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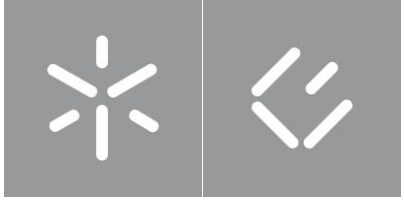

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The effects of decentralisation on educational outcomes: The Portuguese municipalities' case

Master's Dissertation
Master in Economics

Work done under the supervision of
Professora Doutora Linda Veiga
Professor Doutor João Cerejeira

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Statement of Integrity

I hereby declare having conducted this academic work with integrity.

I confirm that I have not used plagiarism or any form of undue use of information or falsification of results along the process leading to its elaboration.

I further declare that I have fully acknowledged the Code of Ethical Conduct of the University of Minho.

University of Minho, Braga, may 2023

Beatriz Costa Azevedo

Os efeitos da descentralização nos resultados educativos: O caso dos municípios Portugueses

Resumo

Nas últimas décadas, Portugal experienciou uma progressiva descentralização das funções do governo central, sendo a educação um dos setores mais descentralizados. Estudos anteriores concluíram que esta crescente atribuição de poderes apresenta vários impactos, por vezes contraditórios, apesar de não ter sido realizada nenhuma análise semelhante para o caso de Portugal. Assim, o principal objetivo desta dissertação prende-se com a avaliação dos impactos da descentralização nos resultados educacionais dos municípios Portugueses, focando-se nos contratos de execução assinados em 2009 e em 2015. Este trabalho assenta na construção de uma base de dados nova, com informação sobre os 278 municipíos do Continente para o período entre 2004 e 2019. A estimação de um modelo base e de um modelo flexível, usando o método das diferenças-em-diferenças, demonstrou que os efeitos destas novas responsabilidades na qualidade e no acesso à educação foram pouco expressivos, não existindo variações significativas ao longo dos anos. Contudo, a extensão para um enquadramento com múltiplos períodos de tratamento permitiu a diferenciação dos municípios descentralizados de acordo com o primeiro ano em que seria esperado experienciarem efeitos. Os resultados obtidos após esta consideração demonstraram que a descentralização melhorou as taxas de retenção e de escolarização, sobretudo ao nível do ensino básico. Vários testes foram aplicados para garantir a robustez dos resultados. A abordagem empírica escolhida e as particularidades do processo de descentralização em Portugal podem ajudar a explicar os resultados obtidos.

Palavras-chave Contratos; Descentralização; Educação; Municípios Portugueses.

The effects of decentralisation on educational outcomes: The Portuguese municipalities' case

Abstract

Over the last decades, Portugal has experienced a progressive decentralisation of central government functions, education being one of the most decentralised sectors. Previous studies have found that this increased attribution of powers presents various and, sometimes, contradictory impacts, even though no similar analysis was performed for Portugal. Therefore, the main goal of this dissertation is to assess the impacts of decentralisation on the educational outcomes of Portuguese municipalities, focusing on the execution contracts signed in 2009 and 2015. This research relies on a newly built database, encompassing information on the 278 mainland municipalities from 2004 to 2019. Estimating baseline and flexible models using a difference-in-differences approach indicates that the new responsibilities promoted little changes in education access and quality, not existing significant variations throughout the years. Nonetheless, the extension to a multiple time periods framework allowed the differentiation of decentralised municipalities according to the expected starting year of effects. The results obtained after this consideration suggest that decentralisation improved retention and schooling rates, especially at the basic education level. Several tests were applied to prove the robustness of the results. The empirical methodology followed and the particularities of the decentralisation process in Portugal may help explain the results obtained.

Keywords Contracts; Decentralisation; Education; Portuguese Municipalities.

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Acronyms

ANMP National Association of Portuguese Municipalities. 11

ATT Average Treatment Effect. 28, 29, 41, 42, 43

DD Difference-in-differences. 1, 6, 7, 18, 19, 24, 26, 27, 28, 41, 42, 47, 48

DGAL Directorate-General for Local Authorities. 16, 25

DGEEC Directorate-General for Education and Science Statistics. 14

DR Diário da República. 10, 11

INE Statistics Portugal. 13, 14, 15, 16, 17, 25

JNE National Exam Board. 15

ME Ministry of Education. 10, 11

PAE Programa Aproximar Educação. 11, 12

1 Introduction

In the last decades, there has been a progressive decentralisation of central government functions in Portugal. Over the years, local governments, particularly municipalities, have been granted new competencies through successive reforms focusing on different areas. Starting in 1984, decentralisation of education has allowed local governments to gain autonomy, making education one of the most decentralised areas in Portugal. Two significant reforms took place in 2009 and 2015, when several municipalities signed execution contracts or participated in a pilot project that provided them with new responsibilities regarding the education sector. Among others, the transferred competencies encompassed the non–teaching staff, the curricular enrichment activities, and the school estate management, concerning the various study cycles.

Previous literature has found contradictory results regarding decentralisation impacts on public education, and no analysis has empirically addressed this topic in the Portuguese case. Hence, the main goal of this dissertation is to assess the impact of decentralisation on educational outcomes in Portuguese municipalities. Specifically, the intention is to analyse if the signature of contracts in 2009 and 2015 promoted improved education access and quality. Based on what was defined in the agreements, the effects are estimated on indicators such as retention, conclusion and schooling rates, the percentage of enrolments in public schools, and the average classifications obtained in national exams.

This analysis is based on a newly-built dataset, encompassing information on the 278 mainland municipalities and covering the period between 2004 and 2019. Nonetheless, since some municipalities participated in both decentralisation reforms, part of the analysis is split into two periods to avoid overlapping effects. Given all the specificities associated with these decentralisation reforms, the empirical analysis relies on a Difference-in-differences (DD) approach to assess the different decentralisation impacts on those that signed the contracts and those that did not. A flexible model setup is also used to obtain extra information on the validity of results and the evolution of impacts throughout the years. Furthermore, benefiting from the two-year period during which the contracts of the first moment were signed, it was possible to divide the municipalities into three different groups, according to the effects starting year (early or late adopters and those that did not sign). This unique detail enables the extension of the DD approach to a multiple time periods framework.

The results demonstrate that, in general terms, decentralised municipalities started to receive greater compensations to cover the additional educational costs, and experienced an improvement in educational outcomes, such as retention and schooling rates. These results were particularly evident when the DD approach was extended to a multiple time periods framework, which allowed the differentiation of impacts

and their intensity experienced by the different groups of municipalities over time. Nonetheless, the lack of significance for some indicators and the negative impacts found in specific variables might reflect the decentralisation process structure and the small capacity of the transferred functions to impact students' outcomes.

This dissertation provides two different types of contributions. First, it sheds light on the impacts that two successive reforms had on education in Portugal and on the adequacy of the set of competencies transferred, an analysis that had ever been done before. Second, it demonstrates that the precise definition of the setup and the extension of typically-used approaches to frameworks taking into account the specificities of decentralisation, such as the different starting years of effects, might provide different and significant results.

The remainder of the dissertation is organised as follows: section 2 presents a review of the previous literature on the topic; section 3 describes the institutional background, mainly regarding the organisation of the Portuguese educational system and the details on the several decentralisation reforms of the last years; section 4 starts with the definition of the hypotheses under study, followed by the description of the data used, its sources and computation processes; section 5 explains the empirical methodologies to be used, with the derivation of the adequate models; section 6 depicts the results obtained; section 7 ends with possible explanations for it and the main conclusions.

2 Literature Review

2.1 The concept of decentralisation

In recent decades, the world has witnessed increased pressure to decentralise government activities. Although decentralisation was first observed in industrialised countries (Oates, 1999), it soon spread across the developing world (E. Ahmad & Brosio, 2006). Nevertheless, the decentralised governance systems and the motivations behind the transition are considerably diverse between countries, which further challenges its analysis (J. Ahmad et al., 2006; OECD, 2019; Veiga et al., 2015).

Even though it has been deeply studied over time, the scope of decentralisation may vary significantly and several definitions exist. The broader concept of decentralisation encompasses several interdependent dimensions, including fiscal, administrative and political ones (J. Ahmad et al., 2006; OECD, 2019; Veiga et al., 2015). Given its complexity, measuring the decentralisation level is not an easy task since there is no single indicator capable of embracing all its dimensions (Martinez-Vazquez et al., 2017), and relying

exclusively on fiscal indicators[1] might provide a distorted interpretation of reality (OECD, 2019).

