Wgt.	147	25%	12	4	Sum of Wgt.	115	25%	8	4	Sum of Wgt.	30
50%	40		Mean	100.6	50%	48		Mean	108.8	50%	22		Mean	60.1
		Largest	Std. Dev.	119.7366			Largest	Std. Dev.	126.9657			Largest	Std. Dev.	71.36413
75%	160	420			75%	160	420			75%	116.5	156		
90%	300	444	Variance	14,336.86	90%	340	444	Variance	16,120.28	90%	158	160	Variance	5,092.839

All companies					Standard CIT					Simplified tax (KATA/KIVA)				
95%	376	444	Skewness	1.394547	95%	420	444	Skewness	1.293457	95%	235	235	Skewness	1.132868
99%	444	444	Kurtosis	4.00337	99%	444	444	Kurtosis	3.556807	99%	235	235	Kurtosis	3.155815
Small enterprises														
Percentiles	Smallest				Percentiles	Smallest				Percentiles	Smallest			
1%	4	2			1%	2	2			1%	4	4		
5%	4	4			5%	4	4			5%	4	4		
10%	4	4	Obs	110	10%	8	4	Obs	96	10%	4	4	Obs	14
25%	20	4	Sum of Wgt.	110	25%	25	4	Sum of Wgt.	96	25%	4	4	Sum of Wgt.	14
50%	50		Mean	129.6	50%	55		Mean	139.8	50%	18		Mean	59.8
		Largest	Std. Dev.	153.4022			Largest	Std. Dev.	159.5493			Largest	Std. Dev.	72.61369
75%	193	550			75%	200	550			75%	100	100		
90%	420	580	Variance	23,532.25	90%	420	580	Variance	25,455.99	90%	190	160	Variance	5,272.747
95%	460	588	Skewness	1.445153	95%	468	588	Skewness	1.320289	95%	193	190	Skewness	.9278898
99%	588	588	Kurtosis	4.195789	99%	588	588	Kurtosis	3.725558	99%	193	193	Kurtosis	2.289118
Medium enterprises														
Percentiles	Smallest				Percentiles	Smallest				Percentiles	Smallest			
1%	4	4			1%	4	4			1%	120.5	120.5		
5%	5	4			5%	5	4			5%	120.5	.		
10%	8	4	Obs	129	10%	8	4	Obs	128	10%	120.5	.	Obs	1
25%	32	4	Sum of Wgt.	129	25%	30	4	Sum of Wgt.	128	25%	120.5	.	Sum of Wgt.	1
50%	96		Mean	150.4	50%	96		Mean	150.7	50%	120.5		Mean	120.5
		Largest	Std. Dev.	153.5819			Largest	Std. Dev.	154.1623			Largest	Std. Dev.	.
75%	206	504			75%	207	504			75%	120.5	.		
90%	420	588	Variance	23,587.41	90%	420	588	Variance	23,766.01	90%	120.5	.	Variance	.
95%	444	588	Skewness	1.17729	95%	444	588	Skewness	1.168729	95%	120.5	.	Skewness	.
99%	588	588	Kurtosis	3.355554	99%	588	588	Kurtosis	3.324386	99%	120.5	120.5	Kurtosis	.
Large enterprises														
Percentiles	Smallest				Percentiles	Smallest				No observations				
1%	4	4			1%	4	4							
5%	4	4			5%	4	4							
10%	8	6	Obs	38	10%	8	6	Obs	38					
25%	40	8	Sum of Wgt.	38	25%	40	8	Sum of Wgt.	38					
50%	121.5		Mean	162.6	50%	121.5		Mean	162.6					
		Largest	Std. Dev.	189.3333			Largest	Std. Dev.	189.3333					
75%	200	320			75%	200	320							
90%	320	390	Variance	35,847.1	90%	320	390	Variance	35,847.1					
95%	588	588	Skewness	2.692334	95%	588	588	Skewness	2.692334					
99%	1,008	1,008	Kurtosis	11.9455	99%	1,008	1,008	Kurtosis	11.9455					

Table 16 Descriptive statistics - total hours spent on VAT administration per year (full sample and sub-sample of companies with less than 50 percent export-share in revenues)

All companies					Companies with an export ratio below 50 percent				
Full sample									
Percentiles		Smallest			Percentiles		Smallest		
1%	0	0			1%	0	0		
5%	0	0			5%	0	0		
10%	18	0	Obs	453	10%	16	0	Obs	303
25%	48	0	Sum of Wgt.	453	25%	32	0	Sum of Wgt.	303
50%	116		Mean	392.5	50%	80		Mean	265.6
		Largest	Std. Dev.	542.0			Largest	Std. Dev.	438.3
75%	536	2,268			75%	228	1,980		
90%	1,392	2,268	Variance	293,830.7	90%	864	1,984	Variance	192,173.3
95%	1,620	2,268	Skewness	1.712837	95%	1,432	2,268	Skewness	2.418579
99%	2,216	2,708	Kurtosis	5.109264	99%	1,980	2,268	Kurtosis	8.449586
Sole entrepreneur									
Percentiles		Smallest			Percentiles		Smallest		
1%	0	0			1%	0	0		
5%	0	0			5%	0	0		
10%	0	0	Obs	9	10%	0	0	Obs	8
25%	0	0	Sum of Wgt.	9	25%	0	0	Sum of Wgt.	8
50%	0		Mean	54	50%	24		Mean	60.7
		Largest	Std. Dev.	78			Largest	Std. Dev.	80.5
75%	72	48			75%	120	48		
90%	198	72	Variance	6,084	90%	198	72	Variance	6,484,5
95%	198	168	Skewness	1.029762	95%	198	168	Skewness	.8544986
99%	198	198	Kurtosis	2.437139	99%	198	198	Kurtosis	2.103239
Micro enterprises									
Percentiles		Smallest			Percentiles		Smallest		
1%	0	0			1%	0	0		
5%	0	0			5%	0	0		
10%	0	0	Obs	174	10%	0	0	Obs	136
25%	32	0	Sum of Wgt.	174	25%	28	0	Sum of Wgt.	136
50%	64		Mean	266.1	50%	48		Mean	197.0
		Largest	Std. Dev.	417.5			Largest	Std. Dev.	357.8
75%	312	1,488			75%	158	1,432		
90%	864	1,488	Variance	174,356.2	90%	632	1,488	Variance	128,078.1
95%	1,408	1,792	Skewness	2.099421	95%	1,312	1,488	Skewness	2.695153
99%	1,792	2,088	Kurtosis	6.872394	99%	1,488	1,792	Kurtosis	9.791271
Small enterprises									
Percentiles		Smallest			Percentiles		Smallest		
1%	0	0			1%	0	0		
5%	18	0			5%	16	0		
10%	32	0	Obs	119	10%	28	0	Obs	78
25%	64	16	Sum of Wgt.	119	25%	48	16	Sum of Wgt.	78
50%	156		Mean	503.2	50%	96		Mean	334.0

All companies					Companies with an export ratio below 50 percent				
		Largest	Std. Dev.	651.8			Largest	Std. Dev.	536.7
75%	800	2,216			75%	272	1,536		
90%	1,620	2,268	Variance	424,848	90%	1,296	1,984	Variance	288,107.9
95%	1,980	2,268	Skewness	1.469862	95%	1,536	2,268	Skewness	2.197358
99%	2,268	2,708	Kurtosis	4.060202	99%	2,268	2,268	Kurtosis	7.005476
Medium enterprises									
Percentiles		Smallest			Percentiles		Smallest		
1%	24	16			1%	16	16		
5%	32	24			5%	32	24		
10%	36	24	Obs	117	10%	36	28	Obs	71
25%	64	24	Sum of Wgt.	117	25%	60	32	Sum of Wgt.	71
50%	176		Mean	439.4	50%	120		Mean	345.5
		Largest	Std. Dev.	533.9			Largest	Std. Dev.	475.0
75%	716	1,700			75%	333	1,544		
90%	1,460	1,701	Variance	285,054.7	90%	1,056	1,680	Variance	225,679.9
95%	1,632	1,701	Skewness	1.33158	95%	1,544	1,701	Skewness	1.863355
99%	1,701	1,980	Kurtosis	3.420523	99%	1,980	1,980	Kurtosis	5.495325
Large enterprises									
Percentiles		Smallest			Percentiles		Smallest		
1%	16	16			1%	16	16		
5%	28	28			5%	16	28		
10%	36	32	Obs	34	10%	22	36	Obs	10
25%	64	36	Sum of Wgt.	34	25%	36	48	Sum of Wgt.	10
50%	324		Mean	579.7	50%	104		Mean	263.9
		Largest	Std. Dev.	619.9			Largest	Std. Dev.	320.3
75%	912	1,437			75%	663	144		
90%	1437	1,504	Variance	384,391	90%	748	663	Variance	102,656.1
95%	2088	2,088	Skewness	1.152165	95%	824	672	Skewness	.8743719
99%	2268	2,268	Kurtosis	3.47217	99%	824	824	Kurtosis	1.936234

Note: companies exempted from VAT are covered.

