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Executive Summary

Out-of-pocket (OOP) spending on medicines remains a feature of healthcare financing in Eastern Europe, even as many countries in the region undergo rapid economic and institutional change. While cost-sharing can be useful in promoting sustainability and curbing moral hazard, poorly aligned design with local economic conditions can limit access, deepen inequities, and constrain growth. The balance between affordability, fiscal responsibility, and economic ambition is therefore central to effective reform.

This paper examines the drivers, patterns, and consequences of OOP pharmaceutical spending in Eastern Europe's evolving health systems. It highlights the risk of importing reforms from other regions without fully considering each country's unique structural and market realities.

Key findings include:

- **Economic context matters:** In many Eastern European states, the rate of increase in per capita pharmaceutical spending has far outpaced that of Western Europe, even where public financing shares have declined—underscoring the need for reform strategies that support, rather than undermine, economic growth.
- **Protective mechanisms are interdependent:** Exemptions, caps, reimbursement lists, complementary insurance, and pricing policy cannot be evaluated in isolation; their effectiveness depends on the interaction between medicine prices, household disposable income, and benefit design.
- **Designing for sustainability:** Optimal OOP policies must balance protection for vulnerable groups with incentives for efficient medicine use, while safeguarding fiscal stability and the viability of the pharmaceutical supply chain.
- **Modelling for impact:** Combining microsimulation, partial equilibrium, and computable general equilibrium approaches enables a full-spectrum assessment—capturing patient-level financial protection, market responses, and wider macroeconomic effects.
- **Country-specific strategies outperform generic models:** Successful reform depends on tailoring design to a country's economic ambitions, production capacity, negotiating power, and population health profile, rather than simply adopting “best practice” from elsewhere.

The paper concludes with a structured framework for policymakers to evaluate OOP reforms against patient outcomes, household finances, and broader economic objectives.

Introduction

High out-of-pocket costs for medicines are one of the most persistent sources of financial strain in Eastern European healthcare systems. While cost-sharing serves legitimate policy functions, such as moderating demand and contributing to public revenues, excessive or poorly designed OOP payments undermine access, adherence, and equity. Furthermore, when two-thirds of GDP depends on household consumption, any policy that reduces disposable income has consequences beyond the health system.

Out-of-pocket (OOP) payments refer to direct healthcare expenses that patients pay from their own funds, including deductibles, copayments, and coinsurance. In the context of medication use, OOP costs can significantly influence patient behaviour, including medication adherence, treatment choices, and healthcare utilization patterns. While research often focuses on the detrimental effects of OOP, it is also important to remember that these cost-sharing mechanisms also serve multiple policy functions within Universal Health Care (UHC) frameworks, including demand management, revenue generation, cost control, and resource allocation. Indeed, most UHC systems worldwide, including those in Western Europe, incorporate some form of patient cost-sharing for pharmaceuticals, whether through copayments, reference pricing, tiered formularies, or coverage limitations for certain drug categories (WHO 2018). The issue is, therefore, not the presence or absence of OOP, but how they are designed. The consequences of poorly designed or overly burdensome cost-sharing mechanisms can be substantial, particularly in settings where income inequality is high, insurance coverage is partial, or implementation capacity is limited.

Pharmaceutical cost-sharing policies should not be evaluated through a singular lens of supposed best practice. Optimal design depends on the unique demographic profile, fiscal capacity, healthcare infrastructure, and policy objectives of each country. Even across a region as integrated as the European Union, there is substantial variation in approaches to OOP, ranging from fixed and percentage based co-payments, reference pricing systems, and tiered formulary systems with different copayment levels. Protective measures also differ considerably, from caps on patient contributions, exemption mechanisms for age, income, disease severity, or social benefit status, to supplementary or complementary insurance schemes.

This white paper focuses on Eastern Europe broadly defined, encompassing EU member states in Central and Eastern Europe, Western Balkan countries, and other post-transition economies. While economic and political contexts vary, these countries face shared structural challenges in pharmaceutical financing: high rates of medical inflation, limited fiscal space, uneven insurance coverage, and legacy systems shaped by their socialist past.

