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Economic and political determinants of Local Government Budget Credibility: A Review of Empirical Evidence

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Abstract This article reviews empirical research on the economic and political determinants of local governments, i.e., cities' and municipalities' budget credibility, which refers to deviations of planned local budget revenues and expenditures from actual values. It focuses mainly on papers published in Web of Science or Scopus database journals, including 2024. Research on the determinants of subnational (intermediary) and central or national government levels is not included. Two key observations can be made: (1) the definitions and measuring of dependent variables vary widely, which may give rise to seeming flaws and contradictions in the findings, and (2) there is not enough research on the determinants of budget credibility due to the issue of collecting data on planned budgets at the local level. Despite differences in definitions and measurements, the article accurately assesses the fundamental explanatory variables, highlighting those significantly affecting local budget credibility.

Keywords: • local governments • budget credibility • empirical review • determinants • forecasting

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1 Introduction

"In theory, there is no difference between theory and practice. But, in practice, there is."

—Benjamin Brewster (1882)

Budget credibility assumes the accuracy of planned budget revenues and expenditures approved by local governments – LGs[1] (from the Enacted Budgets) compared to the actual executed revenues and expenditures (from End-Year Budget Reports). Enacted budgets are approved by the legislative power of LG, which is the local council or local assembly, while executive power in LG has the mayor of the local unit. Accuracy of forecasted (planned) revenues has a significant role in formulating fiscal policy (Auerbach, 1999), while overestimating revenues may result in cutbacks in delivering public goods. The literature provides theories for budget deviations – BDs (e.g., Mayper, Granof, & Giroux, 1991). LGs may underestimate revenues (or overestimate expenditures) to protect against unforeseen expenditures or revenue shortfalls and to convey at year-end that operating savings were the consequence of careful management. They may overestimate revenues (or underestimate expenditures) to meet the requirement for a balanced budget or offer more public services without raising taxes immediately. Furthermore, according to Boukari and Veiga (2018), recurring overestimated revenues or underestimated expenditures at the local level may lead to significant debt accumulation, reducing the public resources to deliver public goods and services and adversely affecting local welfare.

Are planned budgets produced by LGs biased? If yes, what determinants lead to this action, and what are the repercussions? The answers to the above queries are found in numerous research on budget credibility, which mostly examines central governments in the world (Brück & Stephan, 2006; Buettner & Kauder, 2010; Cimadomo, 2016; Jochimsen & Lehmann, 2017) and in Europe (Afonso & Carvalho, 2014; Buettner & Kauder, 2015; Giuriato, Cepparulo, & Barberi, 2016; Heinemann, 2006; Jonung & Larch, 2006; Merola & Pérez, 2013; Paleologou, 2005; Pina & Venes, 2011). There are numerous studies at the subnational levels of the US States (Boylan, 2008; Bretschneider, Gorr, Grizzle, & Klay, 1989; Feenberg, Gentry, Gilroy, & Rosen, 1989; Mocan & Azad, 1995). Some papers have examined determinants of budget credibility in school districts in the USA (e.g., Jones & Reitano, 2022; Reitano, 2018). Finally, some papers examine determinants at the regional level (e.g., Bischoff & Gohout, 2010; Chatagny, 2015; Couture & Imbeau, 2009; Kauder, Potrafke, & Schinke, 2017; Rullán & Villalonga, 2018). The literature discusses the factors that are most likely to impact BDs; the economic and political determinants of budget credibility of LGs are our primary focus here. This is significant because LGs are pertinent to delivering public goods and services, and big and recurring prediction mistakes could undermine that delivery, thus affecting welfare.

The question of how variations in economic and political contexts impact the accuracy of budget forecasting has recently been the focus of some research on budget credibility at the local level (e.g., Guillamón, Ríos, & Prijaković, 2024; Jorge, Cerqueira, & Furtado, 2023; Bohn & Veiga, 2021; Cuadrado-Ballesteros, Guillamón, & Ríos, 2022; Lee & Kwak, 2020; Siregar & Susanti, 2019; Boukari & Veiga, 2018; Ríos, Guillamón, Benito, & Bastida, 2018). Literature on political business cycles pertains to a public choice strategy to budget forecasting as overestimated revenue estimates serve as a stand-in for stated shortfalls. Executives who hold mayor majorities and are in election years are more likely to overestimate the budget (Jorge et al., 2023), and political ideology matters (Cuadrado-Ballesteros et al., 2022; Guillamón et al., 2024). Regarding institutional structures, high debt does not appear to have any bearing, although involvement in any scheme for debt restructuring is adversely correlated with overestimation (Jorge et al., 2023). Overall, external control is the sole method that lessens misbehaviour related to overspending. The intentional manipulation of planned budgets by incumbent politicians is made possible due to the budget process's lack of budget transparency (e.g. Ríos et al., 2018). Incumbent politicians may be motivated to make optimistic or pessimistic budget plans (e.g. Goeminne, Geys, & Smolders, 2008). First, LGs may satisfy the need for a balanced budget and increase access to public goods and services with no immediately increasing local taxes when they overestimate budget revenue. Furthermore, optimistic budget revenue plans would less likely lead to losing votes at local elections compared to higher taxes. According to Benito, Guillamón, and Bastida (2015), underestimating or having pessimistic revenues can serve as a buffer against unforeseen expenses or revenue shortfalls, as well as evidence of wise management producing operating savings at the end of the year.