Table 17 Descriptive statistics - hours spent on VAT administration per template per year (full sample and sub-sample of companies with less than 50 percent export-share in revenues)

All companies					Companies with an export ratio below 50 percent				
Full sample									
Percentiles		Smallest			Percentiles		Smallest		
1%	0	0			1%	0	0		
5%	0	0			5%	0	0		
10 %	14	0	Obs	452	10%	12	0	Obs	303
25 %	20	0	Sum of Wgt.	452	25%	16	0	Sum of Wgt.	303
50 %	55.66		Mean	169.60	50%	36		Mean	120.69
		Largest	Std. Dev.	232.3829			Largest	Std. Dev.	203.5069
75 %	242	1044			75%	106.6667	772		
90 %	540	1104	Variance	54,001.8	90%	360	896	Variance	41,415.07
95 %	661.3333	1408	Skewness	1.964873	95%	656	1,104	Skewness	2.798228
99 %	902.6667	1408	Kurtosis	7.301264	99%	772	1,408	Kurtosis	11.89834
Micro enterprises									
Percentiles		Smallest			Percentiles		Smallest		
1%	0	0			1%	0	0		
5%	0	0			5%	0	0		
10 %	0	0	Obs	173	10%	0	0	Obs	136
25 %	16	0	Sum of Wgt.	173	25%	16	0	Sum of Wgt.	136
50 %	28		Mean	142.95	50%	24		Mean	103.73
		Largest	Std. Dev.	243.3529			Largest	Std. Dev.	206.7182
75 %	152	896			75%	79	744		
90 %	480	1,044	Variance	59,220.66	90%	290	744	Variance	42,732.42
95 %	656	1,408	Skewness	2.7295	95%	656	896	Skewness	3.433973
99 %	1,408	1,408	Kurtosis	11.67717	99%	896	1408	Kurtosis	16.79116
Small enterprises									
Percentiles		Smallest			Percentiles		Smallest		
1%	0	0			1%	0	0		
5%	16	0			5%	12	0		
10 %	16	0	Obs	119	10%	16	0	Obs	78
25 %	28	12	Sum of Wgt.	119	25%	20	12	Sum of Wgt.	78
50 %	72		Mean	205.42	50%	41,50		Mean	140.85
		Largest	Std. Dev.	252.075			Largest	Std. Dev.	226.1418

All companies					Companies with an export ratio below 50 percent				
75 %	300	756			75%	128	744		
90 %	648	800	Variance	63,541.79	90%	512	756	Variance	51,140.1
95 %	744	902.6667	Skewness	1.398716	95%	744	756	Skewness	2.346907
99 %	902.6667	1104	Kurtosis	3.947951	99%	1,104	1,104	Kurtosis	7.924571
Medium enterprises									
Percentiles		Smallest			Percentiles		Smallest		
1%	12	12			1%	12	12		
5%	16	12			5%	16	12		
10 %	17	12	Obs	117	10%	16	16	Obs	71
25 %	32	16	Sum of Wgt.	117	25%	32	16	Sum of Wgt.	71
50 %	67		Mean	169.31	50%	60		Mean	141.90
		Largest	Std. Dev.	199.391			Largest	Std. Dev.	186.985
75 %	252	660			75%	163.5	567		
90 %	525.3333	724	Variance	39,756.78	90%	428	660	Variance	34,963.41
95 %	567	772	Skewness	1.373781	95%	567	724	Skewness	1.85864
99 %	772	783	Kurtosis	3.754364	99%	772	772	Kurtosis	5.498839
Large enterprises									
Percentiles		Smallest			Percentiles		Smallest		
1%	14	14			1%	14	14		
5%	16	16			5%	14	16		
10 %	16	16	Obs	34	10%	15	16	Obs	10
25 %	26.66667	16	Sum of Wgt.	34	25%	16	18	Sum of Wgt.	10
50 %	139		Mean	218.50	50%	40		Mean	115.81
		Largest	Std. Dev.	213.6954			Largest	Std. Dev.	138.9001
75 %	336	501.3333			75%	274.6667	72		
90 %	501.3333	584	Variance	45,665.71	90%	333.75	274.6667	Variance	19,293.22
95 %	696	696	Skewness	.9059621	95%	336	331.5	Skewness	.8632179
99 %	756	756	Kurtosis	2.835736	99%	336	336	Kurtosis	1.86494

Note: companies exempted from VAT are covered.

Table 18 Descriptive statistics - tax administration hours spent on employment-related administrative obligations per year

Total hours				Directly employment-related hours (payroll-related)				Other employment-related hours						
Full sample														
Percentiles		Small est			Percentiles		Small est			Percentiles		Small est		
1 %	8	4			1 %	4	3			1 %	4	4		
5 %	12	8			5 %	8	4			5 %	4	4		
10 %	16	8	Obs	257	10 %	12	4	Obs	257	10 %	4	4	Obs	227
25 %	52.5	8	Sum of Wgt.	257	25 %	34	8	Sum of Wgt.	257	25 %	12	4	Sum of Wgt.	227
50 %	135		Mean	207.8737	50 %	88		Mean	142.8327	50 %	32		Mean	73.63678
		Large st	Std. Dev.	278.4869			Large st	Std. Dev.	228.3243			Large st	Std. Dev.	100.694
75 %	260	1614.5			75 %	171.5	1444			75 %	100	364		
90 %	438	1732	Variance	77554.96	90 %	265.5	1614.5	Variance	52131.96	90 %	188	464	Variance	10139.28
95 %	629	1837.5	Skewness	3.918246	95 %	388	1663.5	Skewness	4.966376	95 %	284	652	Skewness	2.816726
99 %	1732	2123	Kurtosis	22.56026	99 %	1614.5	1759	Kurtosis	31.66785	99 %	464	672	Kurtosis	13.51448
Micro enterprises														
Percentiles		Small est			Percentiles		Small est			Percentiles		Small est		
1 %	4	4			1 %	3	3			1 %	4	4		
5 %	8	8			5 %	8	4			5 %	4	4		
10 %	12	8	Obs	93	10 %	8	4	Obs	93	10 %	4	4	Obs	73
25 %	20	8	Sum of Wgt.	93	25 %	14,4	8	Sum of Wgt.	93	25 %	6,5	4	Sum of Wgt.	73
50 %	52		Mean	106.0414	50 %	35		Mean	73.37849	50 %	15		Mean	41.61164
		Large st	Std. Dev.	128.4439			Large st	Std. Dev.	83.52471			Large st	Std. Dev.	91.18565
75 %	156	388			75 %	100	271.5			75 %	32	132		
90 %	294	486	Variance	16497.83	90 %	200	286	Variance	6976.378	90 %	101	188	Variance	8314.823
95 %	342	504	Skewness	2.121691	95 %	217	316	Skewness	1.506736	95 %	132	339	Skewness	5.186633
99 %	716	716	Kurtosis	8.343359	99 %	388	388	Kurtosis	4.691651	99 %	672	672	Kurtosis	33.91127
Small enterprises														

Total hours				Directly employment-related hours (payroll-related)				Other employment-related hours						
Percentiles		Small est			Percentiles		Small est			Percentiles		Small est		
1 %	8	8			1 %	8	8			1 %	4	4		
5 %	20	8			5 %	12	8			5 %	4	4		
10 %	28	12	Obs	82	10 %	16	8	Obs	82	10 %	4	4	Obs	75
25 %	61	16	Sum of Wgt.	82	25 %	39	8	Sum of Wgt.	82	25 %	14	4	Sum of Wgt.	75
50 %	107.5		Mean	159.5207	50 %	68.25		Mean	107.9427	50 %	32		Mean	56.392
		Large st	Std. Dev.	209.453			Large st	Std. Dev.	181.6983			Large st	Std. Dev.	94.48085
75 %	192	364			75 %	135	231.5			75 %	60	150		
90 %	269	768	Variance	43870.57	90 %	190	276	Variance	33014.28	90 %	108	252	Variance	8926.63
95 %	360	802	Skewness	4.792528	95 %	228	338	Skewness	7.095114	95 %	150	464	Skewness	4.604815
99 %	1614.5	1614.5	Kurtosis	31.16891	99 %	1614.5	1614.5	Kurtosis	59.14038	99 %	652	652	Kurtosis	26.67602
Medium enterprises														
Percentiles		Small est			Percentiles		Small est			Percentiles		Small est		
1 %	56	56			1 %	16	16			1 %	5	5		
5 %	84	72			5 %	32	20			5 %	12	8		
10 %	104	84	Obs	55	10 %	60	32	Obs	55	10 %	19	12	Obs	53
25 %	184	85	Sum of Wgt.	55	25 %	104	46	Sum of Wgt.	55	25 %	44	15,5	Sum of Wgt.	53
50 %	274		Mean	403.7455	50 %	192		Mean	288.1727	50 %	104		Mean	119.934
		Large st	Std. Dev.	438.8729			Large st	Std. Dev.	380.7393			Large st	Std. Dev.	93.84813
75 %	384	1613			75 %	262	1339			75 %	174	284		
90 %	743	1732	Variance	192609.4	90 %	529.5	1444	Variance	144962.4	90 %	270	288	Variance	8807.472
95 %	1732	1837.5	Skewness	2.621422	95 %	1445	1663.5	Skewness	2.820885	95 %	288	360	Skewness	.8642547
99 %	2123	2123	Kurtosis	9.345823	99 %	1759	1759	Kurtosis	10.16409	99 %	364	364	Kurtosis	2.988805
Large enterprises														
Percentiles		Small est			Percentiles		Small est			Percentiles		Small est		
1 %	60	60			1 %	20	20			1 %	4	4		
5 %	108	108			5 %	53	53			5 %	8	8		

