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# Parable of the Talents: Does Differentiated Decentralisation Improve Performance?

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# Parable of the Talents: Does Differentiated Decentralisation Improve Performance?

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## Abstract

The decentralisation of policy functions to subnational levels of government need not be uniform across same-level jurisdictions and may instead be differentiated to reflect differences in administrative capacity, preferences and needs. This paper examines whether differentiated arrangements that grant greater policy authority non-uniformly to selected jurisdictions are systematically associated with stronger economic performance. Using harmonised regional data for middle-tier jurisdictions across OECD countries, we combine cross-sectional, within-region and dynamic event-study approaches. Cross-sectional evidence shows that regions with differentiated authority tend to exhibit higher income levels than standard jurisdictions, even after controlling for observable fundamentals and time-invariant regional characteristics. However, within-region estimates reveal no performance gains following differentiation, and dynamic event-study evidence indicates no systematic improvement in economic outcomes after reforms are adopted. Together, these findings suggest that the income premia observed among differentiated regions primarily reflect long-standing structural characteristics rather than the causal effects of institutional reform.

**Keywords:** fiscal decentralisation; asymmetric decentralisation; policy authority; economic performance; panel data

**JEL Codes:** H70, H77, R11, R58

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## I Introduction

Matthew's Parable of the Talents (25: 14-30) makes an important point about the endowment of responsibilities and resources among individuals that is relevant for the design of intergovernmental fiscal relations. According to a federalist interpretation of the parable, performance can be improved through the differentiated assignment of functions and authority across subnational jurisdictions in a manner that is commensurate with their capacity, preferences and needs, rather than uniformly across a nation's territory.

The literature on the effects of fiscal decentralisation on economic performance nevertheless treats intergovernmental fiscal arrangements as uniform across subnational jurisdictions. The successive generations of decentralisation theory in the tradition of Oates (1972) and Weingast (2009) have by and large treated differentiation as a special case of the broader principles that guide the assignment and sharing of functions and authority across levels of government, rather than as a feature of intergovernmental relations deserving attention in its own right.

The main argument for differentiation is that heterogeneity across subnational jurisdictions, especially in populous or culturally diverse countries, often creates tensions, including outright conflict, which have the potential to tear countries apart. These tensions may be mitigated, at least in part, by the differentiated treatment of jurisdictions that find themselves ill-served by uniformity in policy settings. Ethno-linguistic, socio-economic or political heterogeneity across regions and localities within a given country are therefore treated as drivers of decentralisation, but scant attention is paid to the differentiated, non-standard treatment of otherwise comparable subnational jurisdictions in decentralised systems.

Importantly, the literature does not treat differentiated decentralisation as the outcome of an exogenous institutional shock. Rather, differentiation is typically understood as an endogenous response to underlying territorial tensions linked to identity, geography or political conflict. In this sense, asymmetry is not a 'trigger' but a structural mechanism through which multi-level systems adapt to heterogeneity (Bird and Ebel, 2006; Kymlicka, 1998; Parent, 2021). Our analysis therefore does not seek to explain *why* differentiation emerges — this is well documented in the literature — but instead examines whether differentiated institutional architectures are systematically associated with economic performance.

Indeed, drawing on the Regional Authority Index (RAI) of Hooghe et al. (2021), there has been a steady rise in decentralisation arrangements allowing for some degree of asymmetry or autonomy among subnational jurisdictions in OECD and non-OECD countries alike. Differentiation often emerges in response to geographic distinctiveness, such as remote regions in Finland and Sweden; territorial discontinuity, as is the case of Corsica and overseas territories in France, Sicily and Sardinia in Italy, and Madeira and the Azores in Portugal; or linguistic and cultural heterogeneity, as in Belgium, Canada, Italy, Spain and Switzerland. In metropolitan settings, differentiated authority has also been used to address agglomeration-specific policy needs in capital cities and major urban areas. What unifies these experiences is the political recognition that uniformity may be administratively inefficient or socially destabilising in the presence of sharp territorial asymmetries.

Despite the prevalence of these arrangements, the empirical literature has largely focused on the implications of uniform decentralisation, typically measured in terms of subnational shares in government spending or revenue (Harguindéguy 2021; de Mello and Martinez-Vazquez 2022). As a result, we know far less about whether differentiated institutional architectures—autonomous, asymmetric or dependent regions—shape economic performance. This paper addresses that gap.

The central policy question is whether differentiated decentralisation matters for regional economic performance and, if so, whether there is a causal link between differentiation and performance. To answer this question, we assemble a harmonised panel of middle-tier regional jurisdictions (TL2/TL3) across OECD countries during 1995–2021 and link it to the RAI’s detailed information on regional self- and shared-rule prerogatives.

The empirical strategy proceeds in three steps. First, cross-sectional regressions using nested decentralisation categories are used to assess whether differentiated regions differ systematically from standard regions in their level of income. Second, within-region estimations using categorical differentiation indicators are used to assess whether differentiation correlates with regional income. Third, a dynamic event study is carried out, without claiming causal identification, to shed light on endogeneity by comparing income trajectories between regions adopting, or being granted, differentiation and their non-adopting counterparts.

Three key findings emerge.

First, differentiated regions exhibit substantial income premia. Autonomous, asymmetric and dependent jurisdictions display significantly higher per capita income than standard regions, even after absorbing unobserved regional characteristics and conditioning on key fundamentals selected through a disciplined LASSO–BMA procedure. These premia are robust to alternative decentralisation codings, extended controls and a wide set of sample robustness checks. They point to the possibility that differentiated regions enjoy structural advantages—economic, administrative or geographic—that correlate with institutional distinctiveness.

Second, the within-region results are at odds with the cross-sectional findings. Differentiation is not found to be associated with stronger performance; if anything, the correlation is moderately negative, suggesting that differentiation does not necessarily yield economic benefits. Because these findings cannot be interpreted causally, they may suggest that differentiation is instead driven by underperformance and can therefore be pursued as a policy option to improve economic outcomes in lagging regions.

Third, the event study shows no discernible performance gap in the run-up to differentiation between adopting and non-adopting regions. This casts doubt on the hypothesis that differentiation may be pursued to improve performance in lagging regions. In addition, performance is found to drop when differentiation is adopted or granted, even though it recovers over time. Thus, differentiation appears less of a catalyst for growth than as an institutional arrangement to manage regional tensions and tailor multi-level governance to regional idiosyncrasies in a manner that can underwrite political stability in diverse polities.