To prepare budgets, LGs estimate their revenues and expenditures. The process of budget planning is identifying resource availability and constraints, which is the purpose of revenue forecasting (Williams & Kavanagh, 2016). LGs also track their progress during the fiscal year and make budget amendments if needed. They also forecast for the long-term, years beyond the upcoming budget year, but these projections are not the focus of this research. Each year, the budget is approved by the legislature and then turned over to the executive for implementation. However, an LG frequently modifies its actual actions during the budget implementation stage so that money planned to be spent on, e.g. education or health care is frequently drastically underspent. LGs are changing their priorities, and resources are allocated more to one sector than another. According to the International Budget Partnership (IBP, n.d.), the absence of budget credibility lessens accountability. People frequently pay close attention to the budget approval stage but less to the actual spending, so it is easier for the government to avoid fulfilling its commitments. Ensuring that governments are held accountable for their initial budget promises is the essence of budget credibility. Budget credibility is

becoming a more prominent and popular theme in literature. For example, since 2018 the IBP has been investigating the extent, origins, rationales, and effects of differences between budget outturns and budget plans at the national and lower government levels within particular countries. The capacity of the LG to collect its revenue and expenditure goals (outlined in the enacted budget) throughout a fiscal year is referred to as budget credibility (IBP, n.d.).

According to Public Expenditure and Financial Accountability (PEFA, 2019), deviations of up to 5% are permissible because it is challenging to accomplish the precise amount of budget outturns as initially envisaged. Deviations are unavoidable, but each must be sufficiently explained in the budget execution documentation. When releasing their mid-year and year-end reports, authorities should provide a thorough justification for any deviation from the budget as well as information on how they intend to address the issue moving forward and what will happen to any unrealised revenues and expenditures in subsequent budget periods.

BDs can result from unanticipated events in the domestic or global economy, like a recession or pandemic. Still, they can also be the product of the government's incompetence in planning realistic revenues and expenditures or even an intentional action to further the government's agenda (like immediately before an election). Citizens consequently become less confident in the government's capacity to plan, carry out, and honour obligations realistically. The reason for this omission is what this article is supposed to help find.

The main goal of this article is to explore economic and political determinants of budget credibility at the local level. To understand budget credibility determinants, this study aims to review the evolution of previous studies of LGs' budget deviations. Section 2 gives the structure for analysis, section 3 gives definitions and measurements of budget credibility and the methodology used in the papers, section 4 offers economic and political determinants of LGs' budget credibility, and section 5 presents conclusions and recommendations for future research.

2 Framework for analysis

Discovering precisely quantifiable research on factors determining budget credibility is the primary goal of this review. The choice of quantitative research is based on its capacity to provide quick analysis and replication, which increases validity and reliability as well as the likelihood of precise results and better decision-making. This review includes *only* research on the local level, i.e., cities and municipalities, due to identifying economic and political determinants for analysing the local level. It uses Google Scholar to find previous relevant 11 pieces of research published in the Scopus and the Web of Science databases and three research papers which are appropriate but have been published in journals

indexed elsewhere (I. Lago-Peñas & Lago-Peñas, 2008; Sedmihradská & Čabla, 2013; Siregar & Susanti, 2019). Only research published in the English language is considered. The search phrases "budget credibility determinants", "budget forecast error determinants", and "local budget credibility" were employed. The qualifying requirements, which mainly apply to empirical quantitative studies that use budget credibility (budget deviations or budget forecast errors) as the dependent variable, were created to guarantee that high-quality, pertinent research is included. Finally, this review ended with 14 research studies published between 2005 and 2024.

Although every paper has contributed unquestionably, this review highlights three because of their narrow focus on economic and political determinants of budget credibility and rigorous methodology.

The first is by Boukari and Veiga (2018), who used data from all 308 Portuguese municipalities and 95 French metropolitan departments from 1998 – 2015 and conducted a dynamic panel analysis (system-GMM estimator). It revealed biased and ineffective budget projections, with French departments being more conservative than Portuguese municipalities. They discovered evidence of conservatism in French departments with greater budgetary autonomy and that opportunistic forecasting is more common where LGs have a larger margin of manoeuvre.

The second paper, by Jorge et al. (2023), used data from all 308 Portuguese municipalities from 2005 – 2017 and conducted a dynamic panel analysis. It has shown that a good indicator of overestimated revenue is the discrepancy between budgeted and actual revenues from the previous year. Furthermore, the ratio of own revenues over total revenues is connected to the overbudgeting of revenues and comes from LG's wealth. Regarding political determinants, local executives holding the majority and in electoral years are more likely to overestimate revenues, but it appears that ideology is not relevant. Any restructuring debt program involvement is adversely correlated to overestimating, and extensive debt is not significant. Overall, external control matters in accurately planning the budget.

The third paper, by Cuadrado-Ballesteros et al. (2022), used data from 140 Spanish municipalities with more than 50,000 inhabitants from 2008 – 2018 and conducted a dynamic panel analysis (two-step GMM estimator). It showed that a female mayor and the percentage of female councillors in LGs impact the BDs in revenues and expenditures. LGs with more female councillors and female mayors tend to underestimate expenditures and overestimate revenues. Still, when there are more female councillors, these effects reverse, improving the financial position. It concludes that females may contribute to the economic health of LGs when they have sufficient political representation.

These three articles are emphasised based on the measure of the dependent variables and the methods used to determine the determinants of local budget credibility. In light of this, the following chapters provide all of the articles that were part of the review, measuring the dependent variables and identifying variables related to budget credibility.