Total hours					Directly employment-related hours (payroll-related)					Other employment-related hours				
10 %	116	116	Obs	27	10 %	88	88	Obs	27	10 %	8	8	Obs	26
25 %	144	139	Sum of Wgt.	27	25 %	104	96	Sum of Wgt.	27	25 %	20	12	Sum of Wgt.	26
50 %	244		Mean	306.4815	50 %	148		Mean	191.963	50 %	88		Mean	118.9231
		Large st	Std. Dev.	181.1381			Large st	Std. Dev.	128.0638			Large st	Std. Dev.	111.3829
75 %	466	547			75 %	224	359			75 %	212	294		
90 %	552	552	Variance	32811.03	90 %	384	384	Variance	16400.34	90 %	296	296	Variance	12406.15
95 %	629	629	Skewness	.6081542	95 %	494	494	Skewness	1.246397	95 %	318	318	Skewness	.7701189
99 %	706	706	Kurtosis	2.194058	99 %	527	527	Kurtosis	3.76262	99 %	352	352	Kurtosis	2.231454

Table 19 Descriptive statistics - tax administration hours spent on employment-related administrative obligations per employee per year

Total hours				Directly employment-related hours (payroll-related)				Other employment-related hours						
Full sample														
Percentiles		Small est			Percentiles		Small est			Percentiles		Small est		
1 %	.117 8782	.090 3491			1 %	.1126 418	.039 2927			1%	.0217 391	.011 4123		
5 %	.523 6052	.112 6418			5 %	.2934 783	.066 7351			5%	.0917 782	.014 1844		
10 %	1	.117 8782	Obs	257	10 %	.5714 286	.112 6418	Obs	257	10 %	.1947 566	.021 7391	Obs	227
25 %	2.28 5714	.205 4208	Sum of Wgt.	257	25 %	1.344 371	.133 4127	Sum of Wgt.	257	25 %	.5106 383	.023 614	Sum of Wgt.	227
50 %	4.21 4286		Mean	12.5 5889	50 %	2.95 6522		Mean	8.53 9191	50 %	1.333 333		Mean	4.55 0939
		Large st	Std. Dev.	25.52 122			Large st	Std. Dev.	16.67 366			Large st	Std. Dev.	14.62 494
75 %	10.9 1667	119. 3333			75 %	7.285 714	85			75 %	3.047 619	32		
90 %	30	145	Varian ce	651.3 327	90 %	21.25	97	Varian ce	278.0 109	90 %	6.818 182	50.5 0	Varian ce	213.8 888
95 %	56	150. 5	Skewn ess	4.976 706	95 %	41.6	100	Skewn ess	4.353 393	95 %	21	112	Skewn ess	8.407 133
99 %	145	243	Kurtosi s	35.24 899	99 %	97	143	Kurtosi s	26.95 39	99 %	50.50	169. 5	Kurtosi s	85.55 15
Micro enterprises														
Percentiles		Small est			Percentiles		Small est			Percentiles		Small est		
1 %	1.14 2857	1.14 2857			1 %	1.142 857	1.14 2857			1%	.5	.5		
5 %	2.28 5714	1.33 3333			5 %	1,6	1.33 3333			5%	.625	.571 4286		
10 %	3	1.33 3333	Obs	93	10 %	2	1.33 3333	Obs	93	10 %	.8	.571 4286	Obs	73
25 %	4.66 6667	6,1	Sum of Wgt.	93	25 %	3.111 111	05.ja n	Sum of Wgt.	93	25 %	1.333 333	.625	Sum of Wgt.	73
50 %	10.2 1429		Mean	25.9 792	50 %	7,2		Mean	17.6 8982	50 %	2.833 333		Mean	10.5 6045
		Large st	Std. Dev.	38.17 97			Large st	Std. Dev.	24.53 929			Large st	Std. Dev.	24.50 764
75 %	26	119. 3333			75 %	20,8	85			75 %	8	32		
90 %	74.2 5	145	Varian ce	1457. 689	90 %	44	97	Varian ce	602.1 769	90 %	26,4	50,5	Varian ce	600.6 242
95 %	97	150. 5	Skewn ess	3.062 467	95 %	73,5	100	Skewn ess	2.648 3	95 %	32	112	Skewn ess	4.873 378
99 %	243	243	Kurtosi s	14.60 865	99 %	143	143	Kurtosi s	11.23 101	99 %	169.5	169. 5	Kurtosi s	29.18 219
Small enterprises														
Percentiles		Small est			Percentiles		Small est			Percentiles		Small est		

Total hours					Directly employment-related hours (payroll-related)					Other employment-related hours				
1 %	.307 6923	.307 6923			1 %	.3076 923	.307 6923			1%	.1081 081	.108 1081		
5 %	1	.571 4286			5 %	.6486 486	.571 4286			5%	.1904 762	.137 931		
10 %	1.30 4348	.756 7568	Obs	82	10 %	.8	.595 7447	Obs	82	10 %	.25	.16	Obs	75
25 %	2.47 6191	1	Sum of Wgt.	82	25 %	1,5	.608 6956	Sum of Wgt.	82	25 %	.6153 846	.190 4762	Sum of Wgt.	75
50 %	4.29 3846		Mean	6.44 4573	50 %	2.85 2172		Mean	4.30 8439	50 %	1.184 211		Mean	2.33 5507
		Large st	Std. Dev.	7.227 836			Large st	Std. Dev.	5.244 201			Large st	Std. Dev.	3.734 924
75 %	7,9	21.9 4286			75 %	5.263 158	12.3 6364			75 %	2.631 579	6.81 8182		
90 %	12.2 2727	30	Varian ce	52.24 161	90 %	8.617 647	18.7 7778	Varian ce	27.50 164	90 %	4.695 652	7	Varian ce	13.94 966
95 %	15.2 7273	35.8 7778	Skewn ess	3.177 997	95 %	11.09 091	23	Skewn ess	3.593 653	95 %	6.818 182	18.6 2857	Skewn ess	4.524 736
99 %	44.5 5556	44.5 5556	Kurtosi s	14.91 147	99 %	35.87 778	35.8 7778	Kurtosi s	19.40 337	99 %	25.77 778	25.7 7778	Kurtosi s	26.33 912
Medium enterprises														
Percentiles		Small est			Percentiles		Small est			Percentiles		Small est		
1 %	.595 7447	.595 7447			1 %	.1702 128	.170 2128			1%	.0625	.062 5		
5 %	.992 7008	.651 1628			5 %	.3773 585	.359 5506			5%	.1359 649	.126 9841		
10 %	1.07 3276	.992 7008	Obs	55	10 %	.7366 071	.377 3585	Obs	55	10 %	.2043 796	.135 9649	Obs	53
25 %	1.60 3774	1.00 4464	Sum of Wgt.	55	25 %	1.176 471	.551 7241	Sum of Wgt.	55	25 %	.4255 319	.149 0066	Sum of Wgt.	53
50 %	3.28 8889		Mean	4.78 5608	50 %	1.82 2222		Mean	3.33 1211	50 %	1.094 34		Mean	1.50 928
		Large st	Std. Dev.	5.238 797			Large st	Std. Dev.	4.380 139			Large st	Std. Dev.	1.304 872
75 %	5.48 1132	13.6 5			75 %	3.385 621	10.5 2848			75 %	2.225 806	3.78 3333		
90 %	11.6 2975	16.4 5737	Varian ce	27.44 5	90 %	7.354 167	13.6 3566	Varian ce	19.18 562	90 %	3.396 226	4.15 0943	Varian ce	1.702 69
95 %	16.4 5737	18.8 2609	Skewn ess	2.852 461	95 %	13.63 566	15.6 9565	Skewn ess	3.110 905	95 %	4.150 943	4.50 7936	Skewn ess	.8955 379
99 %	30.4 3396	30.4 3396	Kurtosi s	12.63 376	99 %	25.26 415	25.2 6415	Kurtosi s	13.93 909	99 %	5.169 811	5.16 9811	Kurtosi s	2.956 28
Large enterprises														
Percentiles		Small est			Percentiles		Small est			Percentiles		Small est		
1 %	.090 3491	.090 3491			1 %	.0392 927	.039 2927			1%	.0114 123	.011 4123		
5 %	.112 6418	.112 6418			5 %	.0667 351	.066 7351			5%	.0141 844	.014 1844		
10 %	.117 8782	.117 8782	Obs	27	10 %	.1126 418	.112 6418	Obs	27	10 %	.0217 391	.021 7391	Obs	26

Total hours					Directly employment-related hours (payroll-related)					Other employment-related hours				
25 %	.327 5862	.205 4208	Sum of Wgt.	27	25 %	.1970 26	.133 4127	Sum of Wgt.	27	25 %	.0394 366	.023 614	Sum of Wgt.	26
50 %	.580 2583		Mean	.737 2583	50 %	.321 0702		Mean	.478 1622	50 %	.1880 812		Mean	.269 0614
		Large st	Std. Dev.	.5643 086			Large st	Std. Dev.	.4647 855			Large st	Std. Dev.	.2544 319
75 %	1.01 8293	1.26 9755			75 %	.5735 849	.996 7949			75 %	.4905 66	.575 8755		
90 %	1.71 4744	1.71 4744	Varian ce	.3184 442	90 %	1.081 69	1.08 169	Varian ce	.2160 256	90 %	.6463 414	.646 3414	Varian ce	.0647 356
95 %	2.11 1969	2.11 1969	Skewn ess	1.154 931	95 %	1.506 098	1.50 6098	Skewn ess	1.938 872	95 %	.7179 487	.717 9487	Skewn ess	.7412 246
99 %	2.15 2439	2.15 2439	Kurtosi s	3.691 762	99 %	2.034 749	2.03 4749	Kurtosi s	6.324 058	99 %	.8664 85	.866 485	Kurtosi s	2.356 95