The remainder of the paper is structured as follows. Section 2 reviews related literature. Section 3 presents the empirical strategy and data, including model-selection procedures. Section 4 discusses the main results and robustness exercises. Section 5 concludes.

## **2 Literature Review**

The successive generations of fiscal decentralisation models have focused on uniformity in the assignment of revenue and expenditure functions and authority across levels of government, where jurisdictions with different endowments and socio-economic characteristics are treated uniformly. This implies that same-level jurisdictions have by and large the same revenue sources and spending functions, as well as authority over these functions, even where they differ in terms of size, economic structure and socio-political backgrounds.

First-generation models in the Oatesian tradition emphasize allocative efficiency based on subsidiarity, while second-generation models take into account the implications of incentives created by political and fiscal institutions (Oates, 1972, 2005; Weingast, 2009). In those models, heterogeneity in spending or revenue mobilization capacity arising from socio-economic differences across regions and localities are dealt with primarily through intergovernmental grants and transfers that can be designed to equalize revenue capacity, and less often heterogeneous cost structures.

Notwithstanding this focus on uniformity, there are several reasons for differentiation in the assignment of revenue and spending functions and authority across government levels, including political and economic factors. On political grounds, the main argument for differentiation is to respond to the needs and demands of jurisdictions with cultural or ethnic specificities, which could otherwise encourage secessionist tensions (Bird and Ebel, 2006). Decentralisation can therefore provide a mechanism to organise relations among different states, peoples, nations or territories by combining elements of self- and shared rule to bind the constituent units of a country together and maintain its territorial integrity (Parent, 2021). However, even though uniform decentralisation may balance territorial tensions, some differentiation may be required to prevent decentralised systems from being challenged by constituent units that feel that uniformity does not respond to their preferences and needs (Kymlicka, 1998).

Related to this political tradition is the notion of self-preserving federalism. This school of thought looks at the institutions, including democracy, and electoral and representation systems, that are more likely to balance centralising and decentralising forces arising from the different, often conflicting, incentives and interests of different levels of government (e.g., Weingast, 2009). Emphasis in this case is not on intragovernmental arrangements at a given level of government but on intergovernmental relations and the process through which a stable balance of powers is maintained across levels of government.

Territorial self-governance is not without pitfalls. The differentiated treatment of subnational jurisdictions can be a powerful conflict management and peacebuilding instrument to the extent that power is assigned and/or shared among territorially bound layers of government as a way of diffusing tensions among rival groups (Wolff et al., 2020; Neudorfer et al., 2025). This can be achieved by creating opportunities for political representation at different levels of government,

formal fora for the expression of subnational interests and mechanisms of cooperation among different levels of government. However, while territorial self-governance, asymmetric or not, can be argued to prevent conflict, it is also possible that it may contribute to perpetuating it by enhancing the political resolve and budgetary means of geographically organised groups to pursue nationalistic agendas and engage in conflict (Beramendi and León, 2015).

Beyond political considerations, differentiation may arise for functional reasons. In systems undertaking gradual or experimental decentralisation, specific regions may be granted expanded authority as “sandbox” jurisdictions to test institutional reforms before broader rollout (Weingast 2014). Such pilot arrangements, frequently observed in early-stage decentralisation processes or in sequenced reforms (Bahl and Martinez-Vazquez 2006), allow governments to manage transition costs and learn from local experimentation. In other cases, differentiation results from bottom-up initiatives, as regional or local governments advocate for expanded responsibilities tailored to local development strategies. Sweden’s regional reform process illustrates this dynamic, where voluntary uptake of additional functions preceded national adoption.

Empirical evidence on the performance consequences of differentiated arrangements remains limited and mixed. Some case-based studies document underperformance even after autonomy is granted. For example, Cahyaningsih and Fitriady (2019) use synthetic control methods to evaluate Papua’s enhanced authority in Indonesia and find widening gaps in education and health outcomes relative to a counterfactual. Comparative work on decentralisation and ethnic conflict similarly shows that findings are highly sensitive to how territorial self-governance is measured. For example, building on the literature on decentralisation and ethnic conflict pioneered by Brancati (2006), Neudorfer et al. (2025), using ten datasets in a panel logit framework, demonstrate that estimated effects vary substantially across alternative indicators of intergovernmental arrangements. This suggests that both conceptualisation and measurement remain central challenges in the empirical study of differentiated decentralisation.

The present paper advances this literature in two ways. First, it provides the first cross-country analysis of differentiated decentralisation and economic performance using harmonised regional data for middle-tier jurisdictions in OECD countries. By exploiting variation in regional authority—captured through the Regional Authority Index—it distinguishes standard, dependent, asymmetric, and autonomous regions and evaluates how income and structural outcomes differ

across these categories once time-invariant regional characteristics and key observable differences are controlled for. Second, it examines the extent to which observed income differentials reflect causal effects or endogenous reform dynamics. A dynamic event-study framework tracks economic trajectories before and after regions adopt differentiated arrangements, shedding light on whether autonomy tends to precede improved outcomes or is instead pursued by regions already experiencing relative decline. Together, these contributions integrate long-standing theoretical debates with a richer empirical investigation of both the structural and dynamic dimensions of differentiated decentralisation.

### **3 Estimating Strategy and Data**

To address the empirical questions of whether or not differentiation is performance-enhancing, we first estimate a nested specification comparing income levels across decentralisation typologies. Second, we introduce a categorical differentiation indicator to exploit within-region changes in decentralisation arrangements over time and test whether differentiation leads to improvements in performance. Third, we carry out a dynamic event study around the timing of differentiation to assess whether underperforming regions improve performance after differentiation.

