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Introduction / Abstract

This paper reviews academic and policy evidence, together with selected evaluations of specific policy instruments, on the nature, operation, and effectiveness of incentives intended to support universities' engagement with regional economies. It examines different types of incentives—including financial, performance-based, governance, commercialisation, and reputational mechanisms—and how they operate within multi-level policy environments. Programme-level evidence is used to assess how incentives influence institutional behaviour and intermediate outcomes and, where evidence is available, their contribution to regional economic outcomes.

The review suggests that incentives can influence university behaviour, strengthen organisational capacity for engagement, and in some cases affect firm-level outcomes. Evidence is considerably weaker, however, on whether and under what conditions these effects translate into sustained regional economic performance. Effectiveness appears to depend on factors including institutional capabilities, the scale and specialisation of university activity, regional economic conditions, and the alignment between university strengths, policy objectives, and regional opportunities.

The paper also highlights the importance of interactions between different incentives. In practice, universities respond to overlapping funding mechanisms, performance frameworks, and place-based initiatives, while financial constraints can alter the relative strength of these signals. Limitations in the linkage of programme, partner, and spatial data also make it difficult to assess how incentives combine and whether effects persist or diffuse beyond directly supported organisations. Overall, the evidence base remains fragmented, particularly in relation to aggregate regional outcomes and the interaction of incentives within policy mixes. The paper concludes by identifying policy considerations around coherence, context, time horizons, evaluation, and institutional financial capacity.

Background

Universities are increasingly positioned as anchor institutions within regional growth and innovation strategies. In the UK, this expectation is embedded in knowledge exchange funding, research impact frameworks, skills provision, and place-based innovation agendas. Similar trends are visible internationally (e.g. OECD regional development policy, EU Smart Specialisation, US land-grant and extension systems), where higher education institutions (HEIs) are expected to contribute not only to knowledge creation and human capital development, but also to regional innovation systems and economic performance (OECD, 2007).

This shift reflects a broader evolution in universities' roles, with the expansion of a "third mission" alongside teaching and research. Universities are now expected to engage actively with external stakeholders and contribute to economic and societal outcomes beyond academia. In response, a range of policy, financial, and institutional incentives has emerged to encourage such engagement.

However, universities' responses to these expectations are neither uniform nor straightforward. Incentives operate across multiple levels—national policy frameworks, regional governance structures, and internal institutional strategies—and are mediated by organisational characteristics and local context. As a result, the relationship between incentives and universities' contributions to regional growth is complex, involving potential complementarities, trade-offs, and unintended effects.

Despite growing policy attention, there remains limited systematic understanding of:

- what incentives exist in practice,
- how they shape institutional behaviour,
- how different incentives interact,
- and whether they are effective in supporting regional growth objectives.

This review draws on academic research, policy and sectoral literature, together with selected evaluations of specific policy instruments. Programme-level evaluations are included where they provide evidence on how incentives operate, their effects on institutional behaviour and intermediate outcomes, and, where available, their contribution to regional economic outcomes. The review does not seek to evaluate every individual programme comprehensively; rather, programme-specific evidence is used to assess and illustrate the broader mechanisms and effectiveness of different types of incentive. Given variation in evaluation design and maturity, evidence from impact, process and monitoring studies is distinguished accordingly.

The term "regional growth" is used in different ways across this literature. For the purposes of this review, it is understood as a sustained increase in economic activity and performance within a sub-national area with a degree of economic coherence (Ulrichsen, 2015b; Kelleher and Ulrichsen, 2024). It is principally reflected in changes in GVA and productivity, employment and earnings, and firm formation, survival and growth. Innovation, skills, infrastructure, investment and institutional capacity are treated as enabling conditions or intermediate outcomes rather than as final economic outcomes in their own right. Wider social, cultural and environmental effects are recognised as dimensions of regional development but fall outside the principal definition of regional growth used to assess effectiveness in this review.

Overview of Evidence

Typology of incentives supporting universities' contribution to regional growth

The typology summarised in Table 1 highlights that incentives shaping universities' contributions to regional growth form a complex and multi-layered system, spanning financial, performance-based, governance, commercialisation, and reputational dimensions. These incentives are best understood not as isolated instruments, but as components of broader policy mixes, whose effects depend on their interaction and alignment (Sanz-Menéndez and Cruz-Castro, 2020; OECD, 2019). These incentives have typically emerged incrementally over time, resulting in layered policy frameworks rather than fully coordinated systems.

The categories in Table 1 describe principal mechanisms of influence rather than mutually exclusive types of policy. In practice, individual instruments frequently combine several mechanisms. For example, Strength in Places Fund (SIPF) and Innovation Accelerators combine direct funding with governance and facilitative mechanisms, while Research Excellence Framework (REF) combines performance, funding and reputational incentives. This overlap is important because policies may seek to influence university behaviour through several routes simultaneously. Policies also differ in the extent to which regional growth is part of their intended purpose. For some place-based initiatives, such as SIPF, regional economic growth is a core programme objective; for others, including Higher Education Innovation Fund (HEIF) and Knowledge Transfer Partnerships (KTPs), regional contribution is one potential or secondary dimension of a broader knowledge exchange or innovation remit; while instruments such as REF are not designed around regional growth, although they may generate spatially uneven effects. Table 1 makes this distinction explicit without implying that programmes with a stronger regional orientation are necessarily more effective.

