

# Territorial inequalities in the funding of education and health policies in Spain and Brazil

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The article compares the patterns and territorial inequalities in the funding of two social policies that are pillars of the welfare state and present a high degree of territorial decentralization in Spain and Brazil: education and health. The analysis uses specialist literature, national legislation and government documents to describe the policies and their financing mechanisms. Fiscal data are used to analyze subnational government inequalities in the funding of education and health in both countries. The conclusion is that the Spanish experience has significantly leveled spending on health and education between the autonomous communities of common regime, with lower levels of inequality than those observed in Brazilian states and municipalities. The Spanish result derives from an incremental process of improvement of the country's fiscal federalism, which culminated in a model marked by prioritization and territorial solidarity in the funding of social policies. This model is reference for the analysis and discussion of the Brazilian case, which has configured its fiscal federalism with little concern for reconciling efficiency and equity in the distribution of resources between subnational governments, but which has presented important advances in the reforms of education and health funding.

**Keywords:** fiscal federalism; social policies; territorial inequalities; Spain; Brazil.

## Desigualdades territoriais no financiamento das políticas de educação e de saúde na Espanha e no Brasil

O presente artigo compara os modelos e as desigualdades territoriais no financiamento de duas políticas sociais pilares do estado de bem-estar social e com alto grau de descentralização territorial na Espanha e no Brasil: educação e saúde. A análise utiliza bibliografia especializada, legislação nacional e documentos governamentais para descrever as políticas e seus mecanismos de financiamento. Dados fiscais são usados para apresentar os gastos e analisar as desigualdades dos governos subnacionais no financiamento da educação e da saúde nos dois países. A conclusão é que a experiência espanhola apresenta elevado nivelamento de gastos em saúde e educação nas comunidades autônomas do regime comum, com patamares menores de desigualdade que o observado nos estados e municípios brasileiros. O resultado espanhol é decorrente de um processo incremental de aperfeiçoamento do federalismo fiscal, que culminou em um modelo marcado pela priorização e solidariedade territorial no financiamento das políticas sociais. Esse modelo é uma referência para a análise e discussão do caso brasileiro, que configurou seu federalismo fiscal com pouca preocupação em conciliar eficiência e equidade na distribuição dos recursos entre os entes governamentais, mas apresentou avanços importantes em reformas no financiamento da educação e da saúde.

**Palavras-chave:** federalismo fiscal; políticas sociais; desigualdades territoriais; Espanha; Brasil.

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## Desigualdades territoriales en la financiación de las políticas de educación y sanidad en España y Brasil

El artículo compara los modelos y las desigualdades territoriales en la financiación de dos políticas sociales que son pilares del estado de bienestar y con un alto grado de descentralización territorial en España y Brasil: la educación y la sanidad. El análisis utiliza literatura especializada, legislación nacional y documentos gubernamentales para describir las políticas y sus mecanismos de financiación. Los datos fiscales se utilizan para analizar las desigualdades de los gobiernos subnacionales en la financiación de la educación y la sanidad en ambos países. La conclusión es que la experiencia española muestra una alta nivelación del gasto en salud y educación en las comunidades autónomas de régimen común, con niveles de desigualdad inferiores a los observados para los estados y municipios brasileños. El resultado español es fruto de un proceso de mejora y perfeccionamiento del federalismo fiscal que culminó en un modelo marcado por la priorización y la solidaridad territorial en la financiación de las políticas sociales. Este modelo es una referencia para el análisis y la discusión del caso brasileño, que ha configurado su federalismo fiscal con poca preocupación por conciliar la eficiencia y la equidad en la distribución de los recursos entre las entidades gubernamentales, pero que ha presentado importantes avances en las reformas de la financiación de la educación y la sanidad.

**Palabras clave:** federalismo fiscal; políticas sociales; desigualdades territoriales; España; Brasil.

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## 1. INTRODUCTION

Brazil and Spain abandoned the authoritarian centralism in the third wave of democratization of the 1970s and 1980s (Huntington, 1994) and associated to the democratization process initiatives towards territorial decentralization and advances in the welfare state. However, they present different legacies, socioeconomic scenarios and institutional arrangements.

The Brazilian economy ranked seventh in Purchasing Power Parity (PPP) GDP at current prices, while the Spanish economy was ranked 16<sup>th</sup> in 2018 (Fundo Monetário Internacional [FMI], 2021a). Brazil's GDP per capita in PPP was US\$ 15,090.65 in 2018, while Spain's was US\$ 41,389.42 (FMI, 2012b). In the 2018 Human Development Index (IDH) ranking, Spain enjoyed a “very high human development”, occupying the 25<sup>th</sup> position with a 0.893 score, while Brazil was situated in the “high development” group, occupying the 79<sup>th</sup> position, with 0.761 point (United Nations Development Programme [UNDP], 2020). In terms of family income inequality, measured by the Gini coefficient, in 2018 Spain had a 0.347 index, above the EU's average and below the Brazilian score of 0.539, one of the leading positions in inequality worldwide (Banco Mundial, 2022).

The data indicate that the goal of advance in social welfare, present in the two constitutions, i.e., the Spanish Constitution of 1978 (CE/78) and the Constitution of the Federative Republic of Brazil of 1988 (CF/1988), implies greater challenges to the Brazilian democracy. In Brazil, the advance

involves more reforms in the funding of social policies, something Spain has been able to advance consistently and with positive outcomes.

The aim of this article is to compare the models of funding for education and health policies, configured as universal and with a high degree of decentralization both in Spain and Brazil, as well as their outcomes in terms of inequality in subnational spending. There are two questions of interest: how is the funding of education and health structured, and how unequal is it at the subnational government level? Which aspects of the Spanish experience can provide a reference for reforms in the Brazilian fiscal federalism towards greater equity?

The research used national legislation, academic literature and governmental documents to present the policy designs, with an emphasis on the distribution of competences and the funding models. The quantitative part employed fiscal indicators to characterize the subnational inequalities in spending on education and health policies, based on the Gini and variance coefficients. The comparison was carried out between the subnational government levels that manage the execution and funding of education and health policies: the Spanish autonomous communities (ACs) and the Brazilian states and municipalities.

The results show that Spain presented smaller inequalities in the funding of education and health policies among the autonomous communities because it established a model of intergovernmental transfers (IGTs) that prioritizes social policies and intergovernmental solidarity. Brazil, though presenting greater inequalities and a general IGTs system with little redistribution, had a positive equalization trajectory based on national reforms that established minimum spending levels and redistribution mechanisms for funding basic education and health.