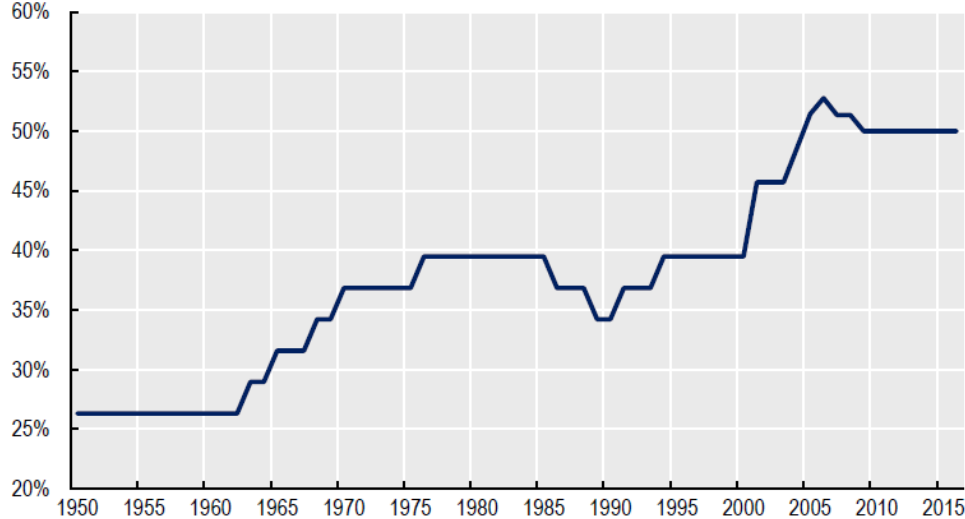
The empirical analysis draws on a combination of rich institutional information on differentiated decentralisation and harmonized regional economic data covering a large number of countries over several decades. The main source of information on decentralisation arrangements is the Regional Authority Index (RAI), which provides the most comprehensive and conceptually grounded measure of subnational authority currently available. The latest edition of RAI scores regional self- and shared-rule prerogatives for more than eighty countries from 1950 to 2018, distinguishing standard jurisdictions from those endowed with differentiated treatment. Because the prevalence and content of differentiation have evolved substantially over time, a natural starting point is a broad overview of these historical patterns.

#### **3.1 Trends in Differentiated Decentralisation**

Differentiated decentralisation has expanded markedly over the past seven decades. As shown in Figure 1, the share of countries granting asymmetric authority to at least one regional unit has risen steadily since the 1950s, with a sharp acceleration from the late 1980s onward. Early instances of differentiation tended to affect the middle tier of government embedded within federal or quasi-federal systems. More recent developments increasingly involve local governments, particularly

metropolitan areas and capital city districts, which face regulatory and fiscal challenges distinct from those of standard local jurisdictions (Allain-Dupré et al., 2020).

**Figure 1. Global Rise of Differentiated Decentralisation, 1950–2018**  
(Share of countries granting asymmetric authority to at least one regional unit - RAI indicator)



Source: Hooghe et al. (2021)

These aggregate patterns mask substantial heterogeneity. Federations unsurprisingly exhibit the highest incidence of differentiated arrangements, though the degree of asymmetry varies widely across cases. Belgium, Canada, India and Russia are markedly asymmetric, while Australia, Austria, Brazil, Germany, Switzerland and the United States favour uniformity. Unitary countries often lean toward uniformity, yet exceptions abound where specific territories—archipelagos, remote regions, culturally distinctive provinces—receive tailored arrangements. Ethno-linguistic diversity also frequently motivates differentiation, as in Belgium, Canada, Italy, Spain and Switzerland.

Differentiation is dynamic rather than static. Germany’s Länder have received increasing opt-out prerogatives in selected domains; France has expanded the role of metropolitan authorities; and Chile has experimented with pilot regional schemes. Conversely, Brazil’s abolition of its federal territories in the 1980s illustrates movement toward greater uniformity. These developments underscore the importance of studying both the levels and the evolution of differentiated governance.

### **3.2 Operationalising Differentiation: The RAI Measure**

RAI provides a multidimensional identification of self-rule and shared rule provisions, capturing both the autonomy regions enjoy in selected policy areas and the channels through which they co-determine national policy. Self-rule includes institutional depth, policy scope, fiscal and borrowing autonomy, and political representation. Shared rule spans legislative, executive, fiscal, borrowing and constitutional domains, and may operate multilaterally or bilaterally.

Crucially, RAI identifies standard and differentiated regions. The latter fall into three analytically distinct categories: (i) dependent regions, which lack meaningful autonomy and are governed unilaterally by the centre; (ii) asymmetric regions, which remain part of the national tier but possess distinctive statutory or constitutional prerogatives; and (iii) autonomous regions, which enjoy a special constitutional or quasi-constitutional status.

### **3.3 Regional Economic Data**

To assess the relationship between differentiation and economic performance, we combine RAI data with harmonised socio-economic indicators from the OECD Regions and Cities Database, which provides annual observations for TL2 and TL3 regions across thirty-eight OECD countries and selected partner economies. The dataset includes GDP, employment, labour force indicators, demographic characteristics, value-added shares and population density. We restrict the sample to 1995–2021 to ensure maximal comparability and coverage. Our dependent variable is the log of real regional GDP per capita. Appendix Table A1 displays relevant summary statistics.

### **3.4 Variable Selection Using LASSO and Bayesian Model Averaging**

A broad set of structural and socio-economic covariates may influence regional performance. Yet, unrestricted specifications risk overfitting and introduce model uncertainty. To discipline covariate selection, we implement a dual approach combining the LASSO, which shrinks weak predictors and yields a high-fit benchmark model, and Bayesian Model Averaging (BMA), which evaluates the posterior inclusion probability (PIP) of each covariate across all model combinations.

As shown in Table A2, several variables consistently emerge as robust predictors of regional income: labour force participation, unemployment, population density, industrial employment shares, flood exposure, and voter turnout. These covariates exhibit high PIPs and economically meaningful effects, while many other potential controls do not survive selection. The resulting

specification provides a stable, transparent and theoretically grounded set of controls for our baseline regressions.

### 3.5 Stylized Facts on Decentralisation and Economic Performance

Three stylised features of the data help motivate the empirical exercises. First, differentiated regions tend to be historically distinctive territories—culturally unique, geographically isolated or institutionally entrenched—and often display higher income levels in cross-sectional comparisons. Second, regions that have been granted differentiated status tend to exhibit lower income levels prior to reform, consistent with the notion that decentralisation may be a response to underperformance rather than a reward for success. Third, substantial heterogeneity exists within each category: some autonomous regions are among the richest units in the sample, while others lag behind national averages.

