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Jānis Bērziņš, BI Norwegian Business School
Nicolas Gavoille, SSE Riga and BICEPS
Anna Zasova, BICEPS
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Employment and Envelope Wages During the Covid-19 Crisis in Latvia

The Covid-19 pandemic created one of the most substantial negative exogenous shocks in decades, forcing firms to rapidly adapt. This brief examines an adjustment mechanism that played a significant role in Latvia, and potentially in other countries in Eastern and Central Europe. Specifically, we focus on the role of envelope wages as a buffer for absorbing the shock. Our analysis demonstrates that this form of tax evasion indeed acted as a cushion during the Covid-19 pandemic. Our results indicate that, in the short run, tax-evading firms experienced smaller employment losses in response to the Covid-19 shock compared to compliant firms.

Introduction

The Covid-19 pandemic generated one of the largest negative, exogenous shocks in decades. To absorb this shock, firms had to swiftly adapt. Prior literature has demonstrated that firms responded by reducing employment and investment (Lastauskas, 2022; Fernández-Cerezo et al., 2023; Buchheim et al., 2020). In this brief we discuss another margin of adjustment – potentially important for many countries in the region. We focus on the role of envelope wages as a buffer for negative shock absorption.

Envelope wages is a widespread form tax evasion, in which, for employees that are formally registered, a portion of their salary (often at the minimum wage level) is reported to tax authorities, while the remaining 'envelope' portion is paid unofficially. The prevalence of this phenomenon has been extensively documented in Eastern and Central Europe (see Kukk and Staehr (2014) and Paulus (2015) for Estonia, Gorodnichenko et al. (2009) for Russia, Putniņš and Sauka (2015) for the Baltic States, Tonin (2011) and Bíró et al. (2022) for Hungary).

In addition to the evident objective of reducing tax obligations, a primary incentive for firms to employ this evasion scheme is the extra flexibility it provides. The unreported portion of wages operates outside of the legal framework, offering firms a means of adaptation in the face of production restrictions, supply chain disruptions, and overall substantial uncertainty caused by the Covid-19 pandemic. In this brief, we argue that firms utilizing envelope wages reduced their employment less than compliant firms during the pandemic in Latvia.

Identifying Firms That Pay Envelope Wages

We identify firms that paid (at least partly) their employees in cash *before* the pandemic using a rich combination of Latvian administrative and survey data and the methodology proposed by Gavoille and Zasova (2021).

The idea is as follows: We use a subsample of firms for which we can assume that we *know* whether they pay envelope wages and, using this subsample, train an algorithm that is capable of distinguishing compliant and evading firms based on their observed characteristics and reported financials.

Following Gavoille and Zasova (2021), we use firms owned by Nordic investors as a subsample of tax-compliant firms. To obtain a subsample of non-compliant firms, we combine data on administrative (i.e., reported) wages with several rounds of Labor Force Survey data in order to spot employees that are paid suspiciously little given their personal characteristics (education, experience, etc). Firms employing these employees form the subsample of evading firms. Using these samples of compliant and evading firms, we train a Random Forest algorithm to classify firms according to their type. We then use the algorithm to classify the universe of firms used in this study. Table 1 shows the classification results.

Table 1. Classification results: share of tax-evading firms and employees.

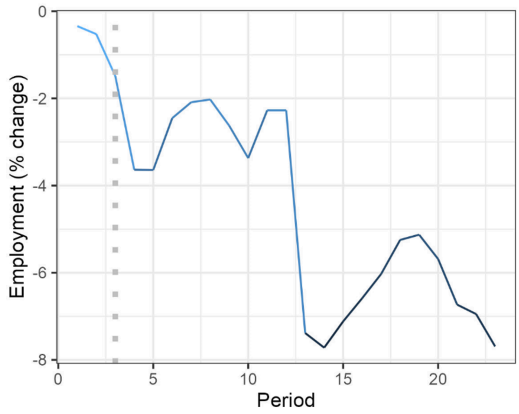
	% of firms in a sector	% of employees in a sector
Overall	38.7	20.1
Construction	41.2	22.6
Trade	35.1	13.5
Manufacturing	31.1	13.4
Transportation	59.3	41.1

Source: Authors' calculations.