The article is organized into three sections besides the introduction and the conclusions. The second section summarizes the literature about fiscal federalism and territorial inequalities in the execution of public policies. The third section presents the territorial fiscal inequalities and the institutional design of intergovernmental transfers for education and health in Spain and Brazil. The fourth section shows the subnational inequalities in the funding of education and health policies in both countries. The conclusions discuss the findings about both funding models and the social spending inequalities.

## 2. THEORETICAL FOUNDATION: FISCAL FEDERALISM AND TERRITORIAL INEQUALITIES

Fiscal federalism can be understood as the distribution of fiscal competences, resources and spending among the government levels in a decentralized political system. This involves “the regulatory structure of subnational finance” (Rodden, 2005). A subnational government can have a major participation in public revenues and spending and yet be strongly constrained by national legislation in the execution of its spending. Therefore, a subnational government’s degree of autonomy depends on its participation in tax generation, total available revenues, spending, and tax and spending regulation authority, which results in different levels of fiscal decentralization between countries.

The effects of fiscal decentralization on governments and public policies are a classic subject of the literature of political economy which has expanded into other knowledge fields. More recent studies in economics and in the multidisciplinary field of public administration discuss the effects of decentralization models over time according to empirical experiences and comparative analyses. From

the perspective of these studies, the effects of territorial decentralization on public policies and welfare depend on the decentralization model adopted and the context where it develops (Barrios-Suvelza, 2019; Organização para a Cooperação e Desenvolvimento Econômico [OCDE], 2021; Tanzi, 2008).

In general, and for the purposes of this article, the debate can be divided into two strands of authors: those concerned with efficiency (Musgrave, 1983; Oates, 1972; Tiebout, 1956) and those concerned with social equity (Boadway, 2006; Dafflon & Vaillancout, 2003; Obinger, Leibfried, & Castles, 2005; Pierson, 1995).

Those who seek to associate federalism with public spending efficiency emphasize the benefits of fiscal decentralization in bringing governments and citizens closer together and promoting intergovernmental competition, which is supposed to enable higher quality and smaller costs in the provision of public policies. One of the assumptions is that citizens behave in the public sector in a similar way to the market, which means they choose to live in locations where public policies are more efficient, i.e., those with the best combination of revenues and spending. This is called “voting with one’s feet” in Tiebout’s (1956) theory. However, choosing between locations suffers from the anomalies found in the market, such as information asymmetry, besides being a decision driven by factors such as community bonding, family ties and employability.

From the point of view of equity, this can be advocated as an end in itself, i.e., the citizens of a country should pay taxes fairly, according to their income and wealth, and have access to public goods and services which allow them to live with dignity. The defense of a welfare state points to the importance of reconciling equity and efficiency, an interaction that can be positive when, for example, decreasing social inequalities enables economic development, and the case of public education is the most recalled in this respect. In some situations, however, increasing equity may imply a loss of efficiency. One such case is when intergovernmental transfers (IGTs) encourage the misuse of public resources by governments which did not collect the resources, something more recurrent when IGTs are unconditioned or scarcely regulated. How to discern these situations and address them?

First, it is necessary to break with traditional studies’ simplification of the analysis of territorial decentralization and understand that it is “neither good nor bad for efficiency, equity or macroeconomic stability; and its effects depend on specific institutional designs” (Litvack, Ahmad, & Bird, 1998, p. vii). Second, advancing on empirical and comparative analyses allows identifying institutional models which are more appropriate for reconciling efficiency and equity in the provision of public policies.

This article intends to contribute in this direction by analyzing the intergovernmental transfer models and the education and health spending inequalities of the subnational government levels of two countries. In the literature, the starting point to understand horizontal funding inequalities in public policies are the differences of fiscal capacity between governments at the same level (autonomous communities, states, municipalities, and others) and their public policy spending needs (Rezende, 2010, pp. 73-74). These inequalities are mainly the result of territorial socioeconomic discrepancies and spending needs defined by population size and characteristics. Territorial characteristics therefore cause “poorer territories to have a smaller fiscal capacity to cover their spending needs, or services can be more costly to provide in some territories (thereby increasing their spending needs)” (León, 2015, p. 109).

The equity-centered perspective should consider the need for some vertical fiscal balance to bring the levying closer to the spending, i.e., tax decentralization that promotes shared fiscal responsibility, endowing each government level with own resources to fund their spending, which builds transparency and efficiency. The problem is that vertical fiscal balance is a distant reality in most countries due to inequalities in the fiscal capacity, potential or effective, of subnational governments to collect taxes in order to fund their spending needs. Thus, to a greater or lesser degree, depending on the territorial socioeconomic discrepancies, central governments play a key role in designing a funding system that provides resources for territories with a smaller fiscal capacity. The main mechanism to correct horizontal inequalities are intergovernmental transfers.

Intergovernmental transfers can ensure subnational governments a more equitable policy funding capacity so they can meet their spending needs. This should be done by reconciling equity and efficiency goals, a complex task as it involves conflicts of interest between richer territories, which demand greater tax autonomy, and poorer territories, which seek greater transfers from other governments<sup>1</sup>. According to Boadway (2006), the main challenge is to obtain a transfer design, on technical and political bases, which maximizes social equality without losing sight of efficiency in public resource allocation, which means offering a range of public goods and services according to citizens' preferences.

The conclusion is that countries with a decentralized provision of public policies present different degrees of economic development throughout their territory, and the perspective of a wide welfare state involves a fiscal federalism where inequalities in wealth production do not translate into inequalities in citizens' living conditions. To this end, the central government must define rules for the distribution of resources and spending between the subnational governments so as to provide universal and equal access to social policies like education and health. Intergovernmental transfers play a key role in promoting greater equity in social policy funding.

### **3. INTERGOVERNMENTAL TRANSFERS AND THE FUNDING OF EDUCATION AND HEALTH IN SPAIN AND BRAZIL**

This section presents the design and funding models for education and health policies in Spain and Brazil. The main information sources were the constitutions of both countries and national legislations, especially the Spanish organic laws and Brazilian complementary laws. Both countries maintain web portals for legislation reference<sup>2</sup>. The presented fiscal data are from international institutions and governmental agencies.

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<sup>1</sup> Besides efficient allocation in public policy, another argument for the concentration of resources in richer territories, founded on fiscal decentralization, is that it promotes greater regional development and can generate spillovers effects, which end up benefitting the poorer territories.