Table 20 Descriptive statistics - total tax compliance cost (million HUF)

All companies					Standard CIT					Simplified tax (KATA/KIVA)				
Full sample														
Percentiles		Small est			Percentiles		Small est			Percentiles		Small est		
1 %	.047	.0475 945			1 %	.0475	.047			1 %	.0475	.0475 945		
5 %	.138	.0475 945			5 %	.136	.047			5 %	.106	.0475 945		
10 %	.268	.0475 945	Obs	957	10 %	.310	.047	Obs	586	10 %	.221	.0475 945	Obs	128
25 %	.628	.0475 945	Sum of Wgt.	957	25 %	.713	.047	Sum of Wgt.	586	25 %	.631	.0475 945	Sum of Wgt.	128
50 %	1.26		Mean	2.36	50 %	1.60		Mean	2.79	50 %	.98		Mean	1.40
		Large st	Std. Dev.	3.372 888			Large st	Std. Dev.	3.773 776			Large st	Std. Dev.	1.245 301
75 %	2.79	20.21 841			75 %	3.102	20.21 841			75 %	1.770	4.510 308		
90 %	4.77	29.34 971	Varian ce	11.37 637	90 %	5.967	29.34 971	Varian ce	14.24 139	90 %	3.102	4.510 308	Varian ce	1.550 775
95 %	9.13	29.34 971	Skewn ess	3.745 029	95 %	10.68 0	29.34 971	Skewn ess	3.356 734	95 %	3.666	4.510 308	Skewn ess	2.364 738
99 %	15.64	29.34 971	Kurtosi s	21.51 922	99 %	15.92 4	29.34 971	Kurtosi s	17.99 604	99 %	4.510	8.861 874	Kurtosi s	12.24 571
Micro enterprises														
Percentiles		Small est			Percentiles		Small est			Percentiles		Small est		
1 %	.106	.1062 686			1 %	.106	.1062 686			1 %	.106	.1062 686		
5 %	.106	.1062 686			5 %	.106	.1062 686			5 %	.158	.1062 686		
10 %	.221	.1062 686	Obs	444	10 %	.172	.1062 686	Obs	219	10 %	.240	.1062 686	Obs	86
25 %	.554	.1062 686	Sum of Wgt.	444	25 %	.526	.1062 686	Sum of Wgt.	219	25 %	.605	.1062 686	Sum of Wgt.	86
50 %	.75		Mean	1.020	50 %	.75		Mean	1.039	50 %	.80		Mean	1.04
		Large st	Std. Dev.	.8159 66			Large st	Std. Dev.	.8832 342			Large st	Std. Dev.	.7732 516
75 %	1.121	3.102 128			75 %	1.154	3.102 128			75 %	2.100	3.102 128		
90 %	2.583	3.102 128	Varian ce	.6658 005	90 %	3.000	3.102 128	Varian ce	.7801 026	90 %	2.325	3.102 128	Varian ce	.5979 18
95 %	3.102	3.102 128	Skewn ess	1.453 794	95 %	3.102	3.102 128	Skewn ess	1.377 586	95 %	3.102	3.102 128	Skewn ess	1.441 954
99 %	3.102	3.102 128	Kurtosi s	4.193 902	99 %	3.102	3.102 128	Kurtosi s	3.759 095	99 %	3.102	3.102 128	Kurtosi s	4.432 489
Small enterprises														
Percentiles		Small est			Percentiles		Small est			Percentiles		Small est		
1 %	.0475 945	.0475 945			1 %	.0475 945	.0475 945			1 %	.0475 945	.0475 945		
5 %	.0475 945	.0475 945			5 %	.0475 945	.0475 945			5 %	.0475 945	.0475 945		
10 %	.2510 638	.0475 945	Obs	263	10 %	.2510 638	.0475 945	Obs	159	10 %	.0800 043	.0475 945	Obs	40
25 %	1.043 389	.0475 945	Sum of Wgt.	263	25 %	1.078 358	.0475 945	Sum of Wgt.	159	25 %	1.317 44	.0475 945	Sum of Wgt.	40
50 %	1.68		Mean	1.831	50 %	1.68		Mean	1.85	50 %	1.70		Mean	1.92
		Large st	Std. Dev.	1.193 892			Large st	Std. Dev.	1.180 488			Large st	Std. Dev.	1.276 042
75 %	2.442 428	4.510 308			75 %	2.487 599	4.510 308			75 %	2.350 888	4.510 308		
90 %	3.659 775	4.510 308	Varian ce	1.425 377	90 %	3.737 851	4.510 308	Varian ce	1.393 552	90 %	4.221 111	4.510 308	Varian ce	1.628 282
95 %	4.510 308	4.510 308	Skewn ess	.6163 623	95 %	4.510 308	4.510 308	Skewn ess	.6113 255	95 %	4.510 308	4.510 308	Skewn ess	.5921 38

All companies					Standard CIT					Simplified tax (KATA/KIVA)				
99 %	4.510 308	4.510 308	Kurtosis	2.832 953	99 %	4.510 308	4.510 308	Kurtosis	2.806 093	99 %	4.510 308	4.510 308	Kurtosis	2.847 973
Medium enterprises														
Percentiles		Small est			Percentiles		Small est			Percentiles		Small est		
1 %	.2147 498	.2147 498			1 %	.2147 498	.2147 498			1 %	3.666 181	3.666 181		
5 %	.2147 498	.2147 498			5 %	.2335 54	.2147 498			5 %	3.666 181	8.861 874		
10 %	.4498 746	.2147 498	Obs	203	10 %	.5390 221	.2147 498	Obs	171	10 %	3.666 181	.	Obs	2
25 %	1.515 607	.2147 498	Sum of Wgt.	203	25 %	1.859 455	.2147 498	Sum of Wgt.	171	25 %	3.666 181	.	Sum of Wgt.	2
50 %	3.61		Mean	4.73	50 %	3.61		Mean	4.80	50 %	6.26		Mean	6.26
		Large st	Std. Dev.	4.212 129			Large st	Std. Dev.	4.151 536			Large st	Std. Dev.	3.673 909
75 %	6.247 239	15.41 896			75 %	6.168 758	15.41 896			75 %	8.861 874	.		
90 %	11.64 19	15.41 896	Variance	17.74 203	90 %	11.64 19	15.41 896	Variance	17.23 525	90 %	8.861 874	.	Variance	13.49 761
95 %	15.41 896	15.41 896	Skewness	1.175 321	95 %	15.41 896	15.41 896	Skewness	1.216 188	95 %	8.861 874	3.666 181	Skewness	0
99 %	15.41 896	15.41 896	Kurtosis	3.546 975	99 %	15.41 896	15.41 896	Kurtosis	3.655 426	99 %	8.861 874	8.861 874	Kurtosis	1
Large enterprises														
Percentiles		Small est			Percentiles		Small est			No observations				
1 %	.4418 187	.4418 187			1 %	.4804 19	.4804 19							
5 %	.4418 187	.4418 187			5 %	.8479 233	.8479 233							
10 %	.5052 438	.4418 187	Obs	47	10 %	1.382 701	1.260 4	Obs	37					
25 %	1.994 153	.4804 19	Sum of Wgt.	47	25 %	2.133 194	1.382 701	Sum of Wgt.	37					
50 %	3.81		Mean	7.86	50 %	3.81		Mean	7.95					
		Large st	Std. Dev.	8.320 572			Large st	Std. Dev.	8.367 142					
75 %	12.41 58	20.21 841			75 %	10.71 243	20.21 841							
90 %	19.96 181	29.34 971	Variance	69.23 191	90 %	20.21 841	29.34 971	Variance	70.00 907					
95 %	29.34 971	29.34 971	Skewness	1.273 765	95 %	29.34 971	29.34 971	Skewness	1.442 323					
99 %	29.34 971	29.34 971	Kurtosis	3.613 079	99 %	29.34 971	29.34 971	Kurtosis	4.082 296					

Note: Sample of companies with at least 2 employees. Cost data winsorised at 5p and at 95p for the relevant cost and size segment. 0 VAT hours are treated as missing data in general, but we used 0 hours for VAT administration in case of companies that are exempt from VAT according to their tax number. We dropped companies if they have hours for all types of CIT, if data on hours is missing from the person who works the most on tax administration according to the CEO, if data on annual turnover is missing or is inferior to 10 million HUF in case of large companies. Data on additional costs related to local taxes or other obligations outside the scope of this study are treated as 0. Data on hours winsorised at p90 for each type of tax and each segment.

