

NON-REPAYABLE SUBSIDIES AND FINANCIAL PERFORMANCE OF BENEFICIARY FIRMS: EVIDENCE FROM THE WESTERN DEVELOPMENT REGION OF ROMANIA, 2014–2023

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Abstract: *This article examines the financial performance of firms that received non-repayable subsidies under the 2014–2020 EU programming period in the Western Development Region of Romania, drawing on longitudinal data spanning 2014–2023. Drawing on aggregated ORBIS data (Bureau van Dijk) — operating revenue, value added, net income, EBITDA, total assets, equity and employment — converted to RON at annual average BNR exchange rates, and contextualised against INS and Eurostat regional benchmarks, the study addresses three research questions: (i) how did the financial performance of subsidised firms evolve between 2014 and 2023? (ii) what is their relative contribution to the regional economy? (iii) what growth differential is observable between the beneficiary sub-population and the regional economy over the 2014–2023 period, and which among subsidy additionality, selection bias, or sectoral composition effects offers the most plausible descriptive account of that differential? Results show that aggregate turnover grew 4.8× (RON 493M → RON 2,370M) and value added 5.5× (RON 133M → RON 738M), consistently outpacing the 2.35× growth of regional GVA. Their share in regional GVA doubled from 0.24% to 0.57%. Net profitability remained stable at 8.8–12.7%. Labour productivity in subsidised firms, while growing substantially, remained at approximately 35–43% of the regional average throughout the decade, a pattern consistent with employment-intensive rather than high value-added growth, partly attributable to employment conditionalities embedded in applicant guides.*

Keywords: *non-repayable subsidies; cohesion policy; ERDF; firm performance; value added; Western Development Region; Romania; 2014–2023*

JEL Classification: G38; H81; R11; R58; L25; O18

1. Introduction

The question of whether public subsidies improve the long-term financial performance of recipient firms remains contested in the cohesion policy literature. Non-repayable grants provide immediate capital access and bridge financing gaps yet may reduce investment efficiency and create dependence on public support (Stiglitz & Weiss, 1981; Aghion & Bolton, 1997). The Western Development Region of Romania — comprising Timiș, Arad, Caraș-Severin and Hunedoara — is a particularly relevant context: eligible for structural fund support under the Convergence Objective, its firms that successfully accessed subsidies represent a selected sub-population that passed project selection criteria, implemented investment projects and were subject to monitoring obligations.

Three research questions structure the analysis: RQ1 — How did aggregate financial performance of subsidised firms evolve between 2014 and 2023? RQ2 — What is their relative contribution to the regional economy, and how did this evolve? RQ3 — What growth differential is observable between subsidised firms and the regional economy across financial, value-added and employment dimensions, and which alternative explanations — subsidy additionality, selection effect, or sectoral composition — are consistent with the descriptive evidence?

The original contribution is threefold: (i) the first longitudinal financial profile of ERDF subsidy beneficiaries in the Western Region using ORBIS data across the full 2014–2023 period; (ii) a multi-level comparison framework linking firm-level indicators with regional macroeconomic benchmarks; (iii) descriptive longitudinal evidence of systematically above-average growth trajectories in the beneficiary sub-population, with explicit acknowledgement that causal attribution to subsidy additionality, selection effects, or sectoral composition cannot be determined from aggregate population-level data.

2. Theoretical Framework and Literature Review

2.1. Economics of Public Subsidies to Firms

The theoretical case for public subsidies rests on the market failure framework. Berger & Udell (1998) documented that young and small firms face a financial life-cycle problem in which access to external debt is severely limited, creating a financing gap only public intervention can bridge. In less developed regions, this is compounded by underdeveloped local financial markets (Honohan, 2010). Against this, moral hazard theory (Aghion & Bolton, 1997) argues that non-repayable grants reduce the incentive for efficient investment selection. Lach (2002) found that subsidies increased R&D investment but partially crowded out private investment; Bronzini & Iachini (2014) document positive investment effects but no short-run profitability impact for Italian SME subsidies.

The cohesion policy literature generally finds positive but modest regional growth effects (Becker et al., 2010; Pellegrini et al., 2013). Criscuolo et al. (2019) found significant positive effects on employment and investment from UK regional policy, but not on productivity — a result directly relevant to the research questions addressed here.