<sup>2</sup> Spain: Agencia Estatal Boletín Oficial del Estado. Retrieved from <https://www.boe.es/buscar/legislacion.php>  
Brazil: Portal da Legislação. Retrieved from <http://www4.planalto.gov.br/legislacao/>

### 3.1. Tax collection and intergovernmental transfers

Spain defines itself as an autonomous state, rather than a federation, although it presents characteristics of latter form of state. The Spanish Constitution of 1978 establishes: “The State is organised territorially into municipalities, provinces and Autonomous Communities that may be constituted. All these bodies shall enjoy self-government for the management of their respective interests” (art. 137, translated). The municipalities and provinces compose the local government, and the autonomous communities compose the regional governments.

Brazil emphasizes its federal condition in the title of its supreme law, the Constitution of the Federative Republic of Brazil of 1988, and establishes in its first article: “The Federative Republic of Brazil, formed by the permanent union of the states, the municipalities, and the Federal District, is a democratic State ruled by the law.”

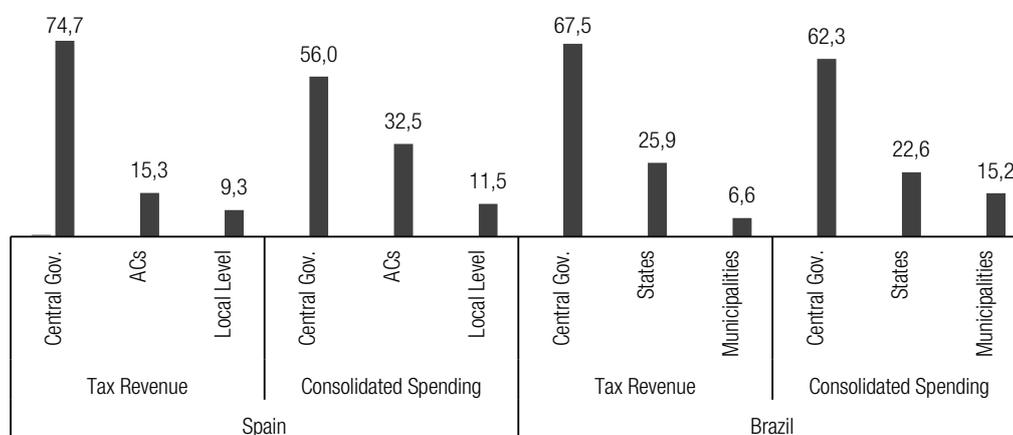
In terms of economic inequality between the regional government levels, Brazil is more unequal than Spain. In 2018, for the GDP per capita in PPP, the 17 autonomous communities (ACs) presented Gini and variance coefficients of 0.114 and 0.20, respectively (Instituto Nacional de Estadística [INE], 2019). These values correspond to half of the 0.223 and 0.40 observed between the 26 Brazilian states (Instituto Brasileiro de Geografia e Estatística [IBGE], 2019). The volume of tax revenues and the way they are distributed among the subnational governments could correct economic-based financial inequalities.

The tax burdens of Spain and Brazil in 2018 were 34.4% and 33.3% of their GDPs, respectively, similar to the OCDE’s average (34.5%), below the EU’s (a mean of 41.2% for the 27 members), and above the 23.1% mean for Latin America and the Caribbean (Receita Federal, 2020).

The participation of governments in tax collection and expenditures, according to Graph 1, shows a greater centralization of collection in the Spanish case (74.7% against 67.5%) and a greater spending centralization in the Brazilian case (62.3% against 56%). Brazilian states collect more than the ACs (25.9% against 15.3%) and spend less (22.6% against 32.5%). Brazilian municipalities collect less than the Spanish local level (6.6% against 9.3%) and spend more (15.2% against 11.5%).

The difference between revenues and spending results mainly from intergovernmental transfers, which are more significant in the funding of ACs, the governments that manage education, health and social services policies. In the Brazilian case, they benefit municipalities more, with municipalities and states sharing the execution of social policies.

**GRAPH 1 REVENUES AND SPENDING BY GOVERNMENT LEVEL (2018)**



Source: Spain: OECD (2022). Brazil: Receita Federal (2020) for revenues; Secretaria do Tesouro Nacional (STN, 2020) for spending.

The tax burden and the concentration of revenues and fiscal regulation authority at the central government level indicate favorable conditions in both countries for advances in social welfare for all national citizens. However, the design of intergovernmental transfers matters, and the differences between the two cases affect equity in social policy funding.

The funding design of Spain's autonomous communities presents two models: the common regime, which applies to 15 communities, and the foral regime, specific to the Basque Country and Navarra communities. The foral regime was established in 1982, in the first additional provision to the CE/78, with the justification of preserving historical autonomy rights. It ensures significant fiscal autonomy for both communities, which present their own tax systems and use their resources freely, being only obliged to transfer to the central government a small amount of resources as compensation for national spending incurred for general benefit. Because they are rich, the result is "an amount per inhabitant considerably greater than those of the other autonomous communities" (León, 2015; Onrubia & Ruiz-Huerta, 2019). This feature of the Spanish fiscal federalism is a departure from the principle of territorial solidarity and equity expressed in the CE/78 and in effect for the common regime.

The common regime's autonomous funding is in the scope of the central government's jurisdiction, and it has been incrementally established. The Organic Law n. 8/1980 (*Ley de Financiación de las Comunidades Autónomas – LOFCA*) provides for periodical reforms in this system, which resulted in five models in effect in the periods from 1987 to 1991; from 1992 to 1996; from 1997 to 2001; from 2002 to 2008; and from 2009 to the present.

The last reform (Organic Law n. 3/2009) reinforced tax decentralization, bringing revenues and spending closer together to ensure greater transparency and efficiency. From the perspective of equality, the main innovation was the Fund for the Guarantee of Fundamental Public Services (Fondo de Garantía de Servicios Públicos Fundamentales – FGSPF), which equalizes horizontally the resources available to the ACs of the common regime for spending needs in health, education and social services.

The guarantee fund is the main intergovernmental transfer mechanism, but there are other transfers with different purposes, rules and redistributive effects which have been criticized for increasing complexity while decreasing equity. The Global Sufficiency Fund (FGS) considers the resources available to the 15 communities, after the distribution of the guarantee fund, and its aim is to level the spending needs for all communities of common regime. In practice, the result is not the leveling, but some recovery from losses the FGSPF causes to the richer communities. The Convergence Funds (FC), funded by the central administration, are subdivided into: Cooperation Fund, for regions with lower income, population density or population growth levels; and the Competitiveness Fund, for communities that fail to reach the national resource mean, considering their fiscal capacity.

