

Shadow Economy Index for the Baltic Countries 2009–2025

Authors of the study



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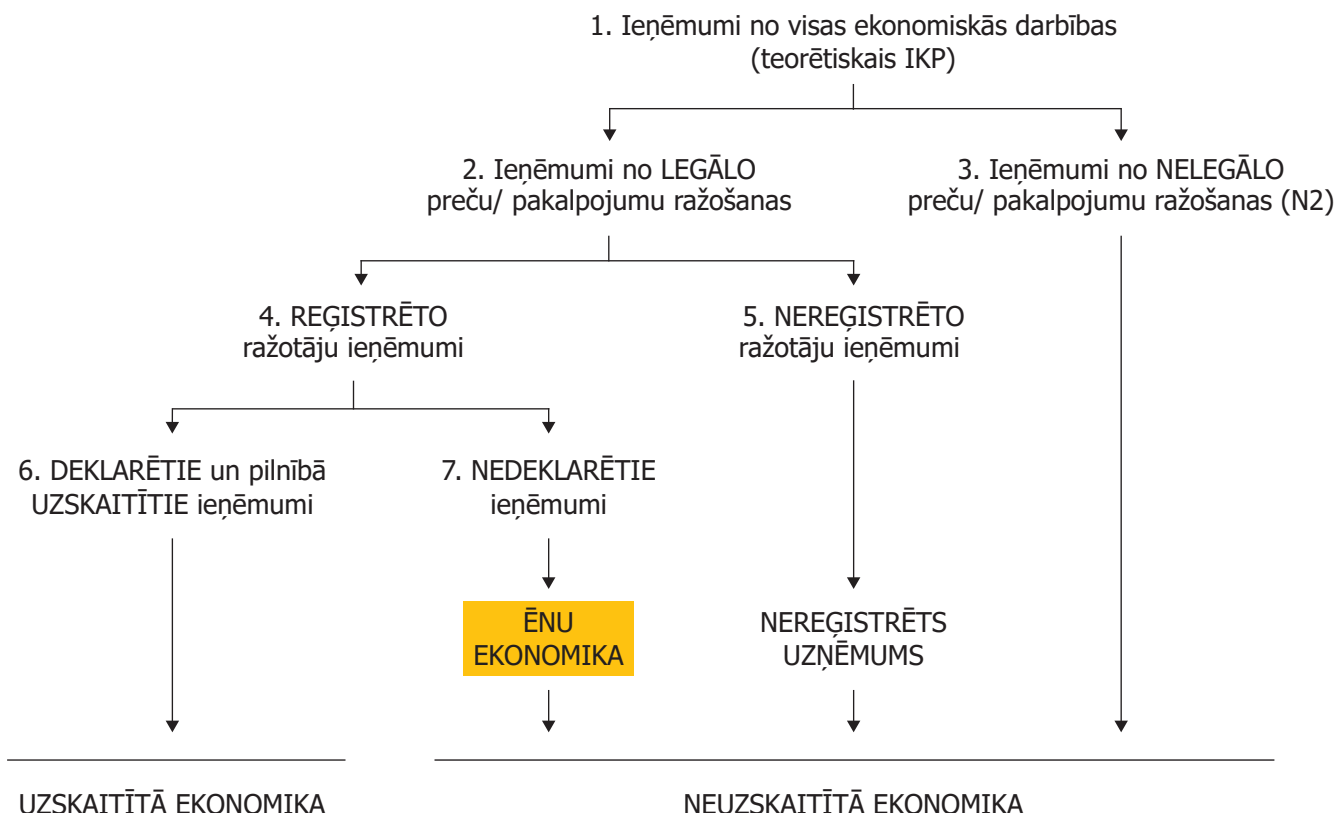
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Since 2009:

- What is the size of the shadow economy in Latvia, Lithuania, and Estonia?
- What are the main determinants of the shadow economy?
- What can be done to reduce the shadow economy?

Observed and non-observed components of GDP



Volume 43, Issue 2, May 2015, Pages 471–490



ELSEVIER

Contents lists available at [ScienceDirect](#)

Journal of Comparative Economics

journal homepage: www.elsevier.com/locate/jce



Measuring the shadow economy using company managers

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Study

- “Direct survey method”: interviews with company owners/managers in the Baltic countries
- Entrepreneurs as experts
- In 2026 about 2025 and 2024
- 507 telephone interviews in Latvia, 504 in Lithuania, 502 in Estonia (the 2025 survey)
- Random sampling, Orbis database
- Interviews performed by Norstat Latvija
- The Index is based on the income approach in measuring GDP

Key components of the shadow economy

- Underreporting of business income (profits)
- Underreporting of the number of employees
- Envelope wages
- % of revenue spent on payments 'to get things done': bribery
- % of the contract value paid to secure a contract with the government: corruption

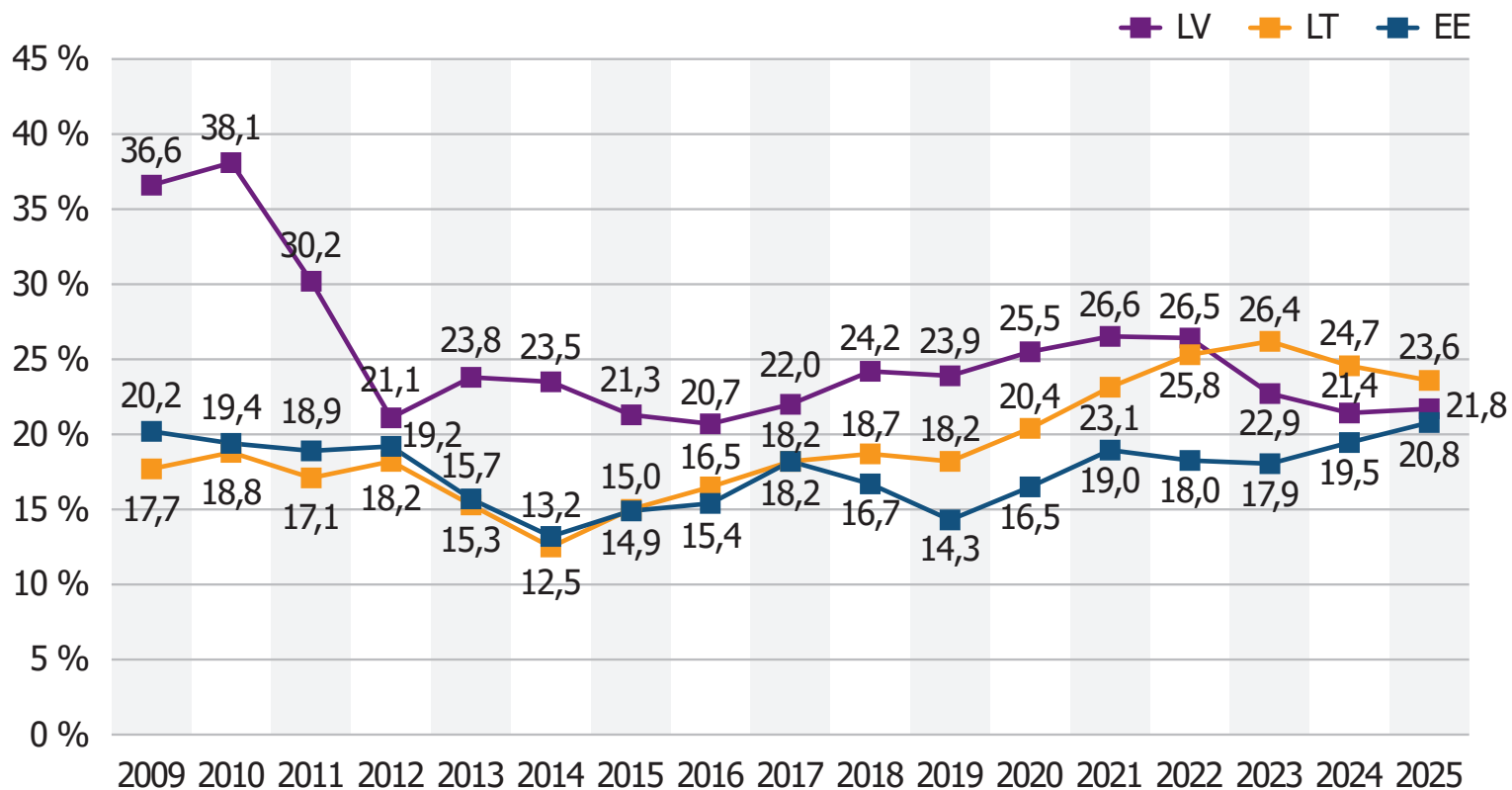
Size of the shadow economy in Latvia, Lithuania, and Estonia 2009–2025 Results

Shadow Economy Index for the Baltic countries (% of GDP), 2009–2025

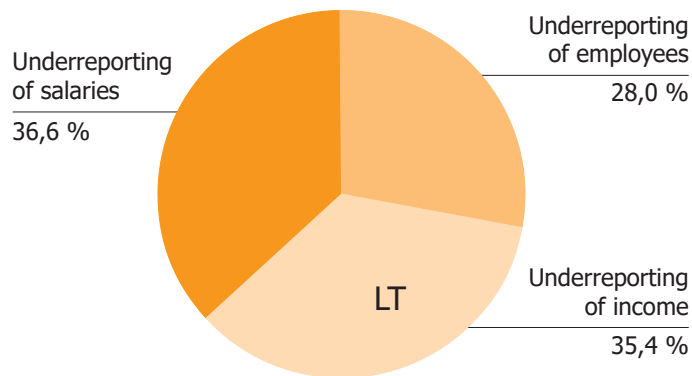
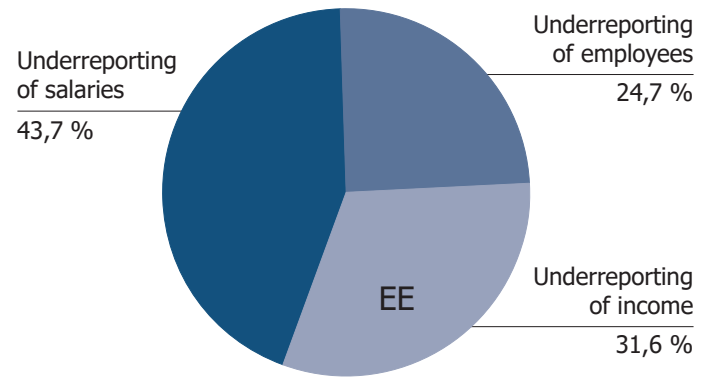
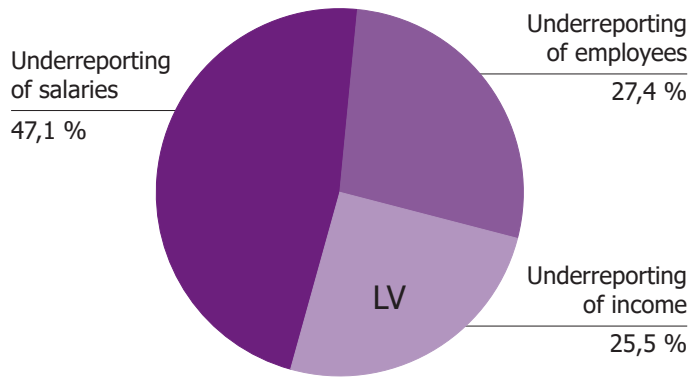
	2025–2024	2025	2024	2023	2022	2021	2020	2019	2018
LV	+0,4 (-1,9 2,5)	21,8 (19,3 24,2)	21,4 (18,7 24,2)	22,9 (20,2 25,5)	26,5 (24,5 28,5)	26,6 (24,9 28,3)	25,5 (23,6 27,4)	23,9 (21,4 26,3)	24,2 (21,5 26,8)
LT	-1,1 (-3,1 1,0)	23,6 (21,3 25,9)	24,7 (22,1 27,3)	26,4 (23,1 29,7)	25,8 (22,2 29,5)	23,1 (20,6 25,7)	20,4 (18,4 22,3)	18,2 (16,5 19,9)	18,7 (17,0 20,4)
EE	+1,4 (-0,5 3,3)	20,8 (18,7 23,0)	19,5 (17,1 21,8)	17,9 (15,6 20,2)	18,0 (15,3 20,7)	19,0 (16,1 21,9)	16,5 (14,3 18,8)	14,3 (12,3 16,3)	16,7 (14,5 18,8)