3 Budget credibility definition

Budgets have three functions—control, management, and planning (Schick, 1966). The control guarantees that public funds are utilised exclusively and precisely to achieve the predetermined (budgetary) goals. The management encourages operational and technological effectiveness and efficiency. The planning makes it easier to decide on the goals and policies. The practice and concept of maintaining a budget which is balanced, i.e., enacted expenditures must not exceed enacted revenues, is known as standard budgetary theory (Wildavsky, 1978).

A budget deficit arises when revenues are insufficient to pay for the promised public services because the volume or size of the revenue portfolio does not correspond with expenditures. Public services should also be maintained within budgetary constraints. Raising the tax rate (or, over time, expanding the tax base) or reducing the public services is the way to address these shortfalls. Even when the anticipated yearly revenues and expenditures match in magnitude, deficits can still arise due to subpar financial management, such as neglecting the budget's control and management tasks. Inadequate oversight might result in excessive or unplanned expenditure, while poor administration could impair technical and operational effectiveness and efficiency (Hou, 2006). Two kinds of estimation mistakes are possible: first is a deliberate protective mistake, or "fiscal conservatism," when financial managers and executive officials overestimate expenditures and underestimate revenues to prevent political pork barrelling; and second is a technical estimating error brought on by predicting complexity and uncertainty in economic operations. The second is hard to avoid, even while the former may be minimised (assuming executive authorities and financial managers choose to maintain the lowest possible level of fiscal prudence).

3.1 Measuring budget credibility

The budget is a crucial financial management instrument and a primary tool for actions at all levels of government, especially of LGs, whose ability to govern mainly depends on their ability to create and implement budgets. The budget should be comprehensive, standardised, transparent, scientific, and robust in resistance; its preparation and execution should be consistent. BD is defined as a state that signifies the deviations of the actual (executed) from the initially planned budget and is usually calculated as:

$$BD = \frac{planned\ \ amount - realised\ \ amount}{planned\ \ amount} \quad (1)$$

planned amount = amount from the enacted budget,
realised amount = amount reported in the year-end report.

Three papers examining the impact of online local budget transparency on budget credibility in Croatian LGs (Guillamón et al., 2024; Prijaković, 2023; Prijaković, Mačkić, & Bronić, 2023) use this measurement. Furthermore, research on Spanish LGs (Benito et al., 2015; Cuadrado-Ballesteros et al., 2022; I. Lago-Peñas & Lago-Peñas, 2008; Ríos et al., 2018), Portuguese (Jorge et al., 2023) and Danish (Serritzlew, 2005) does the same.

Similar to the previous formula but with a different denominator, BDs in Boukari and Veiga (2018), Lee and Kwak (2020), Sedmihradská and Čabla (2013), and Siregar and Susanti (2019), are calculated as:

$$BD = \frac{planned\ \ amount - realised\ \ amount}{realised\ \ amount} \quad (2)$$

Formula (2) presents a percentage of BDs in actual revenues/expenditures, while Formula (1) presents BDs in planned revenues/expenditures.

Furthermore, Bohn and Veiga (2021) use the variable difference between planned and realised amounts (calculated in euros per capita). Goeminne et al. (2008) used a share of the planned in the realised tax revenues. Anessi-Pessina and Sicilia (2015) used the measurement indicating revenue deception during the planning and implementation of the budget.

Budget credibility assumes whether a LGs accomplishes its revenue and expenditure goals for the calendar year. When actual expenditures deviate from the planned expenditures, there is underspending (if actual spending is lower than what was allocated in the planned budget) or overspending (if actual spending is greater than what was allocated in the planned budget). One reliable indicator that revenue is overestimated is the discrepancy between the plan and actual revenue from the previous year.

3.2 The methodology used in papers

The methodology, time periods, samples and dependent variables used in the 14 articles on budget credibility at local levels are described below and presented in Table 1. The lack of research on the determinants of LG budget credibility might result from the complexity of collecting data for numerous LGs. This review highlights one paper due to its focus on budget credibility of LGs, credible and robust evidence, and strictly used methodology. Boukari and Veiga (2018) used

unique panel data for 95 French departments and 308 Portuguese municipalities, employing the system-generalised method of moments (GMM). Other researchers primarily used balanced panel data employing the system-GMM method, e.g., Guillamón et al. (2024) for 100 Croatian cities during 2016 – 2021; Jorge et al. (2023) for all 308 Portuguese municipalities during 2005 – 2017, Benito, Guillamón, and Bastida (2015) for 2,644 Spanish municipalities during 2002 – 2010, Sedmihradská and Čabla (2013) for all 198 Czech municipalities during 2002 – 2011, Goeminne et al. (2008) for all 242 Flemish municipalities during 1992 – 2002, and Anessi-Pessina and Sicilia (2015) for 745 Italian municipalities during 2005–2010. Some studies used various dynamic panel models (Cuadrado-Ballesteros et al., 2022) and various linear panel models (Bohn & Veiga, 2021; I. Lago-Peñas & Lago-Peñas, 2008; Lee & Kwak, 2020; Ríos et al., 2018; Serritzlew, 2005; Siregar & Susanti, 2019). These research papers suggest that panel data for longer periods, with GMM and system-GMM methods for assessing the possibility of a two-way causal relationship between variables, may be helpful for the analysis of budget credibility on economic and political determinants at the LG level.