### 3.6 Empirical Strategy

We start off by examining whether regions with differentiated prerogatives exhibit income levels that diverge systematically from those of standard regions, after accounting for time-invariant characteristics and observable fundamentals. To operationalise the RAI classification, three mutually exclusive indicators are created for dependent regions ( $Dep_{it}$ ), asymmetric regions ( $Asym_{it}$ ) and autonomous regions ( $Auton_{it}$ ), with standard regions serving as the omitted category. This grouping allows the estimation of income premia associated with each form of differentiation. The resulting empirical model is

$$\ln(\text{GDPpc}_{it}) = \alpha_i + \lambda_t + \beta_1 Dep_{it} + \beta_2 Asym_{it} + \beta_3 Auton_{it} + \gamma' X_{i,t-1} + \varepsilon_{it}, \quad (2)$$

where  $X_{i,t-1}$  denotes the vector of lagged controls selected using the LASSO–BMA procedure;  $\alpha_i$  and  $\lambda_t$  are country and time effects, respectively; and  $\varepsilon_{it}$  is an error term.

The lag structure ensures that covariates reflect conditions prior to the income realisation in period  $t$ , reducing simultaneity concerns.

We then turn to the within-region evidence. For this purpose, differentiation is defined as a categorical institutional status capturing transitions across decentralisation typologies. While dependency clearly reflects lower authority than standard arrangements, there is no natural ordering between asymmetric and autonomous regions. Following the original RAI coding strategy, we therefore treat asymmetric and autonomous arrangements as distinct but *non-ordered*

institutional states. This definition captures both the specific decentralisation typologies embedded in RAI and differentiation, defined as *transitions across institutional states* rather than movement along a cardinal scale of authority. The corresponding specification is:

$$\ln(\text{GDPpc}_{it}) = \alpha_i + \lambda_t + \delta \text{AsymScore}_{i,t} + \gamma' X_{i,t-1} + \mu_{it}, \quad (3)$$

where  $\text{AsymScore}_{i,t}$  is the differentiation measure;  $\alpha_i$  and  $\lambda_t$  are country and time effects, respectively; and  $\mu_{it}$  is an error term.

Interpretation of  $\delta$  requires caution and should not be viewed causally. A negative coefficient would be consistent both with differentiation causing weaker performance *and* with differentiation being adopted *in response* to economic decline. Equation (3) is therefore best interpreted as a diagnostic test for endogeneity rather than an identification strategy.

To address endogeneity, we look at income trajectories before and after differentiation. Our data set does not include a shift away from dependency towards other typologies, such as standard arrangements or asymmetry/autonomy. We are therefore left with shifts from standard arrangements towards asymmetry/autonomy, such as Greater London and Northern Ireland in the United Kingdom, Nunavut in Canada, and Jeju in South Korea.

Let  $t_i^*$  denote the year in which region  $i$  is granted asymmetric/autonomous status. Defining event time as  $\tau = t - t_i^*$ , the following dynamic specification is estimated:

$$\ln(\text{GDPpc}_{it}) = \alpha_i + \lambda_t + \sum_{\tau \neq -1} \theta_\tau \mathbf{1}\{t - t_i^* = \tau\} + \gamma' X_{i,t-1} + \eta_{it}, \quad (4)$$

where the indicators  $\mathbf{1}\{t - t_i^* = \tau\}$  capture each event year relative to differentiation, and  $\tau = -1$  is omitted as the reference period;  $\alpha_i$  and  $\lambda_t$  are country and time effects, respectively; and  $\eta_{it}$  is an error term.

Coefficients  $\theta_\tau$ , for  $\tau < 0$ , trace the evolution of income before differentiation and therefore test for the effects of pre-differentiation trends whereas coefficients  $\theta_\tau$ , for  $\tau > 0$ , describe the post-differentiation income trajectory. This specification provides a diagnostic assessment of the plausibility of the identifying assumptions underlying the within-region model and is particularly informative regarding the endogeneity of institutional reforms.

Interpretation of the coefficients across these three equations must account for the nature of the identifying variation. Equation (2) captures persistent income differences across decentralisation

types, controlling for unobserved regional factors. Equation (3) isolates the within-region dynamics associated with differentiation. Equation (4) examines whether differentiation is preceded by or followed by systematic trends, thereby clarifying whether institutional reforms are plausibly exogenous, reactive or neutral with respect to economic performance.

## 4 Empirical Results

### 4.1 Cross-sectional Income Differences Across Decentralisation Types

Table 1 reports the estimates from Equation (2), which includes region and year fixed effects and a parsimonious set of lagged controls selected through the LASSO–BMA procedure.

Across specifications, the estimated coefficients on the decentralisation categories are positive, sizeable and statistically significant in the baseline specification. Dependent regions display the largest income premium, with an estimated coefficient of 0.118, implying an income difference of roughly 12 percent relative to standard regions. Asymmetric regions also exhibit a robust and statistically significant premium of 0.057, corresponding to about 6 percent higher GDP per capita. Autonomous regions display a smaller yet still positive and significant advantage of 0.051, or approximately 5 percent. These magnitudes are consistent with the view that differentiated regions enjoy a persistent structural advantage over their standard counterparts.

The control variables behave as expected. Lagged unemployment is strongly and negatively associated with regional GDP per capita, with coefficients around  $-1.5$ , reflecting substantial cyclical or structural slack. Lagged labour force participation is positively associated with income, with point estimates of about 0.49, suggesting that higher labour-market engagement supports regional economic performance. Lagged population density enters with a negative sign (around  $-0.19$ ), which may capture congestion effects or the legacy of older industrial regions once permanent geographic characteristics are absorbed by fixed effects.

These results show that differentiated regions tend to have stronger performance than otherwise comparable standard regions, even after conditioning on time-invariant structural characteristics and observable fundamentals. We interpret these estimates strictly as correlations, rather than implying a causal relationship between differentiation and performance.

