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Equivalent ERDF innovation subsidies, divergent firm performance: Micro-evidence from an impact evaluation in Northern and Southern Italy

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Abstract

This paper compares two regional innovation incentive designs in Italy and their footprints in beneficiary firms' financial statements. We analyze pre- and post-award accounts (2010–2018) for 129 firms (Lombardy n=60; Sicily n=69) and estimate simple regressions on absolute and size-normalized changes. The study is observational: results are associations, not causal effects. In Lombardy, after normalizing by firm size, higher subsidy intensity is consistently associated with subsequent growth in revenues and intangible assets—concentrated in manufacturing—and with higher personnel costs across sectors. Links to tangible assets, a capital-turnover proxy, and profitability are weak or unstable over the eight-year horizon. In Sicily, coefficients cluster around zero for assets, revenues, labor costs, profitability and productivity, and occasional signals fade across specifications—consistent with grants that acted mainly as liquidity buffers under de minimis caps and slow reimbursements. The contrast suggests that instrument mix and administrative capacity matter: Lombardy's blended finance and digital, milestone-based delivery correlate with clearer balance-sheet traces, while a compliance-heavy, grant-only regime does not. Policy implications are to calibrate instruments to firm readiness and sector maturity (grants for exploratory R&D and services; soft loans and guarantees for scale-up in manufacturing), pair funding with capability-building services (managerial mentoring, technology transfer, market and export support), streamline procedures with milestone-linked tranches and automatic advances to close liquidity gaps, deploy end-to-end digital monitoring that tracks outcomes beyond compliance (intangibles, hiring, commercialization), and combine cluster-targeted calls with inclusive pathways for smaller, lower-capacity firms.

Keywords: public subsidies; SME performance; balance-sheet evaluation; absorptive capacity; place-based policy.
Jel codes: C01; C51; O25; O31; O32; O38

1. Introduction

Place-based innovation policy remains a central plank of regional development strategies, yet the pathways through which subsidies traverse the firm and leave detectable traces in financial accounts continue to be debated. In Europe and beyond, an abundant literature documents how grants and tax incentives catalyze inputs and intermediate outputs such as R&D spending, collaborations and patents, with quasi-experimental studies frequently establishing positive average effects subject to substantial heterogeneity across sectors and territories (Guceri and Liu, 2019; Dechezleprêtre et al., 2016; Castellacci and Lie, 2015). Far fewer studies, however, follow the money into the firm's ledgers and ask whether transfers are mirrored in revenues, cost structures, asset composition and profitability once the project cycle closes, an omission that matters for fiscal accountability and for the design of policy mixes that aim to convert public outlays into durable competitive gains. Italy offers a natural laboratory for this inquiry because it combines heavy reliance on EU-cofinanced regional programs with marked interregional disparities in industrial structure, administrative capacity and digital readiness.

This article provides a comparative reading of two region-specific empirical investigations that track beneficiary firms between 2010 and 2018 after they received support under the 2007–2013 European Regional Development Fund (ERDF). The first, set in Sicily, evaluates a grant-centric, de minimis programme implemented through an administratively demanding chain with an external intermediate body and the Caronte portal. The second, set in Lombardy, examines a blended-finance architecture of grants, soft loans and guarantees under the GeFO digital platform, oriented to R&D and energy-efficiency projects with consortia-based eligibility. Both studies adopt a common measurement strategy based on ordinary least squares estimated on absolute changes and on normalized changes that scale outcomes and incentive intensity to 2010 baselines, with sectoral heterogeneity captured through ATECO interactions. Neither study constructs a counterfactual, and both refrain from causal claims in favor of documenting balance-sheet associations that can inform future impact-oriented work.

The comparative question is straightforward: why does a similar volume of public support, delivered in adjacent programming cycles and observed over identical accounting windows, leave no robust financial imprint in Sicily but does in Lombardy for revenues, intangible assets and personnel costs? The answer we develop integrates differences in absorptive capacity, instrument mix, and governance architecture with insights from the economics of innovation and fiscal federalism. It also speaks to evaluation practice, showing that normalized measures are more diagnostic in heterogeneous SME populations but that two-point, pre–post designs are intrinsically limited. The contribution is therefore twofold. Substantively, it clarifies how regional context conditions the translation of public support into balance-sheet signals. Methodologically, it provides a harmonized comparative frame that can be extended to subsequent EU cycles and to quasi-experimental designs.

2. Literature Review

The rationale for selective, place-based incentives has long been articulated within the fiscal federalism tradition, which argues that decentralized transfers may correct market failures while risking rent seeking and administrative inefficiencies (Musgrave, 1971; Oates, 1998). Contemporary innovation policy reframes this rationale in terms of mission orientation, systems of innovation and transformative change, each implying different targets and metrics for evaluation and thus different expectations about what the firm's financial statements should reveal after an intervention (Schot and Steinmueller, 2018). On the demand side for policy, SMEs face credit rationing and fixed-cost barriers to innovation that can justify targeted support, although instrument choice and timing matter (Stiglitz and Weiss, 1981; Hall and Lerner, 2010; Czarnitzki and Hottenrott, 2011).

At the firm level, quasi-experimental assessments of tax incentives typically find elastic and crowding-in responses of private R&D to reductions in user cost, with treatment effects that survive diverse identification strategies and administrative contexts (Guceri and Liu, 2019; Dechezleprêtre et al., 2016). Meta-analyses and sectorally disaggregated studies confirm heterogeneity in effectiveness, suggesting that the same lever yields stronger gains where absorptive capacity is higher and complementary assets are in place (Castellacci and Lie, 2015; Acebo and Miguel-Dávila, 2024). Direct grants and regional schemes also show positive effects on employment and innovation but with substantial spatial and sectoral modulation. In Italy, scoring-rule designs point to short-lived innovation boosts in manufacturing, whereas broader European studies link larger multipliers to weaker regions only when administrative capacity is adequate (Bronzini and Piselli, 2016; Bachtrögler et al., 2020; Bachtrögler-Unger et al., 2024). This coupling between governance quality and impact recurs across institutional settings, reinforcing the premise that context conditions outcomes (Han and Kung, 2015; Hussen, 2022).