For this region we explore four key policy questions:

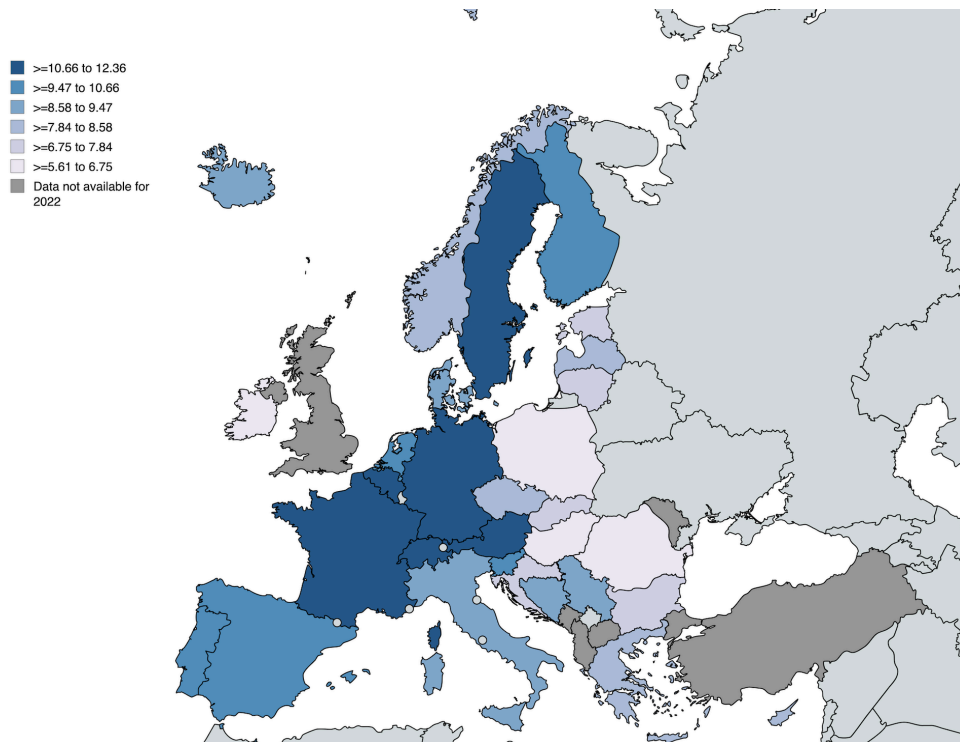
1. Are current levels and types of OOP for medicines harmful in Eastern European contexts?
2. What protective policies can be implemented to mitigate these harms?
3. What are the anticipated effects of such policies on national health systems and economies?
4. Which economic modelling tools are used to assess trade-offs and identify viable reforms?

The Structure of Spending: How Eastern Europe's Baseline Differs

Economic Trends:

Eastern European countries have generally outperformed their Western counterparts in economic growth. In 2025, Bulgaria and Poland reported growth rates of 2.8% and 2.9% respectively, compared to 1.0% in the EU as a whole and 0.8% in the eurozone (Eurostat data 2025). This trend extends to the Western Balkans, where countries such as Albania, Bosnia & Herzegovina, Kosovo, Montenegro, North Macedonia, and Serbia are projected to achieve collective growth of 3.7% in 2025 (World Bank 2025). This strong performance despite considerable global uncertainty, is driven predominantly by domestic demand including household consumption, tourism and construction.

However, this growth is insufficient to achieve rapid convergence with Western European living standards. Many countries remain fiscally constrained, with Romania's government deficit reaching 9.3% of GDP in 2024, driven by public sector wage increases, pensions, and interest payments (European Commission, 2025a). Furthermore, public spending is at risk of reversing and public debt has reached highs in many regions, limiting the scope for expanding public spending on healthcare.



Total Health Care Expenditure as a % of GDP (2022 data). Created by Zeumed using Eurostat data