In Brazil, the main intergovernmental transfers are defined in the CF/88. The initial purpose was to decentralize resources for the states and particularly for municipalities, with little concern for correcting vertical or horizontal federation imbalances (Rezende, 2010). The bulk of transfers is carried out from the states to municipalities and corresponds to 25% of the Tax on the Movement of Goods and Services (Imposto sobre Circulação de Mercadorias e Serviços - ICMS) (CF/88, art. 158). This tax, the one with the biggest revenues in the country, is indirect, and its transfer is unconditional and predominantly for devolution: 75% are transferred as a devolution to municipalities of part of the amount the state levied in their bases.

The main transfer to states and the second biggest made to municipalities come from the Union.

Article 159 of the CF/88 establishes that 49% of the income tax and earnings of any nature (Imposto de Renda - IR) and Tax on Industrialized Products (Imposto sobre Produtos Industrializados - IPI), the two biggest national taxes, are destined to subnational governments, with 21.5% for the Federal District and States Participation Fund (Fundo de Participação do Estados - FPE), 24.5% for the Municipalities Participation Fund (Fundo de Participação dos Municípios - FPM) and 3% for the North, Northeast and Central-West Regions. The funds are unconditional and purportedly redistributive. In practice, their ability to correct fiscal inequalities is low. The starting point to define the fund participation coefficients is larger population and smaller per capita income. According to Medes, Miranda, and Cosio (2008), the small redistributive effects are owing to various aspects, among which: coefficients by fixed population groups, inclusion of the Central-West Region in the regional distribution, and the allocation of 86.5% of FPM resources to non-capital municipalities, privileging those with the smallest populations, though not necessarily the poorest.

Reforms in the Brazilian fiscal federalism have occurred since the Constitution's enactment. In most cases, they were isolated and dictated by the circumstances, more focused on increasing revenues and curbing spending than on territorial equity and efficiency. However, there have been national reforms in the funding of education and health policies that have provided more resources and better territorial equalization. The transfers made through the Fund for the Maintenance and Development of Basic Education and Valuing of Education Professionals (Fundo de Manutenção e Desenvolvimento da Educação Básica e de Valorização dos Profissionais da Educação - Fundeb) and in the sphere of the Brazilian National Health System (Sistema Único de Saúde - SUS) presented redistribution outcomes, according to the studies of Baião, Cunha, and Souza (2017) and Mendes et al. (2008).

### 3.2. Basic education design and funding

Basic Education is a social right guaranteed by the constitutions of the two countries. In Spain, compulsory and free education comprehends 10 years, divided into two levels: primary, for students aged 6-12; and secondary, for students aged 12-16 (Ministerio de Educación y Formación Profesional [MEFP], 2022<sup>3</sup>). In Brazil, basic education has three levels, totaling at least 14 years of compulsory free schooling: preschool, from 4 to 5 years of age; primary education, for students aged 6-14; and secondary education, from 15 to 17 years of age (Emenda Constitucional nº 59/2009). In both countries, spending is concentrated in the subnational levels, but there are differences in the amount of resources, funding models and territorial equalization outcomes.

The decentralization of education towards the autonomous communities was gradual, beginning in the 1980s and concluding in 2002. The ACs have autonomy to define and execute policy according to their statutes, but they are constrained by central government coordination, which defines the right to education, the education system's general organization, the curriculum framework, academic and professional qualifications, the system's control and evaluation, among others (Lei Orgânica nº 3/2020, art. 6 bis).

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<sup>3</sup> Non-tertiary education also includes early childhood education, from 0 to 6 years of age, and bacharelado, for the 16-18 age group, which is optional and of a more specialist nature. The provision of both is public and free, but they are not mandatory.

The Brazilian basic education is decentralized since the 19<sup>th</sup> century, but it is in the present constitutional order that universal, free access to education expanded and that municipalities increased their participation in the provision of this policy. The CF/88 established that “the Union, the states, the Federal District and the municipalities will organize, in collaboration, their education systems” (art. 211). It is for the Union to define “national education guidelines and framework” (art. 22) and redistribute and supplement funding for its subnational government levels (art. 211). It is chiefly the municipalities’ responsibility to provide primary and early childhood education; and chiefly the states’ and Federal District’s responsibility to provide primary and secondary education (art. 211).

Spain and Brazil have positive trajectories of spending on education in the democracy period: the former raised it from 2.2% of the GDP in 1978 to 4.2% in 2018; the latter, from 4.6% of its GDP in 1995 to 6.1% in 2018. In percentage of total public spending, in 2015, Spain committed 9.8%, and Brazil, 16.2% (Banco Mundial, 2022).

Education spending totals are more decentralized in Spain, where in 2018 the central government participated with 4%, the autonomous communities with 90% and local administrations with 5.5% (MEFP, 2020). In Brazil, the spending distribution is more balanced: the central government participates with 28.7% and the subnational governments with 71.3%, distributed between the states and the Federal District (30.7%) and municipalities (40.6%) (Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira [INEP], 2020, p. 413).

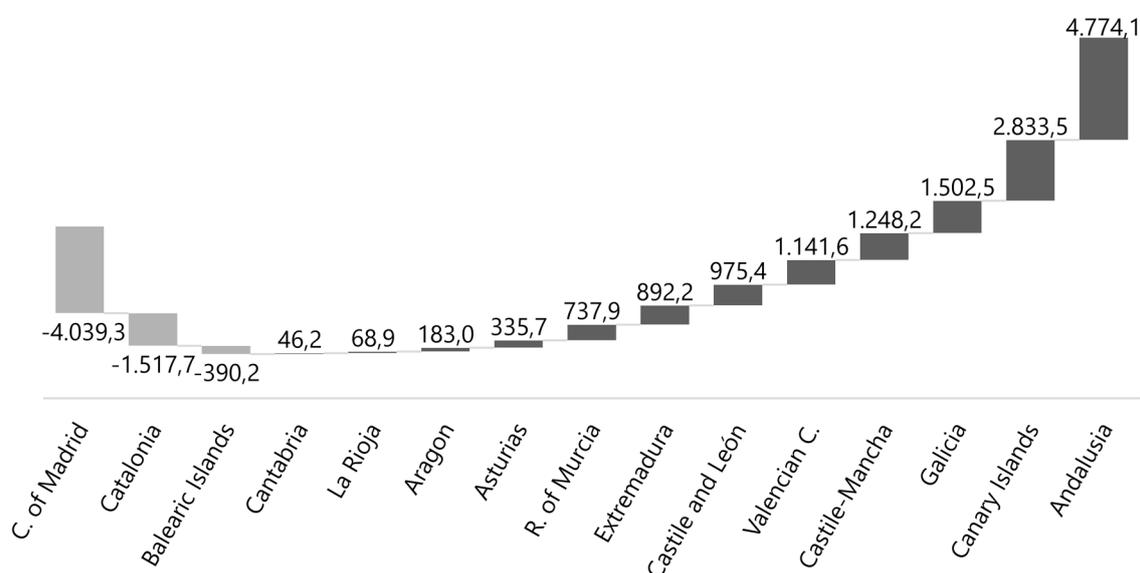
The decentralization of spending preceded that of revenues in the funding of Spanish education, which was adjusted by the national reforms on autonomous funding. As of 2009, the Fund for the Guarantee of Fundamental Public Services (FGSPF) became the main source of funding of compulsory education for the 15 communities of common regime.