Evidence on instrument heterogeneity further complicates the picture. Identical fiscal conduits—such as liquidity injections—can produce divergent productivity and distributional effects depending on ownership, leverage and timing, with counter-cyclical stimuli depressing TFP in some state-owned contexts and VAT refunds raising labor shares and R&D intensity in private, credit-constrained firms (Cheng et al., 2025; Yang and Si, 2025; Shao and Chen, 2022; Gao and Lu, 2025; Guo et al., 2024). Policy packages that combine grants with equity or procurement often unlock collaborative breadth and network formation and, in transition environments, translate into higher productivity (Chapman et al., 2018; Foreman-Peck and Zhou, 2022). Sector regulation that remodels incentives can crowd in tangible capital even without direct transfers, reminding us that the mapping from policy to firm accounts is mediated by rules of the game that shape investment horizons and accounting choices (Brunekreeft, 2007; MartinezVazquez et al., 2006).

Methodologically, the evaluation frontier has shifted from cross-sectional correlations to difference-in-differences, regression discontinuity and dynamic panels, often exploiting digital administrative registries to link program data to firm outcomes and to assemble credible comparison groups (Criscuolo et al., 2019; Pu et al., 2023; Yuan et al., 2023). Even so, two gaps remain salient. First, the lion's share of studies privileges inputs and bibliometric proxies over systematic scrutiny of balance-sheet outcomes. Second, accounting-based evaluations with explicit regional contrasts are rare, especially in complex settings where governance and industrial structure vary widely within a single country. The two regional studies considered here respond directly to these gaps by tracing public support into financial statements and by organizing a disciplined comparison that centers on instrument mix and administration.

A final strand of work integrates governance and policy legitimacy into effectiveness criteria. Here, the stability of fiscal contracts, the transparency of procedures and the social acceptance of policy shape firm expectations and behavior, with digital oversight emerging as a critical enabler that reduces moral hazard and generates evaluable data (Wallner, 2008; Carboni, 2017; Mendez-Picazo et al., 2012). The Lombardy–Sicily contrast, as we shall see, maps closely onto these considerations. In short, the literature leads us to expect that balanced-sheet signatures of public support will be stronger where instruments match absorptive capacity, governance ensures timely, milestone-linked disbursement, and complementary assets permit rapid conversion of funds into product development and sales, while flat or null associations can arise when support acts mainly as liquidity relief.

3. Data & Methodology

3.1 Programme setting, samples and observation windows

The Sicilian investigation evaluates Operational Objective 4.1.1 of the ERDF 2007–2013 regional programme, a de minimis grant scheme designed to foster industrial research, experimental development and technological innovation through multi-firm consortia that included at least one research organization. Two calls in 2010 and 2011 framed allocation, the first lenient and almost non-selective and the second stricter with refined scoring. Funds were released in tranches against milestones, with monitoring via the Caronte portal and payments processed by an external intermediate body. Administrative complexity and payment lags were repeatedly documented in official reporting. The empirical sample includes sixty-nine beneficiary SMEs identified in final administrative reports and observed in 2010, before treatment, and in 2018, after project closure. In accordance with EU SME definitions, all were SMEs at baseline; by follow-up, one firm crossed into the large category. To avoid leverage outliers, firms with an incentive-to-turnover ratio in 2010 outside the open interval (0, 0.6) were excluded.

The Lombardy investigation focuses on Axis 1—Innovation and Knowledge Economy—of the same ERDF cycle but under a different governance and instrument architecture. Grants were combined with soft loans and guarantees in a blended-finance approach, administered end-to-end through GeFO, a digital platform that standardized application, monitoring and milestone-based disbursement. Three calls figure prominently: a strategic-sectors programme co-funded with the national FAR fund, a thematic energy-efficiency call, and a cross-sectoral innovation call. Mixed consortia were required and selection was competitive. The analytic sample consists of sixty beneficiary firms with complete financial statements in 2010 and 2018 within the "Research and Innovation" strand that yielded comparable accounting data after panel cleaning. As in Sicily, an incentive-to-turnover filter in 2010 between zero and 0.6 was imposed. Both studies therefore share a common observation window—2010 baseline and 2018 follow-up—spanning five to seven years after disbursement in 2011–2013 and excluding confounding from the pandemic and the subsequent energy-price shock.

3.2 Measures, normalization and sectoral grouping

To place heterogeneous firms on a common scale, both studies compute absolute changes, defined as 2018 minus 2010 levels, and normalized changes, defined as the ratio of the absolute change to the 2010 baseline for each variable. The key explanatory metric is incentive intensity, constructed as the ratio of the incentive amount

to 2010 turnover. Dependent variables include revenues, intangible and tangible assets, personnel costs, the capital-turnover ratio and profitability measures—ROE, ROI and ROS—aligned with standard accounting practice. Sectoral heterogeneity is captured using three ATECO aggregates: manufacturing (C), professional and technical services (M) and a residual cluster (AA) that consolidates less represented codes such as agriculture and low-tech activities. The sector mix differs markedly across regions. In Lombardy, manufacturing dominates the sample, reflecting program design, whereas in Sicily manufacturing, construction and agriculture are more balanced, with services contributing a smaller slice of the cohort.

3.3 Empirical strategy and diagnostics

Both studies estimate ordinary least-squares regressions in two families of specifications. "Standard" models regress absolute changes on the absolute incentive, pooling all sectors or interacting the incentive with ATECO dummies to allow sector-specific slopes. "Normalized" models regress normalized changes on incentive intensity, again with pooled and interaction variants. For interpretability across heterogeneous firm sizes, the normalized family is the primary diagnostic lens. For each outcome, simple pooled equations are complemented by interaction models and by marginal, composition-weighted averages of sector-specific slopes. The Lombardy investigation augments this architecture with extensive diagnostics: Shapiro–Wilk normality tests, Breusch–Pagan heteroscedasticity checks, variance-inflation factors for multicollinearity, 10,000-draw permutation tests for non-parametric significance, outlier trimming at ±3σ, robust Huber M-estimation, placebo regressions on pre-treatment and plausibly unrelated outcomes, and a floor-effect analysis to gauge risks from near-zero baselines. The Sicilian investigation reports diagnostics consistent with flat slopes and residual patterns that do not cluster along the incentive dimension.