We find that almost 40 percent of firms (employing about 20 percent of employees) underreport at least some of their workers' wages. The cross-sectoral heterogeneity is consistent with survey evidence: the construction and transport sectors are the sectors with the highest prevalence of envelope payments. Comparing the share of tax-evading firms with the share of workers working within these firms also indicate that on average, tax-evading firms are smaller than tax-compliant ones. This is yet again in accordance with survey evidence.

Employment Response During Covid-19

Figure 1. Average firm-level change in employment during the Covid-19 pandemic.



Note: This figure shows the average change in employment between January 2020 and any subsequent month, weighted by firm size (average turnover 2017-2019). Source: Authors' calculations.

The Covid-19 crisis had a severe impact on Latvia. The government declared a state of emergency as early as March 13, 2020, which entailed significant restrictions on gatherings and on-site work, leading to a six-fold increase in the proportion of remote workers within a matter of months.

During the second wave, in Autumn 2021, Latvia had the highest ranking in the world in terms of new daily positive cases per capita. A substantial number of firms were directly affected by the pandemic (see Figure 1).

We study firm-level employment response at a monthly frequency in compliant and tax-evading firms, from January 2020 to December 2021. Our empirical approach is in the spirit of Machin et al. (2003) and Harasztosi and Lindner (2019), who study the effect of minimum wage shocks. In essence, this approach consists of a series of cross-section regressions, where the dependent variable is the percentage change in employment in a firm between a reference period (set to January 2020) and any subsequent month until December 2021. Our key interest is the difference in cumulative employment response between tax-compliant and evading firms, controlling for a set of (pre-pandemic) firm characteristics, such as firm's age, average profitability, average export share, and the average labor share over the 2017-2019 period.

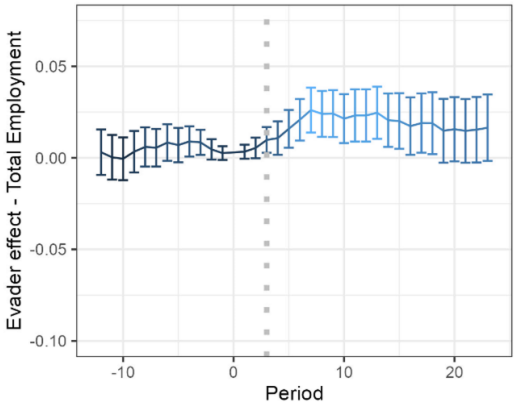
The Aggregate Effect

Figure 2 shows the estimated coefficients that measure the difference between employment effects in compliant and tax-evading firms, aggregate for all sectors. Period 0 denotes our reference period, i.e., January 2020, while the estimated coefficients in other periods show the cumulated difference between tax compliant and tax-evading firms in the respective period relative to January 2020 (e.g., the estimated coefficient in period 10 shows the cumulated differential employment response in October 2020 vis-à-vis January 2020).

We document a noticeable difference in the employment response between the two types of firms starting in April 2020. The positive coefficient associated with evading firms indicate that the change in employment growth was not as negative in evading firms as in compliant firms (see Figure 2). Labor tax-evading firms exhibit, on average, a less sensitive employment response than tax compliant firms. In March 2021, the point estimates are about 0.025, implying that compared to March 2020, tax-evading firms contracted, on average, 2.5 percentage points less than compliant ones. This difference however fades over time and

turns insignificant (at the 95 percent level) about halfway through 2021.

Figure 2. Evasion and total employment.



Note: This figure shows the cumulative difference between employment effects in compliant and tax-evading firms, aggregate for all sectors, by month, with respect to January 2020 (reference period).
Source: Authors' calculations.

Differences by Sector

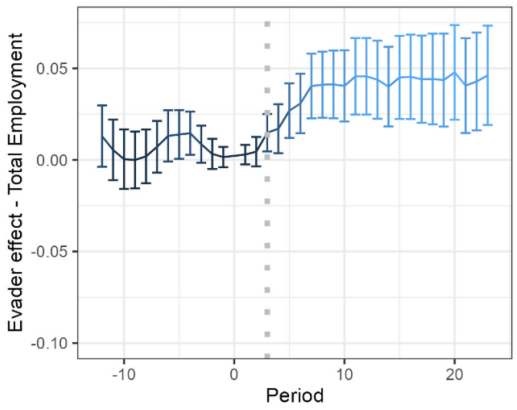
Figure 3 displays the estimated difference in employment response, disaggregating the sample by sector. We show the results for two sectors: trade and transportation. These two sectors exhibited the most significant differences in employment response between evading and non-evading firms.