There are several arguments in favour and against decentralisation[2]. In a decentralised context, it has been argued that mobile consumers have the opportunity to move to the communities that best satisfy their preferences (Tiebout, 1956). Other arguments commonly used in favour of decentralisation include more efficient provision of public goods and services due to the higher proximity of subnational governments to local populations, enhanced regional productivity due to the increased competition between local governments, and higher political participation (Oates, 1999). Nonetheless, those arguing against decentralisation have pointed out negative impacts, such as non–internalisation of spillovers in the presence of externalities (Oates, 1999), loss of economies of scale, growth of inequalities, and additional costs due to the creation of new administrations and local elections (Veiga et al., 2015).

According to J. Ahmad et al. (2006), the attempt to improve the delivery of essential services, including education and health, is one of the main motivations behind the most decentralisation processes worldwide, given the failures of central governments in providing those services and the mismatch between local preferences and centralised decisions. On the other hand, social protection is often the least decentralised function due to the belief that central governments deal more efficiently with redistribution than local governments (Dafflon, 2006; Oates, 1999; Veiga et al., 2015).

Despite the variation in degree of decentralisation across countries, education is one of the most commonly identified areas in which subnational governments are considered essential and has merited significant attention from previous literature.

2.2 The impacts of decentralisation on education

In the education framework, a conflict between desirable outcomes has been observed, with several societies arguing over the need to decentralise public schools without neglecting the assurance of minimum quality standards at a national level (Dafflon, 2006). In the past years, several studies have analysed the impacts of decentralisation on education, with the majority finding evidence of positive effects (Veiga et al., 2015). Nonetheless, the degree of decentralisation differs across those analyses, ranging from the attribution of powers in terms of education finance and expenditures (Barankay & Lockwood, 2007; Faguet &

[1] Commonly used fiscal indicators include tax and spending autonomy, revenue and spending shares of local government, transfer dependency, tax and revenue decentralisation ratios, subnational allocation of resources, among others (Borrett et al., 2021; International Monetary Fund, 2020; Lledó et al., 2020; OECD, 2020).

[2] For a complete review of positive and negative impacts associated with greater degrees of decentralisation, particularly concerning its fiscal dimension, see E. Ahmad and Brosio (2006) and Veiga et al. (2015).

Sánchez, 2008; Kyriacou & Roca-Sagalés, 2019) to a higher degree of autonomy, such as the decentralisation of school administration (Elacqua et al., 2021; Galiani et al., 2008; Hanushek et al., 2013; Salinas & Solé-Ollé, 2018), which may help explain the eventual differences in the findings (Guerra & Lastra-Anadón, 2019). Some studies focused on specific countries while others performed cross–country analyses[3].

Concerning education access, there is evidence that decentralisation improves public schools' enrolment rates (Elacqua et al., 2021; Faguet & Sánchez, 2008; Guerra & Lastra-Anadón, 2019) and reduces the rates of early school dropouts (Salinas & Solé-Ollé, 2018). Regarding education quality, there is evidence of the positive impact that decentralisation has, in general terms, on students' performance. Notably, of an improvement in the classifications obtained in national exams (Elacqua et al., 2021; Galiani et al., 2008) and the percentage of students attaining the university-required entrance levels (Barankay & Lockwood, 2007). International comparisons have shown improved PISA test scores, although this result held only for developed countries (Hanushek et al., 2013). Additionally, Elacqua et al. (2021) have found that decentralisation improved teachers' quality and that hiring high-quality teachers could partially explain the better student outcomes in decentralised municipalities. However, decentralisation may also harm education quality due to the congestion prompted by the positive effect on education access (Guerra & Lastra-Anadón, 2019).

Some studies have highlighted differences in results within the same analysis: the impacts of decentralisation benefit more males (Barankay & Lockwood, 2007) and non-poor students (Galiani et al., 2008). The latter may result from the higher ability of non-poor families to move to areas with better education quality and the lower ability of poor individuals to hold politicians accountable for their resource allocation decisions (J. Ahmad et al., 2006).

Moreover, several authors have identified a particular connection between the magnitude of the effects and the attributes of subnational governments: decentralisation has more substantial impacts in communities with greater levels of local revenues (Salinas & Solé-Ollé, 2018), as well as in those that are more assertive and prioritise costly and visible policies (Guerra & Lastra-Anadón, 2019).

In addition, decentralisation also impacts the governance of local authorities directly. There is evidence of incentives for service delivery improvement when local governments cannot depend only on central transfers and need to raise their own revenues (J. Ahmad et al., 2006). Furthermore, local governments appear to become more responsive to local needs (Faguet & Sánchez, 2008) and more effective as the perceived quality of public services increases (Kyriacou & Roca-Sagalés, 2019). As argued by Elacqua

[3] Among others, see Barankay and Lockwood (2007), Faguet and Sánchez (2008), and Salinas and Solé-Ollé (2018) for country studies and Guerra and Lastra-Anadón (2019) and Hanushek et al. (2013) for cross–country analyses.

et al. (2021), the impacts of decentralisation on education seem to be more closely related to the better allocation of resources than to its amount.

Another fundamental aspect of decentralisation, particularly in the scope of education, concerns the timing of its impacts: the positive impacts may not be observed in the short run due to the need for a period of policy consolidation (Elacqua et al., 2021).

Given the contradictory findings described above, identifying the desired levels of decentralisation on educational services takes time and effort. Table 1 presents a summary of the previous literature's main findings concerning the impacts of decentralisation on education outcomes.

Table 1: Main findings of previous literature

Reference	**Dependent Variable**	**Sample**	**Methodology**	**Main Conclusions**
Barankay and Lockwood, 2007	Share of 19-year-old students obtaining university entry qualification	26 Swiss cantons (1982–2000)	Fixed effects with clustered standard errors	Decentralisation associated with greater educational attainment
Faguet and Sánchez, 2008	Public investment by sector (Bolivia) and annual change in public schools enrolment rates (Colombia)	Colombian (1994-2004) and Bolivian (1987-1993) municipalities	Tobit estimations and principal component analysis (Bolivia); Two-Stage Least Squares panel estimations (Colombia)	Decentralisation of education finance increased enrolment rates (Colombia) and government responsiveness to local needs (Bolivia)

Table 1: Main findings of previous literature, continued

Reference	**Dependent Variable**	**Sample**	**Methodology**	**Main Conclusions**
Galiani et al., 2008	Test scores (school and province level)	Argentine public schools (1994-1999)	DD and Generalized Least Squares methods	Decentralisation positively impacted students' results, with these gains not benefiting the poor
Hanushek et al., 2013	Students' achievement (PISA test scores)	42 countries (2000-2009)	Panel estimation with country-fixed effects	More autonomy negatively impacted students' achievement in developing and developed countries
Salinas and Solé-Ollé, 2018	Dropout rates in secondary education	17 Spanish regions (1977-1991)	DD method and event-study analysis	Decentralisation significantly impacted the early school dropouts rate; Stronger results in regions with more revenues

Table 1: Main findings of previous literature, continued

Reference	**Dependent Variable**	**Sample**	**Methodology**	**Main Conclusions**
Guerra and Lastra-Anadón, 2019	PISA test scores and enrolment rates (OECD); Graduation and enrolment rates (Spain)	OECD countries (2000-2012) and Spanish regions (1980-1999)	DD and Synthetic Controls methods	Decentralisation positively impacted education access but affected its quality negatively (OECD and Spain); Stronger effects in assertive regions (Spain)
Kyriacou and Roca-Sagalés, 2019	Government effectiveness (quality of public services)	30 European countries (1996–2015)	Ordinary Least Squares with panel corrected and robust standard errors	Decentralisation of education expenditures increased the perceived quality of this public service
Elacqua et al., 2021	Test scores, school enrolment and teachers' quality	Colombia (1996-2015)	DD and regression discontinuity methodologies	Decentralisation improved student achievement, school enrolment and teachers' quality

3 Portuguese Case

3.1 Portuguese educational system

According to Eurydice (2022), the Portuguese educational system encompasses distinct levels, including pre-primary education, which is optional for all children aged three to six years[4]. Basic education is mandatory and lasts nine years, divided into three different cycles. The first cycle lasts four years for students aged six to nine years old, the second cycle lasts two years for students aged ten to twelve years old, and the third cycle lasts three years for students aged twelve to fourteen years old. Secondary education is also compulsory, lasts three years for students aged fifteen to eighteen years old, and is divided into five separate courses (Science-humanities courses[5]; Vocational courses; Specialised artistic courses; Own-school-curriculum courses; Apprenticeship courses). Generally, Portuguese students finish mandatory education at the age of eighteen[6].

