Resilience of Municipally Owned Utility Companies – A Hungarian Case Study

by

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Utility companies play a crucial role in the functioning of modern society, and understanding their resilience is essential to ensure the continuous provision of basic services. They also maintain an unbroken chain of supply and the going concern principle. Our study examines the resilience of Hungarian, municipally owned utility companies, with particular focus on security of supply and financial stability. This research presents the environmental obligations of utility companies, the effects of regulatory changes, and the strengthening role of the state over the past decade and a half. It analyses corporate profitability and the challenges posed by the COVID-19 pandemic. The study highlights that adaptive regulatory frameworks and appropriate financial strategies can increase the resilience of utility companies, ensuring service continuity even in crisis situations. The post-2010 Hungarian state model, operating on statist principles where the government assumes a significant role in economic governance and public service provision, has increasingly faced challenges and limitations during the critical economic years since 2020, which may call into question the efficiency and sustainability of this model. The unique contribution of this study is its analysis of utility company operations in the Hungarian economy as it transitioned from a planned to a market economy, focusing specifically on a period of a decade and a half when public ownership and state regulation regained ground within the market economy model.

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1. Introduction: Issues of Municipally Owned Utility Companies in the Context of Security of Supply

Utility companies play a key role in the functioning of modern society by providing essential services, in particular electricity, water, and gas supply. These companies not only contribute to the smooth operation of everyday life but also give the foundation for economic development and standard of living. Their operations are increasingly influenced by global trends, especially from the energy supply side, as well as regulatory pressure and the demand for sustainability. Consequently, utility companies face numerous challenges, including imbalances between supply and demand, infrastructure vulnerabilities, and environmental concerns. The COVID-19 pandemic created additional difficulties that affected workforce, operations, and cybersecurity[1]. Changes in the regulatory environment and the shift toward integrated market environments also require strategic realignment. Regulators face the challenge of protecting the interests of utility company customers while considering objectives reaching beyond establishing fair and reasonable rates[2].

The utility cost reduction program in Hungary is a public policy measure aimed at reducing household utility costs. This measure was introduced by the government in 2013 in response to public dissatisfaction with high utility rates[3]. Under this program, the Hungarian state centrally regulated and reduced the rates for energy, water, waste disposal, and other public services by decree, by approximately 20–25 percent. The state regulation sought to ensure the accessibility and affordability of residential services. From the early 1990s, the privatised public sector, which had largely come under the ownership of foreign-backed utility companies (German, French), adopted market-based

1 *Tom Kokalas/Daniel Connolly/Rebecca Foxwell*, "Crisis Management for Utilities: Lessons Learned from the Pandemic", Power 2021, 165 (5), 15.

2 *Kenneth W. Costello*, "A Troubling Trend in Public Utility Regulation", The Electricity Journal 2019, 32 (5), 35–37.

3 *Csaba Lentner/László Vasa/Szilárd Hegedűs*, "The Assessment of Financial Risks of Municipally Owned Public Utility Companies in Hungary between 2009 and 2018", Montenegrin Journal of Economics, 2020.■page

operations, and service prices also continuously increased—in line with corporate policies. However, Hungarian household income dynamics lagged behind in accepting these increases due to the "stumbling" economic policy of the regime change, which was only able to provide weak income positions for the wider society. This created social problems, with significant arrears accumulating in public services, making both companies and households vulnerable. From 2013, the new economic policy course and administrative price regulation attempted to accommodate household aspects. However, state intervention posed significant challenges for service providers as their revenue-generating financial capacity decreased. In international comparison, Hungary's utility cost reduction program is a unique initiative that other countries have not followed to the same extent. While market-based regulation and competition are present in several European countries, in many cases public utility companies are fully owned by municipalities, which often cover operational losses to maintain affordable service provision[4]. In Hungary, however, centralised state intervention and strict price regulation dominate, representing a significant difference compared to other countries in the region.

Utility companies can exist in various ownership and operational structures, each with distinct characteristics and implications. The Hungarian municipal utility sector analysed in our study—which includes district heating, water services, waste management, and public transportation in terms of security of supply—has undergone significant changes over the past decades with a realignment of ownership between municipal and privatised forms. The ownership structure of utility companies has a significant impact on their financial performance, management, and ability to serve the public interest. In our study, we focus on municipally owned utility companies, which have been found to increase resilience and ensure service continuity even in crisis situations through appropriate regulatory and financial strategies that keep the interests of local communities in mind[5]. For example, in Hungary, in the face of financial constraints imposed by state pricing regulations, municipally owned utilities have shown mixed financial performance but maintained service continuity even during crises[6].

4 *Marcel van Genugten/Bram Voorn/Rhodri Andrews/Ulf Papenfuß/Hans Torsteinsen* (eds.), Corporatisation in Local Government: Context, Evidence and Perspectives from 19 Countries, Springer Nature, 2023.■page
Roger Wettenhall/Ian Thynne, "Dynamics of public ownership and regulation", Policy Studies 2011, 32 (3) , 179–182.

5 *Thomas Ahrens/Laurence Ferry*, "Financial Resilience of English Local Government in the Aftermath of COVID-19", Journal of Public Budgeting Accounting & Financial Management 2020, 32 (5), 813–823.

6 *Thomas Ahrens/Laurence Ferry*, "Financial Resilience of English Local Government in the Aftermath of COVID-19", Journal of Public Budgeting Accounting & Financial Management 2020, 32 (5), 813–823.