**Table 1. Baseline Regression Using Categorical Decentralisation Types**

Variables	(1) Baseline	(2) Extended Controls	(3) Country–Year FE
<b>Dependent region</b>	0.118*** (0.019)	0.064*** (0.004)	0.026** (0.011)
<b>Asymmetric region</b>	0.057*** (0.020)	—	−0.029** (0.012)
<b>Autonomous region</b>	0.051** (0.020)	—	−0.009 (0.010)
<b>L. Participation rate</b>	0.491*** (0.132)	0.272 (0.173)	0.333** (0.147)
<b>L. Unemployment rate</b>	−1.512*** (0.095)	−1.412*** (0.094)	−0.620*** (0.106)
<b>L. Population density (log)</b>	−0.190** (0.088)	−0.216** (0.108)	−0.351*** (0.068)
<b>L. Industrial employment share</b>	—	0.657** (0.330)	—
<b>L. Flood exposure (log)</b>	—	0.024 (0.050)	—
<b>Observations</b>	7747	5026	7642
<b>Within R-squared</b>	0.256	0.283	0.079
<b>Region FE</b>	Yes	Yes	Yes
<b>Year FE</b>	Yes	Yes	No
<b>Country–Year FE</b>	No	No	Yes

Notes: Standard errors are clustered at the regional level. All specifications include region fixed effects; columns (1) and (2) additionally include year fixed effects, while column (3) replaces year effects with country–year fixed effects. Lagged covariates are used to mitigate contemporaneous endogeneity. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .

#### 4.2 Within-region Dynamics: Changes in Decentralisation Status

Table 2 summarises the estimates from Equation (3), which relates changes across four categorical differentiation states (coded 0–3) to log GDP per capita, while absorbing region and year fixed effects.

Across all three specifications, the coefficient on the differentiation score is negative, small in magnitude, and strongly statistically significant. In the baseline specification, a one-step increase in the score, implying a shift from dependency to standard, or standard to asymmetry/autonomy, is associated with a 0.030 log-point decline in GDP per capita ( $\approx 3.0$  percent). When lagged controls are introduced, the effect is slightly larger in absolute terms ( $-0.032$ ) and remains at  $-0.026$  in the robustness specification.

The control variables included in columns (2) and (3) behave as expected. Lagged unemployment enters strongly negatively (around  $-0.97$  to  $-0.91$ ), consistent with cyclical slack or structural labour market weakness suppressing income. Lagged population density is also negatively associated with performance, suggesting that once permanent geographical characteristics are

absorbed by fixed effects, higher-density regions in this sample tend to experience lower income growth. By contrast, lagged labour force participation is positively signed but statistically insignificant, reflecting the limited short-run variation after conditioning on fixed effects. Industrial employment shares and flood exposure do not display stable associations, likely reflecting their relatively sparse regional variation.

Taken together, the cross-sectional and within-region results convey complementary, rather than contradictory, information. Cross-sectional estimates show that differentiated regions tend to display stronger performance than otherwise comparable standard regions. By contrast, the within-region evidence indicates that performance does not systematically improve following differentiation. Importantly, neither set of results should be interpreted causally. The within-region patterns are consistent with two mechanisms: (i) differentiation may fail to generate short-run economic gains; or (ii) regions may seek differentiated status precisely when performance deteriorates. This comparison highlights the likely endogeneity between differentiation and performance and calls for caution in interpreting both sets of estimates.

**Table 2. Within-Region Effects Using Categorical Differentiation Indicator**

Variable	(1) (1) FE Baseline	(2) (2) + Controls	(3) (3) Robust FE
<b>Differentiation indicator (0–3)</b>	–0.030*** (0.008)	–0.032*** (0.006)	–0.026*** (0.007)
<b>L. Participation rate</b>		0.463 (0.375)	0.365 (0.461)
<b>L. Unemployment rate</b>		–0.977*** (0.142)	–0.911*** (0.190)
<b>L. Population density (log)</b>		–0.540** (0.241)	–0.610** (0.291)
<b>L. Industrial share</b>			–0.713 (1.171)
<b>L. Flood exposure</b>			0.057 (0.085)
<b>Observations</b>	1030	889	653
<b>Within R-squared</b>	0.002	0.291	0.278

Notes: Standard errors are clustered at the regional level. All regressions include region and year fixed effects. Lagged covariates are used in columns (2) and (3). \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .

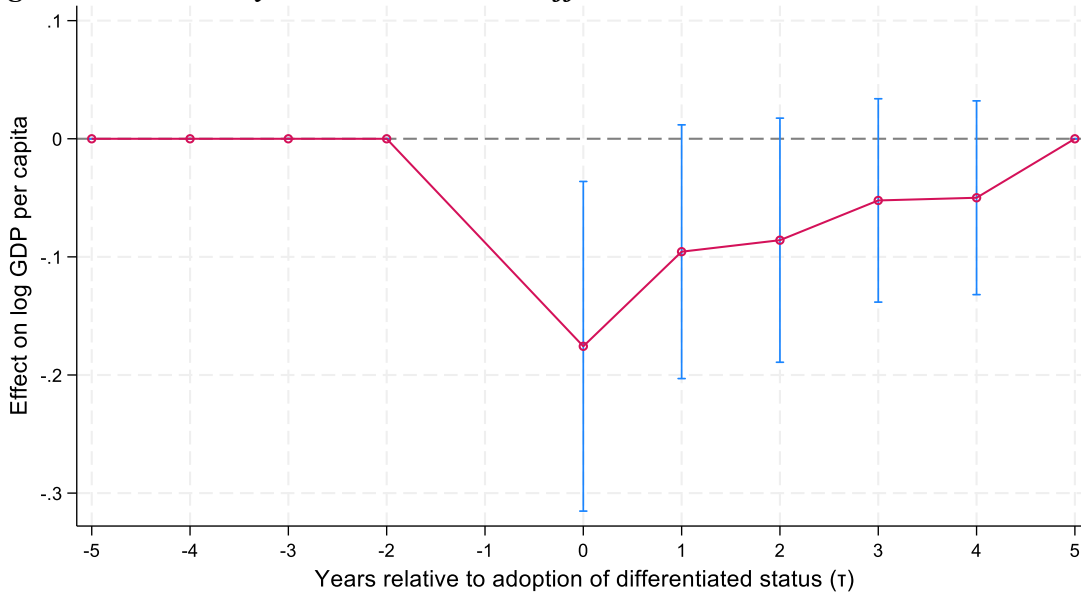
### 4.3 Dynamic Event-study: Pre- and Post-differentiation Trajectories

The evidence depicted in Figure 2 reveals no evidence of systematic pre-differentiation underperformance. For event times  $\tau = -5$  through  $\tau = -2$ , the estimated coefficients are close to

zero and statistically indistinguishable from the baseline period. This pre-differentiation pattern suggests that short-run income dynamics alone do not fully explain selection into differentiated arrangements. While adopting regions do not exhibit sharp pre-trends immediately before reform, longer-run underperformance may still motivate institutional change.