The FGSPF is allocated to the funding of education, health and social services policies, and is composed of 75% of normative tax revenues<sup>4</sup> from the 15 common regime communities and of complements from the central administration. The resources are distributed using a formula that calculates the spending needs of each community based on its adjusted population.

Population size has a greater weight on the coefficient of participation in resources but is weighted by variables that seek to estimate spending needs, among which: the size of the population aged 0-16 years as the indicator of greater education spending need, and the size of the population aged 65 or more, which indicates greater health spending need. The result, as shown in Graph 2, are horizontal intergovernmental transfers from the richer to the poorer communities. By the fund’s rules, “communities whose needs exceed 75% of their revenues receive the necessary funds to support fundamental services, while those with resources exceeding their essential service needs make transfers to the former (negative transfers). With this instrument, the horizontal leveling between richer and poorer communities became clearer” (Onrubia & Ruiz-Huerta, 2019, p. 86).

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<sup>4</sup> The calculation of normative tax revenues considers what would be levied based on ACs’ fiscal competences (personal income tax [IRPF], Value-Added Tax [IVA] and special consumption taxes). The aim is to avoid opportunistic behavior, such as fiscal subsidies, which would impact the fund’s total resources.

**GRAPH 2** DISTRIBUTION OF FGSPF IN MILLION EUROS (2018)

Source: Ministerio de Hacienda (2020).

The Brazilian basic education was funded by resources from intergovernmental transfers with little redistribution effect until the mid-1990s. A new funding model was progressively designed based on the Constitution and has enabled improvements in territorial prioritization and equity. The CF/1988 set minimum annual spending levels: at least 18% for the Union and 25% for the states, the Federal Districts and the municipalities from tax revenues and intergovernmental transfers (art. 212). This allowed for an increase in education spending, though unequally.

Two constitutional amendments promoted advances in equity: Constitutional Amendment n. 14/1996, which created the Fund for the Maintenance and Development of Basic Education and Valuing of Teachers (Fundo de Manutenção do Ensino Fundamental e Valorização do Magistério - Fundef) and established 27 accounting funds (in 26 states and the Federal District) for the funding of primary education. Each fund should receive at least 15% from tax revenues and transfers received by the state and its respective municipalities, in addition to complements from the Union to the funds with less resources. The distribution of resources, in the sphere of each state (fund), was made according to the number of students served by the state and municipal education systems.

The Constitutional Amendment n. 53/2006 created the Fund for the Maintenance and Development of Basic Education and Valuing of Education Professionals (Fundeb), which substituted the Fundef. The structure of funds at the state and Federal District level was kept, but the volume of resources increased, and more education levels were included: 20% of state and municipal revenues were to be transferred to the fund for allocation to early childhood, primary and secondary education. The distribution is made according to the number of students enrolled in the state and municipalities, and some funds receive resources from the central government to reach a minimum annual spending per student according to national legislation.

### 3.3. Health design and funding

Problems of unity, funding and inequality in the provision of health services prevailed in Spain until a universal system was established whose guidelines are in the CF/78. The Constitution recognizes the universal right to education and the government's duty to "organize and oversee public health through prevention measures and by providing the necessary services" (art. 43). Law n. 14/1986 (Ley General de Sanidad) established the National Health System (Sistema Nacional de Salud), comprising the health systems of the central administration and ACs, which must ensure universal, full and egalitarian coverage for both Spanish citizens and foreign residents.

The decentralization of health services from the central governments to the ACs, as in education, was progressive. Catalonia was the first community to be granted such competences, in July 1981 (Real Decreto nº 1.517), and Castile and León was the last, in December 2001 (Real Decreto nº 1.480). Despite AC's prevalence and autonomy, the legislation reserved for the central government important competences on health policy. The central administration sets the bases and general coordination for health and legislates on pharmaceuticals and external health (CE/78, art. 149, item 16). The ACs design, manage and fund health policies, besides providing the services to the population.

About funding, Law n. 14/1986 emphasizes territorial solidarity by saying that "governments shall guide their health spending policies so as to correct health inequalities and ensure equal access to public health services throughout the Spanish territory" (art. 12). To this end, health care services are to be delivered according to the autonomous funding system in effect at the time (art. 82). As seen earlier, the common regime ACs' current system is established in Organic Law n. 3/2009, which defines the FGSPF as the main funding source.

In Brazil, the return of democracy furthered the emergence of the health reform movement, which advocated a public and universal health system in the constituent process of 1987, as opposed to a privatizing approach advocated by corporate sectors. The result was a dual health system that strengthened the state's action based on a public system with universal aspirations, though without eliminating the guarantees and benefits for private sectors (Menicucci, 2014).

The Federal Constitution of 1988 established health as "a right of all and a responsibility of the state" (art. 196) and that "public health services and actions integrate a regionalized and hierarchical network and constitute a single system". The system's regulation came with Laws n. 8.080 and 8.142 of 1990, which defined the form and functioning of the Brazilian National Health System (SUS).

According to the Constitution and Law n. 8.080/1990, the organization and management of SUS is shared by the three government levels. Among the Union's competences are to participate in the design and implementation of policies; to execute prevention and sanitary and epidemiological surveillance actions; to issue norms on, and oversee both SUS and the private health system, and to provide technical and financial cooperation for subnational governments. It is the for the states to decentralize health actions and services to municipalities; complement the Union's actions; monitor and control the SUS health networks; provide financial support for municipalities, and execute, complementarily, health actions and services. In turn, it is the municipalities' responsibility to plan, manage and execute health policies within their territory, participate in and collaborate with actions of other subnational governments, and issue complementary norms on the health policy within their scope.