Administrative price regulation is a system applied by a regulatory authority (or, indirectly, by the state) to keep prices charged to consumers by utility providers affordable while also considering the operating costs and reasonable profits of utility companies. The regulatory authority determines the total authorised compensation, which covers the companies' operating costs, allows for some return on investments, and provides reasonable profit[7].The regulated price is simply the total authorised compensation divided by the planned quantity of services provided to customers. Under administrative price regulation, the total authorised compensation is intended to cover the operating costs of utility companies and, additionally, provide fair profits. In practice, however, a utility company's revenue and costs in a given period may differ from the revenue and costs assumed by the regulator when setting administrative prices, as seen during the post-COVID period (and this difference is not compensated for).

Understanding the resilience of utility companies is crucial for providing sustainable and reliable services that are essential for society and the economy. Municipally owned utility companies face several significant financial challenges that affect their operations and sustainability. State pricing regulations, which aim to ensure the affordability of services, often limit the financial flexibility and investment capacity of municipally owned utilities. Maintaining and modernising aging infrastructure requires significant investment, for example, in sustaining water services, where outdated systems require substantial investment to maintain service quality and reliability[8].

In our study, we further examine the application of the going concern principle in relation to the operation of municipally owned utility companies, the practice of environmental compliance, and generally the operation according to regulatory expectations. From the operation of Hungarian utility companies, we draw conclusions about the relationships between ownership and market structure, and make recommendations for introducing adaptive regulatory frameworks.

Our research on the crisis resilience of utility companies highlights the importance of understanding how these institutions are able to withstand and recover from financial and operational disruptions. This topic is particularly important for ensuring the stability and sustainability of essential services pro-

7 KPMG, "Rate-Regulated Activities", available at: https://assets.kpmg.com/content/dam/kpmgsites/xx/pdf/ifrg/2024/rate-regulated-activities.pdf (last accessed: 26 January2025).

8 *Vanessa L. Speight*, "Innovation in the Water Industry: Barriers and Opportunities for US and UK Utilities", Wiley Interdisciplinary Reviews Water 2015, 2 (4), 301–313.

vided by municipally owned utility companies, especially amid economic uncertainties and environmental challenges.

2. Relationship Between Security of Supply and the Going Concern Principle

For utility companies, the assessment of going concern is particularly important as these companies must provide services uninterruptedly over the long term (security of supply) and possess significant infrastructure (asset base). The operation of utility companies is often influenced by a strict regulatory environment. Regulatory changes, such as modifications to pricing rules or environmental regulations, can have a significant impact on the companies' financial position and operations. Market conditions, such as fluctuations in energy prices or changes in consumer demand, can also affect the continuing operations of utility companies. Consequently, going concern assessment is of fundamental importance for utility companies, as it ensures that financial statements provide a reliable and true picture of the companies' financial position and operations. While IFRS offers a detailed framework for this assessment, its application is not a general legal requirement for municipally owned utility companies in Hungary, but rather an accounting standard that may be adopted under specific regulatory provisions.

The regulation of going concern principle within the framework of IFRS (International Financial Reporting Standards) is found in IAS 1 – Presentation of Financial Statements[9]. IAS 1 specifies that financial statements be prepared on a going concern basis (unless management intends to liquidate the entity or cease operations, or has no realistic alternative but to do so).

In the current economic situation, many utility companies have experienced significant decreases in revenue, profit, and liquidity, which raises questions about their ability to operate according to the going concern principle. IAS 1 requires management to assess the entity's ability to continue as a going concern when preparing financial statements; and in making this assessment, management is to consider the entity's current and expected profitability, the repayment schedules of existing financing facilities, and the disposability of potential alternative financing sources.

In the current economic environment, the operation of utility companies may be influenced by several factors. These include developments in administrative

9 International Accounting Standards Board (IASB). IAS 1 – Presentation of Financial Statements (2001). See also: https://www.ifrs.org/content/dam/ifrs/publications/pdf-standards/english/2021/issued/part-a/ias-1-presentation-of-financial-statements.pdf (last accessed: 11 November 2025).

price regulation, availability of government subsidies, and long-term structural changes in the market. IAS 1 requires management to look ahead for at least 12 months from the end of the reporting period.

The decision to prepare financial statements on a going concern basis is a yes/no decision made by considering where the examined utility company falls on a scale ranging from profitable, financially stable companies to those facing liquidity problems. It is important for management to consider both the specific disclosure requirements regarding the going concern principle in paragraph 25 of IAS 1, and the comprehensive disclosure requirements of IAS 1, including those in paragraph 122, which pertain to the largest items in the financial statements. Four scenarios can be outlined[10].

In Scenario 1, we identify a profitable company without liquidity problems, which has no separate disclosure requirements related to the going concern principle. In contrast, the company in Scenario 3 is close to ceasing operations due to declining demand and shrinking financing opportunities. In the latter case, management must disclose material uncertainties related to the application of the going concern principle, including the feasibility of management's actions or plans in response to these uncertainties. In Scenario 2, management assesses that material uncertainties are expected to mitigate, for example, through the implementation of a reorganisation strategy. IAS 1 requires the company to disclose information about future assumptions and significant estimation uncertainties at the end of the reporting period.

In Scenario 4, a company is no longer a going concern, and according to IAS 1, reporting on a going concern basis is no longer possible as the owners plan to liquidate the company or cease operations. Paragraph 25 of IAS 1 requires the entity to disclose the fact that the financial statements were not prepared on a going concern basis, and the reasons why the going concern principle does not apply.