Medical Inflation and Pharmaceutical Cost Pressures

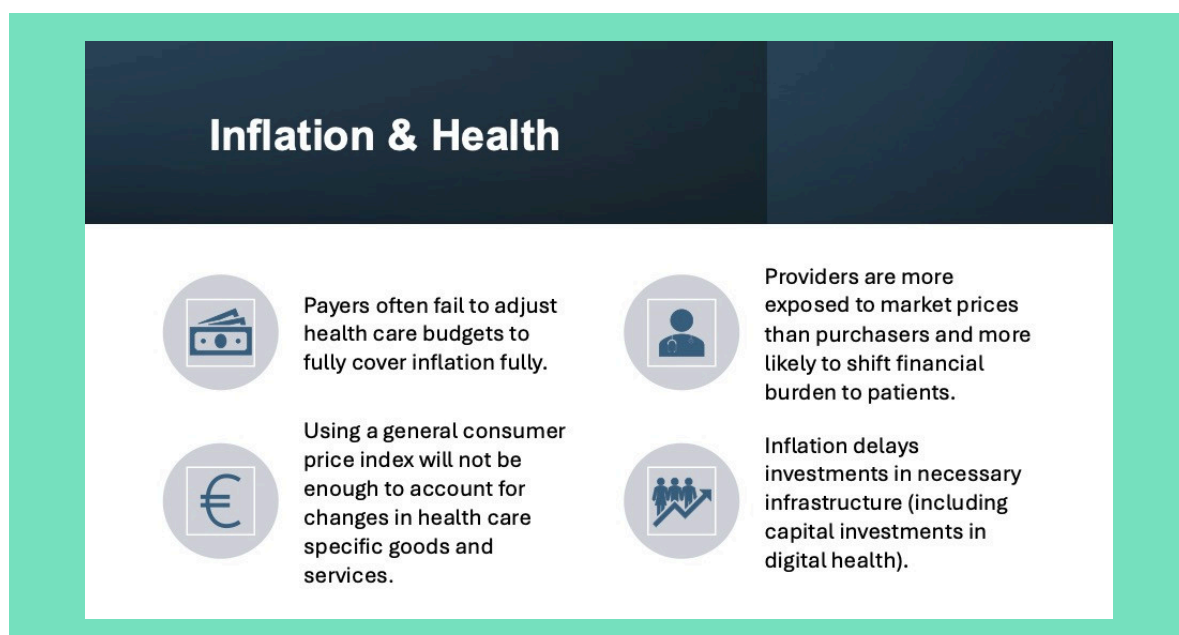
The public share of pharmaceutical expenditure has declined in many CEE countries, even as total and per capita spending on medicines has accelerated. Per capita pharmaceutical spending in the region has increased at a rate eight times higher than in EU15 countries. This divergence underscores the complexities of reform in an environment of sustained medical inflation, where households are increasingly absorbing cost pressures previously borne by the state.

Notably, these pressures were anticipated. As early as 2016, Jakovljevic and colleagues warned that post-socialist countries would face a growing affordability challenge, compounded by rising income inequality and structural limitations in public financing. Nearly a decade later, this prediction has largely materialised (Jakovljevic, 2016).

The medical and pharmaceutical sector has been particularly subject to steep inflationary pressures. A comparison of medical inflation in 2024 shows that it far outpaces general inflation in most of the region: 30% in Latvia, 22% in Bulgaria, 20% in both Serbia and Romania. In contrast, medical inflation remained under 10% in most Western European countries. While some nuances exist—Lithuania recorded 15%, similar to the UK, and Poland was at 10%, which was lower than Germany, the general trend suggests persistent inflationary pressure in the Eastern European medical sector (Aon 2024).

These inflationary pressures are compounded by limitations in pharmaceutical coverage. When public funding cannot match spending, then the financing mix becomes a critical policy choice between expanding insurance coverage versus accepting higher out-of-pocket payments. In general private health insurance remains less developed across the region, with some notable exceptions including Slovenia which has developed complementary insurance markets to address gaps in statutory coverage and offset copayments. Yet fewer have built the type of intermediate risk-sharing mechanisms which can be seen in most mixed financing models.

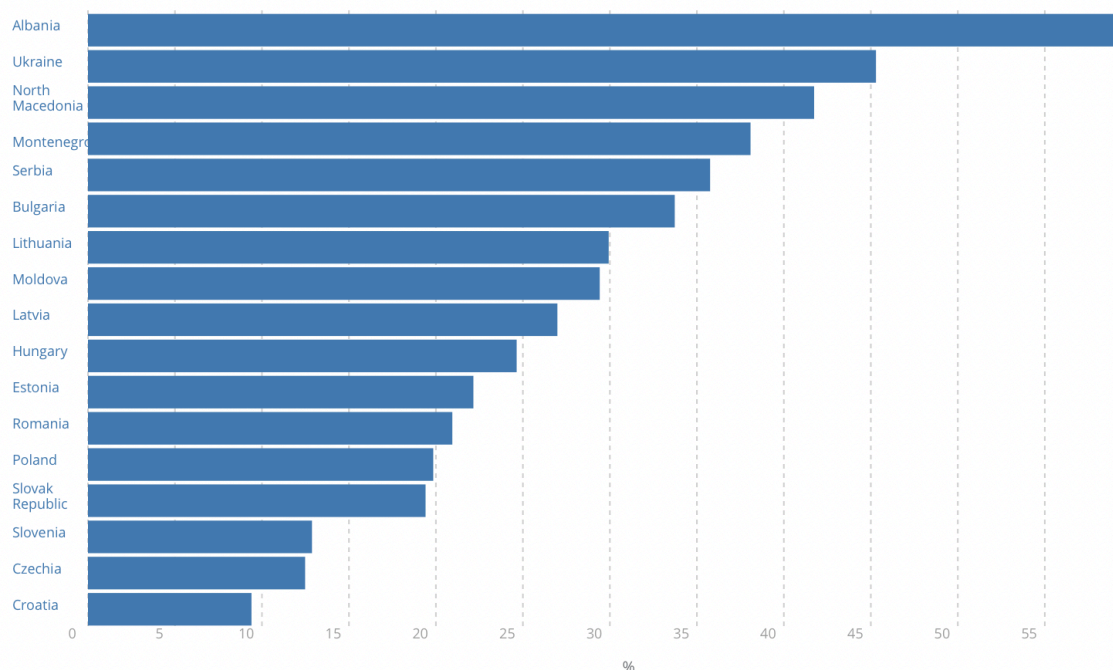
The implications of this choice are well established. While insurance pools risk across the population and over time, shielding users from the financial shock of illness, OOP payments concentrate financial risk precisely at the point of illness. For countries with limited fiscal space, expanding insurance coverage may appear costlier in the short term and reforms are often constrained by limited fiscal space, low administrative capacity, and high levels of informality in labour markets. However OOP payments can impose less visible downstream economic costs through reduced household consumption, foregone care, and productivity losses.