At  $\tau = 0$ , the year when differentiation is adopted, the coefficients exhibit a large and statistically significant drop (around  $-0.20$  log points), indicating a sharp contemporaneous decline in income. By contrast, in the years following differentiation, the point estimates show a gradual upward movement. However, the confidence intervals are wide and consistently overlap with zero, implying that post-reform income levels remain statistically indistinguishable from the pre-reform trend. There is no robust evidence of an improvement in performance following differentiation in the short-to-medium run, nor any strong sign of further deterioration beyond the year in which differentiation is adopted.

**Figure 2. Event-Study Estimates Around Differentiation**



Notes: Coefficients are measured relative to the year prior to reform ( $\tau = -1$ ). The figure plots point estimates and 95% confidence intervals from the event-study regression with region and year fixed effects and lagged controls. Standard errors are clustered at the regional level. A horizontal dashed line marks zero.

The results of the event study suggest that selection effects are at play. Relative to non-adopting regions, the income trajectories of regions adopting, or being granted, differentiated prerogatives are statistically indistinguishable in the run-up to reform, suggesting that short-run income

dynamics alone are unlikely to trigger differentiation. Post-adoption trajectories also show no systematic convergence relative to non-adopters. While point estimates suggest partial recovery over time, confidence intervals remain wide and statistically indistinguishable from zero, providing no robust evidence of performance improvements following differentiation. This is likely due to the small number of jurisdictions adopting, or being granted, differentiated prerogatives in our data set, which calls for further work to disentangle these causal relationships. If confirmed, this finding would suggest that the cross-sectional evidence of an income premium of differentiated regions reflects long-standing structural characteristics, rather than the causal effects of differentiation.

#### **4.4 Robustness and Identification**

This section assesses the robustness of the empirical findings to alternative decentralisation measures, extended sets of controls, sample restrictions and identification-oriented diagnostics. These exercises confirm that the main results are not driven by modelling choices or omitted-variable concerns and reinforce the interpretation of our estimates as robust conditional associations rather than causal effects.

##### **4.4.1 Structural Robustness: Alternative Decentralisation Codings**

To verify that the baseline findings are not an artefact of how decentralisation is coded, two alternative measures are examined. First, a simple binary indicator identifying whether a region holds *any* form of differentiated status yields a positive and statistically significant association with income (0.054,  $p < 0.01$ ), closely matching the magnitude and significance of the categorical specification. Second, when the underlying RAI components are introduced directly through continuous measures of self-rule and shared rule, neither dimension is statistically significant and both coefficients are small in magnitude. This contrast reinforces the earlier conclusion: the structural income premium identified in the cross-sectional regressions is robust to alternative codings of decentralisation, whereas marginal variation in specific institutional powers does not account for the observed differences in performance.

**Table 3. Structural Robustness: Alternative Measures of Differentiated Decentralisation**

<b>Variable</b>	<b>(1) Binary Differentiation</b>	<b>(2) Continuous RAI Components</b>
<b>Any differentiated region</b> (diff_binary)	0.0544* (0.0148)	—
<b>Self-rule</b>	—	-0.0603 (0.0677)
<b>Shared-rule</b>	—	-0.0193 (0.0178)
<b>L. Participation rate</b>	0.4906*** (0.1319)	0.4387 (0.3862)
<b>L. Unemployment rate</b>	-1.5121*** (0.0948)	-0.9731*** (0.1428)
<b>L. Population density (log)</b>	-0.1896** (0.0882)	-0.5421** (0.2432)
<b>Constant</b>	10.9325*** (0.4215)	13.2888*** (1.3780)
<b>Region FE</b>	Yes	Yes
<b>Year FE</b>	Yes	Yes
<b>Observations</b>	7747	889
<b>Within R-squared</b>	0.256	0.291

Notes: Standard errors in parentheses. Standard errors clustered at the regional level. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .

#### 4.4.2 [Extended Controls and Additional Covariates](#)

Extending Equation (2) to include a broader set of socio-economic and structural controls confirms the stability of the baseline findings. Table 4 reports results from progressively augmenting the specification with sectoral value-added shares, demographic composition, internal mobility, flood exposure and a full set of controls. Across all columns, the coefficients on the decentralisation categories remain positive, economically meaningful and statistically significant in most cases. Dependent regions continue to exhibit the largest income premium, with point estimates around 0.12 in the baseline, 0.12–0.13 when sectoral and demographic controls are added, and 0.06 when conditioning on flood exposure. Asymmetric and autonomous regions display similarly stable effects, with coefficients typically between 0.05 and 0.08 depending on the specification.

Although the inclusion of certain controls (e.g., mobility or full-control specifications) reduces sample size considerably—leading to imprecise or suppressed estimates in these smaller

subsamples—the pattern in the richer specifications does not overturn the central result. The size and sign of the decentralisation coefficients remain broadly consistent with the baseline, and in the models with adequate coverage (columns 1–3 and 5), the income premia for differentiated regions persist.

**Table 4. Robustness to Extended Controls**

	(1) Base	(2) +Sectors	(3) +Demographics	(4) +Mobility	(5) +Flood	(6) All controls
<b>Dependent region</b>	0.118*** (0.019)	0.124*** (0.016)	0.120*** (0.019)	0.000 (.)	0.060*** (0.004)	0.000 (.)
<b>Asymmetric region</b>	0.057*** (0.020)	0.059*** (0.015)	0.063*** (0.019)	0.077*** (0.015)	0.000 (.)	0.000 (.)
<b>Autonomous region</b>	0.051** (0.020)	0.052*** (0.017)	0.053** (0.021)	0.030 (0.024)	0.000 (.)	0.000 (.)
<b>Observations</b>	7747	7253	7694	4502	5579	3138
<b>Within R-squared</b>	0.256	0.435	0.292	0.252	0.266	0.511

Notes: Region and year fixed effects included. Standard errors clustered at the regional level. Stars denote: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ . Blank/zero entries in columns (4) and (6) reflect suppressed coefficients due to insufficient within-region variation after adding mobility or full control sets.