Model family (OLS):

- Standard (absolute, pooled):

$\Delta Y_i = \beta 0 + \beta 1 \cdot Incentive_i + \varepsilon_i.$

- Standard with sector interactions:

$\Delta Y_i = \beta 0 + \beta 1 \cdot Incentive_i + \beta 2 \cdot 1\{C_i\} + \beta 3 \cdot 1\{M_i\} + \beta 4 \cdot (Incentive_i \times 1\{C_i\}) + \beta 5 \cdot (Incentive_i \times 1\{M_i\}) + \varepsilon_i.$

- Normalized (proportions, pooled):

$\Delta Y_{norm,i} = \gamma 0 + \gamma 1 \cdot norm\_Incentive_i + u_i.$

- Normalized with sector interactions:

$\Delta Y_{norm,i} = \gamma 0 + \gamma 1 \cdot norm\_Incentive_i + \gamma 2 \cdot 1\{C_i\} + \gamma 3 \cdot 1\{M_i\} + \gamma 4 \cdot (norm\_Incentive_i \times 1\{C_i\}) + \gamma 5 \cdot (norm\_Incentive_i \times 1\{M_i\}) + u_i.$

- Composition-weighted marginal slope (not a separate regression):

$ME = \Sigma_k (\gamma 1 + \gamma 4 \cdot 1\{k=C\} + \gamma 5 \cdot 1\{k=M\}) \cdot w_k.$ No p-value is reported for ME; its role is descriptive.

A common, explicit limitation of both designs is the absence of a counterfactual group. Participation is voluntary, scoring rules do not create sharp discontinuities that could be exploited through regression-discontinuity designs, and non-beneficiary longitudinal data were not linked to program records in these observational snapshots. As a result, coefficients are interpreted as associations rather than causal impacts, a methodological choice aligned with rules of thumb that caution against over-parameterization in small samples (Peduzzi et al., 1996). The shared pipeline nonetheless affords a disciplined platform for cross-regional comparison.

3.4 Harmonization, representativeness and validity threats

Comparability rests on harmonized definitions and observation windows, yet representativeness differs across regions. In Lombardy, beneficiaries concentrate along the Milan–Bergamo–Brescia axis and the sectoral composition is skewed toward manufacturing niches such as advanced materials, ICT and energy technologies, an over-representation relative to the regional firm population. In Sicily, the mix is closer to the island's broader industrial base, with agriculture and construction accounting for a larger share of SMEs. These sample features matter for inference because normalized models are particularly informative where baseline size dispersion is large and where sector routines align with the innovation content of the calls. Beyond sample composition, three validity threats apply symmetrically. First, common shocks—macro recovery, sectoral demand cycles and technology waves—can confound pre–post comparisons. Second, accounting choices—capitalization of R&D, depreciation schedules and leasing—may blur the mapping from real adjustments to measured items, especially

for profitability (an issue that often renders ROI and ROS noisy over medium horizons). Third, selection on unobservables—managerial quality, network position and financing constraints—may jointly influence both the probability of successful application and subsequent trajectories. The discussion below interprets regional differences against this backdrop and within the limits of observational designs.

4. Description of results

4.1 Baseline composition and descriptive patterns

The baseline dispersion of financial items is wide in both regions, as expected in SME populations, with revenues spanning orders of magnitude and profitability ratios highly collinear with one another and weakly related to stocks of intangible assets. In Lombardy, manufacturing firms report larger absolute bases, but normalized specifications mitigate scale effects and reveal proportional dynamics; in Sicily, scale heterogeneity is smaller, yet the dispersion of changes remains high, which further reduces the power of linear models to detect subtle associations. In both settings, the decision to work with normalized deltas reduces the risk that absolute changes in large incumbents dominate results, while floor-effect diagnostics indicate that near-zero baselines are rare enough to sustain proportional analysis.

4.2 Core comparative findings in normalized specifications

The central contrast emerges in the normalized family of models that relates proportional growth to incentive intensity. In Sicily, slopes cluster near zero across outcomes, and p-values remain well above conventional thresholds even in interaction models that allow sector-specific responses. Occasional signals—such as a negative relationship between incentives and intangibles in the residual sector or opposite signs for the capital-turnover ratio in services across standard and normalized models—are modest in magnitude, fail to replicate in marginal models, and do not survive alternative specifications. Taken together, they support the interpretation that grants functioned primarily as liquidity buffers rather than as catalysts of measurable restructuring in asset composition, sales capacity or staffing within the eight-year horizon (see Figures 1-4).