Variation in Out-of-Pocket Contributions Across Health Services

There is substantial diversity in the composition of out-of-pocket payments across healthcare services in Eastern Europe. Payments may take the form of purely private transactions (e.g. direct payments to private doctors or pharmacies), official patient cost-sharing (e.g. copayments within defined benefit packages), or informal payments (e.g. cash or in-kind contributions beyond what is legally required).

Households may contribute to financing medical products (up to 89% in Latvia for therapeutic appliances), dental care (up to 84% in Lithuania), and medicines (up to 63% in Poland). Interestingly, although Latvia spends less on medicines per capita overall, a disproportionately high share of its pharmaceutical expenditure is financed by citizens through out-of-pocket (OOP) payments (in 2020, total pharmaceutical spending in Latvia reached €264 per capita, 58% of which was financed by OOP spending). Only Poland and Bulgaria have higher rates of OOP as a share of total medication expenditure in the EU. (From Eurostat data).



OOP as a % of Total Health Care Expenditure (2021 data).
From the Global Health Expenditure database, World Health Organisation
[uri:apps.who.int/nha/database](https://apps.who.int/nha/database) License : CC BY-40

How Out-of-Pocket Spending Affects Patients and Economies

The effect on OOP on medication adherence

Evidence on the direct health effects of pharmaceutical out-of-pocket (OOP) payments in Europe remains limited. While there is broad recognition that high OOP costs reduce medication adherence, most studies focus on financial protection indicators, such as catastrophic or impoverishing expenditure, rather than health outcomes per se. This lack of clinical outcome data creates a policy blind spot. However we know from European studies that there are associations between unmet need and the proportion of health expenditure paid out-of-pocket (Chaupain-Guillot & Guillot, 2015), and that unmet need is linked to a subsequent deterioration in health (Gibson et al., 2019).

International evidence reinforces this link. The RAND Health Insurance Experiment (1971-1986) in the United States showed that even modest copayments reduced both necessary and unnecessary care with significant adverse effects among lower-income and chronically ill populations. An effect on health outcomes was most evident in this population, where free care led to improvements in hypertension, dental health and vision, with a projected 10% improvement in mortality for those with hypertension (Newhouse, 1992). Similar findings were reported in Canada where cost-sharing reduced essential medication use among elderly patients (Tamblyn 2001). The CLEAN Meds trial, also in Canada, found that eliminating copayments reduced overall healthcare costs at two years. Notwithstanding these findings, the study did not demonstrate a statistically significant change in health outcomes (Persaud 2021).

Cost-related non-adherence (CRNA) behaviours, such as delaying prescriptions, skipping doses, or halting treatment may occur, and these behaviours lead to greater downstream expenditures and cost-shifting. Medication non-adherence is a significant policy issue which affects up to 50% of chronic medication users and contributes to 200,000 deaths and €80-125bn in avoidable costs (European Commission, Medi-Voice 2011). A 2019 German study found that one third of an over-indebted adult population (with statutory insurance) reported not filling prescriptions and/or skipping or decreasing doses of prescribed medications due to financial pressures (Warth 2019).

The effect of OOP on household income

The literature on out-of-pocket (OOP) payments generally focuses on catastrophic and impoverishing health expenditure, and the broader economic impact of these payments on household income often remains under-explored. The impact is not only felt by lower-income households who are at risk of financial hardship, but also affects disposable income and savings capacity right across the income distribution.