National exams are taken by students in the final year of the third cycle of basic education and in the two last years of secondary education[7]. All students take Portuguese and Mathematics exams at the end of basic education[8]. In contrast, the final exams of secondary education cover several areas, depending on the specific course in which the student is enroled[9]. Several substantial changes in the structure of the national exams regarding secondary education were introduced during the production of this research. However, since the focus of this analysis is the 2004-2019 period, and the changes will only produce effects from the 2023/2024 academic year onwards, they were not considered when choosing the variables used[10].

It is essential to mention that there may be remarkable dissimilarities in the educational sector of

4 Despite being optional, Law n.° 65/2015, July 3rd established the universality of pre-primary education for all children over four years old. For children under three years old, education is focused on childcare, not considered a level of the Portuguese education system (Eurydice, 2022).

5 The Science-humanities courses are subdivided into the following courses: Science & Technology, Socio-economic Science, Languages & Humanities and Visual Arts (Eurydice, 2022). Since most Portuguese students choose one of these science-humanities courses, they were the focus of this analysis.

6 Although compulsory education used to correspond to only nine years, Law n.° 85/2009, August 27th, established the new regime of mandatory education, which now corresponds to 12 years.

7 National exams for Portuguese and Mathematics used to be carried out in the last year of the first cycle of basic education, but after several setbacks in their introduction, these exams ceased in 2015, and there is a substantial lack of data concerning their results.

8 Non–native students can take the Portuguese Non–Native Language and the Portuguese Second Language exams, but these are relatively uncommon compared to standard tests and, therefore, will not be considered in the proposed analysis.

9 In the last two years of secondary education, students enroled in Science-humanities courses must take the Portuguese exam and three other exams, depending on their courses (one of them is performed in the same year as the Portuguese exam, and the other two are carried in the previous year) (IAVE I.P., 2022).

10 In February 2023, the Minister for Education, João Costa, and the Minister for Science, Technology and Higher Education, Elvira Fortunato, announced that, starting in the academic year 2023/2024, students will need to take three national exams to complete secondary education, one of which must be the Portuguese exam, while students can choose the other two according to the specific requirements for accessing higher education (MCTES and ME, 2023).

the Portuguese Autonomous Regions of Madeira and Azores. Even though local governments and their functions may be similar to those in the mainland, Madeira and Azores have regional governments with considerable autonomy in decision-making. Therefore, the proposed analysis will focus on the 278 mainland municipalities.

3.2 Decentralisation of the Portuguese educational system

The decentralisation of the Portuguese educational system began in 1984, with the transfer of competencies related to school transport and social action in pre-primary and basic education. These transferences were regulated by the Decree-Law n.º 299/1984, September 5th and the Decree-Law n.º 399-A/1984, December 28th, respectively. Over the years, several legal regulations progressively enlarged the responsibilities of local governments to implement the principles of local autonomy and administrative decentralisation.

In 1999, Law n.º 159/99, September 14th transferred a significant set of competencies to local governments, including responsibility for maintaining school buildings, providing school transport, and organising complementary activities, among others. These competencies were mainly related to pre-primary and basic education. Additional responsibilities were transferred to local governments in 2003 with the publication of Decree-Law n.º 7/2003, January 15th and Law n.º 41/2003, August 22th. Those diplomas regulated the transfer of the new competencies and the functioning of municipal councils, created in the scope of education, and approved the educational letter. Later, the specific regime of the non-teaching staff and the legal regime concerning the collective transport of students from and to schools were defined by the Decree-Law n.º 184/2004, July 29th and by the Law n.º 13/2006, April 17th.

In the following years, some Portuguese municipalities received additional competencies in education through contracts signed with the central government. These agreements occurred around 2009 and 2015 and implemented the decentralisation foreseen in the previous legislation. Since those contracts are the basis of this empirical analysis, their details are provided in the following subsections.

More recently, Law n.º 50/2018, August 16th, promoted a new decentralisation reform in Portugal, covering various domains. A set of unique competencies was transferred to municipal entities, focusing on the second and third cycles of basic education, and on secondary education. These new responsibilities include, among others, managing school canteen meals, elaborating the education letter and the plan of school transport, developing school social action, and maintaining and preserving the pre-primary, basic and secondary education buildings.

Given the complexity of the decentralisation process in education and the unforeseen COVID–19 crisis,

Portuguese municipalities were able to postpone the transfer of new competencies from January 1st, 2021, to March 31st, 2022, as defined in the Decree-Law n.º 56/2020, August 20th. By the end of 2021, only 161 out of the 278 Portuguese mainland municipalities had implemented their new education competencies (DGAL, 2022b)[11]. Nonetheless, all the 278 mainland municipalities were exercising competencies in the field of education by July 2022 (DGAL, 2022a).

The contracts of 2009

In 2008 and 2009, the Ministry of Education (ME) and 113 municipalities signed execution contracts[12]. These contracts were of voluntary signature for municipalities and executed the transference of competencies in the scope of education, following Law n.º 2/2007, January 15th, which approved the new regime of local finances, and Decree-Law n.º 144/2008, July 28th, which determined the process of transferring competencies to local municipalities.

As stipulated in the contracts, the new responsibilities were related to the non–teaching staff in pre-primary and basic education schools, the curricular enrichment activities in the first cycle of basic education, and the school estate management relative to the second and third cycles of basic education[13].

The agreements also defined the monetary amounts to be transferred to municipalities to cover the additional costs, as well as the start date of those transfers. These values were specific to each municipality, depending on its characteristics, such as the number of non-teaching staff that would be transferred and the number of students enroled in schools targeted for decentralisation. For the majority of the contracts signed, the competencies and the respective amounts started to be transferred in January 2009, while for other municipalities, the assumption of the new responsibilities started afterwards, at the latest in January 2010[14].

Nonetheless, as soon as the municipalities started receiving the new competencies, there were several

[11] The exercise of additional educational competencies by municipalities was carried out through three different channels: *Programa Aproximar Educação* (14 municipalities), Contracts of Execution (51 municipalities) and Decree-Law n.º 21/2019, January 30th (96 municipalities) (DGAL, 2022b).

[12] 113 contracts were signed between the ME and Portuguese mainland municipalities at the end of 2008 or during 2009 to define the transfer conditions. All of them were published in *Diário da República* (*DR*) in 2009 (INCM, 2022). One example of those contracts is available in Appendix A, which also contains information on the municipalities that signed the contracts, including the dates on which the signature took place, the competencies were transferred, and the effects started to be experienced.

[13] For some municipalities, the execution contracts also defined two additional responsibilities, concerning the management of secondary schools that also encompassed the third cycle of basic education and students' residencies. Since the number of municipalities receiving these functions was significantly small compared to the 113 that signed the contracts, no particular attention was given to these cases.

[14] The transfer of new competencies took place in January 2009 for 90 municipalities, while the others received the additional responsibilities in March 2009 (5 municipalities), May 2009 (1 municipalities), October 2009 (6 municipalities) or in January 2010 (10 municipalities). There was also a case of a municipality which started to assume functions right in October 2008 (*Freixo de Espada à Cinta*).

complaints about the insufficiency of the funds transferred to face the new responsibilities. At the beginning of 2010, the National Association of Portuguese Municipalities (ANMP) surveyed the municipalities participating in this reform and suggested that the transfer conditions should be more precisely determined. Together with the ME, it was decided not to sign execution contracts with other municipalities until there was a meticulous evaluation of the situation resulting from the already signed contracts[15] (ANMP, 2010).

The contracts of 2015

In 2015, the Ministry of Education and Science, the Presidency of the Council of Ministers, and fifteen Portuguese municipalities signed inter-administrative contracts to delegate new competencies[16]. The signature of those contracts followed the Law n.º 75/2013, September 12th, which established the legal regime of local governments and defined the transference of competencies from the central administration through inter–administrative contracts, and the Decree-Law n.º 30/2015, February 12th, which established the regime under which this transfer would take place.

These contracts were part of a pilot project named *Programa Aproximar Educação (PAE)*, which aimed to promote the efficiency of educational resources and to contribute to human and community development by covering areas such as educational policies and administration, curriculum development, pedagogical and administrative organisation, resource management and school–community relation. These areas are described at the beginning of each contract (INCM, 2022). Unlike the agreements signed in 2009/2010, these contracts did not target a specific level of education.

Due to the importance of decentralisation in Portugal, this pilot project encompassed a limited number of municipalities to promote a gradual approach (Secretário de Estado da Administração Local, 2014). Even though each of them had to consent to the contract signature, the choice of the group to integrate the programme was the central government's responsibility. The primary objective of this selection process was to achieve a group of municipalities with a notable degree of territorial, political and sociodemographic variability. It took into account not only the strong will of the mayors but also the high commitment demonstrated by municipalities in the past, both regarding the educational mission and the management of public resources (Secretário de Estado da Administração Local, 2014).