Table 1: Budget credibility measurements based on 14 various sources

Author(s)	Sample	Period	Dependent variable	Measurement	Methodology
(1) BD as share in planned amount					
Guillamón et al. (2024)	120 Croatian cities	2016–2021	BD in current revenues BD in current expenditures	$\frac{plan - actual}{plan}$	Dynamic system GMM panel analysis
Jorge et al. (2023)	308 Portuguese municipalities	2005–2017	Total revenue over-budgeting	$\frac{plan - actual}{plan}$	Dynamic two-step system, the difference and the orthogonal GMM panel analysis
Cuadrado-Ballesteros et al. (2022)	140 Spanish municipalities with more than 50,000 inhabitants	2008–2018	BD in current expenditures BD in tax revenues	$\frac{plan - actual}{plan}$	Dynamic two-step system panel analysis
Ríos et al. (2018)	100 largest Spanish municipalities	2008, 2009, 2010, 2012, 2014	BD in tax revenues BD in current expenditures	$\frac{plan - actual}{plan}$	OLS, 2SLS estimations Fixed effect and panel-corrected estimations (panel data)
Benito et al. (2015)	2,644 Spanish municipalities with over 1,000 inhabitants	2002–2010	BD in current and capital expenditure BD in tax and fee revenue	$\frac{actual - plan}{plan}$	Dynamic GMM panel analysis
I. Lago-Peñas and Lago-Peñas (2008)	all Galician Spanish municipalities	1985–1995	BD in deficits BD in non-financial revenues/expenditures	$\frac{actual - plan}{plan}$	OLS regression analysis

Author(s)	Sample	Period	Dependent variable	Measurement	Methodology
Serritzlew (2005)	273 Danish municipalities	1991–2003	Budget overruns for net operating costs; BD in current expenditures in five areas: roads, schools, libraries, child care, elderly	$\frac{actual - plan}{plan}$	Pooled OLS regression analysis
(2) BD as share in actual amount					
Lee and Kwak (2020)	15 upper-level Korean LGs	2002–2016	Revenue forecast error (acquisition tax, local education tax, total tax revenue)	$\frac{actual - plan}{actual}$	Fixed effect panel regression analysis with clustered robust standard errors
Siregar and Susanti (2019)	444 Indonesian regional governments: 320 districts and 124 cities of Indonesia	2006–2013	BD in revenue BD in expenditure	$\left\lvert\frac{plan - actual}{actual}\right\rvert$	Partial least square regression analysis
Boukari and Veiga (2018)	95 French departments all 308 Portuguese municipalities	2004–2015 1998–2015	BD in total/current/capital/direct taxes revenues BD in total/current/capital expenditures	$\frac{actual - plan}{actual}$	Dynamic system GMM panel analysis
Sedmihradská and Čabla (2013)	198 Czech municipalities	2002–2011	BD in tax revenues	$\frac{plan - actual}{actual}$	Dynamic system GMM panel analysis
(3) Other measures of BD					
Bohn and Veiga (2021)	308 Portuguese municipalities	1998–2017	BD in total/current/capital revenues	$plan - actual$	OLS regression analysis with fixed effects
Goeminne et al. (2008)	242 Flemish municipalities	1992–2002	BD in tax revenue	$\frac{plan}{actual}$	One-step system GMM
Anessi-Pessina and Sicilia (2015)	745 Italian municipalities with populations above 15,000	2005–2010	Misrepresentation of revenues during budget formulation Misrepresentation of revenues during budget execution	Cash recoveries/Initial appropriations Establishments of amounts receivable/Cash recoveries	Dynamic system GMM analysis

Source: Authors.

4 Economic and political determinants of budget credibility—Empirical overview

Besides presenting the economic and political determinants of budget credibility and their relationship, this chapter also offers different measures of economic and political determinants in the literature. Fourteen papers were analysed at the local level, i.e. cities and municipalities.

4.1 Economic determinants

The most used economic determinants of budget credibility are population (11 papers); income level (9 papers); own revenues (7 papers); tax revenues and budget balance (6 papers); unemployment (5 papers); revenues and expenditures and transfers (6 papers), etc.

4.1.1 Population

LG is supposed to offer a variety of public goods and services to accomplish community's needs. One of the primary factors influencing community requirements is its demography. A growing population means higher and more varied needs for essential public services, which makes forecasting/planning more difficult and could lead to BD. The population of LGs is one of the determinants of budget credibility since larger LGs could profit from economies of scale.

As a proxy variable for population, the number of inhabitants (in thousands, in log terms), population growth and population density were used. According to Cuadrado-Ballesteros et al. (2022), Spanish LGs with a larger population tend to underestimate tax revenues less and overestimate current expenditures less. Ríos et al. (2018) showed that Spanish LGs with a larger population are less prone to overestimating their tax revenues and current expenditures (conservative in their revenue and expenditures forecasts, spending more than planned). According to Benito et al. (2015), in Spanish LGs population growth leads to lower tax and fee revenues and capital expenditure overestimation. On the other hand, Bohn and Veiga (2021) discovered that higher population growth leads to more optimistic forecasts (overestimation) of total and capital revenues in Portuguese LGs. In other research, the population does not seem to be significant for budget credibility (Boukari & Veiga, 2018; Goeminne et al., 2008; Guillamón et al., 2024; I. Lago-Peñas & Lago-Peñas, 2008; Lee & Kwak, 2020; Sedmihradská & Čabla, 2013).

It can be concluded that LGs with a greater population are less prone to overestimating and underestimating revenues and expenditures. In smaller LGs with fewer inhabitants, forecasting the budget is more complex, as the community needs various public goods and services. They frequently make mistakes in budget forecasting because of the unpredictability of complicated community requirements.