Table 21 Share of outsourcing costs to turnover by segment and tax regime

All companies				Standard CIT				Simplified tax (KATA/KIVA)						
Full sample														
Percentiles		Small est				Perce ntiles	Small est				Perce ntiles	Small est		
1 %	0.000 109	6.32E -06			1 %	4.86E-05	6.32E -06				1 %	0.001 323	0.001 323	
5 %	0.000 931	1.54E -05			5 %	0.000 692	1.54E -05				5 %	0.002 834	0.001 873	
10 %	0.001 676	4.86E -05	Obs	513	10 %	0.001 143	4.86E -05	Obs	271	10 %	0.003 441	0.002 064	Obs	86
25 %	0.003 562	5.93E -05	Sum of Wgt.	513	25 %	0.002 941	5.93E -05	Sum of Wgt.	271	25 %	0.004 795	0.002 431	Sum of Wgt.	86
50 %	0.00 7848		Mean	0.01 6679	50 %	0.007 038		Mean	0.01 5677	50 %	0.009 953		Mean	0.01 3491
		Large st	Std. Dev.	0.054 615			Large st	Std. Dev.	0.041 834			Large st	Std. Dev.	0.011 66
75 %	0.015 621	0.151 947			75 %	0.015 621	0.123 604			75 %	0.017 175	0.040 161		
90 %	0.031 046	0.178 359	Varian ce	0.002 983	90 %	0.031 046	0.151 176	Varian ce	0.001 75	90 %	0.027 856	0.050 399	Varian ce	0.000 136
95 %	0.046 779	0.619 835	Skewn ess	14.34 575	95 %	0.046 779	0.151 947	Skewn ess	11.56 865	95 %	0.039 514	0.050 888	Skewn ess	1.765 69
99 %	0.123 604	1.004 212	Kurtosi s	238.6 588	99 %	0.151 176	0.619 835	Kurtosi s	162.8 332	99 %	0.058 271	0.058 271	Kurtosi s	6.212 573
Micro enterprises														
Percentiles		Small est				Perce ntiles	Small est				Perce ntiles	Small est		
1 %	0.000 721	6.32E -06			1 %	0.000 492	6.32E -06				1 %	0.001 873	0.001 873	
5 %	0.002 062	0.000 492			5 %	0.001 87	0.000 492				5 %	0.002 834	0.002 431	
10 %	0.003 179	0.000 613	Obs	314	10 %	0.003 179	0.000 721	Obs	148	10 %	0.003 763	0.002 834	Obs	59
25 %	0.005 238	0.000 721	Sum of Wgt.	314	25 %	0.005 52	0.001 018	Sum of Wgt.	148	25 %	0.005 717	0.003 106	Sum of Wgt.	59
50 %	0.01 0461		Mean	0.02 2837	50 %	0.011 537		Mean	0.02 3306	50 %	0.010 301		Mean	0.01 4815
		Large st	Std. Dev.	0.068 879			Large st	Std. Dev.	0.055 027			Large st	Std. Dev.	0.012 934
75 %	0.022 921	0.151 947			75 %	0.024 972	0.123 604			75 %	0.017 241	0.040 161		
90 %	0.037 924	0.178 359	Varian ce	0.004 744	90 %	0.039 679	0.151 176	Varian ce	0.003 028	90 %	0.035 2	0.050 399	Varian ce	0.000 167
95 %	0.062 327	0.619 835	Skewn ess	11.43 922	95 %	0.065 253	0.151 947	Skewn ess	8.936 009	95 %	0.050 399	0.050 888	Skewn ess	1.628 036
99 %	0.151 947	1.004 212	Kurtosi s	150.3 607	99 %	0.151 947	0.619 835	Kurtosi s	95.12 593	99 %	0.058 271	0.058 271	Kurtosi s	5.186 501
Small enterprises														
Percentiles		Small est				Perce ntiles	Small est				Perce ntiles	Small est		
1 %	0.000 53	0.000 235			1 %	0.000 235	0.000 235				1 %	0.001 323	0.001 323	
5 %	0.000 911	0.000 53			5 %	0.000 637	0.000 53				5 %	0.002 064	0.002 064	
10 %	0.001 378	0.000 575	Obs	136	10 %	0.001 575	0.000 575	Obs	74	10 %	0.003 145	0.003 145	Obs	26
25 %	0.002 905	0.000 637	Sum of Wgt.	136	25 %	0.002 059	0.000 637	Sum of Wgt.	74	25 %	0.004 267	0.003 441	Sum of Wgt.	26
50 %	0.00 5167		Mean	0.00 7024	50 %	0.004 574		Mean	0.00 5674	50 %	0.008 513		Mean	0.01 0891
		Large st	Std. Dev.	0.005 669			Large st	Std. Dev.	0.004 39			Large st	Std. Dev.	0.007 653
75 %	0.009 863	0.023 368			75 %	0.008 944	0.015 902			75 %	0.016 948	0.019 005		
90 %	0.015 162	0.026 33	Varian ce	3.21E -05	90 %	0.011 168	0.016 139	Varian ce	1.93E -05	90 %	0.023 368	0.023 368	Varian ce	5.86E -05

All companies					Standard CIT					Simplified tax (KATA/KIVA)				
95 %	0.017 511	0.026 738	Skewn ess	1.390 276	95 %	0.015 902	0.016 486	Skewn ess	0.858 356	95 %	0.026 738	0.026 738	Skewn ess	0.758 319
99 %	0.026 738	0.027 856	Kurtosi s	5.053 469	99 %	0.017 135	0.017 135	Kurtosi s	2.874 032	99 %	0.027 856	0.027 856	Kurtosi s	2.557 813
Medium enterprises														
Percentiles		Small est				Perce ntiles	Small est				Perce ntiles	Small est		
1 %	0.000 551	0.000 551			1 %	0.000 551	0.000 551			1 %	0.002 996	0.002 996		
5 %	0.000 693	0.000 692			5 %	0.000 693	0.000 692			5 %	0.002 996			
10 %	0.000 79	0.000 693	Obs	56	10 %	0.000 79	0.000 693	Obs	42	10 %	0.002 996		Obs	1
25 %	0.001 227	0.000 755	Sum of Wgt.	56	25 %	0.001 256	0.000 785	Sum of Wgt.	42	25 %	0.002 996		Sum of Wgt.	1
50 %	0.00 2926		Mean	0.00 7622	50 %	0.002 975		Mean	0.00 8947	50 %	0.002 996		Mean	0.00 2996
		Large st	Std. Dev.	0.011 185			Large st	Std. Dev.	0.012 565			Large st	Std. Dev.	
75 %	0.007 549	0.032 533			75 %	0.010 509	0.032 533			75 %	0.002 996			
90 %	0.024 147	0.034 804	Varian ce	0.000 125	90 %	0.026 706	0.034 804	Varian ce	0.000 158	90 %	0.002 996		Varian ce	
95 %	0.034 804	0.041 233	Skewn ess	2.408 172	95 %	0.034 804	0.041 233	Skewn ess	1.988 802	95 %	0.002 996		Skewn ess	
99 %	0.054 125	0.054 125	Kurtosi s	8.527 156	99 %	0.054 125	0.054 125	Kurtosi s	6.297 551	99 %	0.002 996	0.002 996	Kurtosi s	
Large enterprises														
Percentiles		Small est				Perce ntiles	Small est				No observation s			
1 %	1.54E -05	1.54E -05			1 %	1.54E -05	1.54E -05							
5 %	1.54E -05	4.86E -05			5 %	1.54E -05	4.86E -05							
10 %	1.54E -05	5.93E -05	Obs	7	10 %	1.54E -05	5.93E -05	Obs	7					
25 %	4.86E -05	0.000 108	Sum of Wgt.	7	25 %	4.86E -05	0.000 108	Sum of Wgt.	7					
50 %	0.00 0108		Mean	0.00 0508	50 %	0.000 108		Mean	0.00 0508					
		Large st	Std. Dev.	0.000 862			Large st	Std. Dev.	0.000 862					
75 %	0.000 879	0.000 108			75 %	0.000 879	0.000 108							
90 %	0.002 339	0.000 109	Varian ce	7.44E -07	90 %	0.002 339	0.000 109	Varian ce	7.44E -07					
95 %	0.002 339	0.000 879	Skewn ess	1.612 756	95 %	0.002 339	0.000 879	Skewn ess	1.612 756					
99 %	0.002 339	0.002 339	Kurtosi s	4.019 241	99 %	0.002 339	0.002 339	Kurtosi s	4.019 241					

Table 22 Descriptive statistics - total tax compliance cost per turnover at firm level (%)

All companies				Standard CIT				Simplified tax (KATA/KIVA)						
Full sample														
Percentiles		Smallest			Percentiles		Smallest			Percentiles		Smallest		
1%	.0000319	.0000319			1%	.0000319	.0000319			1%	.0000944	.0000944		
5%	.0001495	.0000319			5%	.000114	.0000319			5%	.0007873	.0000944		
10%	.0005546	.0000319	Obs	957	10%	.0004181	.0000319	Obs	586	10%	.0019571	.000099	Obs	128
25%	.0017689	.0000319	Sum of Wgt.	957	25%	.0012395	.0000319	Sum of Wgt.	586	25%	.0044308	.000207	Sum of Wgt.	128
50%	.005		Mean	.012	50%	.004		Mean	.011	50%	.009		Mean	.016
		Largest	Std. Dev.	.0181289			Largest	Std. Dev.	.0173725			Largest	Std. Dev.	.0190571
75%	.0148786	.0886386			75%	.0125679	.0886386			75%	.01776	.0886386		
90%	.0307967	.0886386	Variance	.0003287	90%	.0283541	.0886386	Variance	.0003018	90%	.0401608	.0886386	Variance	.0003632
95%	.0510378	.0886386	Skewness	2.715241	95%	.0398633	.0886386	Skewness	2.938736	95%	.0635799	.0886386	Skewness	2.285354
99%	.0886386	.0886386	Kurtosis	10.76002	99%	.0886386	.0886386	Kurtosis	12.32183	99%	.0886386	.0886386	Kurtosis	8.245717
Micro enterprises														
Percentiles		Smallest			Percentiles		Smallest			Percentiles		Smallest		
1%	.0007873	.0007873			1%	.0007873	.0007873			1%	.0007873	.0007873		
5%	.0007873	.0007873			5%	.0007873	.0007873			5%	.0013964	.0007873		
10%	.0020338	.0007873	Obs	444	10%	.0018612	.0007873	Obs	219	10%	.0034316	.0007873	Obs	86
25%	.0049265	.0007873	Sum of Wgt.	444	25%	.0044364	.0007873	Sum of Wgt.	219	25%	.0058934	.0011094	Sum of Wgt.	86
50%	.0114		Mean	.020	50%	.011		Mean	.021	50%	.0131		Mean	.020
		Largest	Std. Dev.	.023208			Largest	Std. Dev.	.0239803			Largest	Std. Dev.	.0217791
75%	.0264114	.0886386			75%	.0277298	.0886386			75%	.0250534	.0886386		
90%	.0533777	.0886386	Variance	.0005386	90%	.0580786	.0886386	Variance	.0005751	90%	.0521454	.0886386	Variance	.0004743
95%	.0886386	.0886386	Skewness	1.771501	95%	.0886386	.0886386	Skewness	1.704927	95%	.0700736	.0886386	Skewness	1.801251
99%	.0886386	.0886386	Kurtosis	5.383898	99%	.0886386	.0886386	Kurtosis	5.078449	99%	.0886386	.0886386	Kurtosis	5.675637