	2017	2016	2015	2014	2013	2012	2011	2010	2009
LV	22,0 (19,6 24,5)	20,7 (18,0 22,6)	21,3 (19,0 23,7)	23,5 (20,5 26,6)	23,8 (20,7 26,9)	21,1 (18,5 23,6)	30,2 (27,6 32,7)	38,1 (35,9 40,3)	36,6 (34,3 38,9)
LT	18,2 (16,1 20,4)	16,5 (14,8 18,3)	15,0 (13,8 16,3)	12,5 (11,0 13,9)	15,3 (13,6 17,1)	18,2 (16,4 20,1)	17,1 (15,2 19,0)	18,8 (16,9 20,6)	17,7 (15,8 19,7)
EE	18,2 (16,1 20,3)	15,4 (13,1 17,8)	14,9 (12,4 17,4)	13,2 (11,3 15,1)	15,7 (13,5 17,9)	19,2 (16,6 21,9)	18,9 (16,8 20,9)	19,4 (18,0 20,8)	20,2 (18,7 21,7)

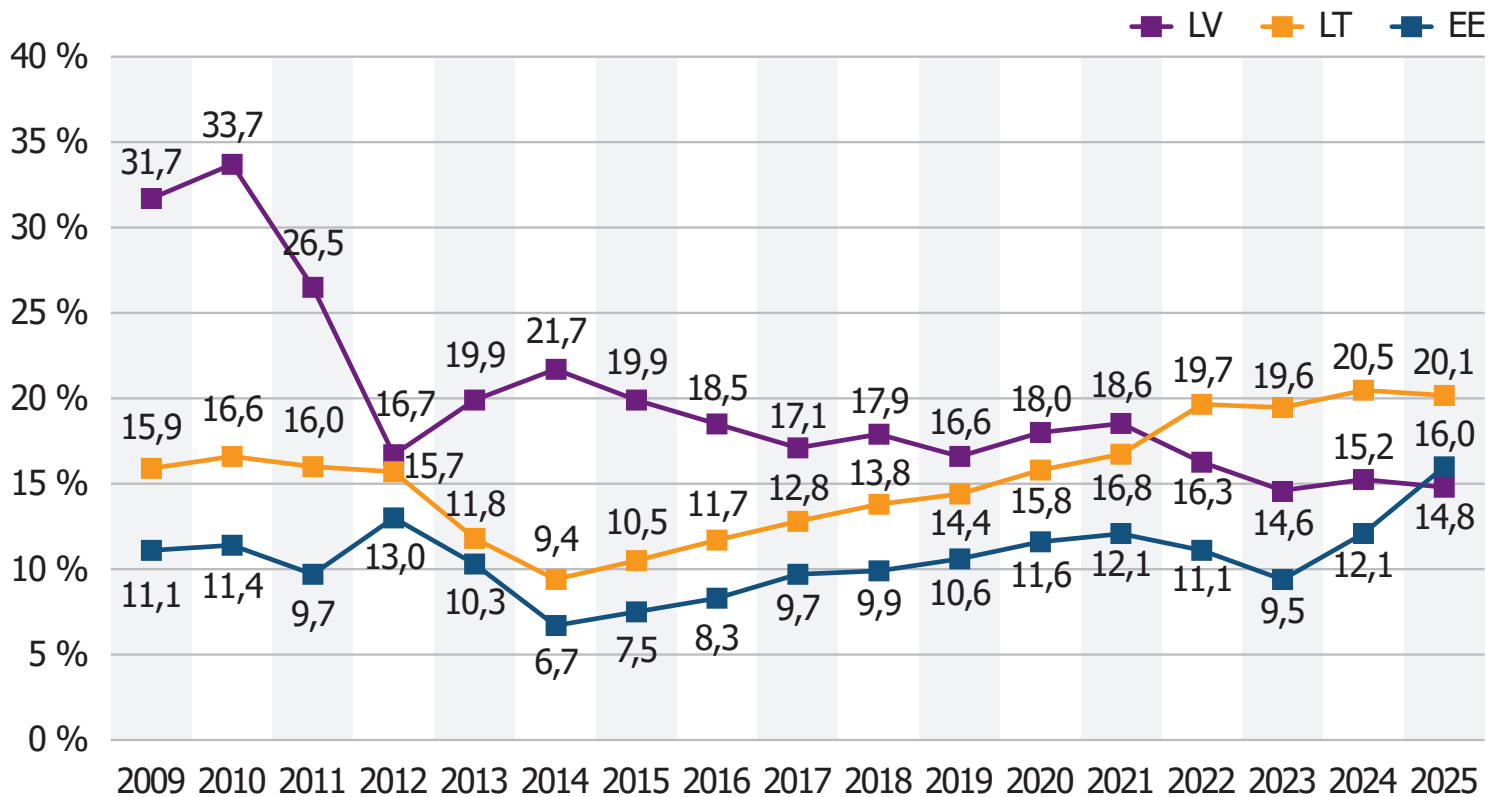
Dynamics of the shadow economy in the Baltic countries (% of GDP), 2009–2025



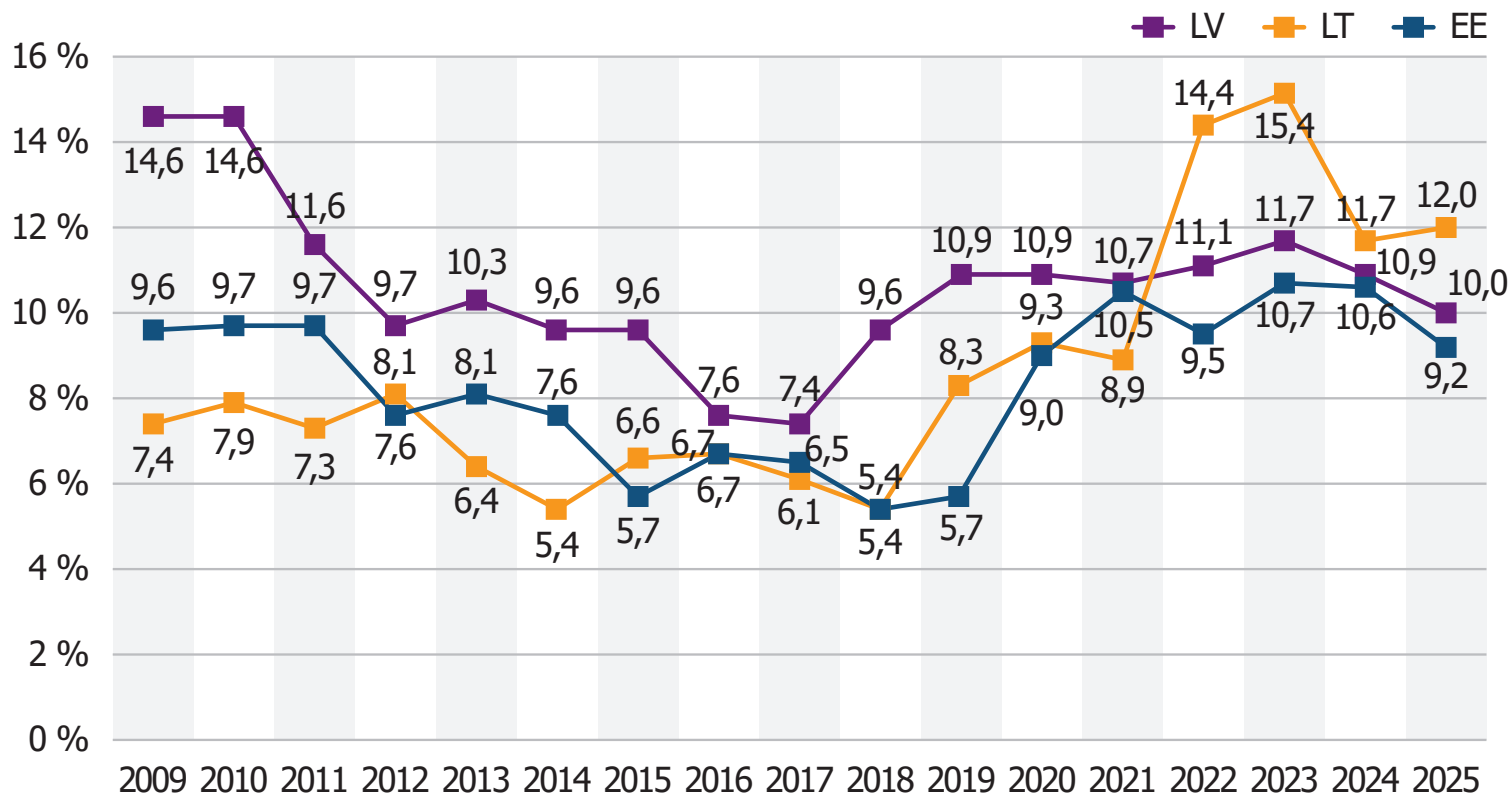
Components of the shadow economy in 2025



Underreporting of business income 2009–2025 (average share of revenue in % that companies conceal from the government)

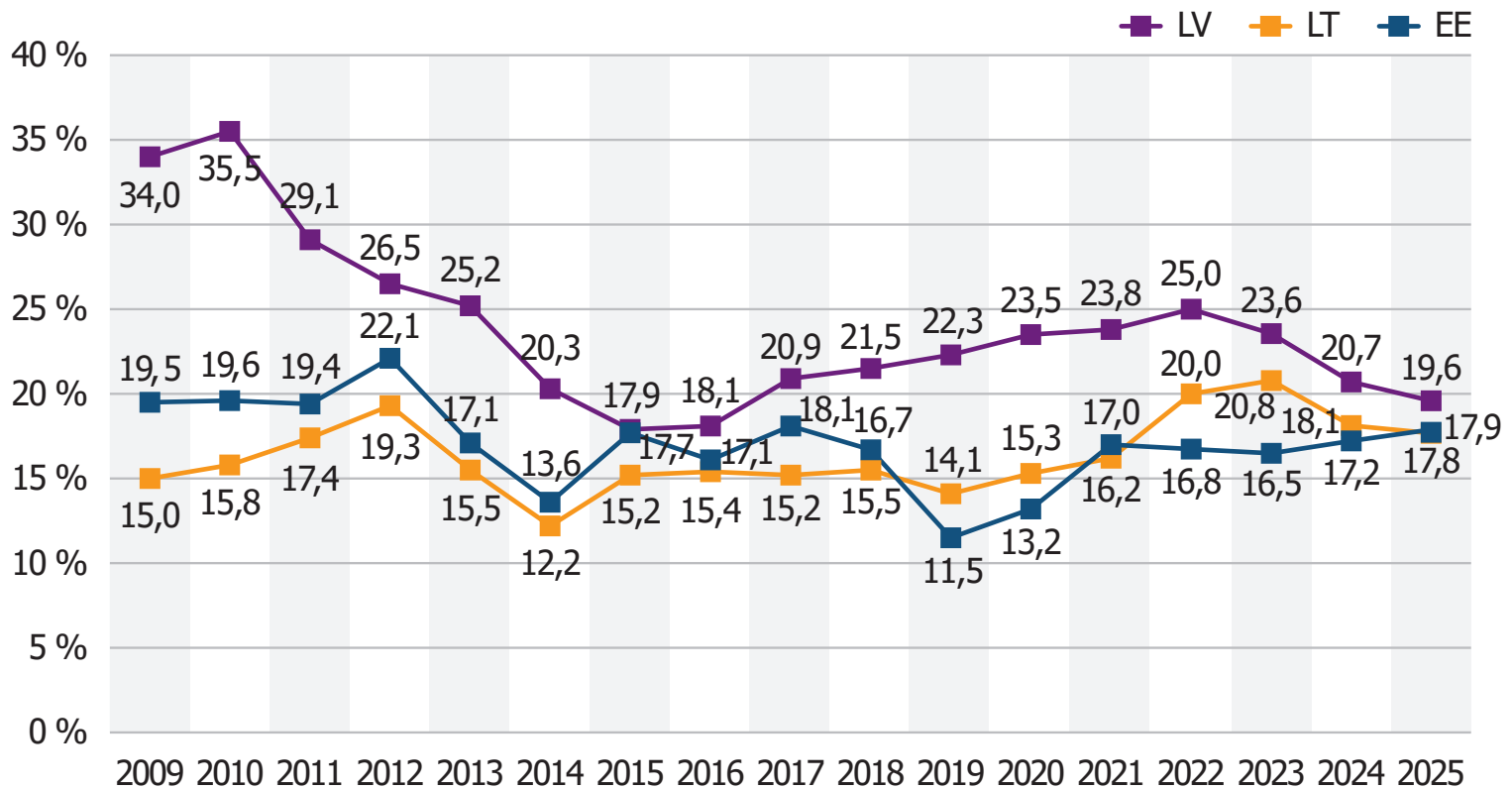


Underreporting of the number of employees, 2009–2025 (average share of the employees in % working without a contract)