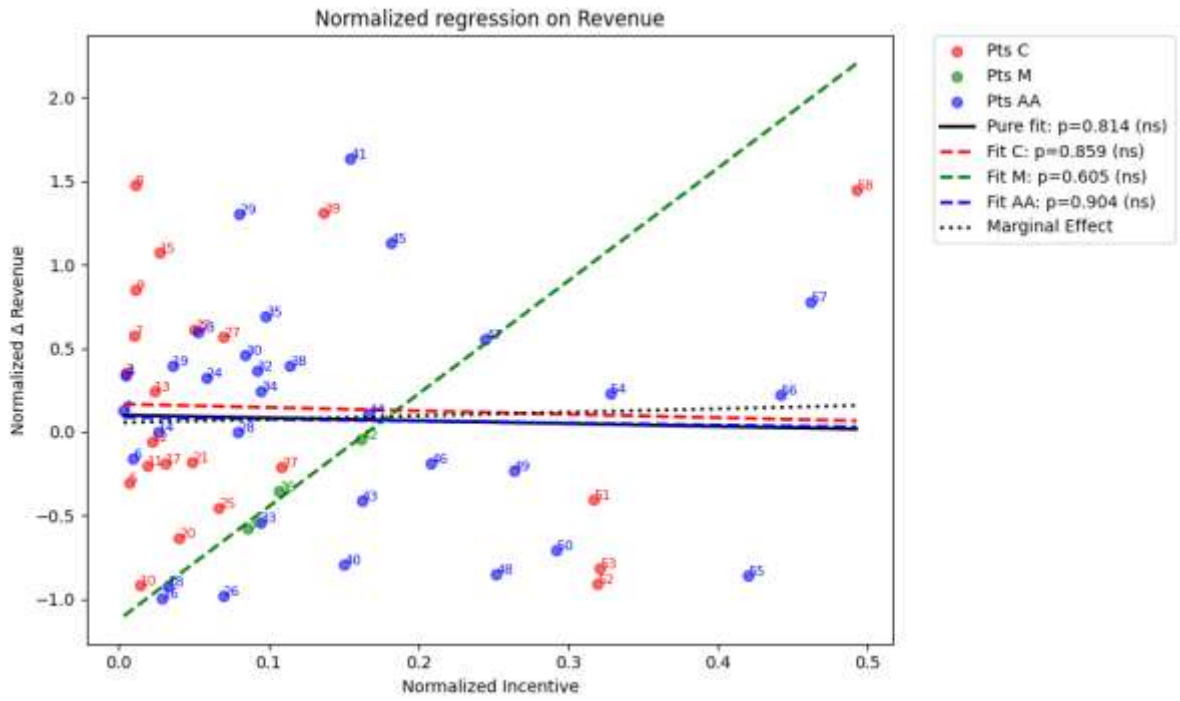

Figure 1. Plot of normalized regression on Revenue

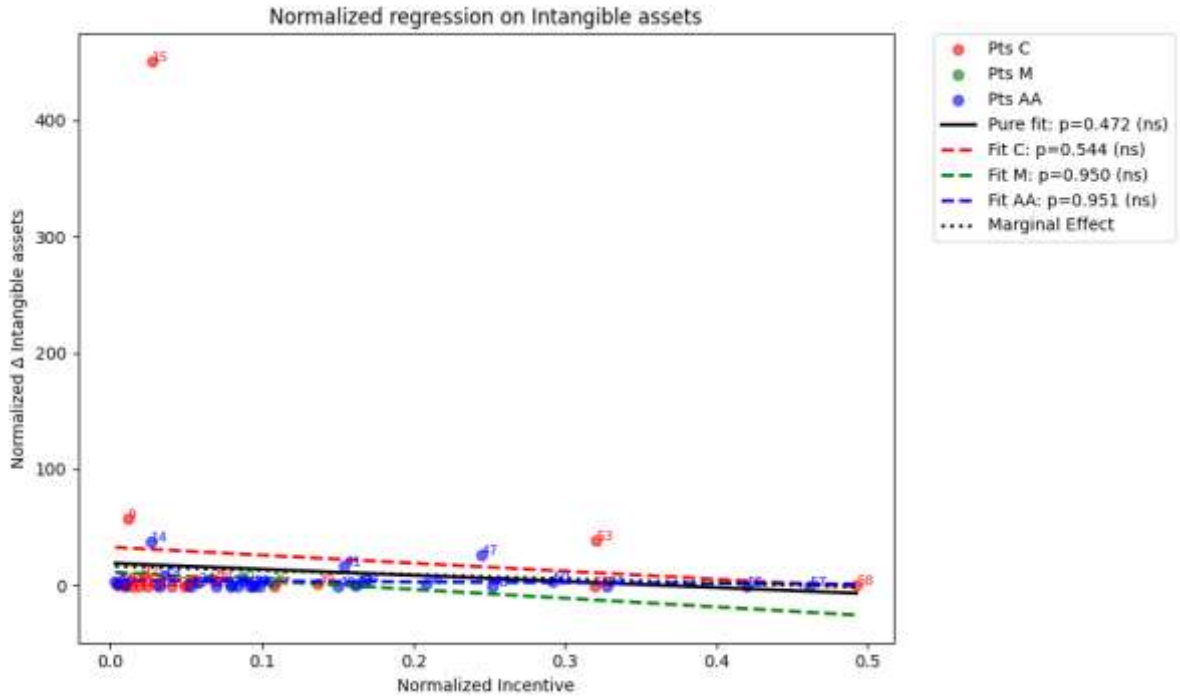

Figure 2. Plot of normalized regression on Intangible Assets

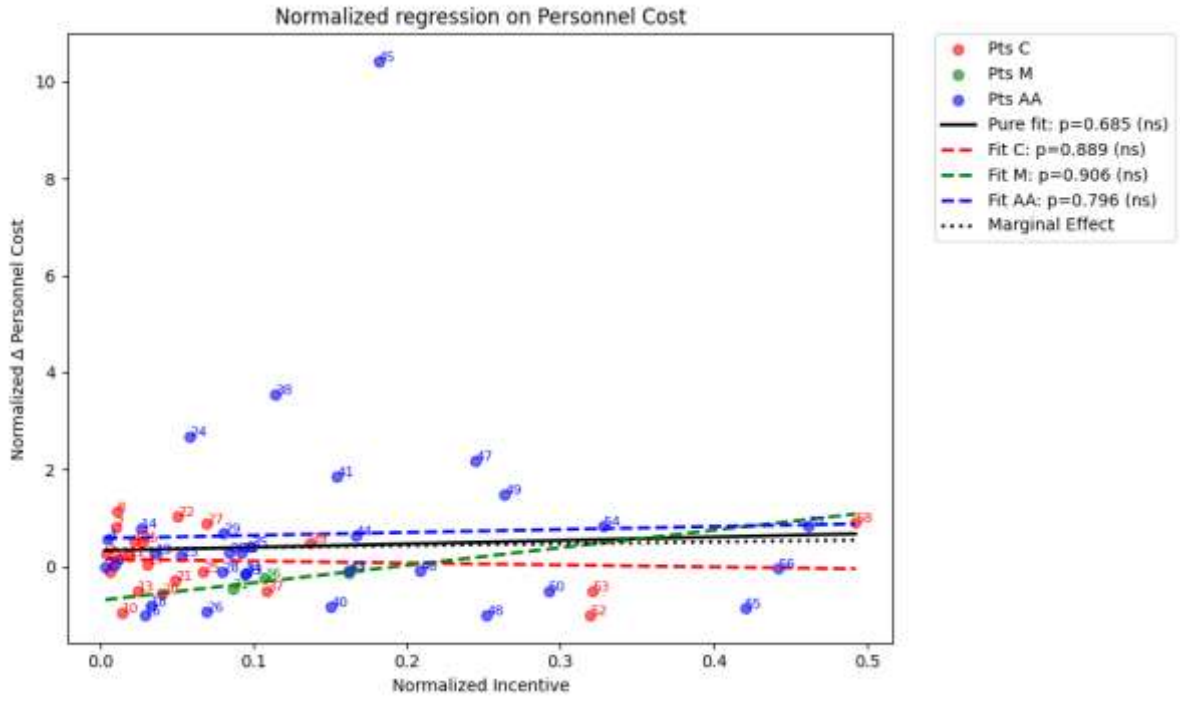

Figure 3. Plot of normalized regression on Personnel Costs

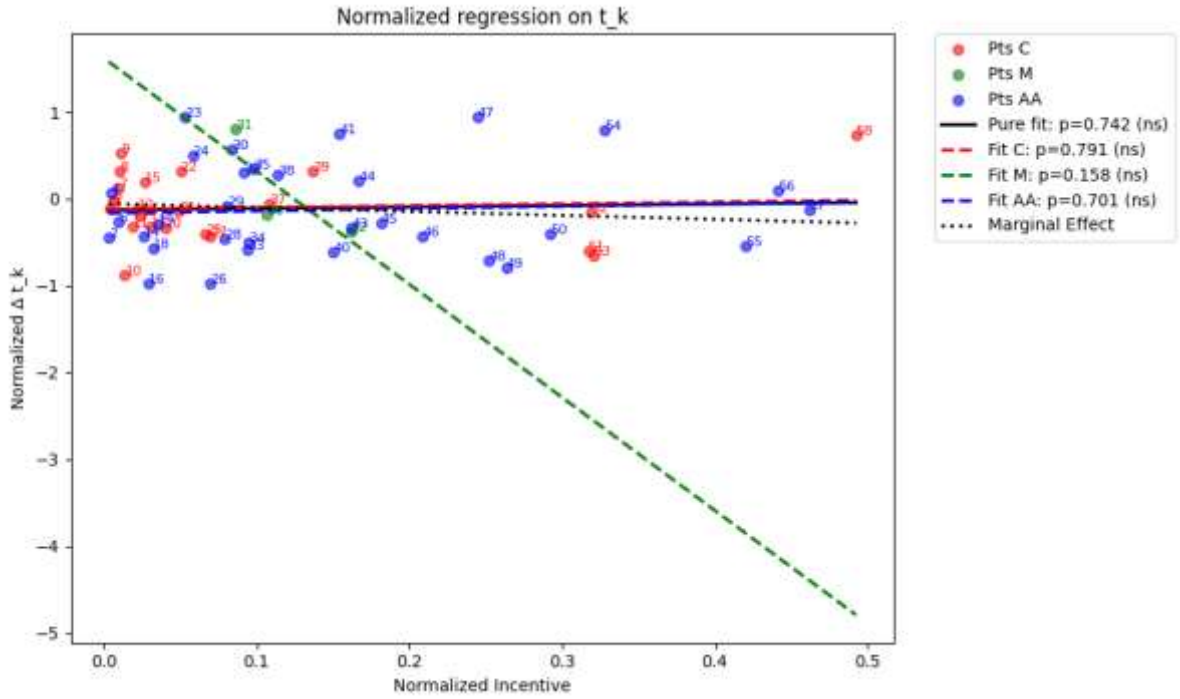

Figure 4. Plot of normalized regression on tk (Revenue/Total assets)

In Lombardy, by contrast, normalized estimates uncover three regularities. First, a positive association between incentive intensity and revenue growth emerges in pooled models and is driven by manufacturing firms once sector interactions are introduced, with slopes that remain significant under non-parametric permutation and robust estimation. Second, intangible assets—patents, proprietary software and capitalized R&D—rise in proportion to incentive intensity, with the manufacturing sector again carrying the signal; pooled significance is sensitive to outliers, but sector-specific robust estimators retain significance, pointing to genuine heterogeneity. Third, personnel costs increase uniformly with incentive intensity across sectors, consistent with recruitment of engineers, project managers and specialized technicians to execute subsidized projects, even if profitability remains flat in the observation window. Tangible assets show only borderline responses, and capital turnover and profitability indicators remain statistically decoupled from subsidy intensity. The absence of margin expansion despite growth in revenues and intangibles is compatible with the cost profile of innovation—front-loaded expenses and reinvestment—combined with medium-to-long diffusion cycles (see Figures 5-8).