Spain and Brazil present similar health spending levels in GDP percentage but differ in per capita spending and public sector participation. In 2018, according to the OECD (2019), Spain's total spending was 8.9% of its GDP, near OECD's average (8.8%), 71% of it being public spending (6.3% of its GDP), which equals OECD's average. In per capita terms, the Spanish spending was 3,323 USD PPP, below OCDE's 3,994 USD PPP. In Brazil, the total spending on health was 9.2% of the GDP in 2018, 43% being public sector's participation (4% of GDP). The per capita spending was 1,282 USD PPP.

Table 1 shows the distribution of spending on health between the subnational governments. Spain presents a significant decentralization in ACs, with a residual participation of the local level. In Brazil, the central government has an important participation in spending, above that of state governments, but it is the municipalities that spend most on health policy.

**TABLE 1 SPENDING ON HEALTH BY GOVERNMENT LEVEL, SPAIN AND BRAZIL (2018)**

Spain						
Million euros				Participation (%)		
Total	Central gov.	ACs	Local level	Central gov.	ACs	Local level
72,811.00	920.00	71,225.00	666.00	1.3	97.8	0.9
Brazil						
Million reais				Participation (%)		
Total	Central gov.	States	Municipalities	Central gov.	States	Municipalities
380,616.43	131,529.42	93,575.81	155,511.20	34.6	24.6	40.9

Source: Ministerio de Sanidad (2020); Ministério da Saúde (2022a, 2022b).

In Brazil, the funding of health, as with education, has in intergovernmental transfers the main resources available to states and municipalities. Here, too, reforms shaped a funding system that is health's own, with gains in volume and spending equity. Constitutional Amendments n. 29/2000 and n. 86/2015 established minimum levels of spending of net revenues on health policy: 12% for states and 15% for municipalities and the Union. Subsequently, regulation was passed on what is considered spending on health (Complementary Law n. 141/2012). The federal government regulates the SUS intergovernmental transfers, with a predominance of the fund-to-fund type, in which resources from the National Health Fund are allocated to state and municipal funds. These transfers are automatic, mandatory, conditional and redistributive (Mendes et al., 2008).

## 4. INEQUALITIES IN THE FUNDING OF EDUCATION AND HEALTH POLICIES IN BRAZIL AND SPAIN

### 4.1. Selected cases

As seen in the previous section, Brazil and Spain present a high degree of decentralization in the execution of education and health policies. Besides, in both countries the central government concentrates tax resources and the regulation authority to define the funding system for social policies, but they have different policy funding designs, with different degrees of inequality.

Spain has, for the 15 communities of common regime, the FGSPF, which encompasses most of the subnational resources and promotes the leveling of funding for education, health and social services policies. However, three factors may produce funding inequalities between regions: a) the two chartered communities (Basque Country and Navarra) with a distinct regime; b) other funds for the division of public resources; and c) the communities' autonomy to distribute the available resources from the FGSPF and additional others between the three social policies covered by the fund.

Brazil, with greater territorial economic inequalities, presents a subnational funding system in which intergovernmental transfers with little redistributive power predominate. However, it has promoted reforms in the funding systems specific to basic education and health which sought to prioritize and promote greater equity in the spending of states and municipalities.

The next section presents the levels of inequality in subnational spending on basic education and health policies in two selected cases.

### 4.2. Data collection and analysis methods

To present and calculate the inequalities in the funding of education and health policies, were used indicators of per capita spending on basic education (spending per enrolled student) and health (spending per number of inhabitants) for 2018, collected from governmental agencies, especially the ministries of education and health of both countries. For a complementary analysis of the evolution of inequalities, three other points in time were considered: 2000, 2010 and 2015.

The comparison of funding inequalities used as units of analysis the Spanish autonomous communities, which account for 90% of education and health spending, and the Brazilian states and municipalities, which, combined, account for over 65% of public spending.

The inequalities were calculated using the Gini and variance coefficients. Variance is a measure of dispersion of data that allows to determine how far the analyzed data spread from the average. This is done by calculating the average value of the differences between each observed number and the average squared. The Gini coefficient, which ranges from 0 to 1, is frequently used to analyze a given group's income distribution, but it can be adopted for other evaluations. Its calculation is based on the relationship between the graph areas that define the Lorenz curve, specifically between the curve and the 45° line divided by the total area of the right triangle formed by the axes and the 45° line.

### 4.3. Result 1: inequalities in the subnational funding of basic education

Table 2 presents the per capita spending, per student, on basic education in Brazil and on non-tertiary education in Spain for 2018. In Spain, the Basque Country's spending is 62% greater than that of the community of Madrid; the 25% of the ACs with greatest per capita spending present an average 6,300 EUR PC against the average 4,664 EUR PC for the 25% of the ACs with smallest spending, a 35% difference. The variance coefficient between the ACs is 0.12 and the Gini coefficient is 0.070. Thus, the Basque Country and Navarra occupy the top positions in spending, contributing to greater inequality between the communities. The inequality measured by the Gini for the communities of common regime is 0.065.

In Brazil, when the subnational spending per student is compared in the sum of states and municipalities, Goiás' spending is 80% greater than that of Pará. The 25% of the governments with greatest spending per student present an average 10,904 BRL against the average 6,820 BRL for the 25% with the smallest spending, a 60% difference. The variance is 0.18 and the Gini is 0.103.

**TABLE 2 PUBLIC SPENDING ON EDUCATION, PER STUDENT (2018)**

Spain – non-tertiary education, in euros		Brazil – basic education, in reais25			
AC	Spending per student	State	Spending per student, states	Spending per student, municipalities	Spending per student, subnational
Basque Country	6,720	Goiás	7,249	4,295	11,544
Navarre	6,173	Rio de Janeiro*	8,574	2,888	11,462
Cantabria	6,154	Amapá	8,943	2,258	11,201
Galicia	6,151	Tocantins	7,403	3,385	10,788
Extremadura	6,124	Mato Grosso do Sul	6,600	3,616	10,216
Asturias	6,032	Sergipe	7,061	3,149	10,210
Castile and León	5,833	Mato Grosso	6,521	3,575	10,096
Balearic Islands	5,672	Maranhão	8,080	1,988	10,068
Aragon	5,536	Paraná	6,701	3,305	10,006
La Rioja	5,430	São Paulo	5,899	3,980	9,879

*Continue*

<sup>5</sup> By the end of 2018, one euro corresponded to approximately 4.4 reais. Central Bank of Brazil, 2022. Retrieved from <https://www.bcb.gov.br/estabilidadefinanceira/historicocotacoes>. This value does not consider the currencies' purchasing power.