A key insight emerging from the literature is that these incentives are designed and operate across different levels of governance, even where this is not always made explicit in policy design. Many of the most prominent instruments originate at the national level, such as funding schemes (e.g. HEIF) or evaluation frameworks (e.g. REF, KEF), which establish system-wide priorities and definitions of value. At the same time, universities are increasingly embedded in regional governance arrangements, including place-based innovation strategies and partnership structures, which shape how these incentives are interpreted and applied in specific territorial contexts (OECD, 2007; Trippl et al., 2015; Kitagawa, 2017). Crucially, these external incentives are ultimately mediated at the HEI level, through internal strategies, organisational structures, and resource allocation decisions.

As a result, incentives are not simply transmitted in a linear way from policy to outcome, but are filtered and recombined across levels. National funding and evaluation frameworks may, for example, be operationalised through institutional infrastructures such as technology transfer offices or knowledge exchange units, and directed towards regionally embedded activities. This reflects a broader insight that universities' responses to incentives depend not only on policy design but also on internal organisational configurations and strategic choices (Sánchez-Barrioluengo and Benneworth, 2019). Consequently, similar incentive structures can produce heterogeneous outcomes across institutions and regions, depending on mission, capacity, and local economic conditions (Salomaa, 2019; Benneworth and Charles, 2005).

The typology also highlights that incentives operate through distinct mechanisms of influence on regional growth. These mechanisms may also target different aspects of universities' roles—including education and skills, research, knowledge exchange, commercialisation, regional leadership and wider anchor functions—and individual instruments may act across several of these roles simultaneously (OECD, 2007; Trippl et al., 2015). Financial instruments reduce the cost and risk of collaboration; performance frameworks define and prioritise measurable forms of impact; governance arrangements align universities with regional strategies; and commercialisation and reputational incentives shape both individual and institutional behaviour. However, these

mechanisms do not necessarily align with policy objectives, and may, in some cases, be structurally misaligned with broader third mission or regional development goals (Rossi and Rosli, 2015; Rosli and Rossi, 2016). For example, performance metrics may incentivise activities that are more easily quantified, potentially narrowing the scope of engagement (Rossi and Rosli, 2015; Watermeyer and Hedgecoe, 2016), while commercialisation incentives tend to emphasise technology transfer and spin-out formation, whose regional effects depend on the characteristics and capabilities of the surrounding innovation system (Benneworth and Charles, 2005; Hayter et al., 2018).

Table 1. Typology of incentives framing universities' contribution to regional growth

Primary incentive mechanism	Mechanism of influence on regional growth	UK examples (incl. timeframe & delivery mechanisms)	International examples
Financial incentives	Provide resources for collaboration, capacity-building and regionally oriented activities; reduce cost and risk of engagement with firms and public actors	◐ HEIF (2001–present) → supports KE capacity via TTOs and KE offices; ◐ KTPs (1975–present) → support firm–university collaboration [also facilitative]; Innovation Vouchers (2010s–present; regional orientation varies by scheme); ● ERDF-funded university projects (2000s–2020) → often combined funding with business support, collaboration and infrastructure [also facilitative/governance]	EU ERDF / Structural Funds (2000–present); Horizon Europe collaboration funding; US federal R&D collaboration grants; regional innovation funds, often delivered via clusters and research centres
Performance & metric-based incentives	Shape institutional priorities by defining and measuring "impact" and "knowledge exchange"; influence behaviour via funding allocation, benchmarking and comparison	○ REF impact (2014–present) [also financial/reputational]; ◐ KEF (2021–present) [also reputational]; HE-BCI survey (2000s–present; monitoring/data instrument rather than a regional-growth incentive); earlier third-stream metrics	Australia ERA & Engagement and Impact (EI); Nordic performance-based funding systems; EU monitoring of Smart Specialisation outcomes
Governance & strategic incentives	Align universities with regional priorities through policy frameworks, partnerships and multi-level coordination; embed HEIs in regional innovation systems	● Devolution and local-growth agendas (2010s–present); ● LEPs / Local Growth Fund (LEPs 2011–2023); ● Strength in Places Fund (2018–present) [also financial/facilitative]; ● Innovation Accelerators (2020s–present) [also financial/facilitative] → delivered through regional consortia, clusters and research centres	EU Smart Specialisation Strategies; OECD regional-development frameworks; regional innovation agencies; cluster policies
Commercialisation incentives	Encourage knowledge exploitation through patents, licensing and spin-outs; create financial and career incentives for academic entrepreneurship	University IP policies (post-1990s; not inherently territorial); proof-of-concept funding (various; territorial orientation varies); spin-out support → delivered through TTOs, incubators and science parks	US Bayh–Dole Act; inventor royalty schemes; national spin-off policies; science parks and incubators
Reputational & institutional incentives	Shape behaviour through expectations, legitimacy and identity, including expectations around civic and anchor roles; encourage visible engagement and responsiveness	◐ KEF benchmarking (2021–present) [also performance-based]; ◐ Civic University Agreements (2019–present); policy discourse on anchor institutions → embedded in institutional strategies and KE structures	European Universities Initiative; OECD engaged-university agenda; civic-engagement frameworks; regional branding alliances
Soft / facilitative instruments (cross-cutting)	Enable collaboration, trust-building and knowledge flows; reduce coordination barriers and support ecosystems and networks	◐ Catapult Centres (2011–present) [also financial/infrastructural; regional role has strengthened over time]; innovation clusters and brokerage programmes (regional orientation varies by scheme)	Cluster initiatives; mobility schemes; innovation networks; Triple Helix platforms; regional innovation ecosystems

Note**:** Incentive categories are overlapping rather than mutually exclusive; named instruments are placed according to their principal mechanism, with important cross-cutting mechanisms indicated in brackets.