All companies				Standard CIT				Simplified tax (KATA/KIVA)						
Small enterprises														
Percentiles		Smallest			Percentiles		Smallest			Percentiles		Smallest		
1%	.0000944	.0000944			1%	.0000944	.0000944			1%	.0000944	.0000944		
5%	.0000944	.0000944			5%	.0000944	.0000944			5%	.0000967	.0000944		
10%	.000347	.0000944	Obs	263	10%	.0002267	.0000944	Obs	159	10%	.0006783	.000099	Obs	40
25%	.0012395	.0000944	Sum of Wgt.	263	25%	.0010289	.0000944	Sum of Wgt.	159	25%	.0030059	.000207	Sum of Wgt.	40
50%	.003		Mean	.005	50%	.0031123		Mean	.004	50%	.00		Mean	.008
		Largest	Std. Dev.	.0052209			Largest	Std. Dev.	.0048373			Largest	Std. Dev.	.006154
75%	.0087709	.0173145			75%	.0067069	.0173145			75%	.0144761	.0173145		
90%	.0146655	.0173145	Variance	.0000273	90%	.0129658	.0173145	Variance	.0000234	90%	.0173145	.0173145	Variance	.0000379
95%	.0173145	.0173145	Skewness	.972894	95%	.0159023	.0173145	Skewness	1.196324	95%	.0173145	.0173145	Skewness	.3512228
99%	.0173145	.0173145	Kurtosis	2.782195	99%	.0173145	.0173145	Kurtosis	3.409563	99%	.0173145	.0173145	Kurtosis	1.695485
Medium enterprises														
Percentiles		Smallest			Percentiles		Smallest			Percentiles		Smallest		
1%	.0000319	.0000319			1%	.0000319	.0000319			1%	.0030511	.0030511		
5%	.0000319	.0000319			5%	.0000319	.0000319			5%	.0030511	.0198814		
10%	.0001727	.0000319	Obs	203	10%	.0002417	.0000319	Obs	171	10%	.0030511	.	Obs	2
25%	.0007558	.0000319	Sum of Wgt.	203	25%	.0007624	.0000319	Sum of Wgt.	171	25%	.0030511	.	Sum of Wgt.	2
50%	.002		Mean	.00	50%	.002		Mean	.005	50%	.011		Mean	.011
		Largest	Std. Dev.	.00763			Largest	Std. Dev.	.0076549			Largest	Std. Dev.	.0119008
75%	.0057687	.0283541			75%	.0057687	.0283541			75%	.0198814	.		
90%	.0169294	.0283541	Variance	.0000582	90%	.0157675	.0283541	Variance	.0000586	90%	.0198814	.	Variance	.0001416
95%	.0283541	.0283541	Skewness	1.952774	95%	.0283541	.0283541	Skewness	1.982911	95%	.0198814	.0030511	Skewness	0
99%	.0283541	.0283541	Kurtosis	5.8391	99%	.0283541	.0283541	Kurtosis	5.969428	99%	.0198814	.0198814	Kurtosis	1
Large enterprises														
	Percentiles	Smallest				Percentiles	Smallest			No observations				

All companies					Standard CIT					Simplified tax (KATA/KIVA)				
1%	.0000345	.0000345			1%	.0000403	.0000403							
5%	.0000345	.0000345			5%	.0000739	.0000739							
10%	.0000739	.0000345	Obs	47	10%	.0000859	.0000845	Obs	37					
25%	.000211	.0000403	Sum of Wgt.	47	25%	.0002386	.0000859	Sum of Wgt.	37					
50%	.0006		Mean	.0036	50%	.0008		Mean	.0033					
		Largest	Std. Dev.	.0068106			Largest	Std. Dev.	.0060787					
75%	.0028663	.0192449			75%	.0028462	.0091763							
90%	.0095671	.0254553	Variance	.0000464	90%	.0091763	.0095671	Variance	.000037					
95%	.0254553	.0254553	Skewness	2.34016	95%	.0254553	.0254553	Skewness	2.733371					
99%	.0254553	.0254553	Kurtosis	7.490935	99%	.0254553	.0254553	Kurtosis	10.11737					

Note: Sample of companies with at least 2 employees. Cost data winsorised at 5p and at 95p for the relevant cost and size segment. 0 VAT hours are treated as missing data in general, but we used 0 hours for VAT administration in case of companies that are exempt from VAT according to their tax number. We dropped companies if they have hours for all types of CIT, if data on hours is missing from the person who works the most on tax administration according to the CEO, if data on annual turnover is missing or is inferior to 10 million HUF in case of large companies. Data on additional costs related to local taxes or other obligations outside the scope of this study are treated as 0. Data on hours winsorised at p90 for each type of tax and each segment.

Table 23 Descriptive statistics - hours spent on tax optimisation (yearly, per respondent)

Micro enterprises				
Percentiles		Smallest		
1%	0	0		
5%	0	0		
10%	0	0	Obs	539
25%	0	0	Sum of Wgt.	539
50%	5		Mean	18.00
		Largest	Std. Dev.	27.83742
75%	20	100		
90%	50	100	Variance	774.9219
95%	100	100	Skewness	1.980433
99%	100	100	Kurtosis	5.92817
Small enterprises				
Percentiles		Smallest		
1%	0	0		
5%	0	0		
10%	0	0	Obs	352
25%	0	0	Sum of Wgt.	352
50%	10		Mean	24.55
		Largest	Std. Dev.	33.66158
75%	40	100		
90%	100	100	Variance	1133.102
95%	100	100	Skewness	1.36399
99%	100	100	Kurtosis	3.442026
Medium enterprises				
Percentiles		Smallest		
1%	0	0		
5%	0	0		
10%	0	0	Obs	294
25%	1	0	Sum of Wgt.	294
50%	10		Mean	30.53
		Largest	Std. Dev.	36.94989
75%	50	100		
90%	100	100	Variance	1365.294
95%	100	100	Skewness	1.054087
99%	100	100	Kurtosis	2.536327
Large enterprises				
Percentiles		Smallest		
1%	0	0		
5%	0	0		
10%	0	0	Obs	102
25%	.6	0	Sum of Wgt.	102
50%	20		Mean	34.20
		Largest	Std. Dev.	35.23969
75%	50	100		

90%	100	100	Variance	1241.836
95%	100	100	Skewness	.7198029
99%	100	100	Kurtosis	2.170587

Table 24 The self-reported position of respondents of the first (CEO) questionnaire

	Position of the respondent			Total
	CEO	CFO	Other	
Micro enterprise	416 (97%)	7 (2%)	4 (1%)	427
Small enterprise	205 (84%)	30 (12%)	8 (4%)	243
Medium enterprise	126 (72%)	40 (23%)	8 (5%)	174
Large enterprise	24 (65%)	12 (32.3%)	1 (2.7%)	37
Total	771 (87.5%)	89 (10.1%)	21 (2.4%)	881

Note: regarding the position of the respondents, first contacted by the data collectors, we find that the overwhelming majority of them is the business owner or the CEO and only 10% has reported that they are the chief financial officers. We defined the position of respondents based on their answer to the question on their position. Notably, we needed to clean the data in case of the 'other' category substantially – c.f. if respondents defined their positions still as 'managing director', 'deputy director' or 'owner', and if their self-reported position was referred to as 'financial director' or 'chief accountant'. Some further answers in the 'Other' category included for example employee or accountant.²⁷

²⁷ The number of observations is 881 because the sample is limited to those companies where the first questionnaire was filled (77 missing answers) and to companies with at least 2 employees.

Regression results

To see the impact of various variables on tax administration costs, level of digitalization, outsourcing, reform satisfaction and *vice versa* we used mainly two types of regressions: OLS regressions (e.g. for cost/ hours variables) or probit regressions (likelihood). We tested models where the dependent variables were various types of costs emerging due to these administrative tasks at the firm level: i) the administrative costs of the company measured in hours spent on tax administration for all types of taxes (weighted by the relevant average wages), ii) the total compliance cost (including the administrative costs plus the costs of time spent on tax optimization, following changes in tax regulation and any further (indirect) costs reported by the respondents). Finally, the total outsourcing costs cover the fees and any additional expense paid to external accountants. At the same time, we also tested models where the dependent variables the hours spent on the administration of the various tax types. The independent variables vary in the various models but most of them include company size (baseline: microenterprise), sector (baseline: agriculture), the type of settlement where the company is seated (baseline: the capital, Budapest), and the share of exports in the annual revenue.