[15] After checking all the contracts published in DR between 2008 and 2015, it was possible to find that three additional municipalities - *Vimioso*, *Entroncamento* and *Vidigueira* - signed similar contracts in 2011 and 2012. These three municipalities were excluded from the analysis.

[16] In total, fifteen municipalities signed these contracts, which were then published in DR. The contracts signed in 2015 and retrieved from INCM (2022) are in the format of protected PDF, not being possible, thus, to include an example in the Appendix. An example of those contracts may be observed in https://dre.pt/dre/detalhe/contrato/552-2015-69879439.

As explicitly mentioned in the agreements signed, the transfer of competencies was intended to improve educational performance by attempting to prevent retention, absenteeism and school dropouts. The PAE design proposed tracking performance improvement using several indicators at the municipality level, particularly the percentage of school dropouts, the retention rates, the classifications obtained in national exams and its annual variation.

For municipalities that had signed execution contracts in 2009/2010, the final clauses explicitly stated that these new agreements would replace the previous ones, without prejudice to the effects produced by them[17].

4 Hypotheses and Data Sources

4.1 Hypotheses

This study's central hypothesis states that transferring competencies to Portuguese municipalities through decentralisation positively impacted educational outcomes in the following years. Given that these impacts on education may be driven by two different sources, as previously discussed in the literature review, this analysis will examine two perspectives.

Firstly, it is expected that the signature of contracts contemplating the transfer of educational competencies may have affected public education access:

- H1: Decentralisation positively impacted access to public education, represented by an increase in the percentage of students enroled in public schools and schooling rates.

The rationale behind this hypothesis is that municipalities can better identify their populations' preferences and satisfy their needs by receiving greater autonomy to make education-related decisions. These decisions and the management of the funds received may improve public school conditions, making them more attractive and competitive with private schools. Therefore, an increase in the demand for public education and the percentage of students enroled in the public schools of the decentralised municipalities may be expected. Since schooling rates result from the division between the number of students enroled in a cycle of studies and the number of residents with a suitable age[18] to attend that level, an increase in

[17] Only eight of these fifteen municipalities had signed the execution contracts in 2009/2010.

[18] The age range used in this calculation corresponds to the expected age at which students are typically enroled in a particular educational level. For example, when calculating the pre-primary enrolment rate, the denominator corresponds to the number of residents aged between three and five years old (INE, 2022c).

enrolments may also affect these rates. Nonetheless, those rates concern private and public education[19], so this increase can only be verified if students previously unenroled, for instance, from another municipality, start attending school. If, instead, decentralisation results only in transferring students from private to public education within the same municipality, schooling rates should not change.

Secondly, by having more autonomy to make decisions and manage funds, local governments may be able to deal with the specific needs of their students and schools. Therefore, they are expected to provide quality education to all. As previously mentioned, the contracts signed in 2015 defined a set of educational indicators that should be used to assess if performance improvements were accomplished. Since these indicators are similar to those that have been used in the literature and given the available data on education, the other hypothesis that this study intends to test is the following:

- H2: Decentralisation positively affected education quality, increasing transition rates and the average classifications in national exams and decreasing retention rates.

This analysis also intends to identify specific patterns related to educational expenses and compensations received to cover those costs. Based on the aspects defined and made explicit in the contracts, the third hypothesis focuses on education expenses incurred and compensation received:

- H3: Decentralised municipalities spent more on education and received extra compensations to cover those costs.

4.2 Data sources

This study relied on a newly built database constructed explicitly for this purpose, which comprises information concerning the 278 mainland Portuguese municipalities from 2000 to 2021. The database contains education-related variables and socioeconomic indicators used to control for local specificities. Most of the data used was collected from the Statistics Portugal (INE) website and treated afterwards to create a database with more than 6100 observations.

Due to the unprecedented COVID-19 crisis, the analysis period is 2004-2019. This crisis had significant adverse effects on students' learning rendering the final exam classifications uncomparable with those of previous years[20]. Moreover, as previously mentioned, a broader set of decentralised competencies was

[19] INE does not provide information on those rates by type of education, so there is no indicator representing only the schooling rates in public education.

[20] Due to the pandemic, the organisation of final exams changed significantly in 2019/2020 and the following school years. Not only did students enroled in the last year of basic education not take the final exams, but secondary education students could only take those indispensable for accessing higher education.

established in 2018 and started to be transferred to municipalities in 2019, which would cause an overlap of decentralisation reforms in the analysis[21]. Although the information on national exam classifications is only available from 2008, data on the remaining variables representing educational outcomes for previous periods are available in INE, allowing a more extended period for hypothesis testing. Even though there was data from 2000, some significant variables used to control for municipality-specific features were only made available from 2004 onwards, making it the first analysis period.

The descriptive statistics of the collected data may be observed in Table 17 and Table 18 of Appendix B. This information is presented for each municipality group (decentralised or non-decentralised) and each decentralisation moment (2009 or 2015 contracts).

Dependent variables

Educational outcomes

To estimate the impacts of decentralisation, it was necessary to collect data representing educational outcomes[22]. While in most cases, the data were readily available for all periods and units of observation, some variables required treatment before being used in the analysis.

The transition/conclusion, schooling, and retention rates at the municipality level were retrieved directly from the INE website, which prepares and presents the data collected by the Directorate-General for Education and Science Statistics (DGEEC). These data were available for all municipalities[23] from 2000 to 2019[24] (INE, 2022a). The retention rates cover all cycles of basic education, while the transition/completion rates concern only secondary education. In turn, the schooling rates provide information on the pre-primary school and the remaining study cycles.

Although the contracts mentioned that early school dropout rates should be used to track the impacts of decentralisation, the lack of annual data at the municipal level led to the use of transition and retention rates instead[25]. The latter was also considered in the contracts as a performance indicator, but the information on retention is only released for the different cycles of basic education. Therefore, the transition/completion rate was used to complement the analysis in the case of secondary education since

[21] Since this process of decentralisation started less than four years ago and happened simultaneously with the COVID-19 crisis, it is too soon to analyse its impacts.

[22] The justification for choosing those indicators was presented in the previous section.

[23] There were a few exceptions where data was missing for some municipalities in specific years.

[24] Although data for later years has been released, it is not included due to data collection being stopped in 2019 for the reasons stated above.

[25] Information on early school dropouts is only collected at the regional level. Using the same rate for all municipalities within a given region would result in a significant loss of relevant information, eventually leading to biased results that do not accurately reflect the actual impacts of decentralisation.

it provides comparable information. Nonetheless, it operates in the opposite direction, meaning that an increase in this variable is expected rather than a decrease in the retention rate[26].

On the other hand, data related to public school enrolment rates and average national exam classifications were treated before being added to the database. In the first case, even though there was no readily available indicator, the number of students enroled in public and private schools is annually released by INE (2022a) at the municipal level. The desired percentage was then calculated by dividing the number of students enroled in public schools by the total number of students enroled in public and private schools and multiplying by 100. The resulting values encompassed all levels of pre-primary, basic and secondary education. However, some observations concerning the number of students enroled in private schools, collected from INE, were missing in some municipalities[27]. In those cases, the percentage of students enroled in public education was also missing and was excluded from the estimations. This exclusion of observations is appropriate since decentralisation may not have prompted a switch in demand from private to public education if the former is not an option in the municipality[28] due to the non-existence of private schools.

Regarding national exam classifications, the information is available at the student level and is released annually by the National Exam Board (JNE). This data is only available from 2008, and, apart from sporadic reports with data at the municipality level, consistent annual information concerning the average of these classifications *per* municipality is unavailable. Therefore, those values were computed from the annual dataset released by JNE (Direção-Geral da Educação, 2022). This dataset contains information about the school in which each student is enroled, as well as the municipality where that school is located[29]. Thus, it was possible to compute the average of the national exam classifications *per* municipality and, particularly *per* cycle of study (basic or secondary education average classifications), and *per* subject[30]. Since the

[26] The transition/completion rate was not used for all education cycles since it provides complementary information to the one reflected by retention rates. It is possible to obtain each one of those indicators by subtracting the other to 100%.

[27] The data provided on the website of INE displays the character "-" for those observations, and there are no observations equal to zero in this indicator. A request for clarifications was emailed to this official entity to ensure that such special characters should be treated as missing values. According to the response received from INE, in early January 2023, the character "-" represents "null or non-applicable data". Given this duality and the impossibility of clearly guaranteeing that "-" is the same as having zero students enroled in private education, those observations were treated as missing values and then removed from the estimations.