The incidence of impoverishing health spending varies widely across Europe. It remains below 1% of households in countries such as Belgium, Ireland, Slovenia, Spain, and the United Kingdom but exceeds 4% in Bosnia and Herzegovina, Georgia, Hungary, Italy, Latvia, Lithuania, Montenegro, the Republic of Moldova and Romania, and reaches over 7% in Albania, Armenia, Bulgaria, Serbia, and Ukraine, while the range of catastrophic health spending is from under 2% of households in Ireland, Spain, Slovenia, Sweden and the United Kingdom to over 14% in Armenia, Bulgaria, Georgia, Latvia, Lithuania, and Ukraine (Thomson, 2023). Yet the effect of pharmaceutical OOPs extends beyond the poorest groups. A paper from Serbia highlighted that this also affects wealthy households who need to use health care frequently (Arsenijevic 2013).

The structural impact of high OOPs on consumption and savings is a concern. In many Eastern European countries, private consumption drives approximately two-thirds of GDP, and indeed it is the main driver of economic growth in the Western Balkans. When OOP spending on medicines reduces disposable income, it not only affects household welfare but may also dampen domestic demand, limiting overall economic growth. Moreover, households with reduced savings are less resilient to future health shocks, creating a cycle in which both health and financial risk become more difficult to manage.

The effect size differs across Europe. Western European households save a large share of their disposable income, while countries such as Romania and Bulgaria maintain negative household savings rates (Rocher 2015). This creates a feedback loop: high OOP spending constrains saving, low savings reduce resilience, decreased resilience and increased fiscal pressure reduces the ability of the public system to respond, resulting in more reliance on private expenditure.

Not only does OOP spending affect day-to-day consumption, but it may also limit investment in economic growth. Policymakers should therefore consider OOP reform not solely as a health system issue, but also as a macroeconomic concern.

What Shields Patients: From Copay Caps to Fiscal Growth

Protective Mechanisms

OOPs are a standard feature of pharmaceutical systems and serve important functions, including limiting moral hazard, promoting more responsible use of medicines, and contributing to overall system sustainability. Indeed they remain a fixture even in high-income countries with well-developed health financing systems, typically in the form of flat prescription fees or percentage-based co-payments. Their presence reflects not a policy failure, but a deliberate balancing act between access, efficiency, and cost containment.

The financial burden imposed by cost-sharing depends not only on how co-payments are structured, but also on additional factors including: the price of the underlying medicine and the disposable income of the payer. A co-payment is not inherently harmful or protective, it becomes so depending on what it is applied to and who bears the cost. A 50% co-pay on a low-cost generic may be inconsequential, while the same share on a high-cost treatment can remain unaffordable even with formal exemptions in place.

Protective mechanisms such as income-based exemptions, annual caps, and complementary insurance can help reduce exposure to high OOP costs. But these mechanisms do not operate in isolation. Their effectiveness depends on the interplay between pricing policy, benefit coverage, and household-level economic conditions. Sustainable financial protection requires coordinated attention to all three dimensions.



Albania

The Compulsory Health Insurance Fund (ISKSH) reimburses prescription drugs for the insured. This insurance is mandatory for all economically active persons resident in the country. Payment contributions for economically inactive individuals are funded by the State. Despite this, gaps still exist.

Rates of catastrophic health spending are estimated to be >14%.

The Ministry of Health publishes a list of reimbursable drugs. However only 30% of registered medications are approved for reimbursement.

The WHO Global Health Expenditure database shows that Albania has the highest rate of total OOP spending in Europe (as a share of total health expenditure), but not the highest rate of OOP spending on medication.

Exemptions and Caps

Exemptions and annual caps are the most common protective mechanisms used to reduce household exposure to out-of-pocket pharmaceutical costs. These measures aim to ensure that co-payments do not prevent access to treatment for individuals with low incomes, high health needs, or both. Exemptions are typically applied based on income, age, disability status, or chronic illness, while annual caps limit the cumulative OOP burden a household can face within a calendar year.

Many countries in Eastern Europe have adopted such mechanisms, though their scope and effectiveness vary widely. The Czech Republic operates a clear annual cap of €200 per person, with lower thresholds for children and older adults. Estonia applies a stepped reimbursement model: once a patient reaches €100 in annual pharmaceutical spending, the reimbursement rate increases, reaching 90% after €300. Hungary also applies monthly limits for selected vulnerable groups. In contrast, countries such as Montenegro have legal caps in place, but out-of-pocket costs still account for more than 60% of pharmaceutical spending, suggesting gaps in enforcement or policy alignment (WHO & Eurostat data 2025).

Complementary insurance

This mechanism involves using private insurance to cover the portion of pharmaceutical costs not paid by the state — especially co-payments, excluded medicines, or spending beyond caps. It is widely used in some systems (e.g. Slovenia, France), but remains underdeveloped or inequitable in much of Eastern Europe (Tambor, 2021).