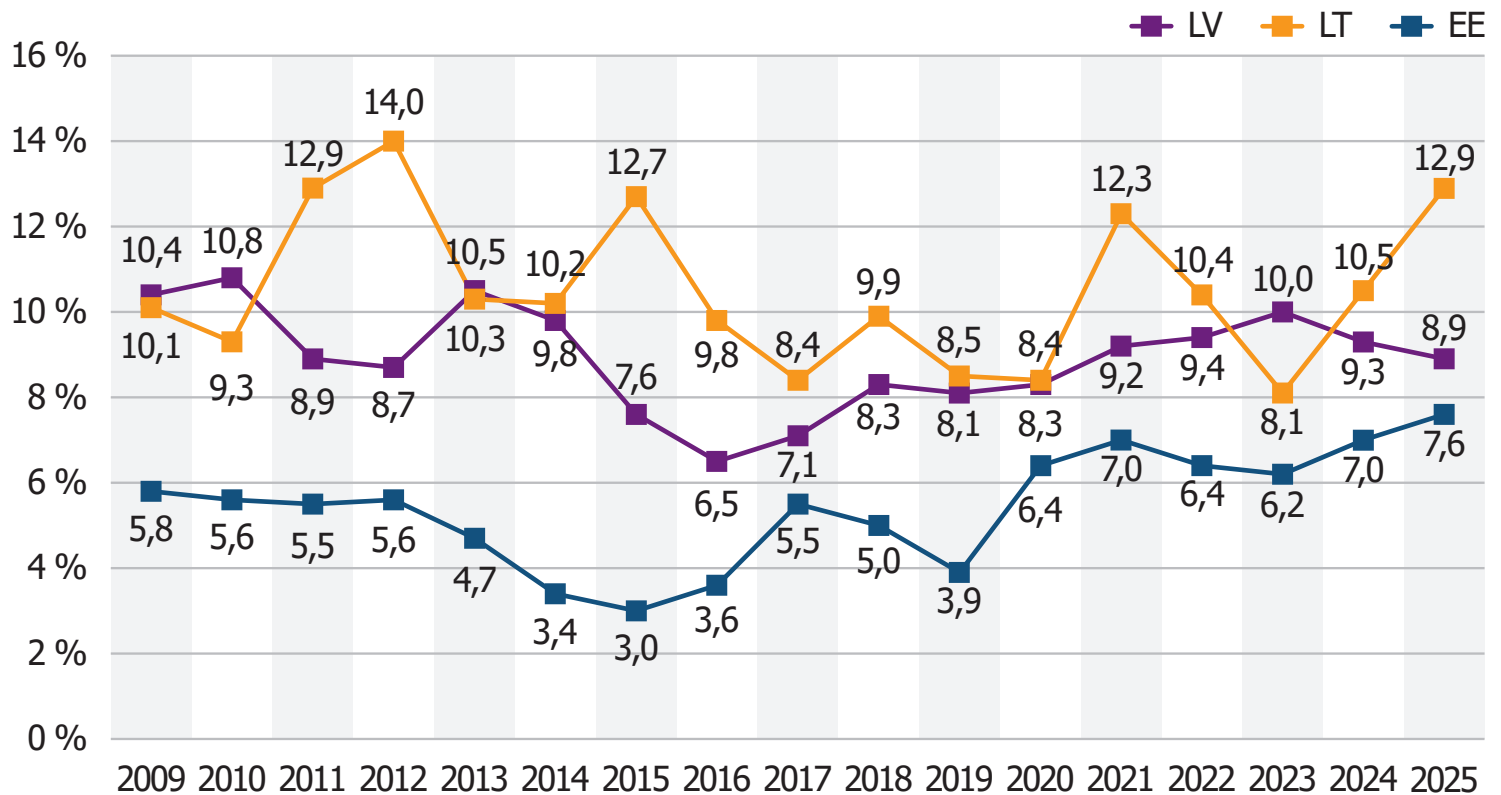


Envelope wages, 2009–2025

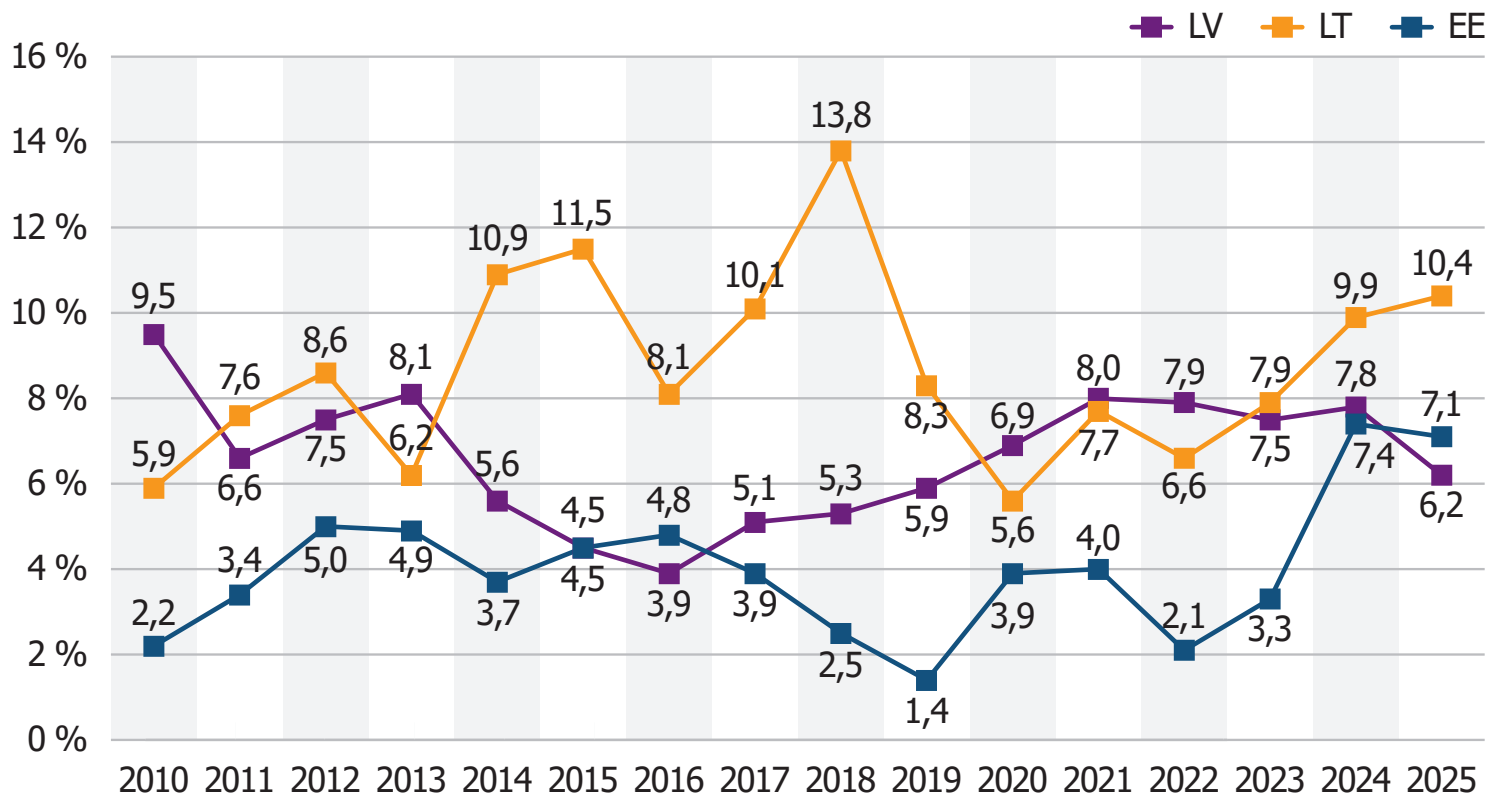
(average share of salaries in % which is paid by the employers, but concealed from the government)



% of payments 'to get things done', 2009–2025 (average percentage of revenue paid as 'bribes')



% of the contract value paid to secure contracts with the government, 2010–2025

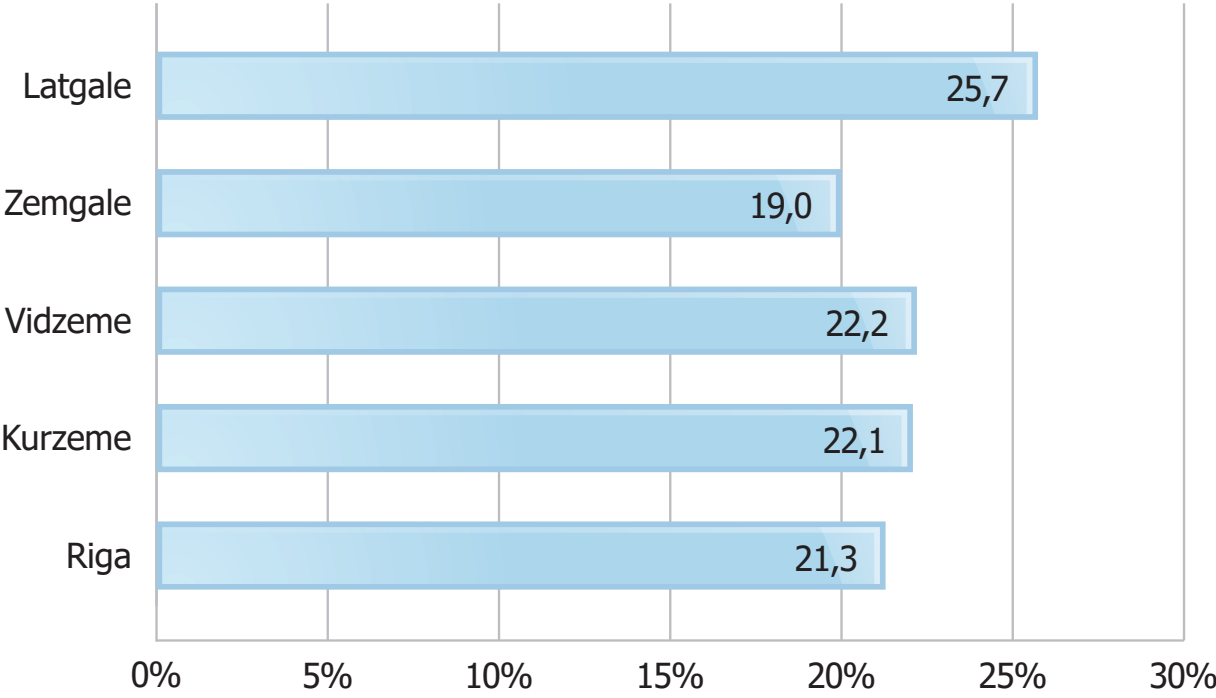


The proportion (%) of goods or services provided by unregistered companies in the Baltic countries, 2013–2025