#### 4.4.3 Identification-oriented Tests: Historical Instruments

It is useful to examine whether long-run country-level historical characteristics help predict differences in decentralisation arrangements. Following the institutional origins literature (La Porta et al., 1999; Berkowitz et al., 2003), we use colonial legal origin as a plausibly exogenous source of variation. Given the weakness of this instrument, we also experiment with ethno-linguistic fragmentation, which has been shown to be a stronger predictor of decentralisation. Both variables are time-invariant, making them suitable for probing the cross-sectional component of equation (2), while remaining orthogonal to contemporary region-level income shocks.

Two conditions motivate its use as an external predictor. First, legal origin has been shown to correlate with broad institutional features that may shape decentralisation patterns. Second, legal origin is historically determined through colonial diffusion or early state formation (La Porta et al., 2008) and captures long-run institutional characteristics. However, we do not rely on strong

exogeneity assumptions. Instead, we use this exercise purely as a robustness check to assess whether the baseline associations remain stable under alternative specifications, rather than as a causal identification strategy.

Table 5 reports the results of this exploratory instrumental-variables estimation. The first stage shows no evidence that civil-law origin predicts the likelihood of having differentiated regions. The instrument is weak: the excluded-instrument F-statistic is essentially zero, the Kleibergen–Paap statistics fail all Stock–Yogo critical values, and underidentification cannot be rejected.

Given the weakness of the instrument, the second-stage estimates are highly imprecise and offer no meaningful inferential content. Nevertheless, the point estimate for differentiation in the second stage retains the same sign as the OLS benchmark, albeit with extreme imprecision. This reinforces our interpretation that the cross-sectional associations are not simply driven by national legal or institutional histories, but the weak instrument prevents drawing causal conclusions.

**Table 5. Instrumental-Variables Estimates Using Legal Origin**

*Panel A. First Stage (Dependent Variable: Differentiation dummy, diff\_binary)*

Variable	Coefficient	Std. Error	Significance
Civil-law origin	0.0046	(0.0757)	n.s.
Lagged participation rate	0.295	(0.326)	n.s.
Lagged unemployment rate	1.097	(0.965)	n.s.
Lagged population density (log)	0.039	(0.014)	<b>p &lt; 0.01</b>
Year FE	Yes		
Clusters	39 countries		
Observations	7,747		
F-statistic on excluded instrument	0.00	(p = 0.95)	—

*Panel B. Second Stage (Dependent Variable: log GDP per capita)*

Variable	Coefficient	Std. Error	Significance
Differentiation (2SLS instrumented)	−84.44	(1,370.15)	n.s.
Lagged participation rate	27.91	(387.22)	n.s.
Lagged unemployment rate	91.54	(1,461.51)	n.s.
Lagged population density	3.41	(54.17)	n.s.
Year FE	Yes		
Clusters	39 countries		
Observations	7,747		

Notes: Panel A. First Stage. Standard errors are clustered at the country level (ifscode). All regressions include year fixed effects and the lagged control set used in the baseline specification. The endogenous variable is diff\_binary (equal to 1 for any differentiated region). The excluded instrument is civil\_law. Underidentification, weak identification, and weak-instrument-robust tests are reported using cluster-robust statistics. Panel B. Second Stage.

Standard errors are clustered at the country level (ifscode). All regressions include year fixed effects and the same controls as in Panel A. *diff\_binary* is treated as endogenous and instrumented with *civil\_law*. IV (2SLS) estimates, robust standard errors, and identification diagnostics (including Kleibergen–Paap statistics and Stock–Yogo critical values) are reported.

#### 4.4.4 [Sample Robustness and Alternative Panels](#)

To ensure that the baseline results are not driven by the structure of the panel or by influential subsets of regions, a series of sample-based robustness exercises is implemented. These include restricting the sample to regions observed for at least ten years, trimming the panel to post-2000 observations, estimating the model separately for federations and unitary states, and allowing for fully flexible region-specific linear trends. Across all alternatives, the qualitative patterns remain unchanged. The estimated income premia of differentiated regions remain positive and statistically significant in the full sample and in the unitary-state subsample, and they remain precisely estimated even when region-specific trends are absorbed. In federations, where the number of differentiated regions is smaller and institutional heterogeneity more limited, the coefficients become imprecisely estimated, but their signs remain in line with the baseline specification. These results confirm that the cross-sectional income advantage of differentiated regions is not an artefact of sample composition, but rather a persistent empirical regularity across institutional and sample configurations.

Moreover, the within-region asymmetry score continues to yield small and negative coefficients, and the event study analysis consistently displays no evidence of systematic short-run pre-differentiation underperformance.

**Table 6. Sample Robustness and Alternative Panels**

Variable	(1) ≥ 10 yrs	(2) ≥ 2000	(3) Federations	(4) Unitary	(5) Region Trends
<b>Dependent region</b>	0.118*** (0.019)	0.121*** (0.017)	0.000 (.)	0.148*** (0.022)	0.032*** (0.012)
<b>Asymmetric region</b>	0.057*** (0.020)	0.054*** (0.018)	0.010 (0.008)	0.079*** (0.023)	0.019** (0.009)
<b>Autonomous region</b>	0.051** (0.020)	0.049*** (0.019)	-0.011 (0.037)	0.079*** (0.023)	0.002 (0.011)
<b>Observations</b>	7,747	7,407	2,776	4,971	7,747
<b>Within R-squared</b>	0.256	0.279	0.094	0.321	0.127

Notes: All regressions include region fixed effects and year fixed effects. Robust standard errors clustered at the regional level are reported in parentheses. Column (1) restricts the panel to regions with at least 10 years of observations. Column (2) restricts to years ≥ 2000. Column (3) estimates the model only for federations; Column (4) only for unitary countries. Column (5) includes region-specific linear time trends. \*\*\* p < 0.01, \*\* p < 0.05, \* p < 0.10.

## 5 Conclusions

This paper has examined whether differentiated decentralisation—defined as the non-uniform assignment of self-rule and shared-rule authority to selected regions within a country—bears a systematic relationship with regional economic performance across OECD middle-tier jurisdictions. Examples of differentiated decentralisation include the non-uniform status of regions with ethnically/linguistically diverse populations, metropolitan areas and capital cities, as well as remote or geographically discontinuous territories, whose specific conditions, preferences and needs create demands for greater policy authority or outright self-government. Conflict prevention and policy experimentation are reasons for treating diverse regions non-uniformly.