[28] In the same email, INE clarified that this indicator concerns the number of students enroled in education establishments located in the respective municipality. Hence, the consideration is about the address of the educational establishment and not the student's address.

[29] The information about exam results, schools, and the municipalities of location is stored in different secondary databases. Therefore, to compute the desired averages, it was necessary to merge these databases, append the results of all years, and collapse the resulting dataset so that each observation corresponded to the average of a given national exam in a specific municipality.

[30] For basic education, the average was computed for the exams of Portuguese and Mathematics, performed in the last year of the third cycle. The classification for those exams ranges between levels 1 and 5. For secondary education, the average was calculated for the Portuguese, Mathematics, Mathematics Applied

focus is on public education, the computed averages excluded observations of students enroled in private schools.

To capture the decentralisation reforms of 2009 and 2015, two dummy variables were created based on the date on which the new competencies started to be assumed by municipalities, considering thus the first year of experienced effects.

Even though INE reports data on education-related variables annually, each value corresponds to an academic period spanning two years (e.g., 2004/2005). In contrast, control variables related to population features are reported by civil year (e.g., 2004). Therefore, the education-related variables were converted to civil years to enable the combination of data and the empirical analysis. Given that the academic period starts in September and finishes in July of the following year, the number of months encompassed by the year in which the academic period ends (e.g., 2005) is higher, so the conversion was as follows: the academic year 2004/2005 corresponds to the year 2005, 2005/2006 is represented by 2006, and so on.

Municipal expenses and compensations received

As previously mentioned, the contracts stipulated the transfer of funds to municipalities that received competencies in education to handle the extra expenses generated. To test the hypothesis presented in subsection 4.1, which is related to expectations about education expenses and compensations received, and given the unavailability of public information on those indicators, we asked the Directorate-General for Local Authorities (DGAL) if they had data on the information reported by municipalities regarding expenses and costs in education, divided by study cycles and competences, and the possibility of accessing it. The requested information was promptly made available by DGAL. It encompassed the amounts relative to the expenses incurred in education, as well as compensations received[31], organised by levels of education[32], and specific functions for the period between 2007 and 2022.

Since educational outcomes are reported as a global indicator, and the goal was to estimate the general impact of the competencies transference (and not a particular function effect), the total amount of expenses and compensations received by education level were computed and used in the estimations. Those values

to Social Sciences, History, Biology and Geology, Physics and Chemistry, Economics, and Geography exams, taken in the last two years of this education level. The range of classifications is between 1 and 200 points. Furthermore, the average of all exams carried out in the last cycle of basic education and secondary education was computed to assess the general impact of decentralisation on exams.

[31] According to the data provided, these values refer to compensations received to cover the costs that were foreseen in the State Budget, as well as in protocols or contracts celebrated with municipalities, such as those signed in 2009 and 2015.

[32] Given the scope of the successive decentralisation reforms over the years, the information concerned pre-primary and the first cycle of basic education. From 2015, the data sent also encompassed information on the third cycle of basic education. However, since those records are scarce, they were not included in the analysis.

were divided by the number of enroled students to guarantee that the comparison between municipalities was independent of it. Thus, these variables represent expenses and compensations received *per* student enroled. All these financial variables were also converted to real terms at 2022 prices.

Control variables

Several factors, apart from decentralisation, may impact educational outcomes. Municipalities' various characteristics can play a role in determining student performance and parents' decisions about private and public schools (Bravo et al., 2010; Goldhaber, 1996; Hoxby, 2003). Consequently, to estimate the effects accurately, it is necessary to include variables that control for the specific characteristics of each municipality in the model.

Various indicators were collected and incorporated into the constructed dataset, including the number of residents, crime rate, average monthly earnings, and the total amount of locally generated revenues expressed both in *per capita* terms and as a percentage of total revenues[33]. Most of this information was retrieved from the INE website and used directly in the analysis, with minor adjustments and without requiring computation.

In turn, there was a need to compute proxies for the unemployment rate and the population's education level due to the lack of those indicators. The unemployment rate was derived by dividing the average number of registered unemployed residents[34] of a given municipality in a particular year, obtained from IEFP (2022), by the total number of active population residents[35] in the same municipality and year, retrieved from INE (2022b). This result was multiplied by 100 to obtain a percentage value. The first year for which information is available is 2004, which determined the start of the empirical period of analysis.

Regarding the population's education level, INE (2022b) releases data on the population's educational attainment of each municipality, which is based on the information collected nationally through *Recenseamentos da População e da Habitação*, known as *CENSOS*. Nonetheless, since this data is only collected once every ten years, it was only available for 2001, 2011 and 2021. Due to the significant importance of including this variable, those three values were used to calculate the average annual growth rate (Cooper & John, 2012; United Nations Conference on Trade and Development, 2021). This calculation provided

[33] The variables were selected based on previous research, as described before.

[34] Since annual data on the number of unemployed of each municipality does not exist, an average of this number was calculated using the monthly data by each municipality, released by IEFP (2022).

[35] As defined by INE (2022c), the active population comprises "all persons aged 15 or over who, during the reference period, made up the available labour force for the production of economic goods and services (employed and unemployed)". Since information on active population is only available for the central Portuguese regions, this indicator was obtained by subtracting the number of residents under fifteen years old from the total population in each municipality.

an estimate of the annual values for the period of analysis.

The number of residents and the average monthly earnings were included in logarithmic terms to facilitate the interpretation of results. All financial variables, such as local revenues and average monthly earnings, were considered in real terms at 2022 prices to ensure the correct comparison over the years.

5 Econometric Models

5.1 Empirical framework

As previously mentioned, the central hypothesis posits that the decentralisation of powers in education has improved education-related indicators, such as enrolment rates and national exam grades. A DD approach was used to estimate these impacts, incorporating municipal and year-fixed effects for the 278 mainland municipalities between 2004 and 2019. Nevertheless, for the particular case of the first reform, the estimations considered only the period between 2004 and 2015 to avoid the very likely overlap of effects with the second decentralisation moment[36].

The use of DD framework ensures that the time-unvarying characteristics of municipalities, which could be related to their choice and educational outcomes, as well as the time trends, do not confound the obtained results (Guerra & Lastra-Anadón, 2019; Salinas & Solé-Ollé, 2018). Nevertheless, the proposed analysis may not be straightforward since other factors could influence the educational outcomes and the decision to participate in this type of contract.

One commonly used argument relies on the idea that the municipalities which agree to receive more powers already have significantly deeper concerns about education. Therefore, self-selection problems may affect the empirical analysis. Even though the Portuguese case did not benefit from an arbitrary choice over the municipalities facing decentralisation as in Elacqua et al. (2021), each municipality did not entirely determine that choice. Several particularities in the celebration of these contracts enable the comparison of outcomes between municipalities that signed them and those that did not:

- Decentralisation occurred in two different moments and was uncommon for all municipalities;
- The transfer of responsibilities was part of a broader package encompassing other functions, indicating that educational sector-specific features did not determine this process;

[36] Regarding the second reform, avoiding the simultaneity of effects is not so direct due to the temporal proximity to the first moment. Therefore, the empirical analysis relied on additional tests to prove the robustness of results, as described in the following section.

- In the case of the 2009 reform, the signature of contracts was not mandatory. Moreover, even though the intention was for all municipalities to face the same decentralisation, it did not happen due to complaints about insufficient funds (ANMP, 2010). Therefore, self-selection for this reform may not have occurred;

- For the 2015 reform, although each municipality had to agree to sign the contract, it was up to the central government to determine which group should integrate the decentralisation programme. So, while it is reasonable to expect that those who agreed had more significant concerns regarding education, it was not their intention that led to the decentralisation;

- There is a substantial variety of features among the municipalities that signed the contracts, namely in terms of location, dimension and other demographic indicators, suggesting that the similar municipality–specific effects were not the determining factor of selection[37].

All these particularities around the signature of contracts provide the necessary groundwork for applying the DD framework. Nonetheless, the parallel trends assumption must hold, meaning that the trends of decentralised and non-decentralised municipalities should be similar before the signature of contracts.

Although there is no particular test to confirm the validity of the parallel trends assumption, a visual inspection can shed light on the behaviour of each outcome trend[38]. Figure 1 displays the paths followed by the averages of the educational outcomes in municipalities that signed the contracts and those that did not for the period before 2010. As observed, there seems to be an identical path for retention and schooling rates, independently of the study cycle. However, the percentage of students enroled in public schools appears to behave differently in some years of the pre-intervention period. Figure 2 depicts similar information for the second decentralisation reform for the period before 2016. Once again, the trends of decentralised municipalities are identical to those of non-decentralised, particularly in the case of transition/retention rates and average classifications in national exams. Nevertheless, some differences arise in the public-private schools' student ratio, the pre-schooling rate, and some years of the other education-related rates.