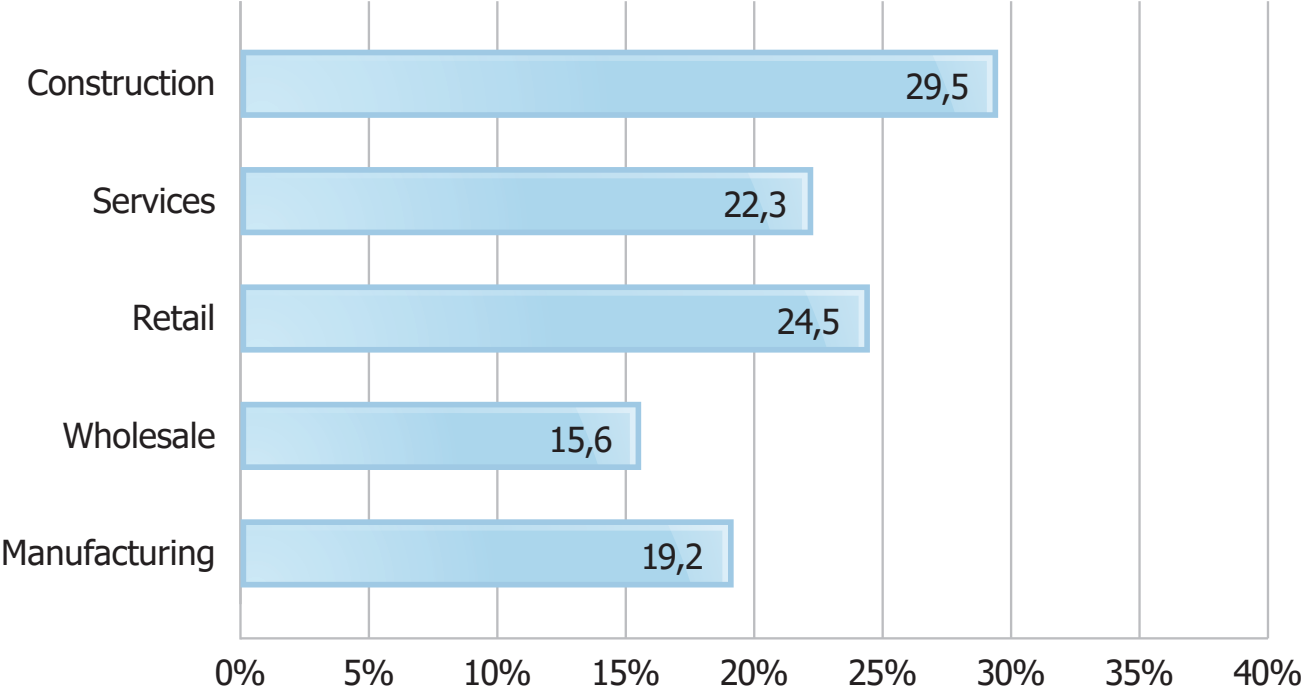
	Latvia	Lithuania	Estonia
2025	10,3 (8,6 12,1)	11,1 (9,6 12,6)	8,6 (7,2 10,0)
2024	10,1 (8,4 11,9)	9,4 (8,0 10,9)	8,6 (7,0 10,1)
2023	8,8 (7,3 10,4)	8,4 (6,9 9,9)	6,5 (5,3 7,8)
2022	8,5 (7,2 9,9)	9,5 (7,8 11,2)	6,3 (5,0 7,6)
2021	8,6 (7,5 9,7)	9,0 (7,5 10,6)	6,7 (5,4 8,0)
2020	8,4 (6,7 9,2)	6,2 (4,9 7,4)	4,0 (3,1 5,0)
2019	8,0 (6,7 9,2)	9,2 (7,8 10,6)	4,0 (3,0 5,1)
2018	8,6 (7,3 10,1)	10,0 (8,8 11,3)	6,4 (5,0 7,9)
2017	6,5 (5,3 7,8)	8,6 (7,5 9,8)	7,0 (5,7 8,5)
2016	5,3 (4,1 6,5)	8,4 (7,5 9,4)	6,1 (5,1 7,1)
2015	5,2 (4,1 6,3)	7,3 (6,5 8,1)	5,8 (4,5 7,1)
2014	5,6 (4,5 6,7)	5,2 (4,5 6,0)	6,3 (4,5 8,2)
2013	5,4 (4,2 6,6)	6,2 (5,3 7,1)	7,6 (5,4 9,9)

**Size of the shadow economy
in the regions, sectors,
companies of different sizes**

Size of the shadow economy (% of GDP) by region in Latvia (2025)



Size of the shadow economy (% of GDP) by sector in Latvia (2025)



Involvement in the shadow economy

- Smaller firms (e.g., those with fewer employees) engage in more shadow activity than larger firms
- Younger firms engage in more shadow activity than older firms

Main determinants of the shadow economy

Statistically significant determining factors (using regression analysis)

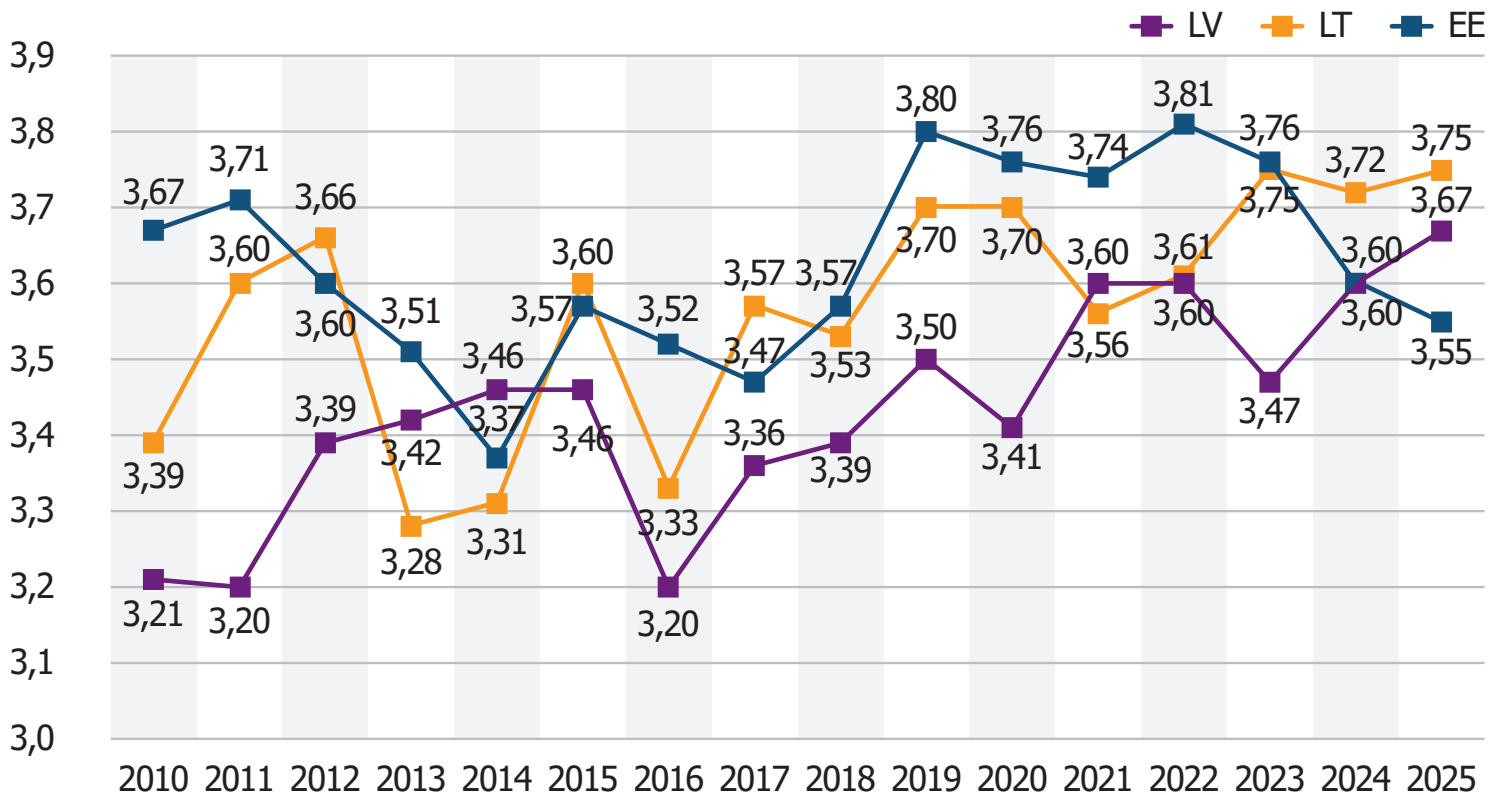
- Greater probability of being caught not paying taxes and more serious consequences → fewer entrepreneurs getting involved in shadow economy activities

Statistically significant determining factors (using regression analysis)

- Dissatisfaction → more shadow activity
- Involvement in shadow economy is greatly determined by dissatisfaction with:
 - ▶ Business legislation (greatest effect)
 - ▶ Performance of SRS
 - ▶ Tax policy
 - ▶ Government support (least effect)

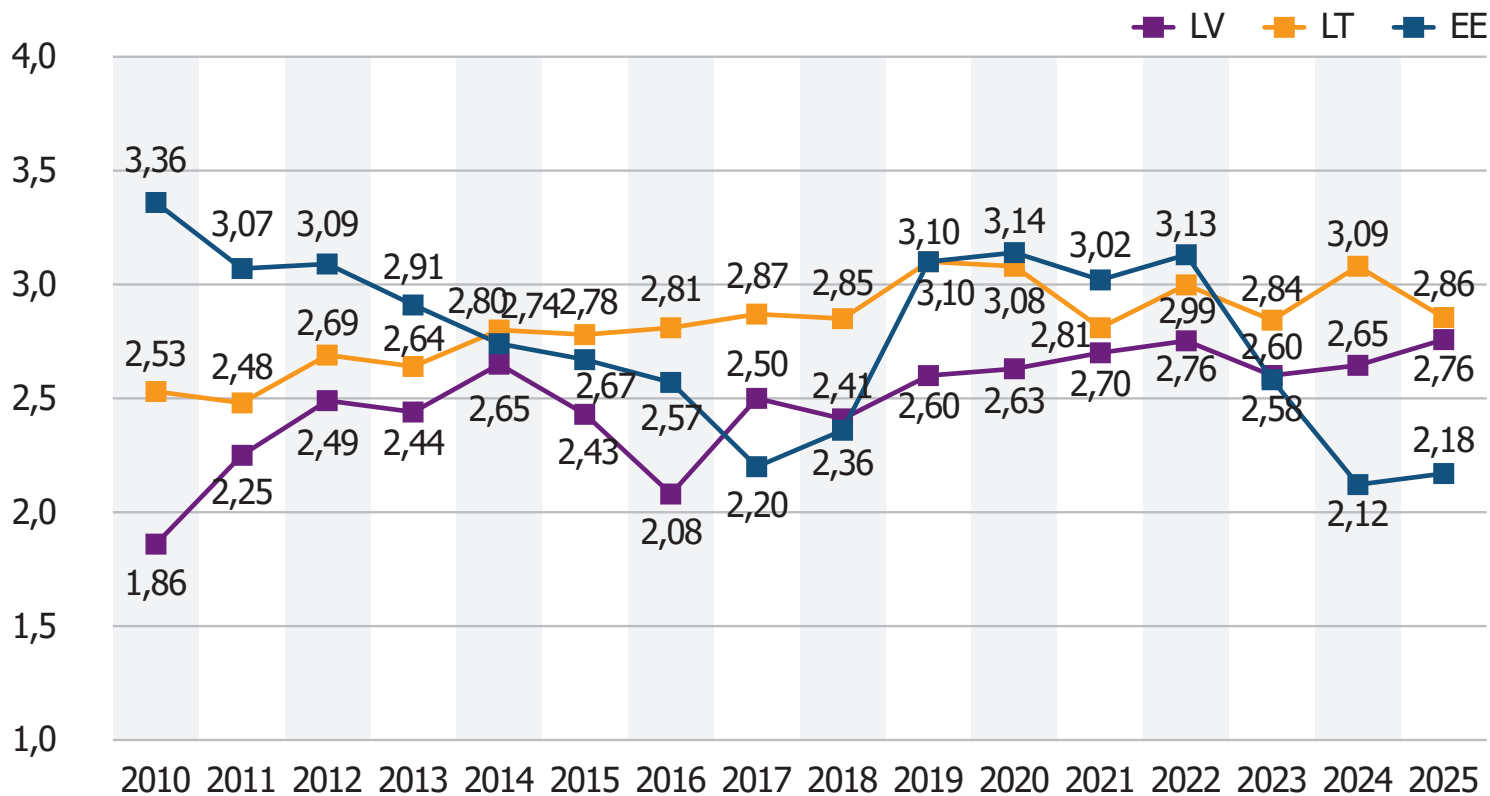
Satisfaction with the performance of the State Revenue Service, 2010–2025