Regional-growth orientation: ● regional/local economic growth is a primary programme objective, intended final outcome or allocation criterion; ◐ regional/local economic contribution is an explicit secondary priority, evaluation dimension or performance dimension; ○ regional/local economic growth is not explicit in the instrument's core purpose or design. These classifications refer to stated policy design and objectives, not demonstrated effectiveness. Generic instrument families are not classified where territorial orientation varies by scheme.

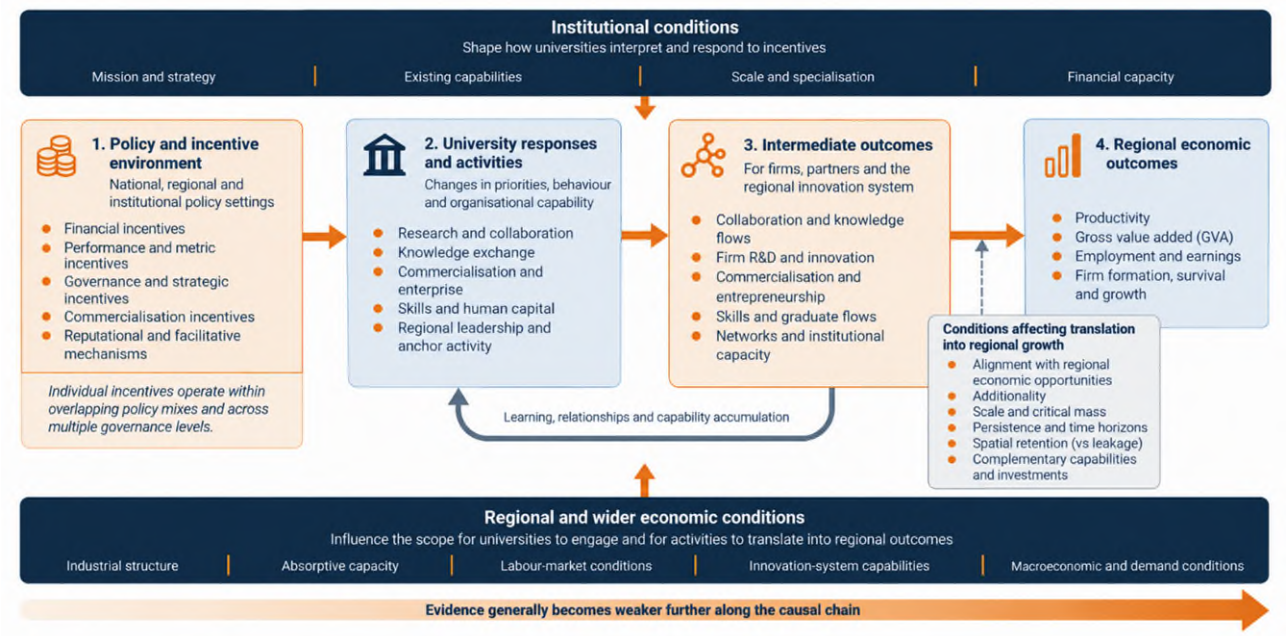
HE-BCI = Higher Education Business and Community Interaction survey; HEIF = Higher Education Innovation Fund; KEF = Knowledge Exchange Framework; KTP = Knowledge Transfer Partnership; LEP = Local Enterprise Partnership; ERDF = European Regional Development Fund; HE-BCI = Higher Education Business and Community Interaction survey; HEIF = Higher Education Innovation Funding; IP = Intellectual Property; KEF = Knowledge Exchange Framework; KTPs = Knowledge Transfer Partnerships; LEPs = Local Enterprise Partnerships; REF = Research Excellence Framework; TTOs = Technology Transfer Offices; UKRI = UK Research and Innovation.

Overall, the table illustrates both the breadth and complexity of the incentive landscape. While a wide range of instruments is in place, there remains limited integrated and causal evidence on how these incentives interact across governance levels, how they shape institutional behaviour in practice, and how they translate into regional economic outcomes. This reinforces the need to move beyond the analysis of individual instruments towards a more systematic understanding of multi-level incentive systems and their effectiveness.

Conceptual framework

Figure 1 summarises the conceptual framework used to organise the evidence reviewed in this paper. Incentives are expected to affect regional economic outcomes indirectly, through changes in university behaviour, organisational capability and activity, and subsequently through effects on firms, partners and regional systems. Whether these intermediate effects translate into regional growth depends on institutional and regional conditions, as well as factors such as alignment, scale, persistence and the spatial retention of benefits. The framework also highlights that the available evidence becomes progressively weaker towards the final stages of this causal chain.