In addition to the main disclosure principles described above, there are further detailed rules applicable to utility companies operating in specific sectors. For instance, the amendments to IFRS 9 and IFRS 7 standards published in December 2024[11] apply to utility companies that enter into long-term power purchase agreements (PPAs), with an obligation to present the financial impacts of contracts from renewable energy sources in their statements, thereby improv-

10 IFRS Interpretations Committee (2021): Going Concern – a Focus on Disclosure. https://www.ifrs.org/content/dam/ifrs/news/2021/going-concern-jan2021.pdf (last accessed: 11 November 2025).

11 https://www.ifrs.org/news-and-events/news/2024/12/iasb-updates-accounting-standards-nature-dependent-electricity-contracts/ (last accessed: 11 November 2025).

ing transparency and the provision of information to the investors. (These amendments shall take effect from January 1, 2026, but earlier application is also possible.)

3. Regulating the Environmental Obligations of Utility Companies

The events of the past decade in both the built and natural environment, particularly regarding sustainability and environmental protection, have prompted legislative changes that have further significant impacts on the operation of utility companies. After 2020, the European Union implemented numerous important amendments to environmental legislation, especially in terms of the European Green Deal[12]. The European Climate Law was adopted in 2021, making it legally binding for the EU to become climate-neutral by 2050. The law aims to reduce greenhouse gas emissions by at least 55% by 2030 compared to 1990 levels. In consequence to this, it encourages utility companies to increase their use of renewable energy sources and develop long-term strategies for emission reduction. In line with this EU legislation, the Hungarian Parliament adopted Act XLIV of 2020 on climate protection, which aims for Hungary to achieve carbon neutrality by 2050. This law forms the basis of Hungarian climate protection regulation and aligns with European climate protection goals. In connection with this, a government decree[13] was issued regulating the sustainability requirements and verification of biofuels and fuels produced from biomass, promoting the use of renewable energy sources for transportation and reducing greenhouse gas emissions. Complying with these regulations will require utility companies to reduce their carbon dioxide emissions and increase energy efficiency in the future. This may effectuate significant investments in infrastructure and technology.

Furthermore, the Fit for 55 package[14] was launched in 2021. It includes numerous regulations aimed at reducing greenhouse gas emissions by 55% by 2030.

12 The European Green Deal is a comprehensive political initiative that encompasses numerous laws and directives. Document 52020DC0021: Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions Sustainable Europe Investment Plan European Green Deal Investment Plan, COM/2020/21 final.

13 Government Decree No. 821/2021 (XII. 28.) on the Sustainability Criteria and Certification of Biofuels, Liquid Bioenergy Carriers, and Biomass-Derived Fuels.

14 The package was announced by the European Commission on July 14, 2021, with the goal of reducing greenhouse gas emissions by at least 55% by 2030 compared to 1990 levels, https://www.consilium.europa.eu/en/policies/fit-for-55/ (last accessed: 11 November 2025). The package includes, among others, the following legislative elements:

Regulations introduced as part of the package, such as the reform of the Emissions Trading System (ETS)[15] and the amendment to the Renewable Energy Directive (RED II)[16], prescribe stricter emission limits and energy efficiency requirements. Utility companies must invest in increasing energy efficiency and renewable energy sources to meet these requirements.

In addition to the above, the Circular Economy Action Plan[17] was launched in 2020, mandating waste recycling and increased resource efficiency. Utility companies need to develop their waste management systems and prioritise circular economy solutions. The ETS reform has a significant impact on Hungarian utility companies, particularly in the energy sector. Companies will need to align with new emission limits and stricter regulations, which will often require significant investments and technological developments.

- Reform of the EU Emissions Trading System (ETS): The reform extends the system to maritime transport, accelerates the reduction of emission allowances, and gradually phases out free allowances in certain sectors.
- Amendment of the Renewable Energy Directive (RED II): Aimed at increasing the share of renewable energy in the EU's energy mix.
- Amendment of the Energy Efficiency Directive (EED): Introduces stricter energy efficiency requirements and sets new targets for reducing energy consumption.
- Carbon Border Adjustment Mechanism (CBAM): This new mechanism aims to prevent carbon leakage to countries outside the EU and guarantee competitive neutrality.

See also: https://www.consilium.europa.eu/en/policies/green-deal/timeline-european-green-deal-and-fit-for-55/ (last accessed: 11 November 2025).

15 The ETS reform is regulated by Directive (EU) 2018/410, which amended the earlier Directive 2003/87/EC. See also: https://www.consilium.europa.eu/hu/policies/climate-change/reform-eu-ets/ (last accessed: 11 November 2025).

16 The aim of Directive (EU) 2018/2001 is to promote the use of energy from renewable sources within the European Union. By 2030, at least 32% of the EU's total energy consumption must come from renewable energy sources. Among other provisions, the directive requires Member States to increase the share of renewables in heating and cooling by at least 1.1% annually compared to the 2020 level.

17 The legislative background of the Circular Economy Action Plan (CEAP) consists of numerous EU and national regulations aimed at promoting sustainable economic growth and reducing environmental impact. See also: https://environment.ec.europa.eu/strategy/circular-economy-action-plan_en (last accessed: 11 November 2025).

4. Regulatory Changes and the Increasing Role of the State in the Operation of Hungarian Utility Companies After 2010

4.1. The post-2010 period: internal consolidation

The post-2010 period brought significant changes in the regulatory environment of Hungarian utility companies and the strengthening of the state's role. The impact of the global economic crisis necessitated the restoration of public finance stability and the improvement of public service quality. To this end, comprehensive public finance reforms were introduced, aimed at strengthening fiscal discipline, more efficient management of public assets, and ensuring public services.