(Average. '1'- very low satisfaction, but '5'- very high satisfaction)



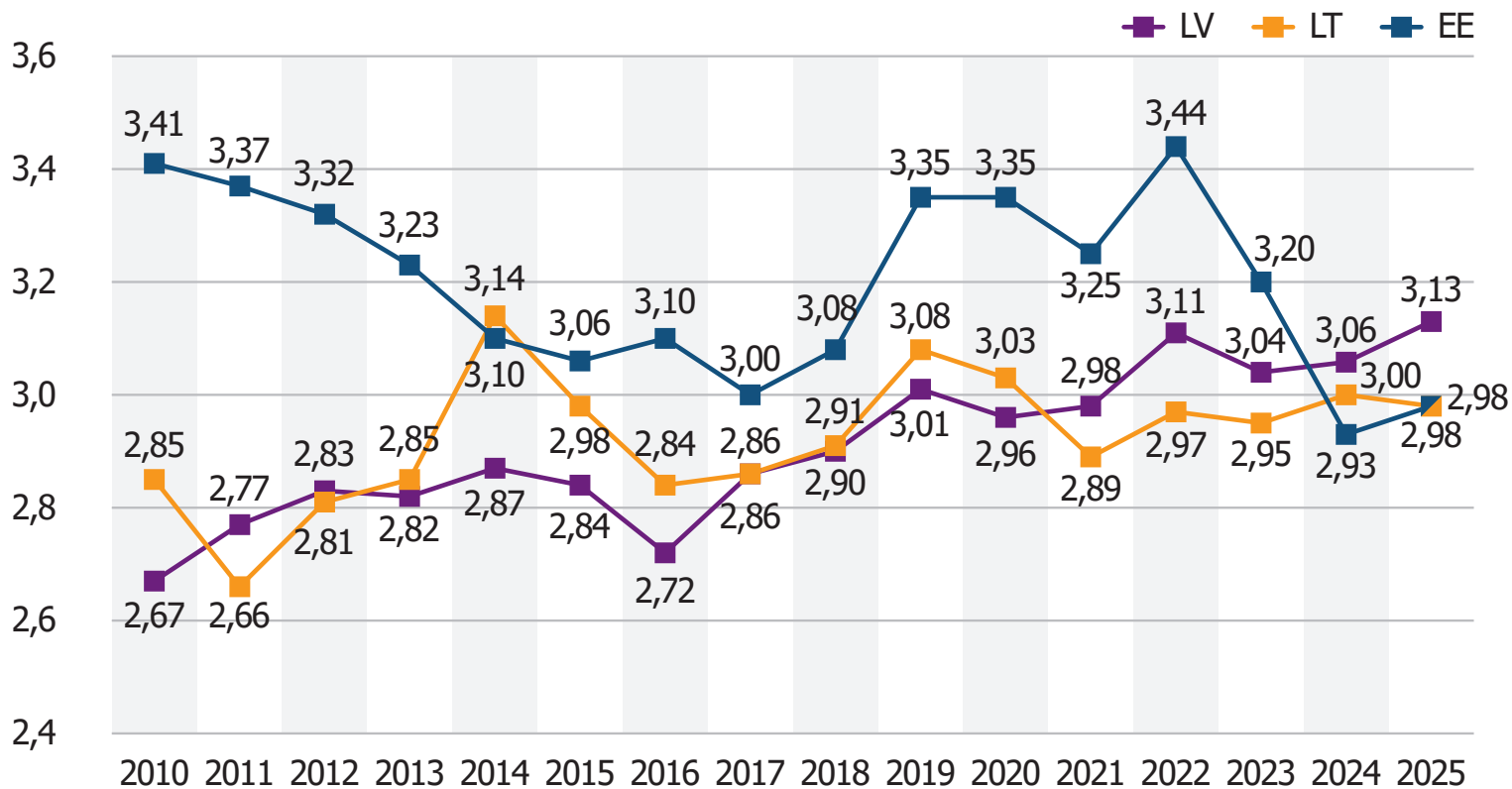
Satisfaction with the tax policy, 2010–2025

(Average. '1'- very low satisfaction, but '5'- very high satisfaction)



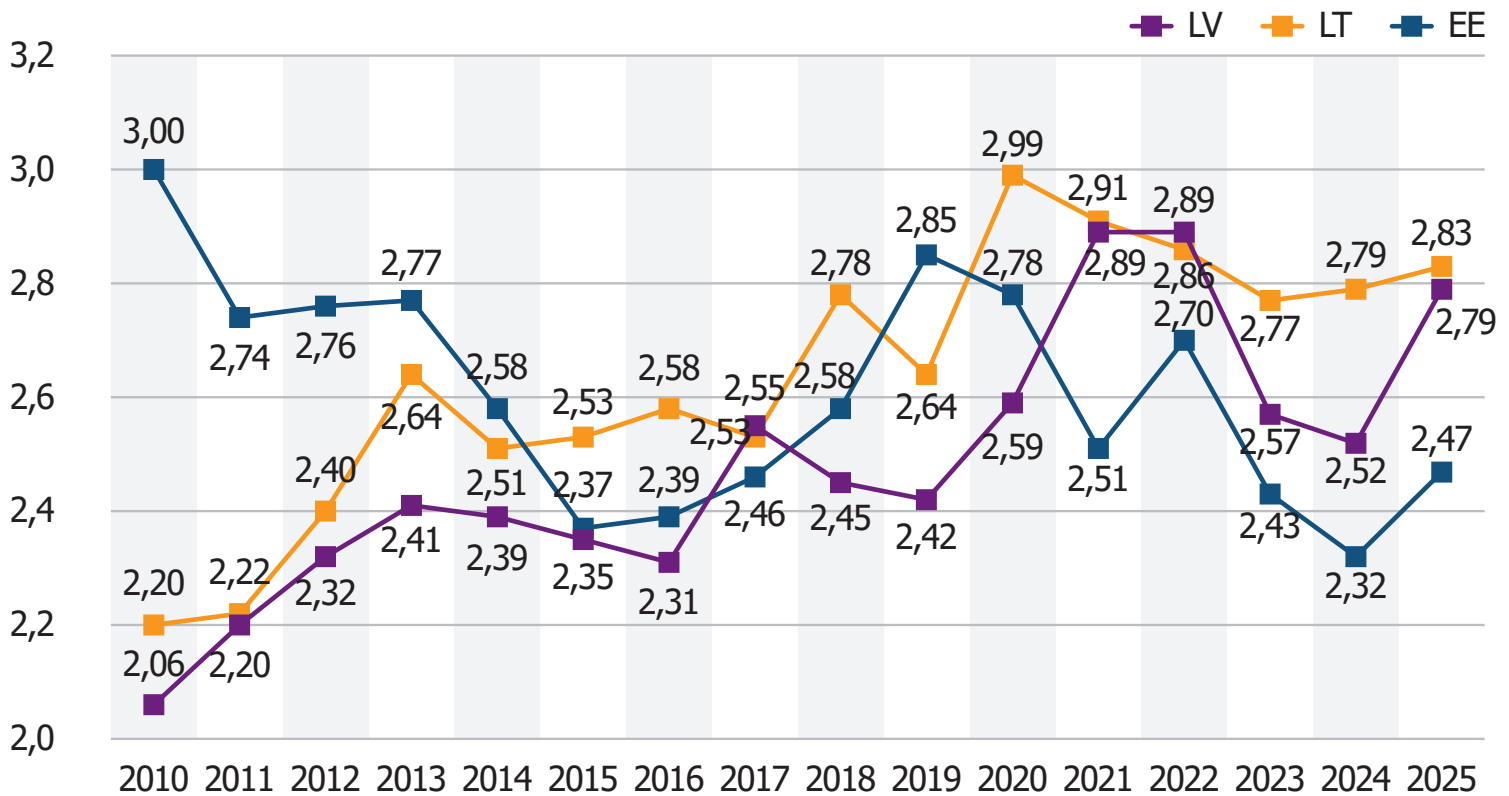
Satisfaction with the quality of business legislation, 2010–2025

(Average. '1'- very low satisfaction, but '5'- very high satisfaction)



Satisfaction with the government's support to entrepreneurs, 2010–2025

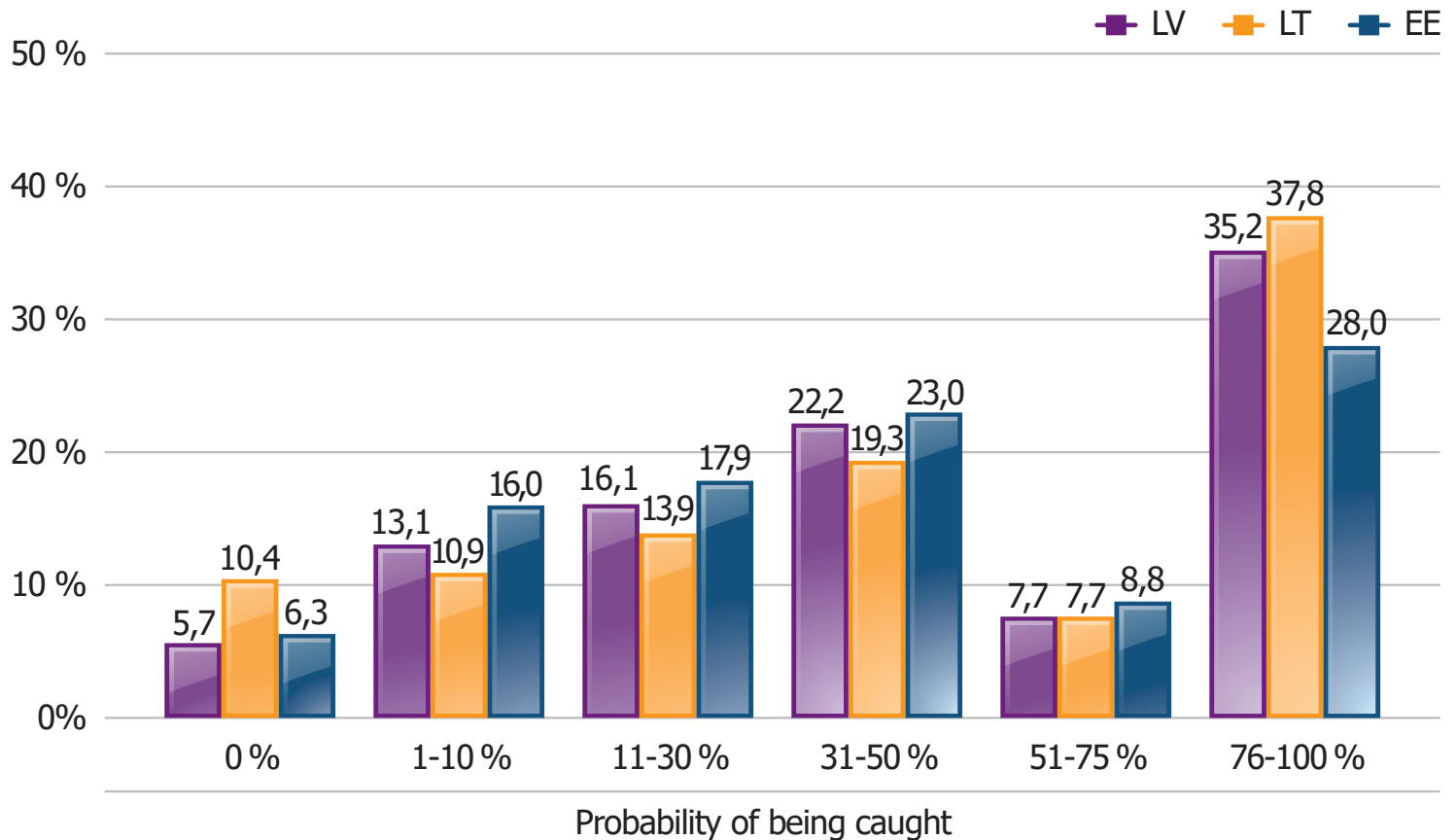
(Average. '1'- very low satisfaction, but '5'- very high satisfaction)