4.1.2 Residence income

According to Giroux and McLelland (2003) and Piotrowski and Van Ryzin (2007), inhabitants with greater incomes have more demands regarding additional public services. Used as a proxy variable for income level was residence income per

capita (in € or scale from 1 to 10) or income growth. Guillamón et al. (2024) showed that Croatian LGs with higher residence income overestimate current expenditures less; on the contrary, Cuadrado-Ballesteros et al. (2022) showed that Spanish LGs with higher residence income overestimate current expenditures more. Spanish LGs with higher residence income tend to underestimate tax revenues less, resulting in a favourable financial situation (Cuadrado-Ballesteros et al., 2022). On the contrary, Spanish LGs with higher residence income overestimate tax revenue less, which shows that they are not attempting to manipulate the budget to increase their popularity (Benito et al., 2015; Ríos et al., 2018). Changes in residence income lead to higher tax and fee revenue overestimation in Spanish LGs (Benito et al., 2015).

It can be concluded that LGs with greater income per capita overestimate and underestimate revenues and expenditures less frequently. In wealthier LGs, the incumbent is not incentivised to manipulate the budget; i.e., planned and executed revenues and expenditures do not differ much.

4.1.3 Own revenues

LGs' steady increase in decision-making authority over their own resources and spending is known as fiscal autonomy. The greatest degree of LG autonomy is represented by its own revenues – taxes. Shared taxes are a form of autonomy between the central and LG authorities (Bröthaler & Getzner, 2011). Theoretically, greater accountability is implied by greater control over a policy tool. Decentralisation modifies the government structure to improve citizen participation and modify the powerful incentives that legislators must contend with.

As a proxy variable for own revenues, current revenues minus all grants per capita and share of own revenues in total revenues were used. Boukari and Veiga (2018) found that a larger dependence on local direct taxes in French departments causes a tendency toward conservative budget forecasting. Financial autonomy encourages fiscal responsibility. Korean LGs with greater economic independence are apparently more unlikely to manipulate increased revenue or improve their ability to collect revenue (Lee & Kwak, 2020). This is especially crucial when the central government pushes toward decentralising devolved powers and responsibilities while continuing to make small steps towards fiscal federalism and local sovereignty (Anessi-Pessina & Sicilia, 2015). In Croatian LGs where their own revenues are higher, the overestimation of current revenues is lower (Guillamón et al., 2024). Jorge et al. (2023) showed that Portuguese LG's tendency to overestimate revenue increased with its financial independence. Portuguese LGs with a greater ratio of their own revenues – primarily from higher taxes, license fees, and service prices – may be less likely to overstate their revenues than LGs that are less affluent. Overestimation and low fiscal autonomy

show a comparatively inadequate fiscal capability, which tends to plan revenue conservatively (revenue underestimation) since they tend to worry over budget deficits and revenue shortages because of overestimation (Lee & Kwak, 2020). In research by Bohn and Veiga (2021), own revenues do not seem significant for budget credibility.

In LGs with more revenue autonomy, higher own revenues are positively linked with conservatism in revenue planning.

4.1.4 Tax revenues

As a substitute variable for tax revenues, tax revenues (in € and per capita terms), the share of tax revenues in total revenues, tax revenue growth, or the number of taxes were used. LGs obtaining a higher ratio of their revenues from local taxation advance their administration performance (Goeminne et al., 2008). An increase in the tax system's complexity leads to overestimating revenues. Tax revenue forecasts are underestimated when revenue volatility (gap) increases during economic expansion. Still, they are overestimated during an economic crisis when the revenue gap decreases due to failure to forecast changes in revenue accurately (Lee & Kwak, 2020). According to Ríos et al. (2018), Spanish LGs which collect more taxes tend to underestimate their tax revenues and current expenditures as they are more conservative in their revenue plans but eventually use more than they planned because they receive more tax revenues than planned. The structure of tax revenues has a major influence, as demonstrated by Sedmihradská and Čabla (2013). The bigger the percentage of taxes paid according to the background, the greater the underestimation. In other research, tax revenues were not significant for budget planning (Benito et al., 2015; Lee & Kwak, 2020).

LGs are aware of these tax revenues' higher volatility and uncertainty and are more careful during their forecasting. Higher underestimation is shown in LGs with projections for increased revenue. The tax revenue plan becomes too conservative with more considerable year-to-year tax revenue growth.

4.1.5 Budget balance

Budget balance is usually included as a lagged variable, i.e. from the year preceding the year in which the budget was planned. As a proxy variable for budget balance, the share of total revenues minus total expenditures in total revenues, the share of non-financial revenues minus non-financial expenditures in non-financial revenues, and deficit or surplus in € per capita were used. It illustrates the fiscal constraints LGs confront when the budget is planned and approved, this might potentially impact BDs (Boukari & Veiga, 2018). They showed that a higher budget balance results in more conservative revenue and expenditure estimates. A larger budget balance (or a lower deficit) in the previous

fiscal year results in smaller total and capital revenue deviations (Bohn & Veiga, 2021). A favourable financial condition typically results from LGs with a budget surplus in non-financial accounts underestimating revenues and overestimating expenditures (Cuadrado-Ballesteros et al., 2022; Guillamón et al., 2024). In other research, budget balance does not seem significant for budget credibility (Goeminne et al., 2008; Sedmihradská & Čabla, 2013).

LGs know the budget balance for the previous year when planning the following year's budget. A higher surplus leads to less underestimation and overestimation of revenues and expenditures.