Generic medicines

Generics play a particularly important role in improving access and controlling costs. Countries benefit from strong domestic manufacturing capacity, and demand-side policies that encourage prescribing by International Non-Proprietary Name and permitted pharmacist-initiated generic substitution. In principle, this supports both affordability and sustainability. However, brand-name prescribing, weak substitution rules, and patient preferences can limit the uptake of generics and result in higher OOP costs, even when reimbursed alternatives exist.

Reimbursement Lists

The design of pharmaceutical reimbursement systems plays a central role in shaping the level and distribution of out-of-pocket spending. Key factors include the scope of the reimbursement list, the depth of coverage for different drug categories, and the pricing rules that determine whether patients pay only a co-payment or cover the full cost of treatment. While many countries in Eastern Europe have expanded their lists of reimbursable medicines in recent years, households continue to face significant OOP costs due to limited coverage levels, narrow exemption criteria, and the absence of effective caps. They also operate tiered reimbursement systems, where medicines are covered at different rates depending on clinical indications or policy priorities. Essential treatments for chronic conditions may be reimbursed at 100%, while non-essential or lifestyle-related drugs are covered at lower rates or excluded entirely.

Since the early 2000s, most European countries have operated positive lists to define which medicines are eligible for public reimbursement. These tend to be more restrictive in Eastern Europe than in Western systems. Moreover, inclusion on a positive list does not necessarily imply full reimbursement: medicines assessed as having lower therapeutic benefit may be reimbursed only partially, requiring patients to cover the remaining share themselves (Vogler 2015). These are tiered reimbursement lists, with tiering based on clinical indications or policy priorities. Essential treatments for chronic conditions may be reimbursed at 100%, while non-essential or lifestyle-related drugs are covered at lower rates or excluded entirely.

The experience of Albania reflects this dynamic. While the reimbursement list has expanded, a high rate of OOP spending persists. Co-payment levels range from 0% to 50% of the reference price, with no explicit exemptions for people with common chronic conditions or low incomes, and no overall annual cap on out-of-pocket spending.

Pricing Policy and the Patient Price of Medicines

Even when co-payment rules are well designed, the actual price of a medicine remains the foundation of a household's out-of-pocket cost. In percentage-based systems, a lower price means a lower co-pay.

In most Eastern European countries, pharmaceutical prices are set through a combination of external reference pricing (ERP), generic price caps, and regulated pharmacy and wholesale mark-ups. These systems have been largely effective in containing retail prices, often placing these countries among the lowest-cost medicine markets in Europe.

However, value-added tax (VAT) significantly adds to patient costs in some countries. While many countries apply reduced VAT rates on medicines, others, such as Bulgaria and Slovakia, continue to apply the full 20% VAT even on essential drugs. This tax is embedded in the retail price and typically not reimbursed, meaning patients absorb the full cost. In several instances, the VAT component alone can exceed the patient's co-payment, especially where low co-payments are applied to high-priced products.

Therefore, one direct lever to reduce household OOP spending is the regulation of pharmacy margins and the application of reduced VAT rates on reimbursable or essential medicines. These components are within government control and, if adjusted appropriately, can reduce patient costs without requiring changes to clinical coverage or benefit design.

Nevertheless, final retail price formation is more nuanced than VAT alone. Some countries with high VAT rates offset this by imposing minimal pharmacy or wholesale mark-ups. In contrast, others apply substantial mark-ups, particularly on high-cost medicines such as monoclonal antibodies, where both pharmacy and wholesaler margins materially inflate the patient-facing price. Even for lower- to medium-cost products, the wholesaler mark-up alone can constitute a significant share of the retail price. A comparative analysis of 35 European countries found that 14% had particularly high combined rates of mark-ups and taxes. A price component analysis across three classes of medicines, representing high-, medium-, and low-cost drugs, showed that combined taxes and mark-ups ranged from 5% to 187% of the ex-factory price (Leon, 2025). The same study estimated that if a moderate average mark-up of 22.3% had been applied across all countries it would have resulted in \$2.4 billion in savings for both payers and patients (Leon, 2025).

Unfortunately it must also be remembered that retail price regulation can create unintended knock-on effects, including parallel trade. In some settings, tightening pharmacy mark-ups has led to costs being shifted upstream, increasing wholesale prices instead. Therefore there must be holistic price governance across the full supply chain, and attempts to regulate OOP exposure through margin control must consider how pricing incentives propagate from manufacturers to wholesalers to pharmacies lest savings at one level be eroded at another.