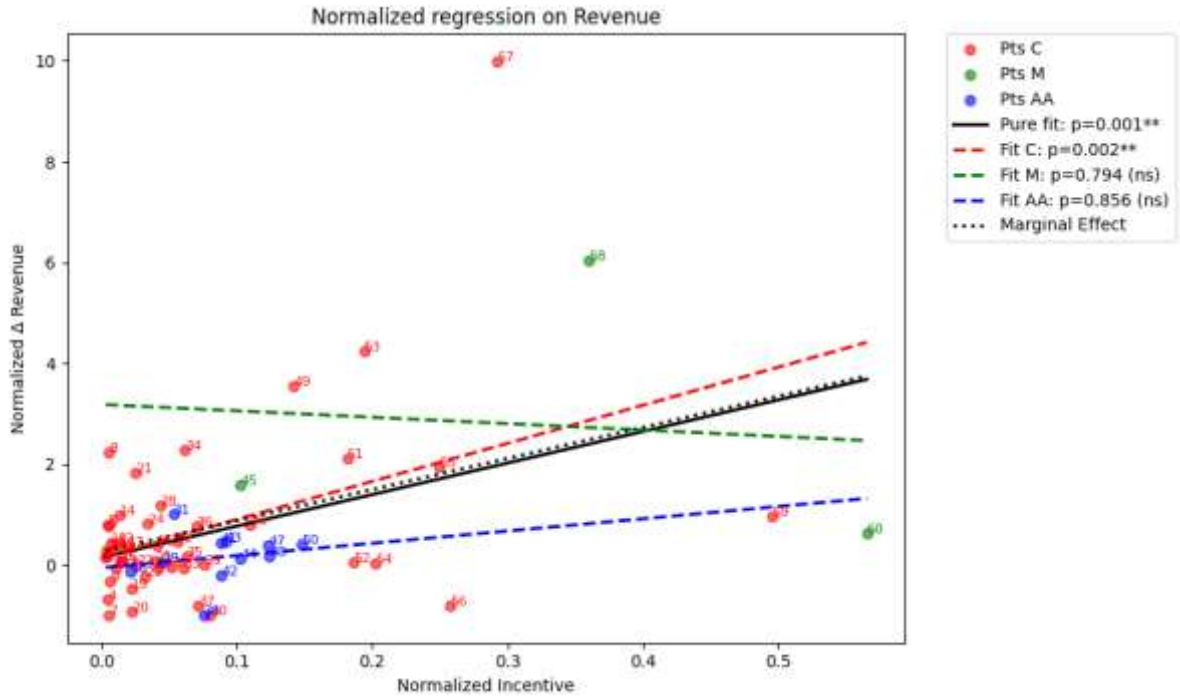

Figure 5. Plot of normalized regression on Revenue

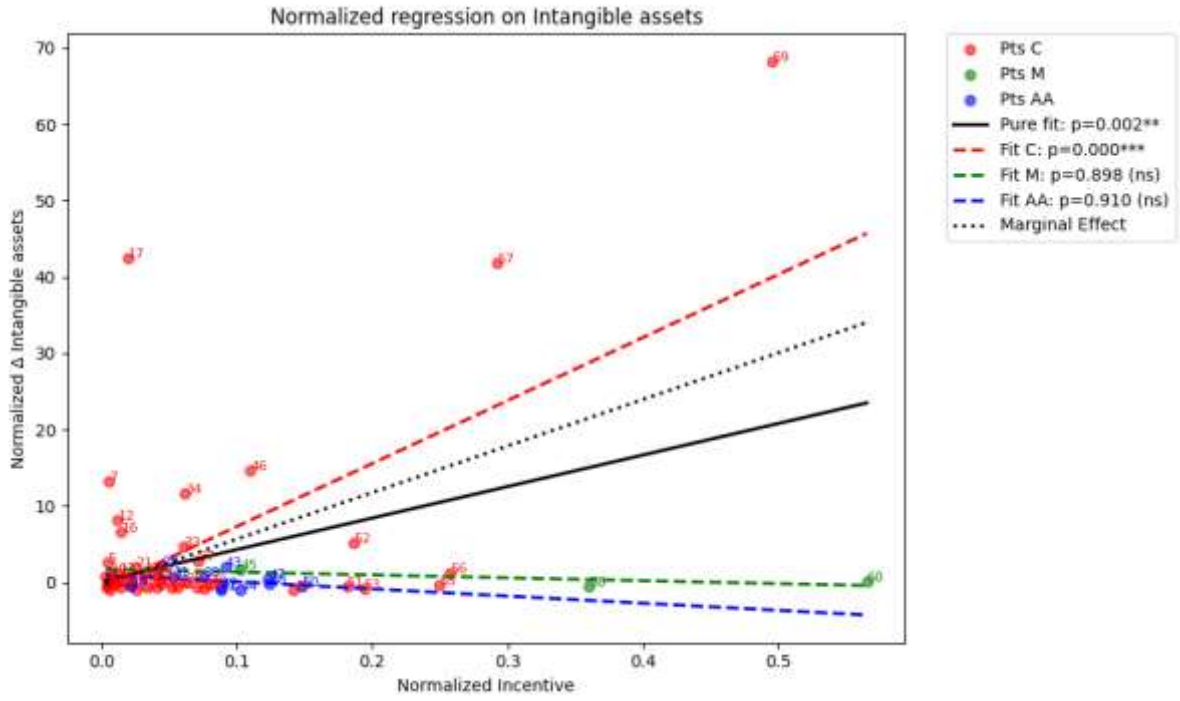

Figure 6. Plot of normalized regression on Intangible assets

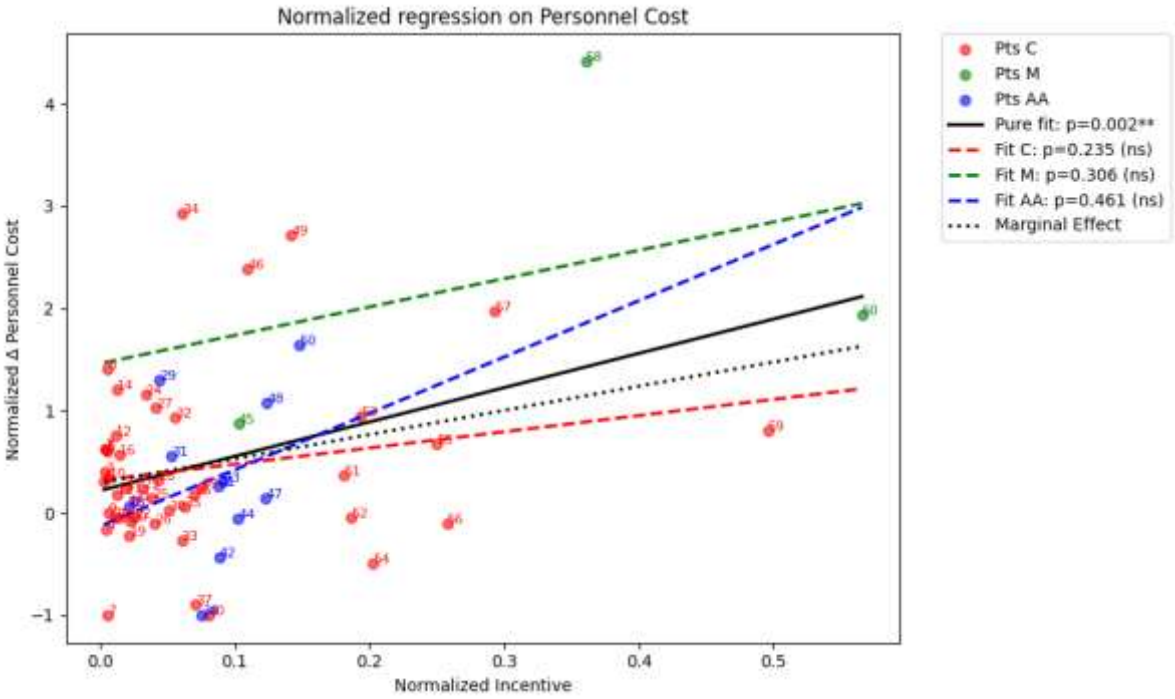

Figure 7. Plot of normalized regression on Personnel Cost

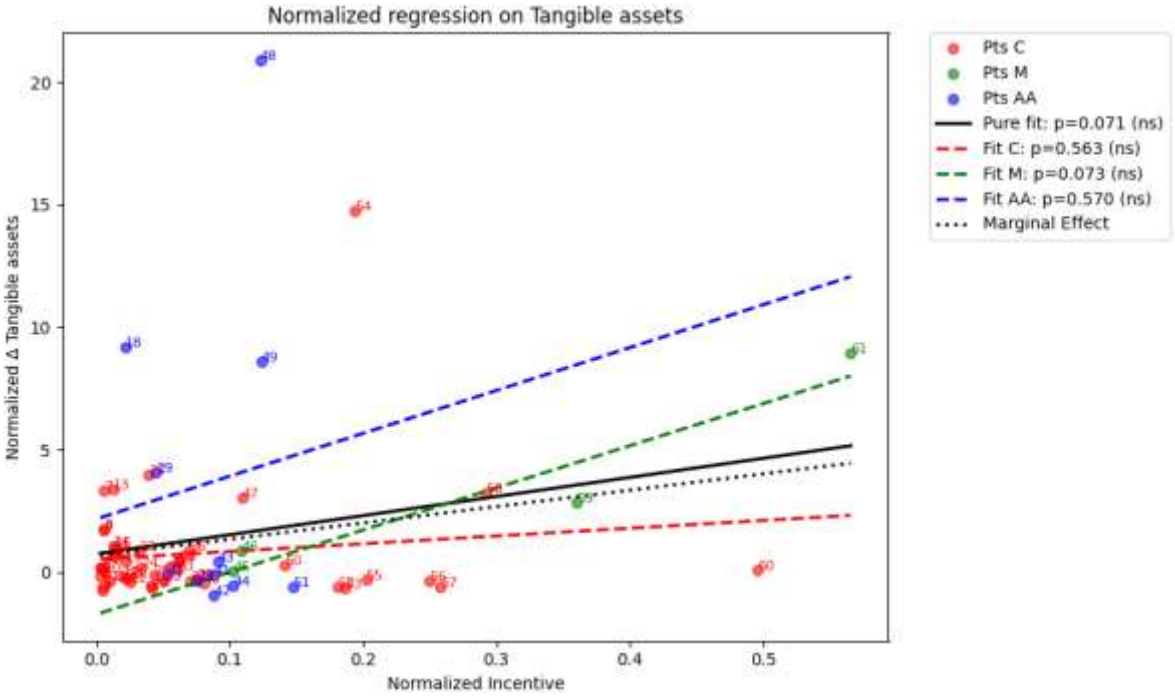

Figure 8. Plot of normalized regression on Tangible Assets

Table 1. Comparative summary of normalized associations with incentive intensity, 2010–2018

Performance metrics	**Model Sicily (pooled)**	**Model Sicily (with interactions)**	**Model Lombardy (pooled)**	**Model Lombardy (with interactions)**
Revenue (Δnorm)	≈ 0, ns	≈ 0, ns	positive, $p < 0.01$	positive in manufacturing, $p < 0.01$
Intangibles (Δnorm)	≈ 0, ns	mixed, unstable	positive, $p < 0.05$	strong in manufacturing, $p < 0.001$
Personnel cost (Δnorm)	≈ 0, ns	≈ 0, ns	positive, $p < 0.01$	system-wide, no heterogeneity
Profitability (Δnorm)	≈ 0, ns	≈ 0, ns	≈ 0, ns	≈ 0, ns

Source: Authors' synthesis of the two regional studies. Notes: ns = statistically non-significant at conventional levels.

4.3 Robustness and diagnostics across regions

The weight of robustness checks falls on the Lombardy investigation because that is where associations are detected. There, residuals depart from normality, as is common with right-skewed accounting variables whose downside is bounded and upside unbounded, and heteroscedasticity appears in normalized models. Yet Huber M-estimation attenuates but does not eliminate the main slopes, permutation tests place observed coefficients in the extreme tail of null distributions, and placebo regressions on pre-treatment outcomes and unrelated liabilities return null patterns, collectively reducing concerns that results are artefacts of distributional assumptions or