Figure 1. Conceptual framework: how incentives may influence universities' contributions to regional growth



Effectiveness of incentives in supporting regional growth and development

Assessing the effectiveness of incentives designed to encourage universities' contributions to regional growth remains difficult, both conceptually and empirically. The literature suggests that incentives can shape institutional behaviour, but evidence is much stronger on their effects on activities, strategies, and capacities than on their contribution to broader regional economic outcomes (OECD, 2007; Rosli and Rossi, 2015; Sanz-Menéndez and Cruz-Castro, 2020). Recent evaluations of specific UK instruments allow this general pattern to be examined more directly (Table 2).

Table 2. Evaluation evidence on the effectiveness of selected UK policy instruments

Instrument	Evaluation approach / evidence base	What the evidence supports	Evidence on regional economic outcomes	Assessment of evidence
Higher Education Innovation Fund (HEIF)	Repeated evaluations using expert attribution, econometric modelling and quasi-control comparisons;	Strong evidence that sustained HEIF funding has built and embedded institutional KE capability,	Evaluation identifies locally and regionally oriented activity and shows HEIF can enable universities to respond	Relatively well supported for institutional capability and KE outcomes; regional-

Instrument	Evaluation approach / evidence base	What the evidence supports	Evidence on regional economic outcomes	Assessment of evidence
	2024 evaluation combines theory-based/realist contribution analysis, case studies and quantitative evidence	specialist staff and structures, and supported additional KE activity. Quantitative assessments find a positive relationship between HEIF investment and KE income, although KE income is a proxy for benefits to external users.	to regional priorities and leverage explicitly place-based funding such as ERDF. However, it does not isolate an aggregate effect of HEIF on regional GVA/productivity/employment.	growth effects indirect / not separately established.
Knowledge Transfer Partnerships (KTPs)	Mixed-method impact evaluation covering 2010–20: beneficiary surveys, case studies, contribution analysis and counterfactual econometric analysis using linked firm data	Strong evidence of innovation and capability effects. Econometric analysis finds statistically significant increases in employment and turnover, sustained during the KTP and for three years afterwards; no statistically significant average productivity effect. Estimated net UK GVA £1.7–£2.3bn.	Evaluation explicitly considers place effects. KTPs are widely geographically distributed and there is some evidence of local ecosystem/spillover effects, but these were not part of programme design and the evaluation does not demonstrate aggregate regional economic effects.	Relatively well supported for firm-level outcomes; place effects identified but aggregate regional impact not established.
Strength in Places Fund (SIPF)	Wave 1 and Wave 2 interim process evaluations, based on document review, stakeholder interviews and applicant surveys; impact evaluation is a separate component	Positive process evidence on the place-based model, flexibility, consortium formation and seedcorn support; applicants particularly valued opportunities to build networks and collaborations.	Regional growth is an explicit programme objective, but the currently available reports are process evaluations and therefore do not yet establish whether SIPF has generated regional growth or productivity effects.	Promising process/design evidence; outcome and regional-impact effectiveness not yet established.
Connecting Capability Fund (CCF)	Final desk-based evaluation drawing on previous reviews, monitoring information, KPIs, project evaluations and public information	Evidence of cross-university collaboration and shared KE capability, leveraged funding, skills development, increased R&D, innovation adoption, spin-outs and investment.	Some projects explicitly addressed regional strengths and challenges, but the evaluation itself stresses that evidence collection was anecdotal rather than systematic or exhaustive, and project-specific KPIs inhibit programme-wide aggregation.	Evidence of capability and intermediate outcomes, but limited evidence for additional programme-wide or regional economic effects.
University Enterprise Zones (UEZs)	Final mixed-method process and impact evaluation: longitudinal surveys/interviews, monitoring data, econometric analysis, contribution analysis and value-for-money assessment	Some evidence that UEZs increased broader interaction between tenant firms and universities, particularly placements, graduate recruitment and staff engagement. They also helped address a need for university–business connectedness.	Findings are mixed. Formal R&D/KE engagement declined over time; engagement with LEPs remained low; most surveyed businesses did not consider UEZ participation to have substantially affected income, employment, investment or profitability. The evaluation reports additional employment/GVA estimates but cautions that programme-level causal evidence is limited.	Mixed evidence; some intermediate benefits, but limited evidence of a consistent programme-level regional economic effect.
Catapults – ORE Catapult example	Retrospective theory-based impact evaluation using contribution analysis, 201 beneficiary survey responses, 12 case studies, monitoring evidence and counterfactual econometric analysis of firms	Stronger evidence for collaboration, technology development/deployment, thought leadership and some UK-level economic/business effects.	Regional socio-economic effects were specifically evaluated, but the evaluators describe this as one of the hardest areas to evidence: regional econometric findings were inconclusive, survey numbers were insufficient for regional analysis, and conclusions relied mainly on case studies.	Relatively strong evidence for selected sector/firm outcomes; regional effects remain limited and largely case-based.
Knowledge Exchange Framework (KEF)	Review of first iteration based principally on consultation and sector engagement, including surveys/focus groups and review of metrics and presentation	Providers reported increased status for KE and improvements in internal KE data collection; the review also found broad confidence in the clustering approach.	KEF includes a Local Growth and Regeneration perspective, but the review evaluates the framework and institutional responses to it, not whether KEF causes local or regional economic growth.	Evidence of behavioural/organisational influence; regional-growth effect not established.