2.2. Value Added as the Core Performance Metric

Value added (VA) — operating revenue minus purchased goods and services costs — measures the genuine economic contribution of the firm to national income. It aligns directly with the GVA aggregate published by Eurostat, enabling a methodologically coherent multi-level comparison. The comparison between ORBIS value added per employee and regional GVA per employee (INS) is methodologically appropriate as a scale benchmark because both numerators are value-added measures and both denominators are headcount measures. This comparison is used solely to establish the relative productivity position of the beneficiary sub-population within the regional economy and does not imply that observed differentials are attributable to subsidy effects. VA is robust to sectoral differences in input intensity, making it the appropriate primary metric for a heterogeneous population of subsidised firms spanning multiple sectors.

2.3. The Western Region in the National Context

In 2014, the Western Region's GVA stood at RON 54.9bn. By 2023 it grew to RON 129.1bn — a 2.35× increase in nominal terms. In comparative regional terms, this growth was below Nord-Vest (2.60×) and Centru (2.40×), and well below Bucharest-Ilfov (2.77×), which widened the absolute dominance gap with all other regions. The Western Region's employment base showed structural stability: total employees across all active local units remained essentially flat at approximately 403–434 thousand throughout 2014–2023, reflecting a mature labour market with limited workforce expansion but improving productivity.

This macroeconomic context is essential for interpreting the performance of subsidised firms: growth above the regional trend is consistent with subsidy-related additionality, while growth in line with the trend is consistent with a selection effect only.

3. Data Sources and Methodology

3.1. Primary Data Sources

Three primary datasets are triangulated. First, ORBIS (Bureau van Dijk) provides aggregated financial data for all Western Region firms receiving non-repayable subsidies in 2014–2020: turnover, value added, net income, EBITDA, total assets, equity and employees, for the period 2014–2023. ORBIS data are expressed in USD; conversion to RON uses annual average BNR exchange rates presented in Table 1. Second, INS (2024) provides aggregate turnover of all active local units in the Western Region by firm-size class (2007–2023, million RON), as well as employment data by firm-size class and development region. Third, Eurostat (2025) (series nama_10r_3gva, NUTS 2) provides GVA at current prices in million RON for all eight Romanian development regions (2007–2023).

An important methodological note concerns the comparability of these sources. ORBIS aggregates cover exclusively the sub-population of subsidised firms, while INS and Eurostat aggregates cover the entire regional economy including all firm categories and sectors. Comparisons between these sources are therefore used to establish the relative scale and growth trajectory of subsidised firms within the broader regional context, under the implicit assumption that: (i) both numerators are value-added measures; (ii) both denominators are headcount measures; (iii) the comparison serves as scale-benchmarking, not causal attribution; and (iv) the sectoral composition of the regional economy is broadly stable over the period.

Table 1. Annual average RON/USD exchange rates (BNR, 2014–2023)

Year / Rate RON–USD	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
BNR annual avg. (RON/USD)	3.3492	4.0057	4.0592	4.0510	3.9398	4.2608	4.2440	4.9204	4.6917	4.5742

Sources: National Bank of Romania (BNR), average annual exchange rates 2014–2023.

3.2. Key Variables and Indicators

Five categories of indicators are constructed. First, absolute financial performance indicators (million RON): operating revenue, value added, net income, EBITDA, total assets, and equity — each derived from ORBIS USD aggregates converted at the BNR annual average rate. Second, profitability ratios: net margin, EBITDA margin, and ROE. Third, employment and productivity indicators: labour productivity

computed as value added per employee (thousand RON per employee) for both subsidised firms and the regional average. Fourth, relative contribution indicators: shares of subsidised firms in regional turnover, GVA and employment (INS). Fifth, growth indices (base 2014 = 100) for all key series, enabling direct comparison of growth trajectories between subsidised firms and the regional economy.

3.3. Methodological Limitations and Scope of Inference

Three fundamental limitations constrain the analysis. First, ORBIS data are aggregated at population level — not a firm-level panel — precluding causal identification strategies such as difference-in-differences, propensity score matching or regression discontinuity design. This study is explicitly a descriptive and exploratory analysis; all results are interpreted as descriptive associations, not causal estimates. Second, no distinction is made by sector, CAEN code, programme axis, grant value, or firm-size class (micro vs. small vs. medium), given data constraints at this aggregation level; firm-size heterogeneity is a specific limitation since the productivity profile of a micro-firm beneficiary differs structurally from that of a medium enterprise. Third, the comparison between ORBIS aggregates and INS aggregates conflates genuine subsidy effects with the characteristics of the selected beneficiary population; disentangling them requires a firm-level counterfactual with a matched control group of non-beneficiary firms, identified as priority for future research.