specification choices. Outlier trimming undermines pooled intangibles but not the manufacturing-specific effect, a pattern that coheres with sectoral heterogeneity. In Sicily, diagnostics reveal neither clustering of residuals nor leverage points along the incentive dimension and are consistent with flat lines that fail to explain the dispersion of changes. Importantly, in both regions absolute specifications on raw deltas are noisy and generally uninformative, highlighting the necessity of normalization in comparative SME analysis.

4.4 Transmission mechanisms and the role of absorptive capacity, instruments and governance

Why would the same accounting window and nominally similar support differ so markedly in their balance-sheet signatures across regions? Three mechanisms offer a coherent explanation. The first is absorptive capacity. In Lombardy, dense industrial agglomerations comprising SMEs, anchor multinationals and university labs compress knowledge transfer cycles and provide complementary assets—specialized suppliers, testing facilities, design studios and export channels—that enable quick translation of support into product development and sales expansion. Manufacturing beneficiaries in this setting exhibit precisely the pattern observed: larger proportional gains in intangible assets and revenues with a neutral short-run profitability profile. In Sicily, the sectoral mix includes a greater share of agriculture and construction, where production is constrained by biological cycles or local demand, and where managerial and technological gaps limit the transformation of liquidity into capitalized knowledge or scalable sales. When incentives help bridge day-to-day liquidity needs or replace short-term bank credit, balance-sheet signatures align with buffering, not upgrading.