Additional tests are typically used to assess the validity of the parallel trends assumption, known as "placebo tests". These tests were applied in this specific case and evaluated the statistical significance

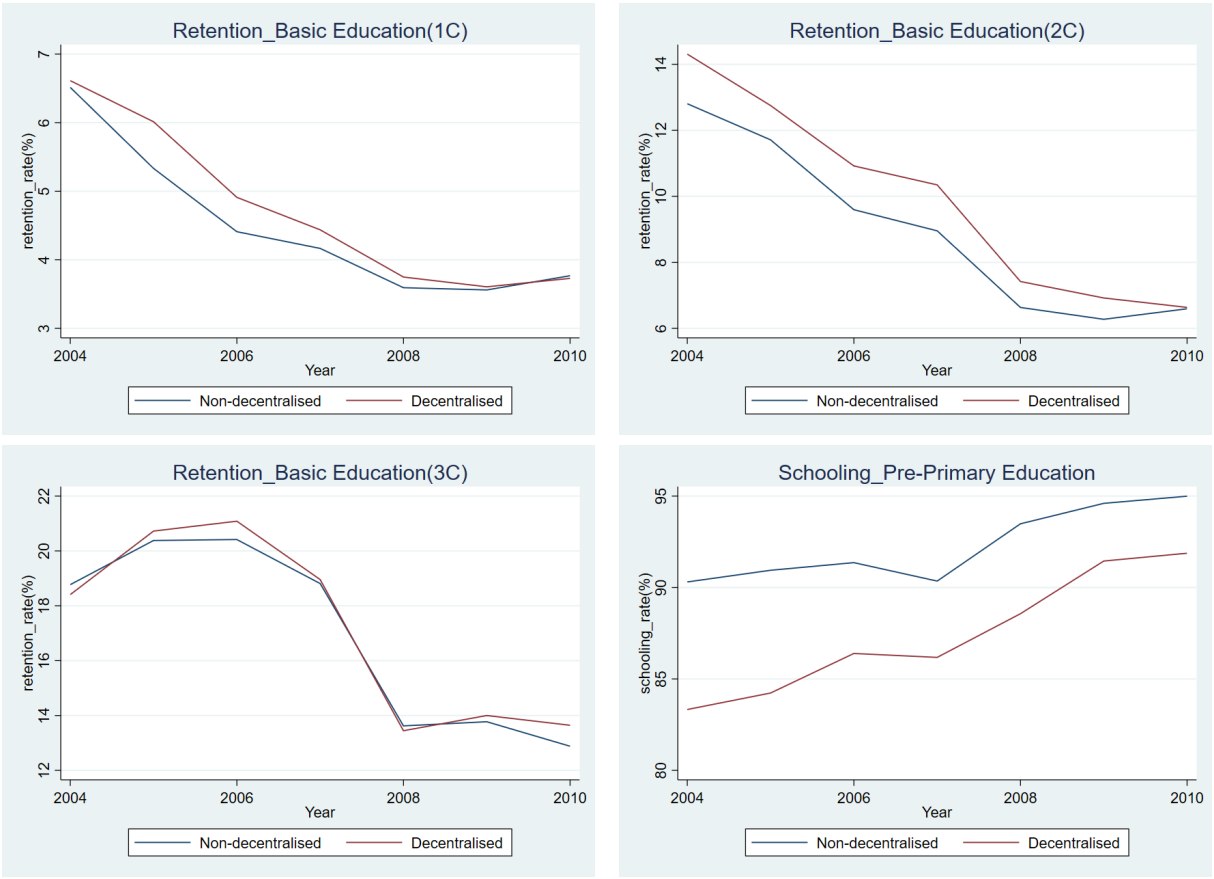
[37] The working memorandum of the 2015 programme clearly stated the goal of achieving a group of municipalities with significant demographic, political and territorial diversity (Secretário de Estado da Administração Local, 2014). Moreover, the descriptive statistics presented in Table 17 and Table 18 of Appendix B demonstrate this considerable variety of characteristics within each group of municipalities.

[38] Given the third hypothesis about the impacts of decentralisation on expenses and compensations received, similar graphs for those variables can be found in Appendix C.

of the decentralisation dummy variable for the periods before the reforms took place. If no significant differences exist between the municipalities that signed the contracts and those that did not, their behaviour should be identical in the pre-intervention period. Therefore, the dummy variables should not be statistically significant before 2010 or 2016. The discussion of those results is presented in the following section.

Despite the checks presented above, it could still be argued that, for some variables, there might be a violation of the parallel trends assumption, which could question the validity of the estimation results. To be extra cautious and account for this possibility, the models also controlled for regional-specific trends[39].

Figure 1: Trends in the educational outcomes before the 1st reform



[39] The inclusion of municipal and time fixed-effects in the models implies the need for a certain degree of within-variation. Therefore, the trends were included at the regional level instead of considering 278 municipal-specific trends to avoid having many variables and the resulting lack of variation.

Figure 1: Trends in the educational outcomes before the 1st reform (cont.)