4. Empirical Results

4.1. Financial Performance of Subsidised Firms (2014–2023)

Table 2 presents the complete longitudinal financial profile across the full 2014–2023 decade. Operating revenue grew from RON 493.4M in 2014 to RON 2,370.3M in 2023 — a 4.8-fold nominal increase. Value added grew from RON 133.1M to RON 738.2M (5.5×), outpacing turnover and indicating improving value-added content. Net income expanded from RON 43.7M to RON 209.4M (4.8×). The total asset base expanded 6.2× (RON 426.3M → RON 2,628.2M). Employment more than doubled from 2,920 to 5,921 employees, with consistent year-on-year growth including during COVID-19 (2020–2021). The years 2021 and 2022, now fully reconstructed from the complete ORBIS extract, confirm the continuity of the growth trajectory: operating revenue reached RON 1,958.5M and RON 2,082.8M respectively, while value added progressed to RON 555.9M and RON 616.8M.

Table 2. Aggregate financial indicators of subsidised firms, Western Development Region, 2014–2023 (mil. RON)

Indicator	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Operating Revenue (mil. RON)	493.4	661.7	766.2	1,078.7	1,108.8	1,389.0	1,529.4	1,958.5	2,082.8	2,370.3
Value Added (mil. RON)	133.1	171.8	202.2	267.5	291.4	399.8	464.2	555.9	616.8	738.2
Net Income (mil. RON)	43.7	68.0	95.3	124.2	140.8	169.8	170.2	215.6	206.0	209.4
EBITDA (mil. RON)	82.1	116.5	149.5	188.6	208.5	277.9	319.7	356.3	385.0	428.8
Total Assets (mil. RON)	426.3	560.2	623.0	859.7	1,122.2	1,369.6	1,713.3	2,353.9	2,391.2	2,628.2
Equity Capital (mil. RON)	183.9	252.3	276.4	370.3	454.8	566.5	693.7	874.3	807.4	930.3
No. of Employees	2,920	3,235	3,548	3,879	4,274	4,783	5,038	5,414	5,750	5,921

Sources: ORBIS (Bureau van Dijk, 2025); BNR annual average exchange rates. Values converted from USD to RON using rates in Table 1.

4.2. Profitability and Labour Productivity

Table 3 presents derived profitability and productivity ratios for the complete 2014–2023 period. Net profitability was remarkably stable across the decade, ranging between 8.8% and 12.7%. The years 2021 and 2022 show net margins of 11.0% and 9.9% respectively, reflecting the onset of inflationary pressures on input costs. ROE remained high throughout (22.5–34.5%). The EBITDA margin (16.6–20.9%) signals strong operational cash generation capacity.

Labour productivity in subsidised firms grew from RON 45,600 per employee in 2014 to RON 124,700 in 2023 (2.74× nominal). The intermediate years 2021 and 2022 record productivity levels of RON 102,700 and RON 107,300 per employee. However, regional average labour productivity grew from RON 130,900 to RON 312,700, remaining consistently 2.5–3.0× above the subsidised firm average. The productivity ratio oscillated between 0.35 and 0.43 with no convergence trend, reaching 0.43 in 2021 before reverting to 0.38 in 2022 and 0.40 in 2023 — the central structural finding of this study.

Table 3. Profitability ratios and labour productivity — subsidised firms vs. regional average, 2014–2023

Indicator	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Net Margin (%)	8.9	10.3	12.4	11.5	12.7	12.2	11.1	11.0	9.9	8.8
EBITDA Margin (%)	16.6	17.6	19.5	17.5	18.8	20.0	20.9	18.2	18.5	18.1
ROE (%)	23.8	27.0	34.5	33.5	31.0	30.0	24.5	24.7	25.5	22.5
Labour Prod. — subsidised (th. RON/emp.)	45.6	53.1	57.0	69.0	68.2	83.6	92.1	102.7	107.3	124.7
Labour Prod. — regional avg. (th. RON/emp.)	130.9	140.3	150.9	167.0	190.3	212.8	218.8	238.2	279.0	312.7
Productivity Ratio (subsidised/regional)	0.35	0.38	0.38	0.41	0.36	0.39	0.42	0.43	0.38	0.40

Sources: ORBIS (Bureau van Dijk, 2025); BNR; INS (2024). Regional labour productivity = regional GVA (INS) / total regional employees (INS).