Hungary's Fundamental Law came into force on January 1, 2012, which provides for the use and efficient management of national assets. In addition to the Fundamental Law, Act CXCVI of 2011 on National Assets (Nvt.) regulates the structure of national assets and asset management contracts. The Nvt. states that national assets may only be used for public task remit, and state and municipal economic organisations must perform their public tasks independently and in accordance with the law.

The regulation of utility companies before 2011 was less strict, which led to the balance sheet of companies demonstrating growth. However, from 2011 onwards, they came under stricter legal control, which contributed to the implementation of good governance and more efficient management of public assets. Reports by the State Audit Office of Hungary highlighted deficiencies in the management of utility companies and inadequate asset registration, necessitating a tightening of the regulatory environment. Domokos and co-authors analyse in detail the problems of managing state and municipally owned economic entities and the need to tighten the regulatory environment. Their study[18] points out that audits conducted between 2011-2015 revealed governance problems with serious public finance consequences, such as the lack of performance requirements, planning, cost accounting, and control by the owner.

The Stability Act (Act CXCIV of 2011 on the Economic Stability of Hungary) provides for the requirement of permission for municipal companies to take out loans, and it has extended the audit authority of the State Audit Office regarding the management of utility companies. This proved to be a significant

18 *László Domokos/Viktor Várpalotai/Katalin Jakovác/Erzsébet Németh/Mária Makkai/Margit Horváth*, "Szempontok az állammenedzsment megújításához – Fókuszban az állami és önkormányzati tulajdonú gazdasági társaságok irányítása" [Considerations for Renewing Public Management – Focusing on the Governance of State- and Municipally Owned Business Entities], Pénzügyi Szemle, 2016/2, pp. 185–204.

change, as previously there had not been adequate external control of companies due to untethered fiscal discipline and over-commitment by municipalities.

The aim of the public finance reforms after 2010 was for the state to take a more active role in the operation of public utility companies. To this end, several measures were introduced, most notably price regulation by authorities and the nationalisation of public utility companies.

The official price regulation (utility cost reduction), introduced in 2013 under Act LIV of 2013, uniformly reduced residential consumer prices for electricity, gas, district heating, water, waste management, and chimney sweeping services by 20–25 percent. Initially applied to privatised utilities, the regulation was gradually extended to companies repurchased by the state and municipalities. While this measure significantly reduced revenues, it also incentivised cost-effective operations and marked a shift toward increased public ownership in the utility sector.

Additionally, the nationalisation (repurchase) of public utility companies was an important step in strengthening the state's role. To ensure the provision of public services, the state repurchased public utility companies and placed them under central control. This process was particularly significant in the energy, water, and waste management sectors, where companies privatised during the regime change were taken back into state or municipal ownership. Through this, economic policymakers aimed to improve the quality of public services and ensure their continuous availability. During the state acquisition, the state paid particular attention to repurchasing companies that were previously state-owned and then privatised, as well as reintegrating municipally owned companies under central control. This strategy contributed to stabilising the operation of public utility companies and improving the quality of public services[19].

A stricter regulatory and monitoring system exerted a positive impact on the operation of public utility companies. According to reports from the State Audit Office, the stricter management and control system contributed to improved fiscal discipline in the case of public utility companies. The financial position of the companies became more stable, and their liquidity, capitalisation, and profitability indicators improved[20].

19 *Balázs Cseh/Csaba Lentner*, "Az önkormányzati tulajdonú gazdasági társaságok működésének egyes jogi és gazdasági vetületei" [Certain Legal and Economic Aspects of the Operation of Municipally Owned Business Entities], Jegyző és Közigazgatás, 2020, available at: https://jegyzo.hu/az-onkormanyzati-tulajdonu-gazdasagi-tarasagok-mukodesenek-egyes-jogi-es-gazdasagi-vetuletei/ (last accessed: 26 January2025).

20 *European Commission*, In-Depth Review 2023 Hungary, Institutional Paper 219, May 2023, doi:10.2765/147442.

To ensure operational continuity and financial discipline, public utility companies were required to implement internal control systems, supporting the application of the going concern principle and enhancing oversight.

Notably, it is one peculiarity of public utility company management that these entities manage public assets, making cost-effective and profitable operation particularly important for them. After the 2008 crisis, the danger of excessive indebtedness and factors hindering efficient operation also appeared in public utility companies. The application of the going concern accounting principle is particularly important for these companies, as their activities directly affect the daily lives of society.

The 2013 utility cost reduction significantly lowered residential service prices and improved household income levels, while also reducing overdue receivables. Despite a 20–25 percent drop in net sales revenue, public utility companies adapted through cost-effective management and strengthened internal controls. During the economic upturn between 2013–2019, their financial indicators improved under intensified state audit and supervision.

Overall, the public finance reforms and regulatory changes introduced after 2010 had a significant impact on the operation of public utility companies. The strengthening of the state's role and the stricter regulatory environment contributed to improving the fiscal discipline and efficiency of public utility companies. Through official price regulation and the nationalisation of public utility companies, the state took a more active role in providing public services, which contributed to broader implementation of public welfare.

Stricter regulation and targeted state support strengthened the financial stability and operational efficiency of public utility companies, contributing to improved service quality and public welfare.

These measures and changes collectively contributed to public utility companies providing more stable and efficient operations, which had a positive long-term impact on the quality of public services and the quality of life of the population. This is supported by the evolution of the gross operating profit to revenue ratio of Hungarian public utility companies, which increased from 7.3% in 2013 to 11.3% in 2016, reflecting improved cost-efficiency and financial stability during the period of regulated price controls and state repurchases.[21]

21 *Csaba Lentner/László Vasa/Szilárd Hegedűs*, "The Assessment of Financial Risks of Municipally Owned Public Utility Companies in Hungary between 2009 and 2018", Montenegrin Journal of Economics 2020, 16 (4), 117, 122.