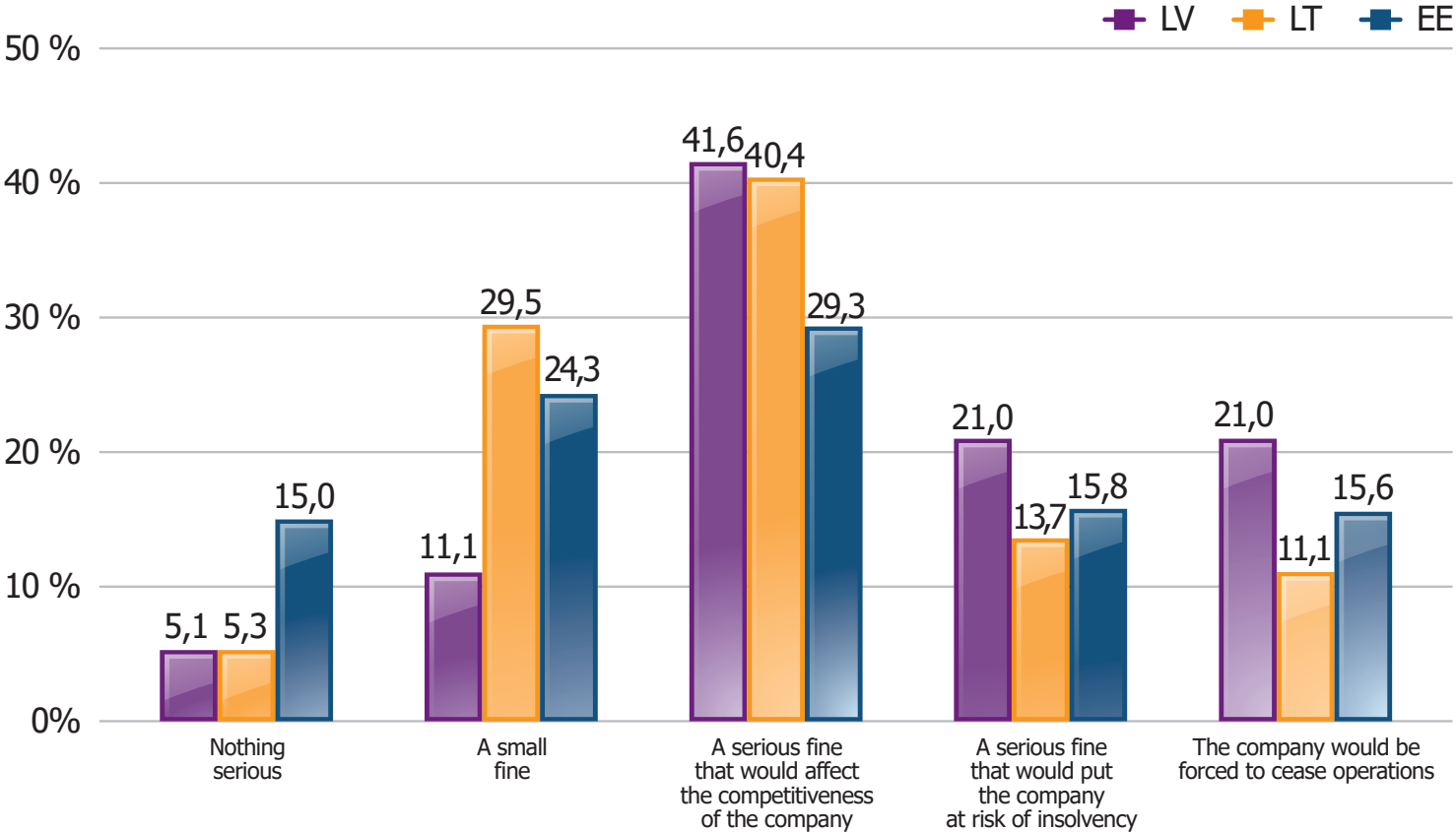
Statistically significant determining factors (using regression analysis)

- Greater tolerance towards involvement in shadow economy → greater involvement in shadow economy

Probability of being caught if the company pays envelope wages, 0–100%, 2025



If a company in your industry was caught for deliberate misreporting, what would typically be the consequence to that company?



Why do some entrepreneurs view tax evasion as unacceptable while others in the same country and industry consider it justified?

Tax morale – the intrinsic willingness to comply with tax obligations – has emerged as a key concept for understanding the gap between legal tax obligations and actual compliance behavior.

Measured as the perceived justifiability of shadow economy participation: the lower the justifiability, the higher the tax morale (Torgler, 2007). Survey question: Is it justifiable to avoid paying taxes if there is an opportunity to do so? Measured on a 1–5 scale, where 1 means “strongly disagree” and 5 means “strongly agree.”

Latvia	Lithuania	Estonia
<ul style="list-style-type: none">■ N = 507■ 46% reject unconditionally (high taxmorale, “1”)■ 44% sometimes justifiable (“2”, “3”)■ 10% largely justifiable (low taxmorale, “4-5”)	<ul style="list-style-type: none">■ N = 504■ 56% reject unconditionally (high taxmorale, “1”)■ 32% sometimes justifiable (“2”, “3”)■ 12% largely justifiable (low taxmorale, “4-5”)	<ul style="list-style-type: none">■ N = 502■ 56% reject unconditionally (high taxmorale, “1”)■ 40% sometimes justifiable (“2”, “3”)■ 4% largely justifiable (low taxmorale, “4-5”)

Baiba Renerte and Arnis Sauka (2026, under review)

Is tax morale more about the people around you or the rules they operate under?

The common assumption/MYTH: “Find the right role models and morale will follow.”

Leadership theory: ethical culture is carried by visible role models, not anonymous systems. Policy focus: CEO pledges, ethics training, visible role models.

What the data show. We tested whether entrepreneurs’ perceptions of their industry’s ethical culture regarding tax compliance are associated with lower acceptance of tax cheating using survey items adjusted from the Corporate Ethical Virtues model (Kaptein, 2008).

REALITY: Role models in the Baltics don’t move the needle, systems do.

Tax evasion is less accepted in industries where entrepreneurs see that:

- Expectations are clear – there are unambiguous standards for taxcompliant conduct (Clarity)
- Practices are visible – it is hard to cheat without being seen (Transparency)
- Compliance is a shared norm – businesses genuinely support each other in paying taxes (Supportability)
- Evasion has real consequences – misconduct is noticed and sanctioned (Accountability)

It makes less difference whether:

- Industry leaders personally set a good example (Role modelling – leaders)
 - Peers and associates behave ethically (Role modelling – associates)
 - Compliance feels practically achievable (Feasibility)
- Role modelling and feasibility are associated with tax morale on their own but add nothing beyond the systemic dimensions – the system matters more than the example.

In the pooled sample $N = 1461$; the results are also robustly confirmed in the data from Latvia, Lithuania, and Estonia using ordered logit models, cluster-robust standard errors, and mixed-effects models; **Baiba Renerte** and **Arnis Sauka** (2026, under review).

Does tax cheating spread horizontally?

The common assumption/MYTH: "If my competitors are cheating on taxes, I will too."

Bad equilibrium theory: if everyone around you is cheating, you will too; non-compliance spreads. Policy focus: social-norm campaigns, publicizing how many others comply.

What the data show. We asked entrepreneurs to rate how justifiable tax evasion would be under escalating real-world conditions – more peers cheating, weaker enforcement, more government waste. Each scenario in this vignette experiment went from the mildest to the most extreme version.

REALITY: Entrepreneurs in the Baltics follow the state's lead.

Government waste is more erosive than peer cheating or strength of enforcement. Entrepreneurs largely calibrate their compliance to what the state does with their money.

More competitors cheat
"Almost none" to "almost all"
peers evading

No consistent effect. Whether almost no one or almost everyone around you cheats, it barely registers. Horizontal contagion is not confirmed.

Weak pooled effect **+0.008 pts**, no consistent direction across countries (LV +0.10; LT -0.22; EE +0.16; positive in Latvia and Estonia, negative in Lithuania).

Enforcement weakens
"Always caught" to "never caught"

Moderate, consistent effect across all three countries. State credibility matters, but it is not the dominant lever.

Moderate effect **+0.22 pts**, consistent across countries (LV +0.16; LT +0.23; EE +0.27).

Government wastes tax revenue
"Wastes almost none" to
"wastes almost all"

Strongest effect by far, perfectly consistent across countries. Government waste is the dominant lever, dwarfing both peer cheating and enforcement.

Strong effect **+0.80 pts**, perfectly consistent across all three countries (LV +0.80; LT +0.78; EE +0.81).

Vignette experiment escalation: same 1,461 entrepreneurs rated justifiability under escalating real-world conditions in all three conditions; **Baiba Renerte** and **Arnis Sauka** (2026, under review).

Can perceived industry ethical culture offset government shortcomings?

The common assumption/MYTH: "Ethics campaigns and training are the lever for improving tax compliance."

Policy focus: ethics training, awareness campaigns, and publicizing compliance norms, on the assumption that knowledge and social proof drive behavior.

What the data show. To test this, we combined the vignette scenarios from the previous slide with each entrepreneur's perceived industry ethical culture score, asking whether those who work in industries with stronger ethical cultures react differently to the same adverse conditions.

REALITY: Structural ethics acts as a buffer when government fails to hold up its end.

Awareness campaigns alone won't move the needle, accountability structures and shared norms will. And those same structures buffer against gaps in fiscal reciprocity.

Accountability buffers government waste:

When industries have strong accountability – where evasion has real consequences – entrepreneurs are significantly less sensitive to government waste.

Waste erodes morale by +0.98 pts in low-accountability- vs +0.59 pts in high-accountability ones.

Supportability buffers weak enforcement:

When industries share a genuine collective commitment to compliance, entrepreneurs are somewhat less sensitive to weak state enforcement.

Weak enforcement raises tolerance for evasion by +0.25 pts in low-supportability-, but only +0.15 pts in high-supportability industries; smaller effect compared to Accountability.

OLS interactions, both confirmed by mixed-effects models with $N = 1,461$ respondents. Accountability \times waste significant in Latvia and Lithuania; marginal in Estonia. Supportability \times enforcement significant in pooled analysis only; **Baiba Renerte** and **Arnis Sauka** (2026, under review).

So what should actually change?

Government

- Account visibly for how tax money is spent – perceived waste is the strongest government-side driver of tax evasion attitudes
- Credible enforcement matters, but cannot substitute for fiscal legitimacy
- Recognize sector-level norms as a policy lever – they measurably buffer the damage from government failures

Industry Associations

- Publish clear, sector-specific tax compliance standards – clarity of expectations is directly linked to member morale
- Build peer accountability mechanisms: shared commitment to comply is a strong predictor
- Establish credible internal sanctions – industries with strong sanctioning cultures show higher morale even when government disappoints

Company Representatives

- Your tax morale is shaped by your industry's norms, not only your own values or what competitors do
- Industry ethical climate is a significant predictor of compliance attitudes, independently of which country you operate in
- The ethical norms that prevail in an industry affect how its members respond when conditions worsen – making norm quality a strategic concern, not just a reputational one

Industry ethical culture is both a direct driver of tax morale and a shield against its erosion when public institutions fall short.

It sits between macro-reform and individual-level persuasion, and it is actionable now: sector norms can be built, published, and upheld by the people in this room.