4.3. Regional Contribution and Growth Dynamics

Table 4 presents the shares of subsidised firms in the regional economy and comparative growth indices. In 2014, subsidised firms accounted for 0.50% of regional turnover and 0.24% of regional GVA. By 2023 these had risen to 1.11% and 0.57%. The years 2021 and 2022 reveal that the GVA share peaked at 0.57% in 2021, dipped marginally to 0.55% in 2022 — reflecting faster growth of the regional GVA denominator — before stabilising at 0.57% in 2023. The growth differential is consistent and substantial: the CA index of subsidised firms reached 480.4 by 2023 versus 219.3 for total regional turnover; the VA index reached 554.6 versus regional GVA 235.2. Employment in subsidised firms expanded by 102.8% while total regional employment contracted marginally (index 98.5).

Table 4. Share of subsidised firms in the Western Region economy and growth indices (base 2014=100), 2014–2023

Indicator	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Share in regional CA (%)	0.50	0.62	0.65	0.84	0.79	0.95	1.09	1.18	1.04	1.11
Share in regional GVA (%)	0.24	0.29	0.31	0.37	0.36	0.44	0.52	0.57	0.55	0.57
Share in regional employment (%)	0.70	0.76	0.82	0.89	1.00	1.12	1.24	1.32	1.43	1.43
Index CA — subsidised (2014=100)	100.0	134.1	155.3	218.6	224.7	281.5	310.0	396.9	422.1	480.4
Index CA — Western Region	100.0	109.1	119.9	131.4	143.5	149.6	143.2	170.0	205.4	219.3
Index VA — subsidised (2014=100)	100.0	129.1	151.9	201.0	218.9	300.4	348.8	417.7	463.4	554.6
Index GVA — Western Region	100.0	108.6	118.8	132.1	148.3	165.0	162.3	177.6	205.0	235.2
Index employees — subsidised	100.0	110.8	121.5	132.8	146.4	163.8	172.5	185.4	196.9	202.8
Index employees — region	100.0	101.3	103.1	103.6	102.0	101.5	97.2	97.6	96.2	98.5

Sources: ORBIS (Bureau van Dijk, 2025); BNR; INS (2024). Growth indices: base year 2014 = 100. Regional CA and GVA from INS Tempo Online.

5. Discussion

5.1. Performance or Selection?

Three non-mutually exclusive explanations are consistent with the data. A first possible explanation is a genuine subsidy effect: if selection and composition effects are held constant, grants may have reduced the cost of capital investment and enabled capacity expansion at rates not achievable under market financing alone — a hypothesis consistent with the 6.2× asset base growth observed over the study period, but which cannot be confirmed or quantified from aggregate population-level data alone. A selection effect: project selection criteria favour firms with above-average growth potential, so observed outperformance partly reflects ex-ante quality rather than subsidy impact. A composition effect: subsidised firms' sectoral tilt towards manufacturing and agro-industry generates structurally higher nominal growth than the regional average. Given that population-level aggregated data preclude formal disentanglement of these three mechanisms, the results should be interpreted as descriptive evidence consistent with the coexistence of all three effects.

5.2. The Productivity Paradox and the Employment Conditionality Effect

The persistence of the productivity gap — subsidised firms at approximately 35–43% of the regional average throughout the decade despite substantially above-average growth — constitutes the central structural finding of this study. The complete 2021–2022 data reinforce this conclusion: even as productivity in subsidised firms reached RON 102,700 and RON 107,300 per employee, the regional benchmark had already moved to RON 238,200 and RON 279,000.

Two interpretations are relevant. The first concerns sectoral profile: subsidised firms are predominantly in labour-intensive manufacturing, agro-processing or food industry — priority sectors of the 2014–2020 Regional Operational Programme — whose lower per-employee VA is a structural feature of the sector. The second concerns the employment conditionality embedded in programme design: the applicant guides governing ERDF TO3 grants imposed an explicit employment retention requirement, structurally in tension with the productivity objective of the

instrument. A firm that expands its workforce in response to a regulatory requirement will, all else equal, experience a dilution of value added per employee even when absolute VA increases. This possibility — that support instruments may have favoured employment expansion rather than efficiency gains — cannot be excluded and constitutes an important caveat in the interpretation of the productivity results.

5.3. Employment Dynamics: The Full Decade Picture

Table 5 presents the complete employment trajectory for the 2014–2023 period. Employment in subsidised firms grew by 102.8% between 2014 and 2023 (index 202.8), compared to a 1.5% contraction in total regional employment (index 98.5). The chain growth indices confirm that the workforce expansion trajectory was not disrupted by the COVID-19 shock: 2021 (1.075) and 2022 (1.062) both register positive growth. By contrast, total regional employment contracted in 2020 (0.957) and 2022 (0.985) before recovering in 2023 (1.024).