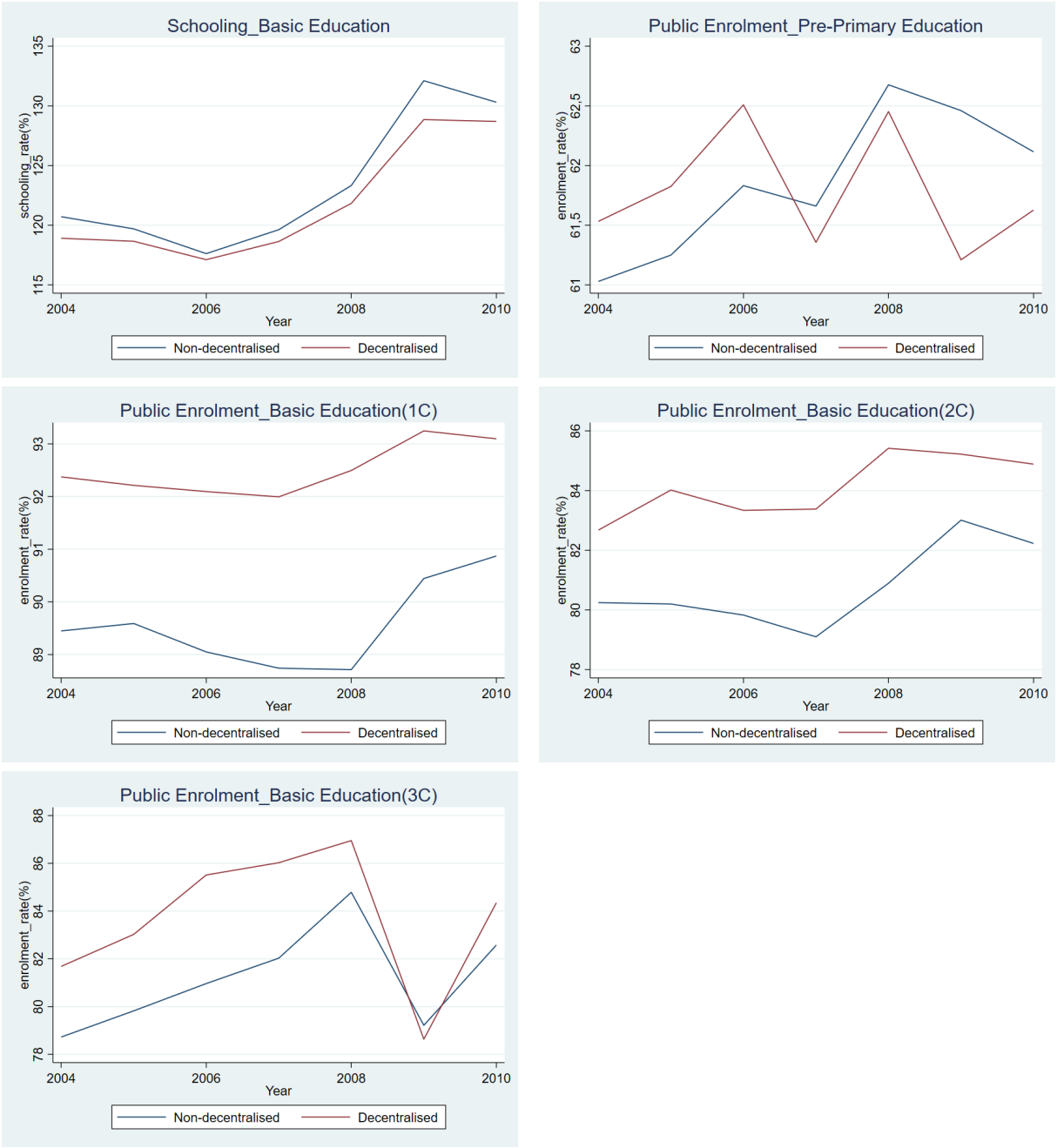
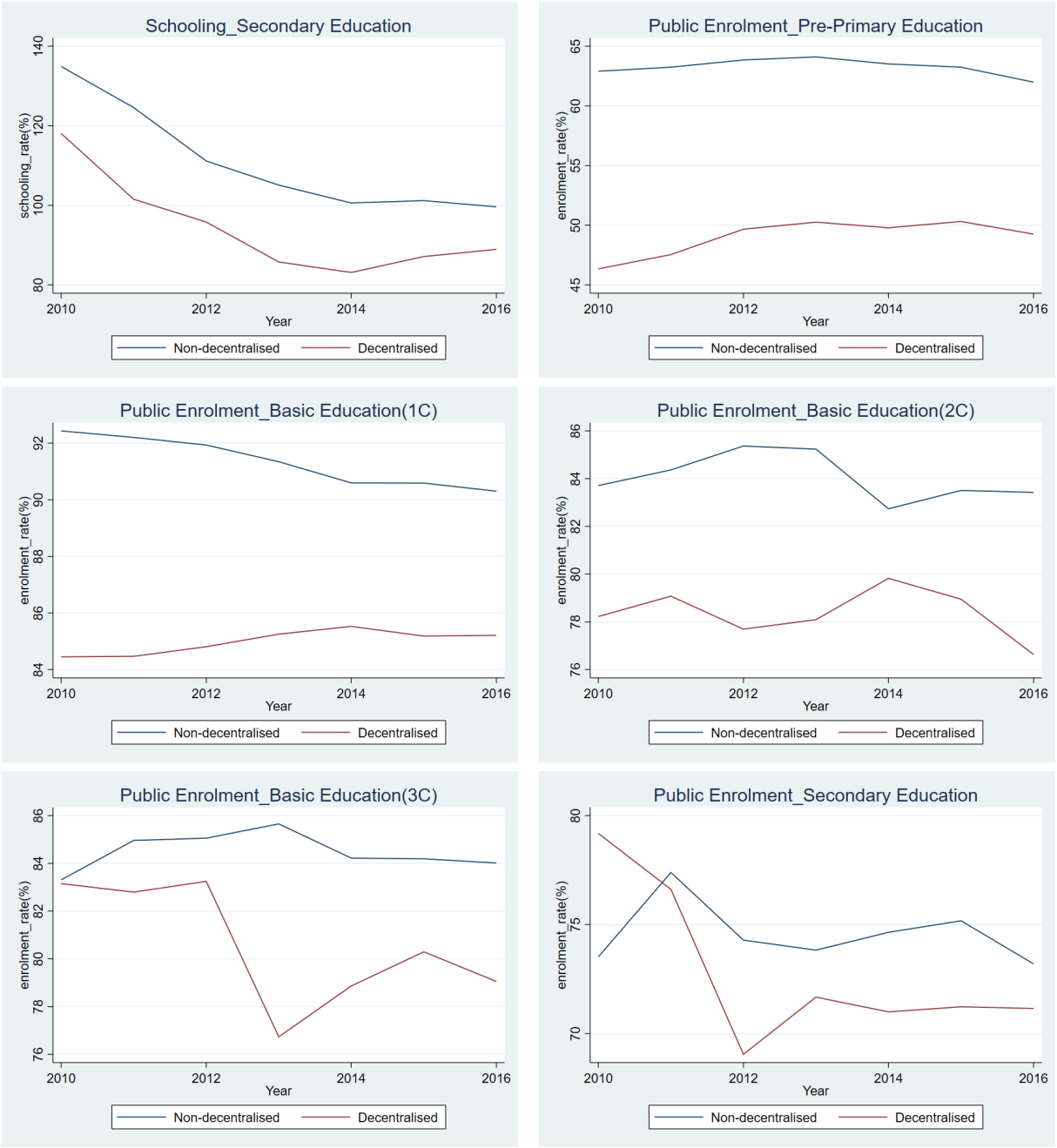


Figure 2: Trends in the educational outcomes before the 2nd reform

Figure 2: Trends in the educational outcomes before the 2nd reform (cont.)



5.2 Baseline model

After addressing the specificities of DD framework, particularly the assumption of common parallel trends, the baseline model for assessing decentralisation effects was derived. The model is as follows:

$$Y_{it} = \alpha + \beta_1 Decentralised\_A_{it} + \beta_2 X_{it-1} + \mu_i + \lambda_t + \theta_i t + \varepsilon_{it}. \quad (1)$$

$$i = 1, ..., 278^{40} \qquad t = 2004, ..., 2019^{41}$$

where Y_{it} corresponds to a given outcome variable in municipality i in year t. For the 2009's reform, the dependent variables are the percentage of students enroled in public schools, as well as the schooling and retention rates. When focusing on the 2015 contracts, the average classification in national exams[42] and the transition/completion rate of secondary education are also included in the group of dependent variables.

$Decentralised\_A_{it}$ is a dummy variable that equals one for the municipalities that signed the contracts from the year the competencies were assumed until 2019 and zero otherwise. Since the first reform's effects started between January 2009 and January 2010, this dummy equalled one from 2010 onwards for the decentralised municipalities. This decision ensures that the dummy variable encloses all contracts and that the time required to carry the new responsibilities entirely is considered[43]. The additional competencies appointed in the second reform were transferred slightly before the 2015/2016 school year began. Accordingly, the decentralisation dummy variable equalled one from 2016 onwards for those municipalities that signed the contracts[44]. β_1 is the coefficient of interest, representing the effect of decentralisation after the signature of the contract.

[40] For the particular case of 2009, the number of municipalities corresponded to 275 due to excluding the three municipalities that only signed the contracts in 2011 and 2012. The sample included then the municipalities of *Vimioso*, *Vidigueira* and *Entroncamento* for a robustness check.

[41] For the first reform, the analysis covers only the period between 2004 and 2015 to avoid overlapping effects, while it encompasses the entire period in the case of the second reform.

[42] For space-saving purposes, the results concern only the average by study cycle, that is, the average classification of all the exams carried out in the third cycle of basic education or during secondary education. Nonetheless, the results for the average of each exam are, in general terms, according to the results of the cycles' averages.

[43] The academic year starts in September, so the municipalities decentralised in January 2009 received the new competencies in the middle of the academic period. Hence, it is probable that they have only experienced effects in the 2009/2010 school year, as it occurred with those assuming the new responsibilities later. Given the conversion of academic periods into civil years described in section 4, 2010 should be considered in the analysis. As formerly mentioned, the three municipalities that underwent effects only after 2011 were excluded from the study.

[44] This consideration was also based on the conversion of school periods into civil years, explained in section 4.

X_{it} is a vector of control variables that may also impact the educational outcomes and is included in lagged terms[45]. That vector includes the following variables, which may control for other municipal-specific features[46]:

- Population: Represents the number of people living in a given municipality in a specific year. This variable is included to control for the size of the municipalities and is introduced in logarithmic terms;
- Average monthly earnings and unemployment rate: These variables control for the economic background of each municipality. The average monthly earnings were adjusted to real terms (at 2022 prices) and were also included in logarithmic terms;
- Percentage of residents with higher education: This variable serves as a proxy for the educational attainment of the population in each municipality.

Finally, μ_i and λ_t represent the municipal and year fixed-effects, respectively, while $\theta_i t$ are the regional-specific time trends.

Considering the previously mentioned hypothesis about the behaviour of educational expenses and compensations received after decentralisation, a reduced form of the same baseline model was estimated. The dependent variables of this new version encompassed the educational expenses and the compensations received *per* education cycle[47]. These values were introduced in real terms (at 2022 prices) and represented the amount *per* student. Moreover, this reduced form did not include the vector of control variables since demographic and municipal-specific features are not expected to influence the monetary amounts spent and received, nor the number of students, given that the computation of the values already considered them. In this model, the years represented by t started only in 2007, the first year for which this financial data is available.