Table 25 Regression results on total tax administration costs per turnover

	<i>Total tax administration cost to turnover</i>	<i>Total tax compliance cost to turnover</i>	<i>Total tax outsourcing cost to turnover</i>
<i>Company size (baseline: micro)</i>			
Small enterprise	0.9905*** (8.491e-04)	0.9876*** (0.001073)	0.9853*** (0.005543)
Medium enterprise	0.9895*** (9.431e-04)	0.9870*** (0.001201)	0.9884 (0.007846)
Large enterprise	0.9877*** (0.001852)	0.9855*** (0.002318)	0.9809 (0.02046)
<i>Sector (baseline: agriculture)</i>			
Manufacturing	0.9994 (0.001282)	0.9977 (0.001625)	0.9714*** (0.009809)
Trade	0.9992 (0.001460)	0.9975 (0.001850)	0.9709*** (0.01064)
Services	1.0016 (0.001493)	0.9990 (0.001921)	0.9805* (0.01099)
Other	1.0040* (0.002146)	1.0035 (0.002721)	0.9800 (0.01347)
<i>Headquarter (baseline: capital)</i>			
Regional or county seat	1.0008 (0.001097)	1.0029** (0.001394)	1.0067 (0.007442)
Town	1.0014 (9.911e-04)	1.0024* (0.001273)	1.0005 (0.006549)
Village	1.0016 (0.001209)	1.0043*** (0.001536)	1.0117 (0.007833)
<i>Share of revenues from export (50+%)</i>	1.0000 (8.987e-06)	1.0000 (1.157e-05)	1.0000 (6.128e-05)
Constant	1.0130*** (0.001594)	1.0172*** (0.002034)	1.0431*** (0.01197)
<i>Observations</i>	799	818	513
<i>R-squared</i>	0.224	0.220	0.049
<i>SE form in parentheses</i>	* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$		

Table 26 Regression results on hours spent on tax administration per tax type

	<i>Hours spent on CIT & simplified taxes per employee</i>	<i>Hours spent on VAT per employee</i>	<i>Hours spent on employment- related taxes per employee</i>
<i>Company size (baseline: micro)</i>			
Small enterprise	20.39 (19.44)	19.74 (30.50)	-9.139*** (2.552)
Medium enterprise	23.87 (18.85)	-26.00 (28.63)	-8.972*** (2.078)
Large enterprise	37.18 (39.73)	-19.93 (44.95)	-11.56*** (2.343)
<i>Sector (baseline: agriculture)</i>			
Industry	7.788 (25.21)	-6.226 (41.17)	-0.996 (3.336)
Trade	-0.696 (27.06)	49.75 (47.45)	1.167 (5.876)
Services	-22.12 (27.76)	-38.35 (43.03)	0.537 (3.520)
Others	28.16 (41.37)	10.20 (67.99)	-1.035 (4.541)
<i>Region (baseline: Central-Hungary)</i>			
Western-Transdanubia	65.11** (32.75)	-98.27* (50.75)	-0.200 (2.278)
Central-Transdanubia	37.37 (29.41)	-23.02 (52.47)	2.315 (4.507)
North-Hungary	78.36** (34.22)	10.77 (49.80)	-0.910 (2.286)
Northern-Great Plain	36.75 (27.38)	6.098 (59.25)	5.305 (4.810)
Southern-Great Plain	79.40** (32.57)	9.771 (56.67)	-0.263 (2.541)
Southern-Transdanubia	52.35 (35.37)	-81.57* (48.36)	-0.918 (2.245)
Regional/ county centre	-36.40 (31.67)	71.66 (54.87)	0.474 (2.659)
<i>Headquarter (baseline: capital)</i>			
Town	-30.45 (25.09)	77.03* (44.60)	0.498 (2.242)
Village	-46.87 (28.89)	55.93 (53.61)	10.62* (5.397)
Share of revenues from export (50+%)	0.140 (0.207)	1.772*** (0.308)	0.0359 (0.0291)
Constant	94.93*** (30.65)	87.81* (46.77)	8.312* (4.619)
Observations	394	425	251
R-squared	0.046	0.132	0.205
SE form in parentheses	*p<0.1; ** p<0.05; *** p<0.01		

Table 27 Regression results on effects of digitalization on tax administration hours

	Total hours spent on tax administration	Total hours spent on tax administration	Total hours spent on tax administration
<i>Level of digitalisation (baseline: fully electronic)</i>			
Digit: Mostly electronic	-72.05** (34.52)	-72.75** (34.58)	-85.36** (40.08)
Digit: Partly electronic	-57.10 (37.31)	-52.91 (36.92)	-48.23 (44.01)
Digit: Mostly paper-based	-5.056 (77.37)	-10.72 (78.48)	-32.96 (91.50)
<i>Outsourcing</i>			
Company fully or partially outsourcing			-301.7*** (40.07)
<i>Company size (baseline: micro)</i>			
Small enterprise	142.0*** (35.57)	139.2*** (35.53)	115.3*** (38.10)
Medium enterprise	243.1*** (42.90)	237.9*** (43.20)	152.2*** (48-71)
Large enterprise	274.6*** (70.61)	268.2*** (69.89)	338.8*** (112.9)
<i>Headquarter (baseline: capital)</i>			
Regional or county seat		79.28* (42.98)	72.70* (50.70)
Town		86.16** (35.43)	81.16** (41.14)
Village		10.80 (40.36)	26.28 (48.76)
Constant	241.7*** (55.06)	188.4*** (61.21)	382.7*** (49.85)
Observations	1,038	1,038	1,038
R-squared	0.058	0.064	0.064
SE form in parentheses	*p<0.1; ** p<0.05; *** p<0.01		

Note: Both models were run on the sub-sample of firms with at least two employees. We also added economic sector to the list of control variables, but it did not yield any significant results in either of the models, thus it is not included in the regression output above.

Table 28 Regression results on effects of digitalisation on total tax compliance cost to turnover

	<i>Total tax compliance cost to turnover</i>	<i>Total tax compliance cost to turnover</i>	<i>Total tax compliance cost to turnover</i>
<i>Level of digitalisation (baseline: fully electronic)</i>			
Digit: Mostly electronic	-0.00196	-0.00222	-0.00222
	(0.00356)	(0.00356)	(0.00356)
Digit: Partly electronic	-0.00410	-0.00421	-0.00419
	(0.00436)	(0.00437)	(0.00437)
Digit: Mostly paper-based	-0.0115	-0.0116	-0.0117
	(0.0101)	(0.0101)	(0.0101)
<i>Outsourcing (baseline: lack of outsourcing)</i>			
<i>Company fully or partially outsourcing</i>			-0.00148
			(0.00353)
<i>Company size (baseline: micro)</i>			
Small enterprise	-0.0201***	-0.0198***	-0.0200***
	(0.00385)	(0.00386)	(0.00390)
Medium enterprise	-0.0200***	-0.0194***	-0.0201***
	(0.00419)	(0.00420)	(0.00449)
Large enterprise	-0.0126*	-0.0127*	-0.0135*
	(0.00756)	(0.00756)	(0.00784)
<i>Sector (baseline: agriculture)</i>			
Industry	-0.0112**	-0.00884	-0.00860
	(0.00543)	(0.00560)	(0.00563)
Trade	-0.0152**	-0.0126**	-0.0124*
	(0.00625)	(0.00643)	(0.00645)
Services	0.00292	0.00575	0.00587
	(0.00637)	(0.00659)	(0.00659)
Others	0.000334	0.00320	0.00363
	(0.00888)	(0.00901)	(0.00908)
<i>Headquarter (baseline: capital)</i>			
Regional or country seat		0.00478	0.00471
		(0.00485)	(0.00486)
Town		0.00434	0.00433
		(0.00445)	(0.00445)
Village		0.0106**	0.0106**
		(0.00535)	(0.00535)
Constant	0.0365***	0.0295***	0.0304***
	(0.00573)	(0.00711)	(0.00747)
Observations	957	957	957
R-squared	0.058	0.062	0.062
Standard errors in parentheses	* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$		

Table 29 Regression results on potential factors of self-reported/ perceived digitalization (dependent variable: the assessment of the CEO/company staff member or the external accountant on level of digitalization, on the scale: 1-fully paper-based, 4-fully electronic)

	Assessment of the CEO/ staff member)*	Assessment of the external accountant
No. of business locations (branches)	-0.00323 (0.00369)	0.00682 (0.0163)
No. of clients of the external accountant		0.00629*** 0.00152
<i>Company size (baseline: micro)</i>		
Small enterprise	-0.137** (0.0644)	-0.0310 (0.167)
Medium enterprise	-0.0926 (0.0691)	-0.162 (0.248)
Large enterprise	0.0387 (0.102)	1.972*** (0.230)
<i>Sector (baseline: agriculture)</i>		
Industry	-0.134 (0.0951)	-0.317 (0.294)
Trade	-0.190* (0.104)	-0.286 (0.305)
Services	-0.144 (0.113)	-0.385 (0.316)
Others	-0.130 (0.138)	-0.118 (0.401)
<i>Region (baseline: Central Hungary)</i>		
Western-Transdanubia	-10.81 (9.129)	-10.81 (9.129)
Central-Transdanubia	-5.831 (10.08)	-5.831 (10.08)
North-Hungary	5.703 (10.73)	5.703 (10.73)
Northern-Great Plain	0.362 (13.03)	0.362 (13.03)
Southern-Great Plain	-5.123 (9.684)	-5.123 (9.684)
Southern-Transdanubia	-6.421 (9.731)	-6.421 (9.731)
<i>Headquarter (baseline: capital)</i>		
Regional/ county centre	0.0785 (0.119)	0.736** (0.352)
City	-0.0349 (0.0993)	0.149 (0.307)
Village	0.0155 (0.110)	0.604* (0.324)
Constant	2.107*** (0.117)	2.336*** (0.351)
Observations	1014	158
R-squared	0.017	0.191
SE form in parentheses	*p<0.1; ** p<0.05; *** p<0.01	

*In case we had assessments from both the CEO and a staff member of the same company, we took the average of their assessment.