Instrument	Evaluation approach / evidence base	What the evidence supports	Evidence on regional economic outcomes	Assessment of evidence
Research Excellence Framework (REF impact)	Evidence reviews of the REF and studies of institutional behaviour, together with analysis of REF impact case studies	Evidence indicates that performance-based research assessment affects university priorities, research management and incentives. The introduction of impact explicitly widened attention beyond academic outputs.	REF impact case studies document many economic and societal impacts, including geographically specific ones, but they provide evidence of research impacts, not evidence that the REF itself caused those impacts or regional growth.	Relatively well supported behavioural incentive effects; regional economic effect of REF itself not established.
ERDF-supported university / innovation interventions	National programme evaluation and synthesis of project-level summative assessments covering research collaboration, innovation support, R&I infrastructure, incubators, business support and other interventions	Extensive evidence of outputs and intermediate outcomes, including business innovation, collaboration, new products/processes, business growth and infrastructure.	Unlike many national university instruments, ERDF explicitly targets local/regional development. However, evaluation quality varies considerably across projects, and the national synthesis cautions that project findings are context-specific; many summative assessments do not provide strong counterfactual evidence of additional regional impact.	Substantial but heterogeneous evidence; stronger on activities/intermediate outcomes than on robust attribution of aggregate regional growth.

Sources: Ulrichsen (2015a, 2020, 2024); PA Consulting (2024); SQW (2023); RAND Europe (2025); Rodriguez Rincon et al. (2025); Eggington and McLeod (2024); Technopolis (2025); Frontier Economics et al. (2025); Research England (2022b); Arnold et al. (2018); Stevenson et al. (2023); Hatch Regeneris Consulting (2019); Wavehill (2024).

Across these evaluations, evidence is strongest for outcomes closest to the intervention. HEIF provides relatively well-developed evidence that sustained funding strengthened universities' internal knowledge-exchange capabilities, including specialist staffing, organisational structures and the strategic embedding of KE (Ulrichsen, 2015a, 2020, 2024; PA Consulting, 2024). The KTP evaluation goes further along the causal chain, finding additional employment and turnover growth among supported firms, sustained beyond the period of support, although no statistically significant average productivity effect was identified (SQW, 2023). By contrast, the currently published SIPF studies are process evaluations: they provide positive evidence on aspects of programme design, partnership development and the operation of a place-based funding model, but do not yet establish whether the programme has generated regional economic impacts (RAND Europe, 2025; Rodriguez Rincon et al., 2025).

The broader literature also suggests that evidence is stronger for behavioural and organisational effects than for final economic impacts. Behavioural effects include increased collaboration with firms, participation in knowledge exchange programmes and engagement in regional partnerships, while organisational effects include the development of internal capabilities such as technology transfer offices, knowledge exchange units and the integration of third mission objectives into institutional strategies. In the UK, funding mechanisms such as HEIF have supported the development and embedding of these capabilities within university practice (Kitagawa et al., 2016; Research England, 2022a). Performance frameworks similarly shape institutional priorities and the organisation of engagement activities, even where direct financial effects are limited (Rossi and Rosli, 2015; Watermeyer and Hedgecoe, 2016). Commercialisation and facilitative instruments tend to generate more readily observable effects on patenting, spin-outs, collaboration and knowledge flows than on wider regional economic performance (Geuna and Muscio, 2009; OECD, 2007).

However, evidence is considerably weaker when moving from these intermediate behavioural and organisational outputs to final regional outcomes, such as productivity growth or broader economic development. Universities contribute to regional growth through multiple and indirect pathways—including human capital development, knowledge diffusion, collaboration networks, and institutional leadership—which are difficult to observe and measure. As a result, the literature is more robust in demonstrating that incentives influence what universities do and how they organise, than in showing that these changes translate into measurable regional economic impacts (OECD, 2007).

Effectiveness is also highly context-dependent. Similar knowledge exchange funding has been shown to support extensive collaboration and commercialisation activity in regions with strong

innovation systems, while generating more limited effects in peripheral regions with weaker absorptive capacity and thinner industrial bases (Benneworth, 2019; Trippl et al., 2015). Kelleher and Ulrichsen (2024) argue that the regional contribution of university knowledge exchange depends on its scale, scope and specialisation relative to the surrounding regional system and emphasise evidence of threshold effects: a critical mass of actors and capital stocks must exist in a particular domain before additional investment translates into higher innovation. They therefore argue that insufficient scale of university activities and regional actors can limit the regional effect of technology transfer. Collinson (2026) illustrates what relatively large-scale and regionally embedded knowledge-exchange capacity can look like through Warwick Manufacturing Group (WMG) and the Manufacturing Technology Centre (MTC). WMG has an annual research portfolio exceeding £60 million and trains around 800 degree apprentices annually, alongside collaborative R&D, contract research, SME support and industrial skills provision. Analysis covering more than 1,000 collaborating businesses found that WMG partner firms located within the same region were significantly more likely to develop inter-firm collaborations, suggesting a potential cluster-building effect, although the resulting productivity gains were not measured.

Universities differ in their missions, structures, and capabilities, while regional conditions—such as industrial structure, labour markets, and absorptive capacity—shape how university activities translate into economic outcomes. For example, graduate retention and entrepreneurship outcomes vary significantly across urban and non-urban contexts, reflecting differences in labour market opportunities and agglomeration dynamics (Kitagawa et al., 2022). Evidence also suggests that universities with similar incentive structures may adopt different engagement strategies depending on their institutional missions and capabilities, leading to divergent regional impacts (Sánchez-Barrioluengo and Benneworth, 2019; Kitagawa et al., 2016).