4.1.6 Unemployment

As a proxy variable for unemployment, unemployment rate and growth were used. In Portuguese and French LGs, a higher unemployment rate is associated with overestimating revenues and expenditures (e.g., Boukari & Veiga, 2018). Furthermore, improved economic outcomes (smaller unemployment rates) result in more optimistic estimates of total/capital/current revenues in Portuguese LGs (Bohn & Veiga, 2021). The impact of unemployment growth on expenditure forecasts is mixed. On the one hand, Benito et al. (2015) found a decrease in current expenditure underestimation in Spanish LGs. However, the opposite effect appears in capital expenditure. There is a substitution effect between current and capital expenditure. Benito et al. (2015) showed that the impact of unemployment growth on Spanish LGs decreases fee revenues. In other research, unemployment does not seem significant for budget credibility (Lee & Kwak, 2020; Sedmihradská & Čabla, 2013).

It can be concluded that LGs with lower unemployment rates have lower overestimation and underestimation of revenues and expenditures, as incumbents in such LGs can plan the budget more accurately.

4.1.7 Revenues and Expenditures

Both revenue and expenditure growth leads to a greater overestimation of revenues and expenditures in Indonesian LGs (Siregar & Susanti, 2019). Regarding financial position and fiscal stress, expenditure rigidity on average causes Italian LGs should be less conservative at both phases (Anessi-Pessina & Sicilia, 2015). A relative revenue increase from the previous year means better planning for current expenditures for schools, child care, roads, older people, and libraries in Danish LGs (Serritzlew, 2005). Total revenues per capita are unimportant for accurate budget planning in Czech LGs (Sedmihradská & Čabla, 2013).

4.1.8 Transfers

Dependency on the EU or transfers from the central government has been proven to impact revenue BDs. Total revenue from grants per capita and transfer growth were used as transfer proxy variables. Spanish LGs that receive more regional and central government transfers result in underestimating tax revenues and overestimating current expenditures (Cuadrado-Ballesteros et al., 2022). In addition, Guillamón et al. (2024) showed that the overestimation of current revenues is smaller in these Spanish LGs. In other research, transfers do not seem significant for budget credibility (Benito et al., 2015; Ríos et al., 2018).

It can be concluded that Spanish LGs with more transfers have lower overestimation and underestimation of revenues and expenditures, as incumbents in such LGs can plan the budget more accurately.

4.1.9 Debt

Local involvement in a debt restructuring program, demonstrating more control over their finances and developing a thorough and sensible budget has a negative impact on revenue overestimation in Portuguese LGs (Jorge et al., 2023). In other research, debt does not seem significant for budget credibility (Anessi-Pessina & Sicilia, 2015; Jorge et al., 2023).

4.1.10 Other economic determinants

Some research used GDP per capita or GDP growth. Boukari and Veiga (2018) and Sedmihradská and Čabla (2013) showed that stronger growth in GDP is linked to higher revenues, resulting in smaller revenue and overestimating expenditure. The impact of current year GDP growth on actual revenues has an adverse effect on forecasting inaccuracy. In other research, the GDP does not seem significant for budget planning (Bohn & Veiga, 2021; Lee & Kwak, 2020). The discrepancy between collected and budgeted revenues in the previous year is a good forecaster that revenues are overestimated (Jorge et al., 2023). Lee and Kwak (2020) showed that LGs merely use data from the prior year on revenue variations in revenue planning. Furthermore, Bohn and Veiga (2021) showed some relation to the educated population – a less educated population is linked to more optimistic projections and more educated inhabitants of LGs are linked with less optimistic projections of capital and total revenues.

According to previous literature, the main economic determinants are population, income, own revenues, tax revenues, budget balance, unemployment and transfers. It can be concluded that LGs with greater population, as well as higher income, own revenues, tax revenues, higher level of budget balance and transfers, are less prone to overestimate and underestimate revenues and expenditures. Furthermore,

LGs with lower unemployment rates are less prone to overestimate and underestimate revenues and expenditures.

4.2 Political determinants

The most used political determinants of budget credibility are political ideology (11 papers); political competition (9 papers); election cycles – pre-election (5 papers), election (7 papers) and post-election years (2 papers); and mayor majority/minority (5 papers).

The incumbents may use their intelligence and strategic position to influence the budget. With the more competitive political environment, they may become more responsive to the needs of voters, providing various populist programs, including social assistance and grants, to attract sympathy and win constituency elections. The provision of these various programs is often vulnerable to budget manipulation. Aidt, F. J. Veiga, and Veiga (2011) stated that incumbents facing tight elections tend to manipulate the budget to be re-elected. They try to appear popular by overestimating the performance by manipulating budget projections (Mayper et al., 1991). This is indicated by overspending on programs that positively impact incumbent popularity (Boukari & Veiga, 2018).

4.2.1 Political ideology

As a proxy variable for political ideology, dummy variables were used for left-wing or right-wing governments. Bohn and Veiga (2021) found weak proof that left-wing mayors are less opportunistic in total and capital revenues. Left-wing incumbents tend to overestimate deviations in expenditures and revenues (I. Lago-Peñas & Lago-Peñas, 2008) and participate more actively in the period of budget execution. The higher caution of left-wing LGs during budget execution and planning contradicts earlier assumptions that left-wing political parties are often anticipated to prefer expenditure, and revenue overestimation may provide space for bigger expenditures (Anessi-Pessina & Sicilia, 2015). Right-wing governments typically overestimate expenditures (Cuadrado-Ballesteros et al., 2022; Guillamón et al., 2024; Ríos et al., 2018) and revenues (Cuadrado-Ballesteros et al., 2022). If conservative (right-wing) governments overestimate revenues, this suggests that progressive LGs frequently underestimate, refuting the idea that conservative LGs aim to achieve relatively small LG (Lee & Kwak, 2020). In other research, ideology does not seem significant for budget credibility (Benito et al., 2015; Boukari & Veiga, 2018; Jorge et al., 2023).