4.2. The post-2020 period: external shocks

From 2020 onward, the economy was hit by external shocks that caused the financial situation of Hungarian public utility companies to deteriorate. Among these, first and foremost, the COVID-19 pandemic posed significant economic and social challenges to public utility companies. The spread of the pandemic and the restrictive measures introduced as a result had numerous negative effects that directly influenced the operational efficiency of public utility companies.

The restrictions implemented due to the pandemic, such as lockdowns, workplace closures, and the shutdown of economic activities, resulted in significant economic decline. The Russian-Ukrainian war had a particularly strong impact on energy prices in Europe, including Hungary. In the first two weeks of the invasion, the prices of oil, coal, and gas increased by approximately 40%, 130%, and 180%. The rise in energy prices, along with inflationary pressure, decelerated economic growth.[22] The decrease in revenue, but especially the increase in hydrocarbon derivatives used as raw materials, severely affected public utility companies, which had to keep up the continued provision of services.

The decrease in revenues caused liquidity problems for public utility companies. The number of delays in payment as well as non-payments increased[23], further deteriorating the financial position of the companies. Due to liquidity problems, companies found it difficult to finance their operating costs and investments, which projected a long-term decline in service quality.

The mitigation of the effects of the pandemic and implementing security measures imposed significant additional costs on public utility companies. Disinfection procedures, procurement of protective equipment, and measures taken to protect employee health all increased operating costs[24]. Moreover, the introduction of remote work and digital solutions required further investments.

Many employees fell ill or were quarantined due to the pandemic, resulting in labour shortages. Public utility companies had to adapt to the changed working conditions and ensure the continuity of services despite reduced staffing. Organisational challenges and labour shortages further increased operating costs and reduced efficiency.

22 *European Commission*, "Economic forecast for Hungary", available at: https://economy-finance.ec.europa.eu/economic-surveillance-eu-economies/hungary/economic-forecast-hungary_en (last accessed: 26 January2025).

23 *European Commission* (fn. 22).

24 *Kokalas/Connolly/Foxwell* (fn. 1), ■ page

Due to economic uncertainty and liquidity problems, many public utility companies were forced to postpone or halt their investments. The lack of necessary infrastructure developments and maintenance work led to a long-term deterioration in service quality and a decrease in operational efficiency.

While the state introduced various support measures to assist public utility companies, these were not always sufficient to maintain operational efficiency[25]. Support and regulatory measures often arrived late and were not available to all companies. In addition, changes in the regulatory environment and compliance with new requirements placed additional administrative burdens on companies.

Overall, from the 2020 onset of the COVID-19 pandemic operational efficiency of public utility companies saw numerous negative effects. Economic decline, loss of revenue, liquidity problems, increased operating costs, labour shortages, postponed investments, and regulatory challenges all contributed to the deterioration of companies' financial situations and the decline in service quality. Public utility companies had to adapt to changed circumstances and develop new strategies to improve operational efficiency.

In addition to the above, changes in global energy prices also affected the results of public utility companies. At the macroeconomic level, restrictions introduced due to the COVID-19 pandemic in early 2020 and the shutdown of economic activities resulted in a significant decrease in energy demand. As a result, prices for oil, natural gas, and other energy carriers decreased drastically. Public utility companies that had long-term energy purchase contracts experienced significant losses in their financial operations.

In 2021, economies gradually resumed their operations, resulting in increased demand for energy. Energy prices began to rise but were still lower than pre-pandemic levels. In 2022, however, global energy prices showed significant increases (European gas prices rose by 145% compared to July 2021, and oil prices by 46%[26]), in part due to geopolitical tensions, such as the Russia-Ukraine conflict. Due to rising European gas prices, wholesale electricity prices also reached record highs amid significant inflationary pressure[27]. Therefore, the biggest challenge for public utility companies was the drastic increase in energy prices and inflation between 2021-2022[28], which further increased their

25 *European Commission* (fn. 22).

26 *European Central Bank*, "Economic Bulletin, Issue 1, 2022", 2022, available at: https://www.ecb.europa.eu/press/economic-bulletin/articles/2022/html/ecb.ebart202204_01~7b32d31b29.en.html (last accessed: 26 January2025).

27 *European Commission* (fn. 22).

28 *European Central Bank*, "Harmonised Index of Consumer Prices (HICP)", available at: https://www.ecb.europa.eu/stats/macroeconomic_and_sectoral/hicp/html/index.en.html (last accessed: 26 January2025).

operating costs and financial burdens. In 2023 and 2024, energy prices consolidated, although they were still about 50% higher than pre-pandemic levels. The transition to renewable resources is likely to experience a long-term increase in the energy costs of public utility companies.

5. Examining the Profitability of Hungarian Utility Companies

The ratio of gross operating profit to turnover is a key indicator of the financial resilience of municipally owned public utility companies (see Table 1).[29] This ratio shows how efficiently companies can convert their revenues into operating profit, taking into account personnel expenses. Data analysis reveals that the ratio of gross operating profit to turnover has shown significant changes over the years. The combined effects of the economic environment, efficiency improvement measures, regulatory changes, and investments all contributed to the development of this indicator.