More recent work further emphasises that effectiveness depends on the degree of alignment between universities' capabilities, regional economic opportunities, and policy incentives. Where such alignment is strong, incentives are more likely to support meaningful and context-appropriate forms of engagement. Where it is weak, incentives may stimulate activity without generating commensurate regional impact (Kelleher and Ulrichsen, 2024; Collinson, 2026).

The relationship may also be cumulative rather than one-directional. Evaluation of HEIF identifies feedback loops whereby improvements in universities' knowledge-exchange capacities, capabilities and behaviours strengthen their ability to deliver subsequent KE more effectively (Ulrichsen, 2024). More broadly, regional innovation-system research suggests that repeated interaction can build networks, trust and collaborative learning between knowledge producers and users, progressively strengthening regional innovation capacity (OECD, 2007). Universities may contribute to this process through boundary-spanning and developmental roles that strengthen collaborative and institutional capacities within the regional system (Kelleher and Ulrichsen, 2024).

International evidence on incentives and regional growth

Direct financial incentives for collaboration have the clearest quantitative support. The Danish Innovation Consortia scheme subsidised joint research ventures between firms and public research organisations. Kaiser and Kuhn (2012) find that participation increased patenting immediately, with effects persisting for up to three years, while employment effects emerged after around one year. Among firms that were already innovative, employment was around 15.6 per cent higher after four years, but there was no statistically significant effect on value added or labour productivity. More recent evidence from Australia points in a similar direction. Alfons et al. (2026) evaluate the Australian Research Council Linkage scheme, which provides competitive funding for university–industry research partnerships. Using more than 5,000 funded and unfunded applications and staggered difference-in-differences, they estimate that funded firms had around 12 per cent higher employment over five years; turnover also trended upwards, although preferred estimates were not statistically significant, and no systematic patenting effect was found. These studies suggest that collaboration subsidies can alter firm behaviour and performance, but that effects differ across outcomes and may take several years to emerge.

The Science Foundation Ireland research-centre programme provides evidence on a related capacity-building financial incentive in Ireland. Public funding of more than €1 billion established research centres in higher education institutions with a dual mandate to conduct high-quality research and collaborate with firms. Mulligan et al. (2022) find that collaboration with the centres increased firms' in-house R&D intensity and gradually shifted R&D towards applied research, with the latter effect taking around three to four years to materialise. French competitiveness clusters similarly combined financial support with requirements for collaboration between firms, universities and public research organisations. Econometric evaluation finds that additional privately financed R&D emerged only after around four years, while no detectable effects on value added, turnover, exports or labour productivity were evident by 2012 (Ben Hassine and Mathieu, 2017). Together, these cases indicate that financial incentives can strengthen collaboration and R&D activity, but downstream economic effects are less certain and may require substantially longer horizons.

A second group of policies operate through strategic and governance incentives, often reinforced by access to funding. Smart Specialisation Strategies (S3) are a prominent example. S3 does not incentivise universities directly in the same way as a grant programme, but it links regional research and innovation funding to collectively identified priorities and creates incentives for universities to align research, skills and knowledge-exchange activity with regional specialisations. Lo Conte et al. (2025), using an instrumental-variable approach across 102 European NUTS2 regions, find stronger regional labour-productivity growth where S3 priorities built on technologies and capabilities in which regions already had related expertise, rather than targeting areas that were technologically distant from their existing strengths. Serafini et al. (2025) examine whether firm investments in advanced digital enabling technologies (Industry 4.0) supported by ERDF are more effective when they are made in sectors prioritised by regional S3 strategies. They find particularly strong effects for these aligned projects, especially on firm value added and employment, while the results for labour productivity are less consistent across specifications. The effects also vary substantially across regions and sectors. The findings suggest that strategic incentives may be more effective when investment in new technologies is aligned with regional economic strengths and innovation priorities, rather than simply increasing expenditure.

However, evidence also shows that place-based collaboration incentives do not automatically generate regional spillovers. Germany's Innovative Regional Growth Cores programme subsidised collaborative development and commercialisation projects between co-located firms and public research institutes, explicitly seeking local spillovers. Falck et al. (2019) find that directly supported firms increased R&D while funding was available, but identify no robust spillovers to untreated firms and no economically meaningful effects on aggregate regional outcomes. This is an important counter example: attaching a regional objective to collaborative funding does not by itself ensure that benefits diffuse at sufficient scale to influence regional growth.

A third mechanism is regulatory or commercialisation incentives. The US Bayh–Dole Act changed universities' incentives by assigning them property rights over inventions arising from federally funded research. Hausman (2022) exploits this policy change together with differences in universities' pre-existing technological strengths and federal research funding. Industries technologically related to nearby university strengths experienced faster employment and wage growth after the reform, with effects stronger closer to universities and in larger cities. Importantly, these effects accumulated over a long period: employment and payroll effects emerged relatively early but continued to build over the following decade, while wage effects were slower to materialise and became clearly significant only towards the end of the 1977–1997 observation period. Hausman links this gradual adjustment to the time required for universities to develop commercialisation infrastructure and stronger university–industry connections.