Economic Growth as a Protective Mechanism

While much of the debate around out-of-pocket (OOP) payments focuses on cost-sharing design and pricing policy, a more foundational determinant of affordability is the overall economic capacity of households and governments. Higher disposable income reduces the relative burden of co-payments, while greater fiscal space enables expanded public coverage and stronger price negotiation with suppliers.

In this sense, economic growth functions as a protective mechanism in its own right. Countries with higher GDP per capita tend to exhibit both lower levels of catastrophic health expenditure and more progressive financing arrangements. Growth expands tax revenues, widens the formal employment base, and supports the expansion of pooled financing—ultimately allowing governments to shift more of the health cost burden away from individuals.

This effect is particularly relevant in Eastern Europe, where income convergence with Western Europe remains incomplete. Even with identical pharmaceutical policies, a country with a significantly lower average wage will expose its population to greater financial risk. OOP payments that are affordable in relative terms in Austria or Germany may be impoverishing in Romania or Bulgaria. Accordingly, measures of affordability must be interpreted in context: not just as a share of health spending, but as a function of purchasing power and income distribution.

Moreover, economic growth also strengthens the strategic position of payers. Larger, wealthier markets have greater leverage in price negotiations, improved access to innovative therapies, and more attractive conditions for local manufacturing investment. Conversely, small or stagnating economies may be more susceptible to medicine shortages, parallel trade pressures, and supplier disengagement.

Lithuania

Real GDP grew 2.8% in 2024, with momentum driven by last-year consumption and investment; the Commission projects 2.8% in 2025 as real wage growth continues to support private consumption.

The Bank of Lithuania noted that household consumption expenditure surpassed its pre-inflation peak in Q1 2024, with rising real income the main driver.

Public health spending rose steadily over the past decade, driven in part by the pandemic response and policy reprioritization. By 2021, government health expenditure reached 5.4% of GDP.

This combination of growth in public health spend and economic momentum underlines Lithuania's increasing fiscal commitment to health and reflects improved capacity for protective reforms.

Policy Design and Modelling: Tools for Tailored Reform

Effective reduction of out-of-pocket (OOP) burden requires more than isolated reform of cost-sharing or pricing policies. Policymakers must take a system-wide view—linking household-level financial risk with upstream policy levers in taxation, pricing, insurance design, and market regulation.

This requires tools that can move beyond descriptive statistics toward predictive modelling. A key step is the use of ex-ante simulation frameworks that estimate the likely distributional effects of policy reforms before implementation. Such models can project how proposed changes, such as adjusting co-payment caps, expanding benefit coverage, or modifying VAT, would affect OOP spending across income quintiles, disease areas, and population groups.

Importantly, these models must account for the interplay between pricing, coverage, and household income. For instance, a policy to reduce VAT on essential medicines will have very different distributional effects depending on whether high-cost products dominate spending, or whether generics are widely available. Similarly, expanding the positive reimbursement list will only improve financial protection if there are adequate public funds to support reimbursement and sufficient retail availability of the newly covered products.

In fragile or transitional health systems, ex-ante modelling can also identify unintended consequences, such as:

- Supply-side effects (e.g. manufacturer withdrawal in response to price cuts);
- Shifts to informal payments or private sector leakage;
- Cross-border effects (e.g. parallel exports undermining local supply).

To address these complex trade-offs, policy makers require sophisticated analytical tools. Three complementary modelling approaches can provide the evidence base for optimal OOP design and financing reform: microsimulation; partial equilibrium models; and general equilibrium models. Together, these tools enable comprehensive analysis of policy impacts across patient outcomes, household financial risk, and system-wide economic effects, a critical step toward designing resilient and equitable pharmaceutical systems.

Microsimulation

Microsimulation allows for the granular modelling of how different households, patients, or insurance units respond to OOP policy changes. It captures the heterogeneous impacts of OOP reforms, which includes an income-stratified impact assessment accounting for informal economy participation, the effect on healthcare utilisation and health outcomes due to non-adherence, and policy interaction effects between caps, exemptions, and copayment structures.

Applications include:

- Modelling individual and family healthcare decisions based on utility maximization;
- Modelling adherence responses to cost-sharing;
- Evaluating the response to detailed insurance benefit designs including deductibles, copayments, and OOP caps;
- Projecting both healthcare utilisation and health outcomes.

Microsimulation is the gold standard in health reform analysis and is increasingly applied to assess benefit redesign, exemption policies, and the effects of informal economy participation on access and equity.

Partial Market Equilibrium Model for the Pharmaceutical Sector

Partial equilibrium models provide a macro-level simulation of the supply-side dynamics within the pharmaceutical sector. This approach assesses how various actors across the pharmaceutical supply chain manufacturers, wholesalers, and pharmacies adjust to pricing and regulatory changes.