The second mechanism is instrument mix. Blended finance in Lombardy—grants combined with soft loans and guarantees—matched instruments to project maturity and risk. Firms nearer to commercialization could scale with repayable support, while exploratory work could rely on non-repayable grants, all under milestone-linked disbursements. Such matching likely enhanced selection on readiness and reinforced performance discipline through repayment obligations and staged tranches. By contrast, grant-only approaches under de minimis constraints lack the disciplining effects of repayables and may unintentionally encourage the allocation of funds to routine expenditures when capability gaps and demand constraints prevail. The broader literature is aligned with the view that mixes calibrated to readiness and sectoral maturity outperform isolated instruments (Ribeiro-Soriano and Galindo-Martin, 2012; Castellacci and Lie, 2015).

The third mechanism is governance architecture. GeFO's end-to-end digitalization, with standardized documentation, traceable works-in-progress and milestone verification, reduces moral hazard, shortens payment lags and generates reliable data for monitoring and course correction. In Sicily, multiple actors and compliance-heavy procedures translated into delays between award and reimbursement that often exceeded twelve months, forcing SMEs to draw on bank lines and eroding the real value of non-repayable support. The importance of administrative capacity and digital oversight in conditioning outcomes is borne out by comparative EU evidence (Bachtrögler et al., 2020; Bachtrögler-Unger et al., 2024) and by institutional analyses that place governance and policy legitimacy at the core of effectiveness (Wallner, 2008; Carboni, 2017). Together, these mechanisms reconcile the divergent balance-sheet signatures with theory and with the international literature on place-based policy.

4.5 Counterfactual reasoning and alternative explanations

Could common shocks or selection account for the observed contrast absent any role for context and governance? Sectoral cycles and macro recovery after 2010 indeed influenced both regions, but the same window and the same national environment argue against a shock-only explanation. Selection remains more plausible. Applicants in Lombardy may have been more capable even before treatment, with higher managerial quality and network centrality, and could thus have converted any liquidity into growth regardless of the instrument. Without a credible counterfactual, this possibility cannot be ruled out. Yet two considerations attenuate its force. First, the normalized patterns are strongest precisely where program design and industrial fabric align—manufacturing niches that the calls targeted—and are absent where one would expect selection to be most salient—profitability ratios that respond rapidly to managerial quality. Second, diagnostics that probe placebo associations in Lombardy find no spurious correlation with pre-treatment incentive-unrelated chosen variables or with accounting items unconnected to innovation projects, suggesting that unobserved confounders are not pervasive across outcomes. The cautious conclusion is that regional context likely amplified or muted the transformation of support into balance-sheet signals, while unobserved selection and measurement noise remain relevant threats to identification that motivate future counterfactual analysis.

5. Conclusions

The comparative analysis of Sicily and Lombardy offers a clear lesson about the conditions under which public incentives leave a detectable imprint in firms' financial statements over medium horizons. In a governance-intensive, grant-only scheme operating under de minimis constraints and subject to payment lags, the Sicilian evidence shows flat, non-significant associations across key balance-sheet aggregates, consistent with a role of grants as liquidity stabilizers rather than as catalysts of structural upgrading. In a blended-finance, digitally governed architecture embedded in a dense industrial ecosystem, the Lombardy evidence shows that greater incentive intensity is associated with proportional gains in revenues and intangible assets—driven by manufacturing—and with an increase in personnel costs, while profitability remains unchanged in the window of analysis. The divergence aligns with theory that emphasizes absorptive capacity, matching of instruments to readiness, and the disciplining role of digital, milestone-linked disbursement.

These conclusions support a pragmatic reorientation of place-based innovation policy. First, instrument choice should be contingent on ecosystem maturity and project readiness. Where consortia and supply chains are thick and capabilities are strong, repayable instruments can stretch public budgets while preserving discipline; where gaps are large and risk high, grants are warranted but should be embedded in packages that combine money with managerial coaching, technological mentoring and market access services if they are to translate into capitalized knowledge and sales. Second, governance matters. End-to-end digitalization with standardized templates, transparent scoring, milestone verification and real-time dashboards is not an administrative convenience but an effectiveness driver that reduces delays, aligns incentives and generates evaluable data. Third, monitoring should mirror investment cycles, with different horizons for R&D, digitalization and plant modernization, and with metrics that capture non-linear paths from capability building to earnings. Finally, the evaluation architecture should move beyond two-point, pre–post correlations to quasi-experimental designs that exploit oversubscription and near-threshold applicants, link administrative records to registries and tax data, and deploy synthetic controls where geography allows. Such designs can test whether the associative patterns documented here survive under credible counterfactuals and can estimate displacement, spillovers and distributional effects.

The comparative frame developed in this article is readily extensible. Subsequent cycles—2014–2020 and 2021–2027—offer richer administrative datasets, sharper eligibility thresholds and wider variation in instrument mix and governance. Across these cycles, three questions should guide a cumulative research program. Do the Lombardy-type balance-sheet signatures replicate where blended finance and digital oversight are scaled in structurally weaker regions? Can capability-building services paired with grants convert flat Sicilian-type profiles into growth in intangibles and revenues without compromising fiscal prudence? How do instrument

mixes interact with ownership forms, leverage and market power to shape productivity and equity outcomes, as the Chinese evidence suggests (Cheng et al., 2025; Yang and Si, 2025)?

None of this diminishes the value of observational balance-sheet analysis. On the contrary, the two studies compared here demonstrate that even without counterfactuals, normalized accounting indicators can reveal meaningful heterogeneity in how public money travels through the firm. They also underscore the limits of generic prescriptions. In the absence of absorptive capacity, appropriate instruments and capable governance, subsidies may calm liquidity but not rewire production, a conclusion that cautions against using transfers as a blunt counter-cyclical lever. Conversely, when ecosystem maturity and administration are aligned, the same support can leave measurable traces in intangibles and revenues, even if profits take longer to materialize. For policymakers, this is less a verdict on incentives than a call to treat instrument choice, capability building and digital oversight as complements, not substitutes. For scholars, it highlights the need to integrate accounting outcomes into evaluation, to explain why growth in knowledge capital and sales may arrive ahead of margins, and to build the counterfactual evidence base that the policy conversation now demands.

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