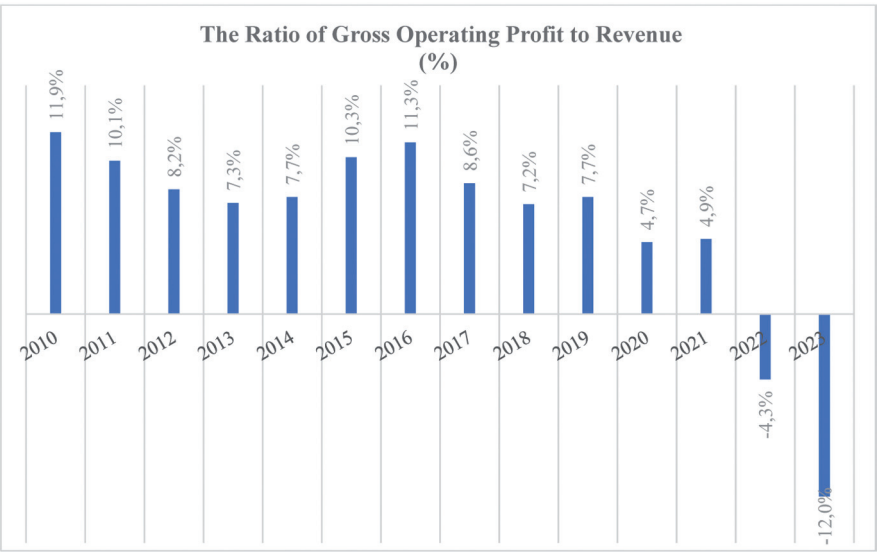
In the period between 2010-2019, this ratio was relatively stable with minor fluctuations. This was a period of consolidation after the economic crisis when companies tried to consolidate their financial situation. The ratio showed a slight increase between the 2014-2016 period, which was due to economic recovery and efficiency improvement measures. The growth in gross fixed asset investments contributed to the long-term financial stability and efficiency of companies. Between 2017-2019, the ratio showed significant growth, indicating an improvement in the financial position of companies and an increase in cost efficiency.

However, in the period following 2020, the ratio of gross operating profit to turnover deteriorated significantly. The economic effects of the COVID-19 pandemic resulted in decreased company revenues while costs did not decrease proportionally. In 2021, the ratio remained low, while some improvement was observed as the economic situation slowly began to stabilise. In 2022, the ratio decreased again, partly as a result of rising inflation and energy prices. Public utility companies faced higher costs while their revenues did not increase proportionally. In 2023, the ratio still further deteriorated, which was a consequence of economic uncertainties and rising costs. Companies struggled to control costs and increase revenues. Changes in the regulatory environment,

29 This is a relative indicator, calculated as the ratio of gross operating profit to net sales revenue.
Gross operating profit represents the surplus generated by operational activities after compensating labour—that is, it is the difference between value added at factor cost and personnel expenses.

such as price regulation of public utilities and the moderation of state subsidies, also impacted the financial performance of companies. (Table 1)

Table 1: The Ratio of Gross Operating Profit to Revenue for Public Utility Companies, 2010–2023



Source: Own compilation based on the reporting data of public utility companies and an independent data collection by the Hungarian Central Statistical Office (KSH).

The municipal government owners of public utility companies and state-owned public utility companies are not in a position to provide open capital contributions or hidden subsidies to the extent they did in the pre-2020 period. From 2020, the deficit of public finances increased significantly, including the municipal government subsystem. The cash-flow deficit of public finances in 2020 was 5,422.5 billion HUF, which corresponded to 11.3% of the GDP. By the end of 2020, public debt increased to 81% of the GDP.[30] Meanwhile, Hungary's economic performance also declined, with its GDP decreasing by 4.7% in 2020. In 2023, the volume of the GDP was 0.9% lower compared to the previous year. In 2024, however, it showed a 0.5% growth, ending the techni-

30 *National Bank of Hungary (MNB),* "Hungarian Economy 2020: Skyrocketing Budget Deficit and Public Debt", available at: https://www.mnb.hu/letoltes/mnb-penzugyi-szamlak-2020.pdf (last accessed: 26 January2025).

cal recession.[31] These data support the fact that the owners of public utility companies currently do not have sufficient resources to provide subsidies at previous levels, further complicating the financial situation of public utility companies.

According to the literature,[32] ensuring efficient management and an appropriate regulatory environment is important for improving the financial resilience of public utility companies. The analysis of the financial management of public utility companies highlights that continuous innovation and improved cost-effectiveness are necessary to increase financial stability and efficiency. Nevertheless, it appears that the possibilities for this are severely limited during periods of economic downturn, as the opportunities to compensate for the negative operating results of the public utility sector through public finances have become very restricted, due to the generally unfavourable position of public finances.

Overall, the increase in the ratio of gross operating profit indicates improved financial resilience of public utility companies, which is due to the combined effect of the economic environment, efficiency-improving measures, regulatory changes, and investments. However, in the post-2020 period, the deterioration of this indicator is a consequence of the COVID-19 pandemic, inflation (i.e., the producer price index), rising energy prices, and economic uncertainty.

6. Questions Raised by the Etatist State Model

State intervention models for public utility companies may take various forms, from direct ownership and control to indirect incentive modifications and partnerships between the public and private sectors. Additionally, their impact significantly depends on the socio-economic context of the intervention and the method of implementation.

31 *KSH*, "Központi Statisztikai Hivatal – GDP" [Hungarian Central Statistical Office – GDP], available at: https://www.ksh.hu/nemzeti-szamlak-gdp (last accessed: 26 January2025).