Taken together, the international evidence suggests that incentives can influence university engagement and related firm behaviour, particularly through collaborative funding, capacity-building and commercialisation mechanisms. The clearest effects are generally found on outcomes relatively close to the intervention, such as collaboration, R&D activity, patenting and firm employment, while

evidence on productivity and wider regional economic outcomes is more mixed and less consistently established. The studies also indicate that effects may take several years to emerge and can depend on factors such as technological relatedness, regional capabilities and the persistence of support. Overall, the evidence supports the view that incentives can shape the conditions through which universities contribute to regional economies, but does not provide a strong basis for assuming that particular incentive mechanisms will, on their own, generate sustained regional growth.

Interaction of incentives and systemic challenges

Individual incentives, however, do not operate in isolation, but as part of multi-layered policy mixes that have evolved incrementally over time rather than being designed as coherent frameworks (OECD, 2019). Instruments may reinforce and complement one another, but can also generate duplication, tension, or unintended effects. The overall effectiveness of incentives therefore depends not only on their individual design, but on the coherence and consistency of the wider policy mix. These interactions take place across national, regional and institutional levels, where funding mechanisms, performance frameworks and place-based initiatives may have different objectives and time horizons (Kitagawa, 2004; Kitagawa, 2017). This creates coordination challenges for universities responding simultaneously to several sets of incentives. The relevant issue is therefore not simply the number of instruments, but the extent to which their objectives and signals are mutually reinforcing.

One potential challenge is misalignment between incentives and regional objectives. Different instruments may reward different activities, outputs or time horizons, while sustained regional engagement often requires longer-term relationships and investments whose benefits are less immediately measurable. Where these incentives are poorly aligned, universities may face competing priorities rather than a consistent signal to support regional growth (Kelleher and Ulrichsen, 2024; Collinson, 2026). This points to the importance of coordination across incentive frameworks rather than necessarily to any particular allocation of responsibilities between national and regional levels.

These challenges are compounded by limitations in the way data on university engagement and policy exposure are collected and linked. The UK has relatively rich longitudinal data on firm and graduate outcomes, but these are not routinely connected to identifiable university–business interactions or to the different incentives received by universities and their partners. Information on the location, timing and duration of engagement is also uneven. This makes it difficult to reconstruct the combinations and sequencing of incentives experienced by particular institutions, firms or places, and therefore to assess whether instruments reinforce, duplicate or offset one another. More consistent organisational identifiers, partner-level and spatial information, and linkable programme records would strengthen the ability to evaluate both individual interventions and their interaction within wider policy mixes.

Finally, the interaction of incentives is increasingly shaped by financial constraints within the higher education sector. In the current UK context, universities face significant resource pressures, which influence how they respond to policy signals. Under these conditions, institutions may prioritise activities that generate short-term income or align closely with funding and evaluation criteria, potentially at the expense of longer-term, place-based engagement (IED and AtkinsRéalis, 2025; IRC, 2025; O'Brien, 2026). A particularly clear example is provided by the University of Hull. In evidence to the House of Commons Education Committee, the University identified limited financial headroom and declining student demand as important factors in its decision to close Chemistry provision, despite the significance of the chemicals industry to the Humber economy (University of Hull, 2025). Similar tensions are visible elsewhere: in 2026 the University of Sheffield proposed substantial reductions in chemistry and materials science staffing as part of its response to financial pressures, despite advanced manufacturing and materials being established regional strengths and the University playing a central role in the South Yorkshire Advanced Manufacturing Investment Zone (Durrani, 2026). More broadly, recent closures and contractions in subjects such as chemistry have

prompted concerns about emerging geographical and subject "cold-spots" and the loss of provision relevant to regional skills and innovation needs (House of Commons Education Committee, 2026; Royal Society of Chemistry, 2026).

Indeed, recent evidence from surveys of university finance directors conducted in 2025 and 2026 suggests a mixed picture in terms of universities' regional engagement (IRC, 2025 and 2026). This survey covered 78 institutions in England in 2026 of which 61 were in deficit, were breaking even or had a reduced operating surplus in the current year. Patterns were very similar among those institutions with an increased or stable operating surplus. In 2026, notable changes included a decrease in support or sponsorship for non-university activities reported by 19.1 per cent of institutions and an increase in regional engagement by university leadership reported by 18.1 per cent of institutions (Table 3). Both of these shifts were similar to those observed in 2025. These findings should not be interpreted as showing that financial pressure causes greater leadership engagement: the surveys do not identify the reasons for this increase. They do, however, suggest that relatively different forms of regional engagement can move in different directions under financial constraint, with senior-level engagement potentially being maintained or strengthened even where other forms of institutional support are reduced.

Table 3. Has financial stringency impacted institutions' civic and regional roles?

	Reduced	Same	Increased
2025			
Regional engagement of the leadership team	4.9	65.6	29.5
Support of local non-university activities	32.1	64.3	3.6
Staff volunteering or local engagement	10.7	78.6	10.7
Access programmes or outreach	11.7	80.0	8.3
Community access to university facilities	4.9	82.0	13.1
2026			
Regional engagement of the leadership team	10.0	72.0	18.0
Support of local non-university activities	19.1	78.7	2.1
Staff volunteering or local engagement	9.3	88.4	2.3
Access programmes or outreach	8.0	86.0	6.0
Community access to university facilities	2.0	94.0	4.0

Note: % institutions, N=61

Evidence Gaps and Future Research

The literature provides a growing but fragmented understanding of the types of incentives shaping universities' engagement with regional economies. Evidence is strongest for changes in university behaviour and organisational capacity, and for some intermediate and firm-level outcomes. Much less is known about whether, when and under what conditions these effects translate into sustained regional economic performance.