Baiba Renerte and **Arnis Sauka** (2026, under review)

Study Summary

The aim of the SSE Riga Shadow Economy Index for the Baltic countries is to measure the size of the shadow economy and analyse the factors influencing entrepreneurs' participation in the shadow economy in Estonia, Latvia, and Lithuania. We use the term "shadow economy" to refer to the income of registered companies from all legally produced goods and services that is deliberately concealed from public authorities. The Index has been published since 2010 in order to provide policymakers with information for evidence-based decision-making, as well as to promote a deeper public understanding of business processes in the Baltic countries.

The Shadow Economy Index is calculated based on the methodology developed by Tālis Putniņš and Arnis Sauka, published in the *Journal of Comparative Economics* in 2015. The Index draws on surveys of company managers in Estonia, Latvia, and Lithuania. The surveys apply several data collection techniques that have proven effective in previous research in eliciting more truthful responses. To estimate the size of the shadow economy as a percentage of GDP, the Index includes estimates of unreported business income, unregistered or hidden employees, as well as envelope wages. In addition to the Baltic countries, this methodology has also been applied to estimate the size of the shadow economy and analyse its determinants in other countries, including Ukraine, Moldova, Romania, Poland, Kyrgyzstan, Georgia, Russia, and Kosovo.

Study Summary

This study focuses primarily on estimates of the shadow economy in 2025 and trends in the Baltic countries over the period 2009–2025. The study also analyses the key factors influencing entrepreneurial involvement in the shadow economy.

According to our calculations, the size of the shadow economy in Latvia showed an upward trend from 2016 to 2022, with a slight exception in 2019: 20.7% of GDP in 2016, 22.0% in 2017, 24.2% of GDP in 2018, and 23.9% of GDP in 2019. In 2020, the shadow economy in Latvia increased to 25.5% of GDP, reached 26.6% in 2021, and 26.5% in 2022. In 2023, the shadow economy in Latvia decreased to 22.9% of GDP, and further to 21.4% in 2024. Meanwhile, in Lithuania, an increase in the size of the shadow economy was observed almost every year from 2014 to 2023. Specifically, in Lithuania it stood at 12.5% of GDP in 2014, increasing to 18.2% in 2019, and then to 20.4%, 23.1%, 25.8%, and 26.4% of GDP in 2020, 2021, 2022, and 2023 respectively. In 2024, the shadow economy in Lithuania decreased to 24.7% of GDP. In Estonia, according to our data, the size of the shadow economy has fluctuated, both increasing and decreasing over time. For example, in 2014 the shadow economy in Estonia amounted to 13.2% of GDP, in 2015 to 14.9%, in 2017 to 18.2%, in 2020 to 16.5%, and in 2024 to 19.5% of GDP.

According to the latest Shadow Economy Index data, the size of the shadow economy in Latvia slightly increased in 2025, reaching 21.8% of GDP, which is 0.4 percentage points higher than in 2024. An increase in the shadow economy was also observed in Estonia in 2025:

Study Summary

by 1.4 percentage points compared to 2024, reaching 20.8% of GDP. This is the highest level of the shadow economy recorded in Estonia since 2009, when we began measuring the shadow economy in the Baltic countries. In Lithuania, by contrast, the shadow economy declined in 2025 to 23.6%, or by 1.1 percentage points compared to the previous year.

Overall, the data indicate that the convergence in the size of the shadow economy across all three Baltic countries is continuing, following the trend observed last year: the highest level remains in Lithuania, where it is declining, while the lowest level remains in Estonia, where it is increasing. However, the latest results do not show substantial changes in the size of the shadow economy in any of the Baltic countries. One possible explanation is that the shadow economy reduction initiatives introduced previously — and which may have contributed to reductions in earlier years — have already achieved their maximum effect. Therefore, as the data suggest, without further and/or new policy initiatives, we cannot expect additional improvements. It is also possible that the absence of major changes in the shadow economy across the Baltic states reflects the fact that the effects of both Covid-19 and Russia's war in Ukraine had already impacted the shadow economy in previous years, while the effects of the 2025 Iran/oil crisis have not yet been felt.

Study Summary

The findings of the Shadow Economy Index study show that in Latvia, Estonia, and Lithuania, the most significant component of the shadow economy in 2025, as in 2024, was envelope wages. In Latvia, envelope wages accounted for 47.1% of the total shadow economy (50.0% in 2024 and 48.2% in 2023); in Estonia, 43.7% (43.9% in 2024 and 45.3% in 2023); and in Lithuania, 36.6% (36.9% in 2024 and 35.5% in 2023). Unreported income in Latvia accounted for 25.5% of the total shadow economy in 2025 (24.6% in 2024 and 25.8% in 2023), while the component related to unreported employees accounted for 27.4% (27.4% in 2024 and 26.0% in 2023). In Estonia, unreported employees accounted for 24.7% of the shadow economy in 2025 (30.2% in 2024 and 32.0% in 2023), while unreported income accounted for 31.6% (25.9% in 2024 and 22.7% in 2023). In Lithuania, unreported income accounted for 35.4% of the total shadow economy in 2025 (36.8% in 2024 and 34.5% in 2023), while unreported employees accounted for 28.0% (26.3% in 2024 and 30.0% in 2023).

Compared to 2024, the average share of wages concealed from the authorities — envelope wages — continued to decline in both Latvia and Lithuania in 2025. Specifically, in Latvia envelope wages decreased by 1.1 percentage points to 19.6%, while in Lithuania they declined by 0.3 percentage points to 17.8%. In Estonia, however, envelope wages continued to increase in 2025, reaching 17.9%, which is 0.7 percentage points higher than in 2024.

Study Summary

The level of underreporting of business income (profits) increased in Estonia in 2025 compared to 2024: from 12.1% to 16.0% (+3.9 percentage points). In contrast, underreporting of income declined in Latvia from 15.2% to 14.8% (-0.4 percentage points), and in Lithuania from 20.5% to 20.1% (-0.4 percentage points). According to the latest Shadow Economy Index data, the underreporting of employees (the average percentage of employees working without contracts) declined in Estonia from 10.6% to 9.2% (-1.4 percentage points) and in Latvia from 10.9% to 10.0% (-0.9 percentage points) in 2025 compared to 2024. Lithuania, meanwhile, recorded a slight increase from 11.7% to 12.0% (+0.3 percentage points).

Given the relatively high proportion of envelope wages in the shadow economy across all three Baltic countries, we asked company managers: "What is the approximate probability (0–100%) that a typical company in your industry would be caught if it paid envelope wages?" According to the results, the largest proportion of entrepreneurs still believe that the probability of being caught is "76–100%": this was the response of 37.8% of Lithuanian entrepreneurs, 28.0% of Estonian entrepreneurs, and 35.2% of Latvian entrepreneurs surveyed. Respectively, 7.7% of Lithuanian, 8.8% of Estonian, and 7.7% of Latvian entrepreneurs responded that the probability of being caught was between "51–75%", while 19.3% of Lithuanian, 23.0% of Estonian, and 22.2% of Latvian entrepreneurs stated that the probability was between "31–50%". Meanwhile, 10.4% of Lithuanian, 6.3% of Estonian, and 5.7% of Latvian entrepreneurs believe that the probability of being caught paying envelope wages is "0%", i.e. that companies cannot be caught.

Study Summary

We also asked respondents: "What would typically happen if a company in your industry were caught deliberately misreporting?" In Latvia and Lithuania, 5.3% of respondents answered "nothing serious", compared to 15.0% in Estonia. Meanwhile, 41.6% of Latvian respondents, 40.4% of Lithuanian respondents, and 29.3% of Estonian respondents answered that the consequence would be "a serious fine that would affect the competitiveness of the company". Furthermore, 21.0% of Latvian company managers surveyed, 11.1% in Lithuania, and 15.6% in Estonia responded that "the company would be forced to cease operations".

In addition to measuring the involvement of registered companies in the shadow economy, we also estimate the proportion of unregistered business activity in the Baltic countries. According to our estimates, the share of goods or services provided by unregistered businesses in 2025 (2024) amounted to 10.3% (10.1%) in Latvia, 11.1% (9.4%) in Lithuania, and 8.6% (8.6%) in Estonia.

According to our findings, the overall level of bribery (the percentage of revenue firms pay in unofficial payments to "get things done") in Latvia declined from 9.3% in 2024 to 8.9% in 2025, or by 0.4 percentage points. Meanwhile, increases in the overall level of bribery were observed in Estonia (+0.6 percentage points) and Lithuania (+2.4 percentage points), reaching 7.6% and 12.9% respectively.

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Our findings also show that, compared to 2024, the average percentage of contract value paid to secure government procurement contracts declined in Estonia and Latvia in 2025. Specifically, in Latvia the average share fell to 6.2% (-1.6 percentage points), while in Estonia it declined to 7.1% (-0.3 percentage points). In Lithuania, this indicator increased to 10.4% (+0.5 percentage points).

In Latvia, the highest level of the shadow economy in 2025 was observed in Latgale (25.7%), followed by Vidzeme (22.2%), Kurzeme (22.1%), the Riga region (21.3%), and Zemgale (19.0%). Across sectors, the highest share of the shadow economy in Latvia remained in construction: 29.5% (-4.3 percentage points compared to 2024). In 2025, the shadow economy in Latvian retail trade reached 24.5% (26.2% in 2024 and 27.0% in 2023), in services 22.3% (23.6% in 2024 and 26.4% in 2023), in manufacturing 19.2% (17.3% in 2024 and 18.9% in 2023), and in wholesale trade 15.6% (13.0% in both 2023 and 2024).

In terms of attitudes, companies in the Baltic countries remain relatively satisfied with the performance of the State Revenue Service, which, according to the latest data, is rated slightly higher in Lithuania. On a scale from 1 to 5, where 5 indicates very high satisfaction, satisfaction with the State Revenue Service in Latvia increased to 3.67 in 2025 (3.60 in 2024 and 3.47 in 2023). This is the highest satisfaction level recorded in Latvia since we began measuring it in

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2010. An increase in satisfaction was also observed in Lithuania, from 3.72 in 2024 to 3.75 in 2025, while in Estonia satisfaction declined from 3.60 to 3.55.

The study results also indicate that, compared to 2024, entrepreneurs' satisfaction with state tax policy improved in Latvia and Estonia in 2025: from 2.65 to 2.76 in Latvia and from 2.12 to 2.18 in Estonia. In Lithuania, however, entrepreneurs' satisfaction with tax policy declined from 3.09 in 2024 to 2.86 in 2025.

In 2025, compared to 2024, Estonian entrepreneurs' satisfaction with the quality of business legislation increased, from 2.93 to 2.98. According to the latest findings, satisfaction with the quality of business legislation also increased slightly in Latvia, from 3.06 in 2024 to 3.13 in 2025. In Lithuania, this indicator decreased slightly from 3.00 to 2.98.

Satisfaction with government support for entrepreneurs increased in all three Baltic countries in 2025: in Latvia to 2.79 (2.52 in 2024), in Estonia to 2.47 (2.32 in 2024), and in Lithuania to 2.83 (2.79 in 2024).

Using regression analysis, we identified several factors that drive entrepreneurs' involvement in the shadow economy in the Baltic countries. The regression coefficients suggest that the perceived probability of being caught evading taxes and the severity of penalties are consistent

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with the predictions of rational choice models. Namely, the higher the perceived probability of detection and the greater the penalties, the lower the involvement in the shadow economy. The regression analysis shows that the perceived probability of being caught has a particularly strong effect in reducing participation in the shadow economy. The regression results also indicate that tolerance towards tax evasion is positively associated with the level of underreported income, i.e., entrepreneurs who view tax evasion as acceptable behaviour tend to engage more in shadow economy activities. Measuring tolerance towards tax evasion also plays an important role as a control mechanism for assessing the scale of shadow economy activities, given the sensitive nature of the topic.

The regression results further confirm that companies' satisfaction with tax policy and government support is negatively associated with involvement in the shadow economy, i.e., dissatisfied firms tend to participate more in the shadow economy, while satisfied firms participate less. Analysing each of the four satisfaction indicators separately, we conclude that shadow activity is most strongly associated with dissatisfaction regarding the quality of business legislation and the State Revenue Service, followed by satisfaction with tax policy and government support for entrepreneurs.