32 *Csaba Lentner/László Vasa/Petronella Molnár*, "Certain Regulatory and Efficiency Issues of Public Utility Companies in Budapest", Public and Municipal Finance 2020, 9 (1), 14.
Fanny Salignac/Axelle Marjolin/Rebecca Reeve/Kristy Muir, "Conceptualizing and Measuring Financial Resilience: A Multidimensional Framework", Social Indicators Research 145 (2019), 17–38.
Ekin Ilseven/Phanish Puranam, "Measuring organizational resilience as a performance outcome", Journal of Organization Design 10 (2021), 127–137.

As Murialdo et al. point out, states can influence public utility companies both as regulators and shareholders[33]. Legislative changes, privatisation initiatives, and state intervention can have a significant impact on the financial performance of public utility companies, as experienced in the electricity sector of an emerging market country between 2010-2015.

Based on international examples, state regulatory interventions have positively impacted the efficiency and performance of public utility companies. The retail deregulation process in the US electricity sector demonstrated that different governance structures deal with regulatory uncertainties in different ways, thus influencing the production efficiency of companies[34]. At the same time, the establishment of independent regulators has not always resulted in the desired outcomes. It was, for instance, the case for the United Kingdom, where high prices and poor service quality persisted[35]. The effectiveness of these interventions therefore depends on the specific context and method of implementation, where regulatory quality and the balance between direct and indirect approaches play a key role in maintaining and improving service quality.

During the Classical period, Adam Smith's liberal doctrine of laissez-faire[36] focused on fiscal balance and decreasing the role of the state in Europe and the USA. However, the Great Depression of the 1930s led to a shift in the state's role in the economy, with the creation of the welfare state to ensure an adequate standard of living for citizens. The term "welfare state" first appeared in Great Britain during World War II and has since been used more broadly to reference social protection systems that have emerged since the 19th century.

Bresser-Pereira[37] identifies three capitalist social models in modern developed countries: the liberal democratic model, the social model or welfare model, and the endogenous social integration model. He also discusses developmental and liberal dependent models emerging in developing countries. In many developed countries, state intervention created public monopolies in areas, such as

33 *Murialdo Loch/Rosilene Marcon/André Leonardo Pruner Da Silva/Wlamir Gonçalves Xavier*, "Government's Impact on the Financial Performance of Electric Service Providers as Both Regulator and Shareholder", Utilities Policy 2018, 55, 142–150

34 *Magali Delmas/Yesim Tokat*, "Deregulation, Governance Structures, and Efficiency: The U.S. Electric Utility Sector", Strategic Management Journal 2005, 26 (5), 441–460.

35 *Steve Thomas*, "Is the Ideal of Independent Regulation Appropriate? Evidence from the United Kingdom", Competition and Regulation in Network Industries 2019, 20 (3), 218–228.

36 *Roy C. Smith, Adam Smith and the Origins of American Enterprise*: How the Founding Fathers Turned to a Great Economist's Writings and Created the American Economy, Macmillan, 2004, pp. 13–14.

37 *Luiz Carlos Bresser-Pereira*, "Five Models of Capitalism", Brazilian Journal of Political Economy 2012, 32 (1), 21–32.

energy, communications, postal services, transportation, healthcare, and education, leading to the belief that the public sector should continue to participate in protecting public welfare. However, deterioration in the quality of basic services provided was particularly seen in developing countries.

The state's impact on the economy has been at the centre of theoretical debates and has been one of the foundations of empirical studies since the beginning of capitalism and market economy. Some argue that the state should engage in policies that ensure economic development, fair opportunities, and social welfare. Stiglitz advocates for a third way, positioned between socialism and laissez-faire, where the state's economic dominance is less prevalent[38].

Walter Eucken, the father of ordoliberalism, developed the concept of social market economy in the 1930s and 1940s[39]. This can be considered a third way between socialism and laissez-faire liberalism, with primary goals of preserving economic freedom and full competition. The state must limit itself to establishing regulations or frameworks, and its intervention in the economy must be based on market conformity, while avoiding any influence on the market and price mechanisms. Alfred Müller-Armack's concept of social market economy[40] emphasised the importance of market economy principles, rejecting mixed economic policy systems, but differed from ordoliberals by placing greater emphasis on social policies and accepting countercyclical measures.

Ludwig Erhard developed his concept of economic policy[41] to achieve social goals, focusing on limiting arbitrary political power, restricting any monopolistic structure, and continuously favouring freedom and competition. According to the social market economy, state intervention should be passive or indirect, providing regulatory and reliable general conditions. Accordingly, economic policy decision-makers shape regulatory frameworks so that public utility companies can meet national strategic goals.

The financial performance and stability of public utility companies are of vital importance. Governments can intervene to manage financial risks with the aim of ensuring that utility providers maintain service quality and continuity. This is particularly important in cases of external shocks that could pose a risk to the

38 *Joseph Stiglitz*, "Globalization and the Economic Role of the State in the New Millennium", Industrial and Corporate Change 2003, 12 (1), 3–26.

39 *Christian Ahlborn/Carsten Grave*, "Walter Eucken and Ordoliberalism: An Introduction from a Consumer Welfare Perspective", SSRN Electronic Journal 2006, ■page

40 *Nils Goldschmidt*, "Alfred Müller-Armack and Ludwig Erhard: Social Market Liberalism", Freiburg Discussion Papers on Constitutional Economics 04/12, Walter Eucken Institut e.V., Breisgau, Germany, 2004, pp. 1–23.

41 *Serge Audier*, "A German Approach to Liberalism? Ordoliberalism, Sociological Liberalism, and Social Market Economy", L'Économie Politique 2013, 60, 48–76.

provision of services. Government intervention in pricing, such as through regulated prices and pricing formulas, can have further significant effects on the performance of state-owned companies. Strong governance structures, including board strength and stakeholder representation, are crucial for the adequate performance of state-owned companies. In contrast, excessive government intervention in operational decisions can negatively influence performance[42].