Three key gaps stand out. First, there is limited evidence tracing the full causal chain from incentives to regional economic outcomes. Evaluations typically examine particular stages of this process—for example, changes in university behaviour, collaboration, R&D or firm performance—rather than establishing whether these effects become sufficiently large and persistent to affect regional productivity, employment or growth. Longer evaluation horizons are also needed to capture effects that may take several years to emerge, alongside greater attention to additionality, scale and critical mass, and the spatial retention or leakage of benefits.

Second, there is insufficient understanding of how incentives operate within policy mixes. Most evaluations consider individual instruments, whereas universities respond simultaneously to funding mechanisms, performance frameworks, strategic priorities and place-based initiatives. More evidence is needed on whether these incentives reinforce, duplicate or counteract one another across national, regional and institutional levels, and how their effects are altered by wider constraints, including current financial pressures within the higher education sector.

Third, there is limited systematic understanding of why similar incentives produce different effects across universities and regions. Existing evidence points to the importance of institutional capabilities, the scale and specialisation of university activity, alignment with regional economic strengths, and the capacity of local firms and labour markets to absorb and retain resulting knowledge and skills. However, these conditions are rarely tested systematically, making it difficult to identify where particular incentive mechanisms are most likely to be effective.

Addressing these gaps will require more longitudinal and spatially disaggregated evidence that links university activities to firm and regional outcomes over time. Where feasible, quasi-experimental approaches can strengthen estimates of additionality and causal effects; where incentives operate through complex policy mixes and indirect pathways, these may need to be complemented by approaches capable of tracing contribution and interaction across different parts of the system.

Key Insight

University incentives operate through several distinct mechanisms—financial, performance-based, governance and strategic, commercialisation, reputational and facilitative—but in practice these are often combined within the same policy instrument. Evidence is strongest for their effects on university behaviour and organisational capacity, while the extent to which different combinations translate into sustained regional growth remains much less certain.

Policy Considerations

The evidence reviewed does not support a single model of incentives through which universities can be expected to generate regional growth. It does, however, point to a number of considerations for the design and evaluation of policies seeking to strengthen universities' regional contributions.

First, there is value in considering the coherence of incentives across policy frameworks. Universities respond simultaneously to funding mechanisms, performance systems and place-based initiatives, and the evidence suggests that these signals can reinforce or cut across one another. Recent initiatives such as Innovation Accelerators and SIPF already incorporate elements of this

more coordinated, place-sensitive approach, combining funding with partnership, governance and strategic alignment. The issue is therefore less one of creating an entirely new model than of understanding whether different incentives are mutually reinforcing in practice and where tensions remain.

Second, incentive design may need to allow for differences in regional context and institutional capability. The evidence does not suggest that the same form of university engagement will be equally effective in all places. Effects appear to depend on factors including institutional mission and capacity, the scale and specialisation of university activity, regional industrial structure and absorptive capacity. This supports maintaining sufficient flexibility for universities to play differentiated regional roles, while ensuring that place-sensitive approaches remain coordinated with wider national research and innovation objectives.

Third, the time required for effects to emerge should be reflected in programme design and evaluation. Several of the international evaluations reviewed show that changes in collaboration, R&D activity and firm performance can take a number of years to become visible, while wider regional effects may take longer still. Short funding or evaluation cycles therefore risk capturing only the early stages of the causal chain. Where longer-term regional effects are expected, evaluation frameworks may need to distinguish more clearly between early changes in behaviour and capability, intermediate outcomes, and subsequent economic effects.

Fourth, improving evaluation is likely to require better linkage and use of existing data, alongside more systematic collection of information on the location and beneficiaries of university engagement. The UK already has rich longitudinal data on firms and graduate outcomes, but these are not routinely linked to individual university–business interactions or to the different incentives received by universities and their partners. Greater use of consistent organisational identifiers, including for external partners and unsuccessful programme applicants, together with information on the location, timing and duration of engagement, would make it possible to trace outcomes over time and test additionality, spatial reach and persistence more robustly. For complex place-based interventions, quantitative impact evaluation methods can be complemented by theory-based approaches which test how different instruments interact and whether the expected sequence of intermediate changes occurs before wider economic outcomes emerge.

Finally, current financial pressures in the higher education sector need to be explicitly recognised in policy design. In a constrained funding environment, universities are more likely to prioritise activities that generate short-term income or align closely with existing evaluation criteria. Without adjustment, this may limit engagement in resource-intensive, place-based initiatives. Policy frameworks therefore need to ensure that incentives for regional engagement remain credible and sustainable under financial constraint. This is clearly reflected in recent IRC studies on financial sustainability and the call from many university finance directors for more consistent and supportive policy from government towards the HE sector (IRC, 2026).

Overall Conclusion

Universities can contribute to regional growth through multiple channels, but incentives shape these contributions indirectly and with effects that depend heavily on institutional capability, regional and wider economic conditions, and the way different policy instruments interact. The evidence therefore supports a cautious policy approach focused less on any single "best" incentive and more on coherent, sustained and context-sensitive combinations of incentives, accompanied by stronger evaluation of how their effects translate into regional economic outcomes.

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