A left-wing incumbent must reduce budget deficits and generate more conservative forecasts than a right-wing one to make up for the signal that was passed negatively by their ideology to the voters and to be perceived by them as at least capable.

4.2.2 Political competition

According to the partisan hypothesis, ideological factors influence political decisions (Hibbs, 1977). It is customary for left-wing administrations to implement more expansive programs than those led by right-wing rulers. They could thus be inclined to generate shortfalls. Heinemann (2006) proposes that the LG may employ financial predictions as a tactical instrument to sway budgeting procedures in accordance with its ideological perspective on the government's future. A left-wing administration intentionally presents a positive image of public finances to justify the growth of the public sector. It may do this to persuade the general public that funding for a current expansion is feasible. To push for budgetary cuts, a right-wing administration with opposing views would paint an especially dire image of the fiscal future.

As a proxy variable for political competition, Herfindahl and Rae indices, number of political parties in the local council, number of departments in LGs, a dummy variable for strength, and political disagreement were used. Weak LGs tend to underestimate their current expenditures and tax revenues, collecting and spending more than they projected (Guillamón et al., 2024; Ríos et al., 2018). Czech LGs with more fragmented local councils (more local parties) approve more optimistic tax revenue forecasts (Sedmihradská & Čabla, 2013). Given that the inability of different coalition parties to come to an agreement is linked to a higher tendency to overestimate revenue because it enables LGs fragmentation will delay decisions about budget consolidation, fragmented governments typically predict revenues more optimistically than most LGs do (Goeminne et al., 2008). Compared to single- or two-party LGs, Flemish LGs with at least three parties are substantially more cautious (or less optimistic) in their revenue estimates (Goeminne et al., 2008). According to Siregar and Susanti (2019), the more departments in LGs there are, the more complex the budget preparation is. Many departments in LGs show a variety of demands and components of revenues and expenditures. If the quantity of departments in LGs differs, it will be more challenging to determine revenue and expenditure targets, and it is challenging to organise the process of creating and compiling budgets across departments in LGs, finally resulting in budget deviations.

In other research, competition does not seem significant for accurate budget planning (Anessi-Pessina & Sicilia, 2015; Benito et al., 2015; Cuadrado-Ballesteros et al., 2022).

4.2.3 Election cycles

Political economics claims that current politicians influence budgetary policy to raise the chances of re-election, i.e., the political budget cycles – PBC (Dubois,

2016). There are certainly information gaps between the public and the government about the budgetary future, resulting in room for the administration to mislead voters. Indeed, politicians can intentionally distort fiscal estimates due to the lack of openness in the financial process. Therefore, there may be motivations for politicians to be optimistic or pessimistic (Goeminne et al., 2008). First, overestimating revenue leads to optimism, which enables governments to meet balanced budget requirements or expand services without immediately raising taxes.

Furthermore, optimistic revenue projections are less politically damaging than tax rises regarding possible vote losses. In addition to demonstrating that careful management produces year-end operational savings, underestimating revenue may act as a buffer against unforeseen expenses or revenue shortfalls (Benito et al., 2015). Preceding an election, a remarkably upbeat estimate of the fiscal future is expected, usually resulting in a budget deficit. In years when there are no elections, governments would seek to record compensatory surpluses. More optimism is projected in election years since votes are lost due to tax increases and spending cutbacks (Larkey & Smith, 1989). According to L. G. Veiga and Veiga (2007) and Aidt et al. (2011), voters might not completely internalise the consequences of deficits resulting based on the opportunistic budget estimates. They may even favour opportunism at the elections.

Boukari and Veiga (2018) found that French departments underestimate expenditures in pre-election years while revenue forecasts stay mainly conservative. Portuguese municipalities opportunistically overestimate revenues (total, current, and direct taxes) and expenditures in pre-election years and capital expenditures in election years.

When local elections are held is essential. The PBC is more than just a cyclical trend in expenditures, it applies to budget overruns. Politicians find it difficult to turn down further funding when the election is near. Overspending is especially high in the pre-election and election years, while budgets are more successfully executed when the election is far off. Overspending is extremely restricted for roads and libraries, while it is significant for the elderly, schools, and child care (Serritzlew, 2005).

4.2.4 Pre-election years

Politicians use opportunistic tactics to reduce tax collection and raise public expenditures in pre-election years in order to increase their popularity and chances of winning re-election (Guillamón et al., 2024; Ríos et al., 2018). According to Benito et al. (2015), odds for re-election could improve in pre-election years by underestimating the revenue. French departments underestimate expenditures in pre-election years, while Portuguese municipalities overestimate revenues (total,

current, and direct taxes), and there is some tendency to overestimate expenditures (Boukari & Veiga, 2018). In research by Anessi-Pessina and Sicilia (2015), the pre-election year was insignificant.

4.2.5 Election years

Executives are opportunistic, over-budgeting revenues to offset expenditures in order to increase the chances of winning re-election (Jorge et al., 2023). These odds can be raised by overestimating revenues in the election year (Benito et al., 2015). Deviations in deficits are higher in election years (I. Lago-Peñas & Lago-Peñas, 2008). In election years, LGs strategically overestimate revenue and underestimate expenditure (Boukari & Veiga, 2018). Projections are more optimistic in election years (Sedmihradská & Čabla, 2013). More optimistic projections in the election year of total revenues (excluding loans) appear to be primarily driven by cycles in capital revenue projections (Bohn & Veiga, 2021). Election year was insignificant in Goeminne et al. (2008).