Three findings emerge from the analysis. First, differentiated regions—whether classified as dependent or asymmetric/ autonomous—display sizeable and robust income premia in cross-sectional comparisons. After absorbing unobserved, time-invariant regional characteristics and conditioning on a parsimonious set of economic fundamentals selected through LASSO–BMA, differentiated jurisdictions exhibit 5–12 percent higher income levels relative to standard regions. These structural premia are stable across alternative codings of decentralisation, extended sets of controls, alternative samples and identification-oriented tests. They likely reflect long-standing structural characteristics—geographic uniqueness, historical institutional trajectories, or distinctive economic specialisations—that historically differentiated regions possess.

Second, the within-region evidence points to a modest but statistically significant short-run decline in performance following differentiation. These negative coefficients are stable across specifications and robust to a wide range of controls. However, this relationship should not be interpreted causally. The within-region findings stand in contrast to the cross-sectional evidence, highlighting the endogeneity likely to characterise the relationship between differentiation and performance. Differentiation may fail to generate immediate economic gains, but it may also be adopted precisely in response to economic weakness. In this sense, greater policy authority may be sought as a strategy to improve outcomes in lagging regions by enabling policies better tailored to local conditions, preferences and needs.

Third, evidence from the dynamic event-study analysis sheds further light on the direction of causality. Regions adopting or being granted differentiated arrangements exhibit income trajectories that are statistically indistinguishable from those of non-adopting regions in the years

preceding reform, providing no evidence of systematic pre-differentiation underperformance. At the time of adoption, however, income declines sharply. While subsequent years display some recovery, the estimates are imprecise and confidence intervals remain wide. Overall, there is no robust evidence of sustained performance improvements following differentiation.

These findings are consistent with the identification-oriented diagnostics based on historical instruments. Although the paper does not claim causal identification, we examine whether long-run country-level characteristics help predict decentralisation patterns. Following the institutional origins literature, colonial legal origin is used as a plausibly exogenous predictor, exploiting its time-invariant nature and cross-country variation. The IV exercise shows that the instrument is weak, providing no explanatory power for decentralisation arrangements and yielding imprecise second-stage estimates. This reinforces the interpretation that the cross-sectional income premia associated with differentiated regions are not artefacts of national institutional histories, while the weakness of the instrument prevents any causal inference.

Taken together, these results cast doubt on the performance-improving potential of differentiation as a general policy instrument. Differentiated regions tend to perform strongly because they may be better able to tailor policies and resources to local preferences and needs that differ substantially from those of other regions and cannot be adequately addressed through uniform arrangements across same-level jurisdictions. Such tailoring may go beyond public service provision and facilitate place-based strategies that build on local comparative advantages and compensate for structural deficiencies that would otherwise constrain performance.

At the same time, lagging regions may seek additional policy space precisely to redress structural weaknesses and compete more effectively for investment and economic activity. This is consistent with the interpretation of differentiated decentralisation as a mechanism for managing territorial tensions. However, the absence of systematic post-reform convergence suggests a risk that, while preventing conflict, differentiated decentralisation may end up perpetuating the disadvantages that motivated it in the first place. In this sense, differentiated decentralisation appears less as a direct tool for stimulating regional economic upgrading and more as an institutional response to regional imbalance—an effort to manage territorial tensions, accommodate identity-based demands, and provide tailored governance arrangements in diverse polities.

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## 7 Appendix

**Table A1: Summary Statistics**

	e(count)	e(sum_w)	e(mean)	e(Var)	e(sd)	e(min)	e(max)	e(sum)
lgdppc	8671	8671	10.30	0.35	0.59	8.18	12.17	89320.94
partrate_pc	9516	9516	0.70	0.01	0.09	0.14	0.98	6661.00
unemprate_pc	9592	9592	0.08	0.00	0.05	0.00	0.93	776.41
lpopdensity	11731	11731	4.35	2.64	1.62	0.01	9.05	51023.78
dep_region	12339	12339	0.00	0.00	0.03	0.00	1.00	8.00
asym_region	12339	12339	0.04	0.04	0.21	0.00	1.00	547.00
auton_region	12339	12339	0.06	0.05	0.23	0.00	1.00	693.00
selfrule	1331	1331	1.01	1.95	1.40	0.00	8.10	1348.50
sharedrule	1331	1331	0.45	0.93	0.96	0.00	6.60	595.10

**Table A2. Model Selection: Bayesian Model Averaging**  
(Dep. Var.: Regional per capita GDP, in logs)

Variable	Posterior Mean	Std. Dev.	PIP
Labour force participation rate	1.98692	0.24058	1.00000
Unemployment rate	-1.86595	0.20823	1.00000
Flood area	0.06339	0.01445	0.99999
Industry share (in employment)	-1.76808	0.41965	0.99382
Population density	0.08854	0.01822	0.98714
Voter turnout	0.42539	0.14702	0.96343
Trade share (in GVA)	0.61199	0.51984	0.66067
Industry share (in GVA)	-0.05846	0.21775	0.12298
Finance share (in GVA)	0.15495	0.61449	0.11352
Agriculture share (in GVA)	-0.10740	0.45906	0.10874
Business share (in GVA)	0.07400	0.29669	0.10533
Old age dependency rate	0.01896	0.09597	0.08344
Agriculture share (in employment)	0.02777	0.46685	0.07141
International mobility (inflows, share of population)	0.27806	2.20899	0.07071
Population growth rate	0.00063	0.04735	0.05614
Asymmetric decentralisation	0.06772	0.02566	1.00000
Constant	8.90028	0.30580	1.00000

Note: The BMA exercise is based on 10,000 MC3 draws with a burn-in of 2,500 iterations. The asymmetry measure is included as an always-in predictor, while all other variables are entered as auxiliary regressors and selected probabilistically. Reported are posterior means, standard deviations, and posterior inclusion probabilities (PIP). Variables with PIP > 0.95 are retained in the parsimonious BMA specification reported in Table 1 (Model 2), while Table 1 (Model 1) shows the broader set of controls selected by LASSO. This explains why the list of variables is not identical across the two tables. All variables are defined in logs.