For trade, evading firms have been able to maintain employment losses at approximately 5 percentage points less than compliant firms (see Figure 3(a)). This is consistent with the envelope wage margin mechanism. Contrary to the aggregate results, the difference in employment response does not fade over time. This suggests that this margin is not a shock absorber only in the very short run.

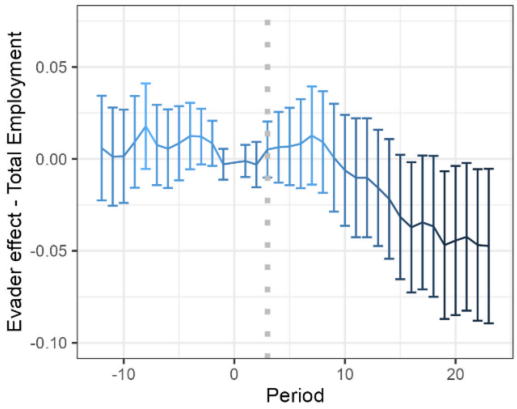
The decrease of the evader effect at the aggregate level is caused by negative point estimates of the evasion indicator in the transportation sector, starting in the first quarter of 2021 (see Figure 3(b)). In this sector, evading firms have on average experienced a larger employment decline in 2021 than compliant firms.

Figure 3. Employment effect - by sector

(a) Trade



(b) Transportation



Note: These figures show the cumulative difference between employment effects in compliant and tax-evading firms, disaggregated by sectors. Source: Authors' calculations.

The outcome in the transportation sector is likely influenced by the taxi market. There were two major changes in 2021 that particularly affected taxi drivers receiving a portion of their remuneration through envelopes. Firstly, amendments to State Revenues Service's (SRS) regulations made it more difficult to underreport the number of taxi trips, as each ride was now automatically recorded in the SRS system through taxi apps. Secondly, commencing in July, legal amendments mandated a minimum social security tax, which had to be paid based on at least the minimum wage. Given that many taxi drivers work part-time, and that those associated with evading firms tend to underreport their rides, this new requirement was more binding for evading firms. Additionally, there was a significant shift of

taxi drivers to the food delivery sector, where demand for driver services surged during the pandemic.

Conclusion

Our results indicate that employment losses in response to the Covid-19 shock were smaller in tax-evading firms than in compliant firms in the short run. We also demonstrate that by the end of 2021, the discrepancy between the two types of firms had disappeared. This can be explained by significant heterogeneity in employment responses across sectors.

These findings contribute to our understanding of the pandemic's impact on the size of the informal sector. Despite tax-evading firms generally having more restricted access to finance, the added flexibility provided by unreported wages may have increased their resilience to the negative shock.

Acknowledgement

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Jānis Bērziņš

BI Norwegian Business School
Janis.Berzins@bi.no
www.bi.edu

Jānis Bērziņš is an Associate Professor at the BI Norwegian Business School. He holds a PhD in Finance from Indiana University. Jānis' main research interests are in the field of corporate governance, corporate finance and asset management. He has published in journals such as Journal of Financial Economics, Review of Finance and Journal of Corporate Finance.

Nicolas Gavoille

Stockholm School of Economics in Riga (SSE Riga), Baltic International Centre for Economic Policy Studies (BICEPS)
Nicolas.Gavoille@sseriga.edu
www.sseriga.edu

Nicolas Gavoille is an Associate Professor at the Stockholm School of Economics in Riga and a Research Fellow at BICEPS. He holds a PhD in Economics from the University of Rennes 1, France. Nicolas' main research interests are in the field of public economics, labour economics, and political economy. He has published articles in journals such as the European Economic Review, the European Journal of Political Economy and the IMF Economic Review.

Anna Zasova

Baltic International Centre for Economic Policy Studies (BICEPS)
Anna@biceps.org
www.biceps.org

Anna Zasova is a Research Fellow at the Baltic International Centre for Economic Policy Studies (BICEPS). She received her PhD degree in Economics from the University of Latvia. Her main research interests include public economics and labour economics.

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