Table 30 Regression results on effects of outsourcing on tax administration hours

	<i>Total hours spent on tax administration</i>
<i>Outsourcing (dummy: partly or fully)</i>	-14.20***
	(5.157)
<i>Company size (baseline: micro)</i>	
Small enterprise	20.39
	(19.44)
Medium enterprise	23.87
	(18.85)
Large enterprise	37.18
	(39.73)
<i>Sector (baseline: agriculture)</i>	
Industry	-20.28**
	(10.27)
Trade	1.321
	(11.90)
Services	-2.051
	(12.52)
Others	-12.93
	(11.28)
<i>Region (baseline: Central Hungary)</i>	
Western-Transdanubia	-10.81
	(9.129)
Central-Transdanubia	-5.831
	(10.08)
North-Hungary	5.703
	(10.73)
Northern-Great Plain	0.362
	(13.03)
Southern-Great Plain	-5.123
	(9.684)
Southern-Transdanubia	-6.421
	(9.731)
<i>Headquarter (baseline: capital)</i>	
Regional/ county centre	9.439
	(10.20)
City	14.64
	(9.694)
Village	0.632
	(9.079)
<i>Share of revenues from export (50+%)</i>	0.146***
	(0.0547)
Constant	49.31***
	(12.92)
<i>Observations</i>	1014
<i>R-squared</i>	0.094
<i>SE form in parentheses</i>	*p<0.1; ** p<0.05; *** p<0.01

Table 31 Regression results on effects of outsourcing on total tax compliance costs (HUF)

	Total tax compliance costs
<i>Outsourcing (dummy: partly or fully)</i>	-331,667*** (52,981)
<i>Company size (baseline: micro)</i>	
Small enterprise	-19,514 (36,586)
Medium enterprise	731,480*** (75,668)
Large enterprise	2.054e+06*** (267,555)
<i>Sector (baseline: agriculture)</i>	
Industry	-85,03 (90,753)
Trade	-158,322* (94,241)
Services	-112,558 (100,914)
Others	-112,151 (128,453)
<i>Region (baseline: Central Hungary)</i>	
Western-Transdanubia	-253,672** (114,157)
Central-Transdanubia	-54,55 (108,299)
North-Hungary	90,518 (116,35)
Northern-Great Plain	-83,855 (106,393)
Southern-Great Plain	-45,923 (103,848)
Southern-Transdanubia	(140,923) -124,728
<i>Headquarter (baseline: capital)</i>	
Regional/ county centre	-1,151 (112,311)
City	1,837 (89,533)
Village	-61,078 (103,21)
<i>Share of revenues from export (50+%)</i>	2,466*** (610.4)
Constant	633,483*** (107,267)
<i>Observations</i>	693
<i>R-squared</i>	0.472
<i>SE form in parentheses</i>	*p<0.1; ** p<0.05; *** p<0.01

Table 32 Regression on the likelihood of outsourcing (probit model)

	Outsourcing (dummy: 1=yes, 0=no)
Total hours spent on tax administration	-0.000665** (0.000267)
<i>Company size (baseline: micro)</i>	
Small enterprise	-0.185*** (0.0367)
Medium enterprise	-0.455*** (0.0393)
Large enterprise	-0.563*** (0.0519)
<i>Sector (baseline: agriculture)</i>	
Industry	0.178*** (0.0498)
Trade	0.146** (0.0576)
Services	0.0853 (0.0611)
Others	0.262*** (0.0680)
<i>Region (baseline: Central Hungary)</i>	
Western-Transdanubia	0.00484 (0.0631)
Central-Transdanubia	-0.131** (0.0625)
North-Hungary	-0.0610 (0.0608)
Northern-Great Plain	-0.0499 (0.0638)
Southern-Great Plain	0.00978 (0.0574)
Southern-Transdanubia	0.00694 (0.0662)
<i>Headquarter (baseline: capital)</i>	
Regional/ county centre	-0.0186 (0.0649)
City	0.0346 (0.0556)
Village	0.0686 (0.0601)
Share of revenues from export (50+%)	-0.000473 (0.000362)
Constant	0.625*** (0.0633)
Observations	1,014
R-squared	0.184
SE form in parentheses	*p<0.1; ** p<0.05; *** p<0.01

Note: Here we used probit regression

Table 33 Regression results on factors of VAT irritation

	VAT irritation	VAT irritation	VAT irritation	VAT irritation
<i>Company size (baseline: micro)</i>				
Small enterprise	1.0721 (0.07887)	1.0619 (0.07415)	1.033 (0.0740)	1.014 (0.104)
Medium enterprise	1.1784** (0.09511)	1.1556* (0.08677)	1.147* (0.0897)	0.991 (0.110)
Large enterprise	1.4459*** (0.1784)	1.2947** (0.1456)	1.371*** (0.159)	1.039 (0.168)
<i>Sector (baseline: agriculture)</i>				
Manufacturing	0.9552 (0.09881)	0.9395 (0.08831)	0.996 (0.0950)	1.223 (0.151)
Commerce	0.9305 (0.1104)	1.0075 (0.1082)	0.984 (0.108)	1.118 (0.158)
Services	0.8979 (0.1102)	0.9595 (0.1057)	0.962 (0.108)	1.051 (0.152)
Other	1.0197 (0.1582)	1.1120 (0.1589)	1.143 (0.167)	1.145 (0.265)
	(7.551e-04)			
<i>Headquarter (baseline: capital)</i>				
Regional or county seat	0.9244 (0.08423)			
Town	1.0224 (0.08533)			
Village	0.8705 (0.08994)			
Share of revenues from export (50+%)	0.9970***			
<i>Perception on reforms (baseline: much more complicated)</i>				
Reform: Slightly more complicated		1.5091*** (0.1390)		
Reform: Did not change		1.7270*** (0.1559)		
Reform: Slightly simpler		1.9118*** (0.1478)		
Reform: Much simpler		2.2845*** (0.2596)		
<i>Level of digitalisation (baseline: fully electronic)</i>				
Digit: Mostly electronic			1.028 (0.0698)	1.191* (0.111)
Digit: Partly electronic			0.795*** (0.0597)	0.920 (0.0946)
Digit: Mostly paper-based			0.616*** (0.0966)	0.714 (0.153)
Outsourcing			1.128* (0.0779)	0.961 (0.0857)
Total hours of VAT admin				1.000 (0.000178)
Constant	21.745*** (2.8185)	11.869*** (1.2752)	19.21*** (2.022)	18.50*** (2.782)
Observations	1,280	1,359	1,359	705
R-squared	0.023	0.069	0.024	0.023
SE Eform in parentheses	*p<0.1; ** p<0.05; *** p<0.01			

Table 34 Total (enterprise) tax compliance costs broken down by company size segment (2014, mean, EUR)

	Company size			
	Micro	Small	Medium	Large
HU	5,267	9,919	28,686	31,449
SK	4,980	11,008	19,092	37,605
CZ	4,252	12,390	15,736	20,845
PL	4,240	11,823	20,853	93,326
AT	8,562	24,927	22,732	100,019
BG	7,854	20,221	14,143	45,882
EST	1,287	1,175	2,784	2,639
FL	4,853	9,816	7,333	12,363
FR	7,998	13,446	8,578	24,274
FYROM	599	1,256	1,183	1,010
GER	10,361	21,277	35,794	58,280
GR	4,086	14,789	4,168	10,134
IRL	2,955	6,533	11,159	24,019
IT	7,196	22,022	22,590	66,834
LUX	3,340	10,158	17,143	15,885
NL	2,684	5,881	9,582	23,493
RO	2,977	8,250	8,381	12,764
SLN	1,955	5,926	5,025	7,313
ESP	5,949	11,510	15,730	21,896
SW	8,316	10,578	16,423	24,387
UK	4,711	11,821	19,539	20,444
KPMG average	2,427	6,143	5,378	12,285

Source: KPMG (2019), own calculation

Note: The HU estimates are based on reported hours for the corresponding tax administration tasks surveyed for the year 2018 and payroll data for the year 2014. The estimation is based on the sub-sample of companies with at least 1 employee (trimmed-mean based calculation), and we converted the Hungarian results based on the annual average EUR currency exchange rate for 2014 published by the Hungarian National Bank (HUF/EUR 308).

Annex III. Survey questionnaires

(in separate Excel-files)

Annex IV. Presentation of the knowledge transfer workshop

(in separate PowerPoint file)

Annex V. Presentation of the closing executive workshop

(in separate PowerPoint file)

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