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Another important (and statistically significant) factor determining involvement in the shadow economy is firm size: smaller firms (those with fewer employees) engage in shadow economy activities more than larger firms. The regression results also show that younger firms engage in shadow activities more than older firms. One possible explanation for both of these trends is that small and young firms use tax evasion as a means of competing with larger and more experienced competitors. The regression results also confirm that companies in the construction sector tend to engage in shadow activities more than companies operating in other sectors.

Tax morale – the intrinsic willingness to comply with tax obligations – has emerged as a key concept for understanding the gap between legal tax obligations and actual compliance behavior. Here it is measured as the perceived justifiability of shadow economy participation: the lower the justifiability, the higher the tax morale (Torgler, 2007). According to our results most company owners and managers in Latvia, Lithuania, and Estonia believe tax cheating is wrong, but far from all of them. In a 2026 survey of 1,513 entrepreneurs across the three Baltic states, 53% said participating in the shadow economy is never justified. Another 38% said it depends on the situation, and 9% found it largely acceptable. Namely, there are clear country differences. In Estonia and Lithuania, 56% of entrepreneurs firmly reject tax evasion, against 46% in Latvia – a gap of about ten percentage points. The picture at the other end of the scale is different: Estonia

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has the smallest share who consider cheating largely justifiable (just 4%), while Latvia (9%) and Lithuania (12%) are markedly higher and statistically similar to each other. Estonia thus stands out as the strictest country on both measures, while Lithuania combines a high share of clear rejectors with a high share of permissive entrepreneurs.

Differences across industries are visible as well. Construction has one of the lowest shares of entrepreneurs rejecting tax evasion outright in Latvia (42%) and Lithuania (42%); in Estonia, by contrast, construction sits near the country average and retail is the most permissive sector (45% reject). Wholesale trade shows the highest reject share in Latvia and Estonia (67% in both), and businesses in the "other" category lead in Lithuania (70%). The spread across sectors is somewhat wider than the spread across countries, but the country pattern is the more reliable one statistically.

But here is the twist: those sector differences are not really about which industry an entrepreneur works in. When researchers account for the ethical climate within an industry – how much transparency, accountability, and clarity entrepreneurs actually observe around them – the sector differences largely vanish. What predicts tax morale is not the industry label, but the ethical culture behind it.

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In this year's study, in cooperation with University of Zurich researcher Baiba Renerte, we conducted an in-depth analysis of corporate tax morale in the Baltic countries. A new statistical analysis finds that four out of seven dimensions of industry ethical culture significantly predict whether an entrepreneur considers tax evasion acceptable, even after accounting for which country and sector they work in (Baiba Renerte and Arnis Sauka, 2026 *). The strongest effects come from accountability (whether misconduct has real consequences, i.e. whether industry peers and authorities visibly sanction tax-evasive conduct), supportability (whether the industry actively encourages compliance), transparency (whether business practices are open and visible), and clarity (whether ethical expectations are clearly communicated). Entrepreneurs in industries that score higher on these dimensions are meaningfully less likely to find tax evasion justifiable.

Three dimensions do not show an independent effect once the four above are taken into account: whether industry leaders set a good example, whether peers and associates do the same, and whether compliance feels practically achievable. Taken on their own, each is associated with higher tax morale, but their information overlaps with the four leading dimensions and they add nothing on top of them. The role model finding is the most counter-intuitive. It suggests that pointing to compliant businesses as examples – a common policy instinct – does not move the needle on tax morale. What matters is not who is held up as a model, but whether the industry has genuine rules, real consequences, and a culture of openness. Ethics, in other words, needs to be built into the rules and incentives, not just modelled by individuals.

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Hypothetical scenario findings that follow are reported in detail in a companion paper (Renerte and Sauka, 2026**) using the same survey. A common assumption in tax compliance policy is that cheating spreads horizontally: if your competitors are not paying their taxes, you will feel less obligated to pay yours. To test this, our study also presented entrepreneurs with a series of realistic scenarios and asked how justifiable they would find tax evasion as conditions changed: as more and more peers cheated, as enforcement weakened, and as government waste increased. The key question was which of these three conditions moves attitudes the most.

The answer is unambiguous: what the government does with tax money matters far more than what competitors do. When the scenario included increasing amounts of tax revenue being wasted, tolerance for evasion increased by an average of 0.80 points on a five-point scale, consistently across Latvia, Lithuania, and Estonia. Weakening enforcement had a moderate average effect, positive in all three countries but somewhat larger in Estonia than in Latvia. Peer cheating had no consistent effect: positive in Latvia and Estonia, negative in Lithuania, and statistically indistinguishable from zero in the pooled sample. Horizontal contagion – the idea that non-compliance spreads peer to peer within industries – is not clearly supported. Entrepreneurs are watching what the state does, not what their competitors do. The practical implication is direct: social-norm campaigns telling businesses that “most companies pay their taxes” appear less likely to shift attitudes than measures that demonstrably reduce visible government waste.

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The same industry ethical culture that predicts tax morale in normal conditions also buffers against the two biggest hypothetical external shocks to it. When entrepreneurs operate in industries where misconduct genuinely has consequences (high accountability), government waste erodes their tax morale by about 40% less than in low-accountability industries. A similar but weaker buffering pattern holds for weak enforcement: industries where businesses share a collective commitment to compliance (high supportability) are less sensitive to the state failing to catch cheaters, though this pattern is clearer in the combined Baltic sample than within any single country. The policy implication is that building accountability into industry self-regulation and association standards may not only raise tax morale directly, but also make it more resilient in case the state underperforms.

The findings point to concrete actions for three groups. For government, the most important takeaway is that how tax money is visibly spent matters more for compliance attitudes than how aggressively evasion is pursued. Perceived potential waste is the single biggest driver of tax evasion attitudes in the data, dwarfing the effect of enforcement strength. This does not mean enforcement is irrelevant, but it cannot substitute for fiscal legitimacy. Governments that want higher voluntary compliance need to be seen to spend responsibly.

For industry associations and company representatives, the data make a case for treating sector-level ethical standards as a serious policy instrument rather than a reputational afterthought. Industries where misconduct has real consequences, where compliance is a shared norm, and

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where expectations are clearly communicated show significantly higher tax morale – and crucially, they also prove more resilient in case government fails to hold up its end. In industries with strong accountability cultures, the erosive effect of hypothetical government waste on tax morale is about 40% smaller than in industries without them. This means that building and maintaining credible sector norms is not just good for reputation, it is a buffer against the conditions that would most strongly push entrepreneurs toward the shadow economy.

* Renerte, B., & Sauka, A. (2026). Perceived industry ethical culture and tax morale: Evidence from entrepreneurs [Manuscript under review]. University of Zurich and Stockholm School of Economics in Riga.

** Renerte, B., & Sauka, A. (2026). Conditional tax morale among entrepreneurs: State reciprocity, enforcement, and peer effects [Manuscript under review]. University of Zurich and Stockholm School of Economics in Riga.

Methodology Used to Construct the Index

Survey of entrepreneurs

The SSE Riga Shadow Economy Index is based on an annual survey of company owners/managers in Estonia, Latvia, and Lithuania, designed according to the methodology developed by Putniņš and Sauka (2015). The surveys are conducted each year between February and April and include questions about the shadow economy during the previous two years. For example, the survey conducted between January and March 2026 collected information about the shadow economy in 2025 and 2024. To ensure consistency of responses, consecutive surveys overlap by one year (e.g., information on shadow business activity in 2024 is collected in both the 2025 and 2026 surveys).

The sample of surveyed companies is constructed using a random stratified sampling method, ensuring representation proportional to the number of companies in each country. Working with active companies in each Baltic country (using the *Orbis* database maintained by *Bureau Van Dijk*), we divide firms into size quintiles based on the book value of assets. An equal-sized sample is then randomly selected from each size quintile. In total, at least 500 telephone interviews are conducted in each country every year. In the 2026 survey, 504 respondents were surveyed in Lithuania, 502 in Estonia, and 507 in Latvia. The 2025 survey was conducted in cooperation with *Norstat Latvia*.

Methodology Used to Construct the Index

Calculation of the Index

The Index measures the size of the shadow economy as a percentage of GDP. There are three commonly used approaches to measuring GDP: the production approach, the expenditure approach, and the income approach. Our Index is based on the income approach, according to which GDP is calculated as the sum of gross compensation of employees (gross personal income) and gross operating income of firms (gross business income). The Index is calculated in three stages:

- (i) using the survey responses, estimates are made of the extent to which employee compensation and firms' operating income are underreported;
- (ii) the shadow production of each company is estimated as a weighted average of underreported employee compensation and underreported business income, where the weights reflect the shares of employee compensation and business income in GDP;
- (iii) the weighted average level of shadow production across firms is calculated.

Methodology Used to Construct the Index

In the first stage, underreported business income $UR_i^{Operating\ Income}$ of company i is estimated directly using the relevant survey question. Underreported employee compensation, meanwhile, consists of two elements: (i) underreported wages, or “envelope wages”; and (ii) underreported employees. Together, these two elements indicate the total share of underreported employee compensation in company i :

$$UR_i^{EmployeeRemuneration} = 1 - (1 - UR_i^{Salaries})(1 - UR_i^{Employees})$$

In the second stage, a weighted average of underreported personal income and underreported business operating income is calculated for each company, thereby producing an estimate of the unreported (shadow) share of the company’s production (income):

$$ShadowProportion_i = \alpha_c UR_i^{EmployeeRemuneration} + (1 - \alpha_c) UR_i^{OperatingIncome}$$

where α_c is the ratio of employee compensation (*Eurostat* item D.1) to the total sum of employee compensation and firms’ gross operating income (*Eurostat* items B.2g and B.3g). We calculated α_c for each country, denoted by c , for each year using *Eurostat* data. It is important to use a weighted average of the underreported components, rather than a simple average, in order for the Shadow Economy Index to be interpreted as a percentage of GDP.

Methodology Used to Construct the Index

In the third stage, the weighted average of unreported production, denoted by *ShadowProportion_i*, across firms in country *c* is used to obtain the Shadow Economy Index for the respective country:

$$INDEX_C^{Shadow\ Economy} = \sum_{i=1}^{N_c} w_i ShadowProportion_i$$

The weights, denoted by w_i , represent each company's relative contribution to the country's GDP, approximated using the relative size of the company's wage payments. As in the second stage, it is important to apply weighting in this stage as well in order to express the Shadow Economy Index as a percentage of GDP.

In the final stage, we applied the methodology used in the *Global Competitiveness Report* prepared by the *World Economic Forum* and used a weighted moving average $INDEX_C^{Shadow\ Economy}$ based on data from the two most recent surveys. There are several reasons for this approach, including:

(i) increasing the amount of available information and thereby improving the precision of the Index by providing a larger sample size; and (ii) reducing the sensitivity of the results to the specific timing of the survey implementation.

Methodology Used to Construct the Index

The weighting scheme incorporates two overlapping elements:

(i) greater weight is assigned to the most recent survey because it contains more up-to-date information (past information is therefore “discounted”);

(ii) greater weight is assigned to larger samples because they contain a greater volume of information.

Following the World Economic Forum approach, for those years for which no time series from previous surveys were available (the 2009 and 2010 results, based on the first survey conducted in 2011), the Index is based on only one survey. Accordingly, the Index estimates for the first two years (2009 and 2010) are more sensitive to sampling error than subsequent yearly estimates, which are based on larger samples and a moving average. To ensure comparability across countries, we applied a consistent methodology when calculating the Shadow Economy Index in each of the Baltic countries.

Acknowledgments



We thank the Centre for Sustainable Business at SSE Riga for the financial support in the collection of shadow economy index data in 2026, NORSTAT LATVIJA for data collection and our cooperation partner – the Latvian Chamber of Commerce and Industry for the joint work in organising the conference “Shadow Economy in Latvia”. We also thank all the entrepreneurs who agreed to participate in the interviews.

This research and conference are funded by the Latvian Council of Science under the project “Unequal Shadows: Informality, Kinship and Tax Morale in Latvia” (project number LZP-2025/1-0346).



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