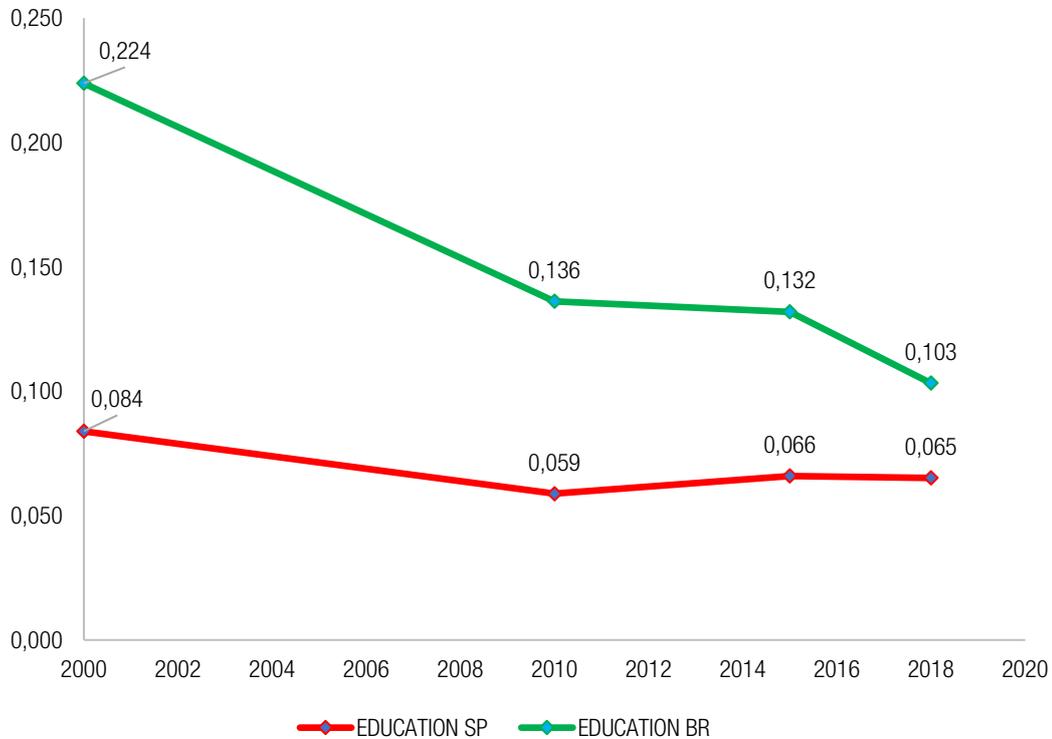
Spain – non-tertiary education, in euros			Brazil – basic education, in reais25		
AC	Spending per student	State	Spending per student, states	Spending per student, municipalities	Spending per student, subnational
Canary Islands	5,238	Roraima*	6,742	3,055	9,797
Castile-Mancha	5,151	Ceará	7,241	2,187	9,428
Valencian Community	5,127	Santa Catarina	5,479	3,923	9,401
Catalonia	5,042	Pernambuco	6,867	2,263	9,130
Region of Murcia	4,838	Rio Gde. do Sul*	4,366	4,629	8,995
Andalusia	4,617	Rio Gde. do Norte*	5,956	2,718	8,674
C. of Madrid	4,159	Rondônia	5,614	2,566	8,180
		Minas Gerais*	5,025	2,820	7,845
		Acre	5,449	2,257	7,706
		Piauí*	5,334	2,365	7,699
		Paraíba	4,806	2,470	7,275
		Espírito Santo	4,671	2,305	6,975
		Amazonas	4,853	2,122	6,975
		Bahia	4,711	2,124	6,835
		Alagoas*	4,025	2,444	6,469
		Pará	4,101	2,289	6,390

\*Data for 2017 (INEP, 2022).

Source: Spain: MEFP (2020). Brazil: Ministério da Educação (MEC, 2021).

Graph 3 presents the Gini coefficient for the subnational spending per student for the Spanish autonomous communities of common regime and Brazilian states and municipalities for four years: 2000, 2010, 2015 and 2018. Spain presented the smallest inequality in 2010, the year the last reform in the autonomous funding system took effect, with a subsequent slight increase. The Brazilian case is one of greater inequality for all four years, though with a sharp decline from 2000 onwards, when Fundeb and Fundeb were in effect.

**GRAPH 3 GINI OF SUBNATIONAL SPENDING ON EDUCATION, PER STUDENT**



**Source:** Spain: MEFP (2020). Brazil: data for 2000 and 2010 (Instituto de Pesquisa Econômica Aplicada [IPEA], 2022) and data for 2015 and 2018 (MEC, 2021).

**4.4. Result 2: inequalities in the subnational funding of health**

Table 3 presents the per capita spending on health at the subnational government levels. In Spain, the Basque Country’s spending is 45% higher than that of Andalusia. The 25% of the ACs with the greatest spending present an average 1,677 EUR PC against 1,323 EUR PC for the 25% with the smallest spending, a 27% difference. The variance coefficient between the ACs is 0.09, and the Gini coefficient is 0.055. The inequality value measured by the Gini for the communities of common regime is 0.050.

The Spanish inequality is smaller than that of the Brazilian case, in which the difference between Roraima and Pará is 2.2. The 25% of the subnational governments with the greatest spending in Brazil, considering the sum of states and municipalities, present an average 1,626 BRL against 998 BRL for the 25% with the smallest spending, a 63% difference. The variance coefficient is 0.20 and the Gini indicates an inequality of 0.110 between the governments.