Table 5. Employment in subsidised firms versus total employment in the Western Region, 2014–2023

Indicator	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Employees in subsidised firms	2,920	3,235	3,548	3,879	4,274	4,783	5,038	5,414	5,750	5,921
Total employees — Western Region	419,228	424,847	432,289	434,461	427,650	425,688	407,355	409,270	403,310	412,921
Share subsidised / total (%)	0.70 %	0.76 %	0.82 %	0.89 %	1.00 %	1.12 %	1.24 %	1.32 %	1.43 %	1.43 %
Chain growth index — subsidised	—	1.108	1.097	1.093	1.102	1.119	1.053	1.075	1.062	1.030
Chain growth index — Western Region	—	1.013	1.018	1.005	0.984	0.995	0.957	1.005	0.985	1.024
Fixed-base index subsidised (2014=100)	100.0	110.8	121.5	132.8	146.4	163.8	172.5	185.4	196.9	202.8
Fixed-base index Western Region (2014=100)	100.0	101.3	103.1	103.6	102.0	101.5	97.2	97.6	96.2	98.5

Sources: ORBIS (Bureau van Dijk, 2025) for subsidised firm employment; INS (2024), Tempo Online, employees by development region. Own processing.

5.4. Implications for 2021–2027

Three design implications follow for the 2021–2027 programming period. The financial maturity principle suggests that the additionality test for grant allocations should incorporate a forward-looking productivity component. The intermediary capacity principle follows from the consistent profitability of subsidised firms (net margins 8.8–12.7%, ROE above 22% throughout the decade), demonstrating substantial debt-absorption capacity in the beneficiary population. The complementarity principle recognises that the employment trajectory documented here is consistent with subsidies functioning as effective net job-creation vehicles, though this employment expansion came at the cost of productivity dilution.

5.5. Two-Phase Growth Dynamic

The complete longitudinal data reveal two structurally distinct growth phases. Phase 1 (2014–2019) coincides with the active subsidy deployment period, with value added growing at a CAGR of +24.6% per year. Phase 2 (2019–2023) represents a consolidation period: growth decelerated but remained substantially above the regional average, with value added CAGR of +16.6% versus regional GVA CAGR of

+9.4% — a premium of 7.2 percentage points. The 2021–2022 data confirm that subsidised firms navigated the post-COVID inflationary environment without structural deterioration: EBITDA margins remained in the 18.2–18.5% range and employment continued to expand.

6. Conclusions

This study provides the first complete longitudinal financial profile of ERDF subsidy beneficiaries in the Western Development Region, triangulating ORBIS/BNR (Bureau van Dijk, 2025) and INS (2024) data across the full 2014–2023 period. The findings address the three research questions as follows.

RQ1 — Financial performance evolution: subsidised firms exhibited substantial and consistent growth across all financial dimensions. Turnover grew 4.8× (RON 493M → RON 2,370M), value added 5.5× (RON 133M → RON 738M), and total assets 6.2× (RON 426M → RON 2,628M). Net profitability remained stable at 8.8–12.7% and ROE above 22% throughout. Employment more than doubled (2,920 → 5,921), with uninterrupted year-on-year growth including during COVID-19.

RQ2 — Relative regional contribution: the share of subsidised firms in regional GVA doubled from 0.24% (2014) to 0.57% (2023); the employment share grew from 0.70% to 1.43%. The 2021 data confirm that the doubling of relative economic weight was achieved before the end of the study period.

RQ3 — Growth differential and productivity: subsidised firms grew materially faster than the regional economy (VA ratio 2.36:1; CA ratio 2.19:1 relative to regional growth), documenting a sustained descriptive growth differential whose causal attribution to subsidy additionality, selection effects, or sectoral composition cannot be determined from the available aggregate data. Labour productivity reached RON 124,700 per employee by 2023 (from RON 45,600) but remained at approximately 35–43% of the regional average with no convergence trend. The complete 2014–2023 data confirm that this persistent gap is a structural feature of the beneficiary population, not a temporary artefact.

The principal research limitation — use of population-aggregated ORBIS data precluding causal identification — defines the agenda for future work: (i) firm-level panel construction with propensity-score-matched controls; (ii) disaggregation by sector, programme axis and grant amount; (iii) separate tracking of employment and productivity outcomes in the 2021–2027 monitoring framework.

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