Applications include:

- Assessing how manufacturers, wholesalers, and pharmacies may adjust behaviour in response to VAT changes, regulated mark-ups, or price caps;
- Estimating pharmacy financial viability, with special focus on rural and underserved areas;
- Modelling the impact of policy scenarios on medicine availability and supply chain stability;
- Exploring the sensitivity of pricing and launch decisions to EU-wide parallel trade incentives for high-value medicines.

It is particularly valuable for assessing policy cohesion, including ensuring that reforms do not threaten system viability.

Computable General Equilibrium (CGE)

CGE models capture the full economic system, linking the health sector with households, firms, government, and external trade. These models assess not only direct policy impacts, but also feedback effects across sectors and over time, enabling analysis of long-term sustainability and macroeconomic impact.

Applications include:

- Modelling the impact of tax or subsidy reform on public and private pharmaceutical spending; Assessing the broader fiscal and productivity implications of reducing OOP burden;
- Estimating the effect of healthcare policies on economic growth, labour markets, and inequality;
- Analysing the health sector's contribution to GDP and tax revenue generation under different scenarios.

These should be used in combination with microsimulation and partial equilibrium approaches to support a multi-level evaluation of reform options.

A Practical Approach to OOP Policy Design

While technical modelling is critical, the design of effective out-of-pocket payment (OOP) policies also requires strategic alignment with national priorities, stakeholder awareness, and institutional feasibility. A structured, country-specific approach can support this process. Steps include:

1. Clarify national objectives:

OOP reforms should not be assessed in isolation from broader health system or industrial policy goals. For example, a medium-term ambition may include development of a strong pharmaceutical manufacturing industry. Aggressive price regulation may generate short-term savings but can reduce margins for pharmacies and suppliers, limiting future investment or employment in the sector. Policy design must consider both affordability and long-term industrial development.

2. Assess market leverage:

The country's negotiating position on medicine prices is shaped not only by population size, but also by procurement capacity and its role in regional supply chains. Larger countries, such as Poland (population ~40 million), may have greater leverage in bilateral negotiations or joint purchasing schemes than smaller markets like Bulgaria (~7 million) or Montenegro (~600,000). Leverage can also stem from institutional strength and coordinated procurement, not just market size.

3. Evaluate reform options across three dimensions:

- Health system and service delivery: including access to medicines, adherence, and continuity of care;
- Household finances and health outcomes: including risk of catastrophic expenditure, income inequality, and forgone care;
- Broader economic effects: including employment in the pharmaceutical supply chain, tax revenue, and public expenditure implications.

4. Run targeted simulations, using synthetic data if necessary:

Where detailed national datasets are unavailable, initial policy screening can be conducted using synthetic or proxy data. These early simulations can help identify scenarios likely to produce adverse distributional or fiscal outcomes, narrowing the field of viable reforms. This phase does not replace detailed modelling but helps avoid pursuing options that are structurally incoherent or politically infeasible.

Conclusion

Out-of-pocket (OOP) payments remain a core element of pharmaceutical financing across countries. When well designed, they can support appropriate medicine use and system sustainability. But where they are misaligned with household incomes, medicine prices, or supply-side incentives, they can undermine access and increase financial vulnerability.

In Eastern Europe, although pharmaceutical spending has risen rapidly, the public share has not followed, placing greater cost burden on individuals. Assessing the consequences of OOP payments does not only depend on co-payment rates, but also necessitates a review of configuration including benefit design, VAT and mark-up rules, medicine pricing, and overall household purchasing power. Without coordinated action across these domains, even well-intentioned reforms will fail to deliver meaningful protection.

This paper has outlined how effective OOP policy requires a structured, country-specific approach. Reforms cannot rely on lifting international ‘best practices’ and applying them wholesale. Countries differ in their market leverage, fiscal space, administrative capacity, and long-term ambitions, including whether they aim to build or preserve domestic pharmaceutical production. These contextual factors are not incidental, they are central to whether reforms succeed or fail.

To support this complexity, robust modelling is essential. The combined use of various econometric frameworks allows policymakers to understand trade-offs across the patient, system, and economy. But these tools must be embedded in a wider policy process, one that recognises political economy dynamics, industrial strategy, and implementation realities.

The goal is not to eliminate OOP payments, but to structure them in a way that reflects each country’s economic position and health system goals. For countries seeking to improve access, enhance equity, and lay the foundations for sustainable growth, this requires more than technical capacity. It requires tailored insight, cross-sectoral coordination, and long-term strategic planning.

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