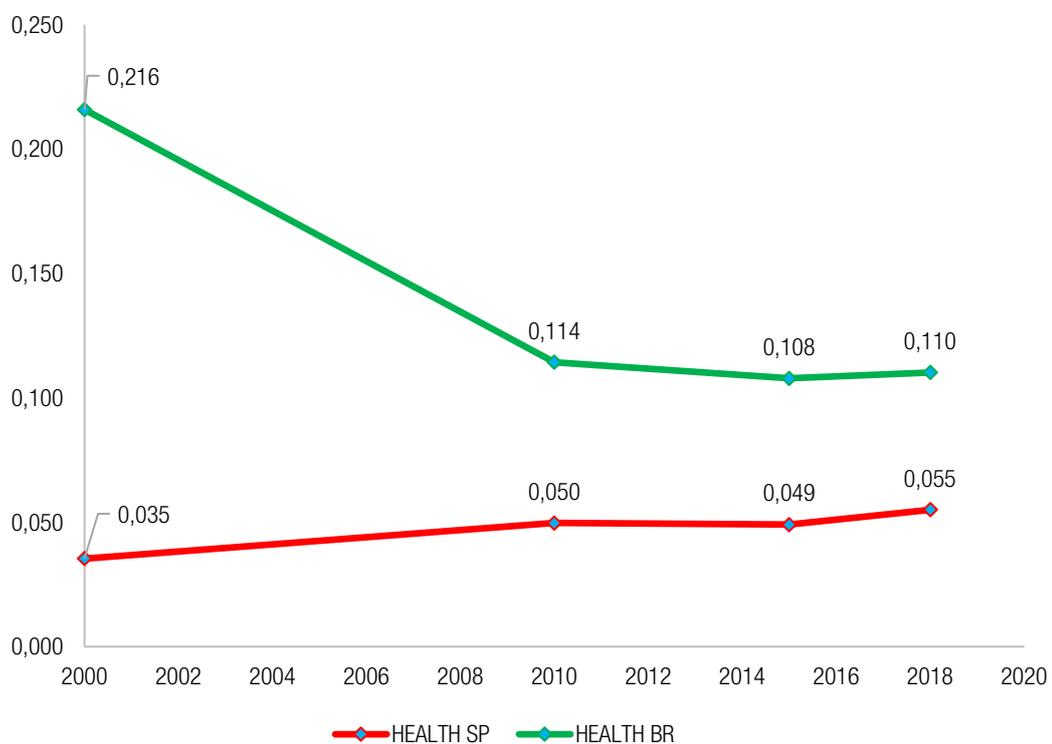
**TABLE 3 PUBLIC PER CAPITA SPENDING ON HEALTH (2018)**

AC	Spain, in euros		Brazil, in reais		
	Spending PC	States	Spending PC, states	Spending PC, municipalities	Spending PC, subnational
Basque Country	1,753	Roraima	1,341	600	1,941
Asturias	1,676	Mato Grosso do Sul	564	1,154	1,718
Navarre	1,651	Tocantins	938	673	1,611
Extremadura	1,626	Acre	1,159	422	1,580
Aragon	1,601	Mato Grosso	552	958	1,511
Castile and León	1,577	Santa Catarina	523	870	1,393
R. of Murcia	1,567	São Paulo	512	876	1,387
Cantabria	1,543	Amapá	967	401	1,368
Galicia	1,491	Paraná	477	875	1,352
La Rioja	1,477	Espírito Santo	703	576	1,280
Castile-Mancha	1,438	Piauí	426	847	1,274
Catalonia	1,432	Rio Gde. do Sul	440	810	1,250
Valencian C.	1,415	Rio Gde. do Norte	504	714	1,218
Balearic Islands	1,407	Rio de Janeiro	380	820	1,200
Canary Islands	1,399	Rondônia	613	577	1,190
C. of Madrid	1,274	Minas Gerais	296	884	1,180
Andalusia	1,212	Amazonas	695	459	1,153
		Alagoas	394	723	1,118
		Sergipe	507	599	1,106
		Pernambuco	557	528	1,085
		Ceará	408	670	1,078
		Goiás	373	698	1,071
		Paraíba	365	703	1,069
		Bahia	379	566	945
		Maranhão	325	609	933
		Pará	377	514	891

Source: Ministerio de Sanidad (2021); Ministério da Saúde (2022a, 2022b).

Graph 4 presents the Gini for the subnational spending, per inhabitant, on health for the Spanish autonomous communities of common regime and Brazilian states and municipalities for four years: 2000, 2010, 2015 and 2018. Spain presented low inequality levels, with a slight increase from 2000 to 2010. In Brazil, inequalities declined sharply in the first decade, and stabilized from 2010 onwards, though still with a Gini twice as high as for Spain.

**GRAPH 4 GINI OF SUBNATIONAL PER CAPITA SPENDING ON HEALTH**



**Source:** Spain: Ministerio de Sanidad (2021). Brazil: data for 2000 and 2010 (IPEA, 2022) and data for 2015 and 2018 (Ministério da Saúde, 2022a, 2022b).

## 5. ANALYSIS OF RESULTS AND CONCLUSIONS

Spain and Brazil have gone through processes of return to democracy and territorial decentralization since 1970, and have sought advances in the welfare state, with important results in the expansion of universal social policies. However, the Brazilian fiscal federalism is less effective than the Spanish one in leveling the spending on health and education between subnational governments, without disregarding the important advances since the CF/88. Spain has demarcated, since the CE/78, the purpose of decentralization and territorial solidarity and has managed to advance in this direction based on reforms in the funding system of the autonomous communities of common regime.

Three positive characteristics of the Spanish experience can inform new empirical studies about the redistributive effects of intergovernmental transfers and the search for improvements to the Brazilian fiscal federalism:

1. The gradualism in the reforms made by the central government towards greater efficiency and equity. The CE/78 and subsequent legislation established that autonomous funding would be a gradual construction, with incremental reforms according to periodic evaluations and the combination of fiscal decentralization and horizontal equalization procedures. Transfers from the central government were initially the ACs' main funding sources, which did not encourage them to collect their own taxes (Onrubia & Ruiz-Huerta, 2019). These transfers gradually decreased with the progress in tax decentralization and in mechanisms of intergovernmental, equalizing transfers to the ACs of common regime.
2. The definition of health, education and social services as priority public policies in the allocation of communities' resources, as well as their funding through a leveling system of intergovernmental transfers – the Fund for the Guarantee of Fundamental Public Services (FGSPF).
3. The FGSPF's distribution criterion according to adjusted community population allows to better estimate spending needs considering weightings on population size, which considers inhabitants' age structure. Communities with more children, youths and older people receive more resources from the fund.

However, the debate about a new autonomous funding model in Spain identifies challenges to equity for a future reform: the chartered regime, the intergovernmental transfers made by other funds, and autonomous communities' fiscal responsibility. In this last case, the aim is to avoid increasing public debt, which can compromise the country's economic development and the welfare state's sustainability (Onrubia & Ruiz-Huerta, 2019). The experience of other countries, like Spain, can facilitate the search for a more suitable institutional design for the Brazilian fiscal federalism. To this end, it is important to advance research and academic debates on reforms that prioritize gains in efficiency and equity. In this direction, funding should choose universal social policies and distribute resources according to the spending needs of states and municipalities. Basic education fared better in this respect and can be considered a good example for other countries, including Spain in some respects, with important advances in the volume, municipal decentralization and equity of spending. Health policy had smaller advances, marked by public underfunding and less equitable criteria in the distribution of SUS resources, with little consideration for population characteristics and service access indicators (Duarte et al., 2009). Finally, the integration of social policy funding through a common fund or something similar would afford subnational governments more autonomy to decide on the allocation of resources between policies, which can generate gains in efficiency.

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