7. Concluding Remarks

The introduction of adaptive regulatory frameworks can help public utility companies better respond to economic fluctuations and crises, thereby increasing their resilience. Compliance with environmental regulations, efficiency requirements, and disclosure obligations, and consequently, operational transparency, allows for companies to adapt more flexibly to changing circumstances and to give prompt responses to challenges. This is particularly important for maintaining financial stability and providing services uninterruptedly. Adaptive regulatory approaches can also promote investments in renewable energy and operational efficiency, thus contributing to the long-term sustainability and reliability of public utility companies.

The etatist model, in which the state assumes a significant role in overseeing economy processes and the provision of public services, may have several advantages in certain situations, possibly even in crisis situations. Today, however, challenges and limitations that dispute the efficiency and sustainability of this model are on the rise. We find that the etatist model often restricts market competition and innovation. In state-owned companies, decision-making is often more sluggish and more bureaucratic than in the private sector, which can hinder rapid adaptation to changing market conditions. In terms of innovation and technological development, the private sector is more flexible, and it has the capacity to respond to new challenges and opportunities more rapidly. According to Auer and Papp[43], changes in the regulatory environment theore-

42 *Mbako Mbo/Charles Adjasi*, "Drivers of Organizational Performance in State Owned Enterprises", International Journal of Productivity and Performance Management 2017, 66 (3), 405–423.

43 *Ádám Auer/Tekla Papp*, "Some Thoughts about the Changed Legislator's Approach in the Regulation of the Hungarian Company Law", in: Ádám Auer/Zoltán Bankó/Gábor Békési/Gyula Berke/Zoltán Hazafi/Dávid Ludányi (eds.), Ünnepi tanulmányok Kiss György 70. születésnapjára [Celebratory Studies for György Kiss's 70th Birthday]: Clara pacta, boni amici, Wolters Kluwer Hungary, Budapest, 2023, pp. 29–41.

tically create opportunities for companies to apply innovative solutions and improve the quality of their services.

At the same time, the etatist model often hinders financial flexibility and investment capacity. State-owned companies often face strict budgetary and pricing constraints, which make it difficult to finance necessary investments and developments. This can be particularly problematic when it comes to maintaining and modernising aging infrastructure, which requires significant investments.

Finally, the etatist model is not always able to efficiently address global economic and environmental challenges. Issues of the global economy and environmental sustainability are increasingly intertwined, and state-owned companies often struggle to adapt to these complex challenges. The more flexible and innovative approaches of the private sector may prove more effective in achieving sustainability goals.

Consequently, while the etatist model may have several advantages, especially in crisis situations, current challenges and limitations are increasingly emerging that dispute the efficiency and sustainability of this model. In terms of market competition, innovation, financial flexibility, and addressing global challenges, the private sector may offer more flexible and efficient solutions.

With regard to the study period covered by this research, we explored regulated price controls introduced in Hungary as a determining influencing factor. The impact of utility cost reduction in Hungary on utility companies is a complex issue influenced by regulatory changes and financial implications. The reduction in residential utility costs can be the result of various factors, such as government interventions, adjustments in pricing mechanisms, and changes in regulatory frameworks.

Lentner, Vasa and Hegedűs[44] assessed Hungarian public utility companies operating in a stronger regulatory environment before the Covid pandemic. In their study, the authors examined financial risks based on profitability, liquidity, and equity adequacy indicators during a time of economic prosperity, and found that although financial risks had increased, they proposed the imposition of even stricter controls and efficiency adjustments to improve operational effectiveness and compensate for net revenue losses. In their assessment, more disciplined management improves company indicators. The decreased net company revenue due to price regulation (utility cost reduction) is counterbalanced. Lentner et al. (2020) also highlight regulatory and efficiency issues of Budapest metropolitan utility companies, emphasising the importance of con-

44 *Lentner/Vasa/Hegedűs* (fn. 3), ■page

tinuous state and owner supervision for municipally owned companies[45]. This highlights the need for solid regulatory frameworks and internal control mechanisms within municipal enterprises to enhance operational efficiency while also ensuring compliance with pricing regulations. By establishing strict control channels, municipalities can rationalise operations and maintain transparency in pricing practices. Ukrainian researchers[46] also represent a similar concept for crisis situations, emphasising innovative financing techniques and the application of digital technologies to improve cost management.

Our research has led us to maintain the position that regulatory utility price control is viable during periods of economic prosperity. Lost company net revenue can be compensated with open or hidden capital injections from the public financing, and company management can be improved through inspections and increased efficiency requirements. All this is a tested methodology in Hungary during periods of economic prosperity. During economic downturns, however, in cases of a global pandemic, energy crisis, inflation, when the role of public financing in compensating for loss of turnover diminishes, and when increasing inspections and efficiency improvement requirements hit the proverbial glass ceiling, it inevitably raises the question of reconsidering state influence (deviating centrally regulated prices from market prices, in this specific case) and adjusting the underlying methodology to the market environment.

45 *Lentner/Vasa/Hegedűs* (fn. 3), p. 122. The authors analyse the financial risks of municipally owned companies in Budapest, focusing on liquidity, profitability and equity adequacy indicators. They argue that stricter regulatory oversight and continuous owner supervision are essential to compensate for revenue losses caused by price regulation and to improve operational efficiency.

46 *Olga Kuznetsova/Ivan Barannik*, "Transforming Public Finance Under the Impact of COVID-19", Public and Municipal Finance 12 (2), 2023, 12–26.