4.2.6 Post-election years

Benito et al. (2015) found that capital expenditures are overestimated in post-election years while current expenditures are underestimated.

4.2.7 Mayor minority and majority

Majority executives seem more likely than minority executives to overestimate (Jorge et al., 2023). BDs in deficit are greater in the instance of minority and fragmented mayors (I. Lago-Peñas & Lago-Peñas, 2008), BDs in non-financial revenues are overestimated in the case of single-party majority mayors then are more cautions in revenue forecasts. The majority of the mayors were insignificant regarding budget credibility in Bohn and Veiga (2021) and Boukari and Veiga (2018).

4.2.8 Political alignment

The political alignment of municipalities with higher level governments had no impact on BDs and was non-significant in any of the analysed papers (e.g., Benito et al., 2015; Bohn & Veiga, 2021; Boukari & Veiga, 2018; Serritzlew, 2005).

4.2.9 Winning margin

The winning margin is the margin of victory for the incumbent party relative to the largest opposition party. Boukari and Veiga (2018) showed a higher underestimation in capital and total expenditures and in total revenues when the

winning margin is higher, while in Bohn and Veiga (2021), the winning margin seems unnecessary for accurate budget planning.

4.2.10 Mayor runs for re-election

The connection between electoral rivalry and the motivation to create PBC is examined theoretically and empirically (Aidt et al., 2011). By extending the Rogoff (1990) model, they demonstrate that the incumbent has a greater motivation to influence budget policy in order to electoral benefit when a tight election contest is anticipated, increasing the opportunistic distortion. Budget forecasting is impacted by opportunistic behaviour, which produces skewed budgets. Since they can target key voters or interest groups to win support and votes, higher spending and/or lower taxes boost the incumbent's popularity. They can also lead to temporary increases in output and employment. Hence, in election years, incumbents could prefer to inflate their budgets.

Mayors run for re-elections have not reached significance on budget credibility in any research paper before (e.g., Boukari & Veiga, 2018; Bohn & Veiga, 2021).

4.2.11 Female mayor

According to Cuadrado-Ballesteros et al. (2022), LGs with a female mayor tend to overestimate tax revenues than those with a male mayor.

4.2.12 Female councillors

There is a U-shaped link between the number of female councillors and expenditure deviations, as LGs with a higher proportion of women councillors are more likely to overestimate their tax revenues than those with a smaller proportion of women councillors. (Cuadrado-Ballesteros et al., 2022).

According to previous literature, the main political determinants are political ideology, political competition, pre-election, election and post-election years, mayor majority, winning margin, female mayor and female councillors. It can be concluded that LGs with a left-wing government, in post-election years, with a female mayor and more female councillors are less subject to overestimating and underestimating revenues and expenditures. Furthermore, in pre-election and election years, LGs with lower political competition, a major majority, and a higher winning margin are more prone to overestimate and underestimate revenue and expenditures.

5 Conclusions

While the literature on budget credibility is mostly focused on national, provincial and regional levels of government, the literature on the local level (cities and municipalities) is rather scarce. This article reviews 14 empirical studies on economic and political determinants of budget credibility, i.e., deviations of revenues and expenditures in enacted budgets from executed budgets on LG levels. Particular contributions of this paper are the classification of economic and political determinants of budget credibility at the local level, i.e. the systematisation of economic and political determinants and their measures for each article. The main economic determinants, according to previous literature, are population, income, own revenues, tax revenues, budget balance, unemployment and transfers. From existing research and analysed papers, it can be concluded that LGs with greater population, as well as higher income, own revenues, tax revenues, level of budget balance and transfers, are less prone to overestimate and underestimate revenue and expenditures. Furthermore, LGs with lower unemployment rates are less prone to overestimate and underestimate revenue and expenditures. The main political determinants, according to the previous analysed literature, are political ideology, political competition, pre-election, election and post-election years, mayor majority, winning margin, female mayor and female councillors. According to those pieces of research and published papers, it can be concluded that LGs with a left-wing government, in post-election years, with a female mayor and more female councillors are less prone to overestimate and underestimate revenues and expenditures. Furthermore, in pre-election and election years, LGs with lower political competition, with a major majority and higher winning margin are more prone to overestimate and underestimate revenue and expenditures. Interaction variables are not the subject of this article.

Preferably, we think that the main economic determinants are population, residence income, own revenues, budget balance and unemployment rate. At the same time, the main political determinants are political ideology, political competition, pre-election and election years, and women's political representation in local councils. Using determinants in future research would depend on the availability of them at the local government level. Future research on this subject may wish to prolong the observation time or do systematic reviews and meta-analyses, as this study primarily focuses on online disclosure. Future research might analyse determinants of budget credibility at different levels and countries. A possible limitation of this article is that it does not include research papers analysing regional, state, and national levels of government. This omission is because this article is supposed to help find possible determinants that could affect budget deviations on the local level (cities and municipalities) for different countries.

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Notes:

[1] In the theory, subnational (intermediary) government usually refers to all government levels below the national level, such as local, regional, state, and provincial. Moreover, the term local government refers to municipalities (somewhere communes) and cities while, depending on the territorial organisation of the country, regional level could be mostly consisted of counties, districts and provinces.

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