[45] The lagged terms are considered because it is highly probable that the conditions involving students and their parents' realities may take some time to impact educational outcomes and the private-public school choice. One specific example is the proxy for the unemployment rate, which corresponds to the rate registered in December. Therefore, one might expect that the unemployment proxied by this specific rate will only likely affect outcomes and choices in the following year.

[46] For testing purposes, this vector of control variables also included other indicators such as the crime rate (collected from INE), own revenues *per capita* and its percentage in total revenues (both retrieved from DGAL website), the expenses in education and compensations received by the cycle of education (directly provided by DGAL), as well as the number of students *per* teacher and *per* computer with an internet connection (both from INE). Nonetheless, these variables did not turn out statistically significant in the estimations in which they were included, and there is no evidence that they impact educational outcomes.

[47] Data was available for the pre-primary and the first cycle of basic education, as well as for total values.

5.3 Flexible model

Apart from estimating the impact of decentralisation in general terms for the period after the reform, it is also interesting to understand if those same effects were constant or modified over the years. With that goal in mind, this empirical research also employed a flexible model.

Relying on the same assumptions as the baseline DD framework, this flexible model allowed testing the hypothesis of parallel trends and enabled the examination of whether the reform had different effects over the years[48]. The derived model was the following:

$$Y_{it} = \alpha + \sum_{t=2004}^{2019} \beta_{1t} Decentralised\_A_{it} + \beta_2 X_{it-1} + \mu_i + \lambda_t + \theta_i t + \varepsilon_{it}. \quad (2)$$

$$i = 1, ..., 278^{49} \qquad t = 2004, ..., 2019^{50}$$

As previously noted, the coefficient of the decentralisation dummy variables, β_{1t}, should not be, on the one hand, statistically significant for all the pre-treatment years to prove that the parallel trends assumption is verified. On the other hand, β_{1t} should be statistically significant after 2010 or 2016 if decentralisation did impact educational outcomes. Differences in the coefficients' values and significance for the years after decentralisation indicate that the effects and their intensity may have varied over time. The remaining components of the flexible model were defined as in the baseline DD model.

5.4 DD with multiple time periods

The general DD approach considers a setup with two different periods and two groups, which must display a similar trend in the pre-intervention period. However, that is often not the case, with several analyses focusing on a multiple-period framework with significantly different groups that might prevent the common trends assumption from holding. The use of the DD extended for multiple time periods as presented by Callaway and Sant'Anna (2021) allows the estimation of those same impacts for cases in which there are more than two periods, the units receive treatment at a different time, and the common trends assumption does not hold unconditionally.

[48] This approach followed the similar one used by Elacqua et al. (2021) in the study of the decentralisation reform which took place in 2002, involving some Colombian municipalities.

[49] For the particular case of 2009, the number of municipalities corresponded to 275 due to excluding the three municipalities that only signed the contracts in 2011 and 2012. The sample included then the municipalities of *Vimioso*, *Vidigueira* and *Entroncamento* for a robustness check.

[50] For the first reform, the analysis covers only the period between 2004 and 2015 to avoid overlapping effects, while it encompasses the entire period in the case of the second reform.

When looking at the contracts of the first decentralisation reform in analysis, two groups of municipalities may be distinguished: those which signed contracts in September 2008 and those which only signed in the middle of 2009. Since the transference of competencies might take time to produce effects on educational outcomes and, in the majority of the cases, the contracts clearly stated that the transference of some functions and funds would only happen on the first day of the following year, the two groups may be seen as potentially experiencing effects in different times.

There are several assumptions on which this method relies. Therefore, before adopting this new approach, it was essential to understand them and guarantee they were adaptable to this case. As presented by Callaway and Sant'Anna (2021), the assumptions are the following:

- After receiving treatment, which must not happen in the first period, each unit continues to be treated in the following periods. That is precisely the case of the presented analysis since those municipalities signing contracts in 2008/2009 remained treated afterwards, and there is available data for the pre-treatment period;

- A panel data should be used[51] and an anticipation behaviour towards treatment is generally not allowed, even though this might happen in those cases where its horizon is clear. This research relies exclusively on a panel dataset and, although one could argue that municipalities may know about the contracts before signing them, that knowledge was acquired, at most, in the previous year, not before[52];

- The parallel trends assumption should also hold in this framework, even though it might be conditional on covariates represented by X. Such premise is fundamental in cases where those covariates are differently distributed across groups and may present particular outcome trends over time. As previously stated, there might be doubts about verifying the unconditional parallel trends assumption in this case since there might be considerable differences between those municipalities that signed and those that did not, particularly in terms of specific features represented by the control variables in X.

Therefore, given that all conditions seem to hold in the specific case of this research, the DD extended to a multiple time periods framework was also used to assess decentralisation impacts concerning the

[51] Nonetheless, the authors also show that results hold for the cases with repeated cross-section data.

[52] The transference of competencies in the scope of education was approved by the Decree-Law n.° 144/2008 and so in the same or the previous year to the signature of execution contracts.

first decentralisation reform under analysis in terms of educational outcomes[53].

This approach's main parameter of interest is the Average Treatment Effect (ATT). Callaway and Sant'Anna (2021) derive this average effect for the members of each group, identified by g, and in a particular period, denoted by t, as follows:

$$ATT(g,t) = \mathbb{E}[Y_t(g) - Y_t(0)|G_g = 1] \tag{3}$$

Therefore, one of the outstanding contributions of using this framework is that the ATT may vary over time in each group and be heterogeneous across groups (Callaway & Sant'Anna, 2021). Under this framework, the mainland municipalities were organised into three different groups[54]:

- Municipalities whose contracts started having effects in January 2009. This group corresponds to the early adopters of the reform and includes 91 municipalities. Since on January first, only one-third of the 2008/2009 school year had passed, it is possible that the reform produced effects from 2009 onwards, and this was the *2009 Group*;
- Municipalities whose contracts started having effects from March 2009 till January 2010 (22 municipalities – late adopters of the reform). In these cases, it is considered that the reform started producing effects in the school year 2009/2010, that is, from 2010 onwards, and those municipalities are part of the *2010 Group*;
- Municipalities that did not sign any contract in 2009 or 2010 (162 municipalities). These municipalities constituted the "never treated" control group.

Due to the possible overlap of effects with the second reform and given that the considered control group encompasses the never treated units, the DD with multiple time periods framework covered only the period between 2004 and 2015. As previously mentioned, some municipalities that signed the contracts in 2009/2010 also received additional competencies in 2015/2016. Additionally, some that did not benefit from this increased autonomy in the first moment could experience it later. If this analysis did not carefully consider those cases, the results could be, at least in part, driven by the second decentralisation reform. Thus, relying on this shorter period guarantees that the results represent only the effects of the first

[53] In this case, the empirical analysis focused only on education-related outcomes since those were the ones which did not display significant results when the baseline and flexible models were applied, in contrast with the verified regarding municipal accounts.

[54] As previously mentioned, there are three municipalities - *Vimioso*, *Entroncamento* and *Vidigueira* - which have only signed execution contracts in 2011 and 2012. Nevertheless, being just three municipalities implies that attributing them to a different cohort would lead to tiny groups, which could produce results that are not adequate to be interpreted. As before, those three municipalities were excluded from the empirical analysis.

moment and still enable the analysis through a considerable post-treatment period of five years, which is supposedly enough for the impacts to be noted.

By applying this setup, the main goal was to estimate the ATT of decentralisation on education outcomes by each group of municipalities and identify whether that effect differed across groups or varied over time. The computation of those parameters relied on doubly robust estimands, which require the correct specification of the propensity score model or the outcome evolution, being thus more robust than other methods[55] (Callaway & Sant'Anna, 2021).

6 Empirical Results

6.1 Baseline model

Table 2 to Table 7 present the results obtained by estimating the baseline model using fixed effects clustered at the municipality level. The results are divided according to the dependent variable and the reform under analysis.

2009 Contracts

As it is observable in Table 2, there is evidence of the higher amount of compensations received following decentralisation, even though the expenses in education do not seem to vary after 2010. Specifically, the decentralised municipalities started to receive higher compensations to face the additional costs of the reform, corresponding to increases of 90.75, 244.9 and 76.84 euros *per* student (at 2022 prices) in pre-primary, basic education (first cycle) and total terms, compared to what would be expected if no decentralisation occurred. Those increases align with the contract's definition since monetary transfers should follow the attribution of new competencies in the amounts stipulated in the same agreement. However, no statistical evidence shows that increased autonomy led municipalities to spend more on education.

Regarding educational outcomes, no statistical evidence was found for most of the dependent variables analysed regarding quality and access to education, as shown in Table 3 and Table 4. The only exceptions are the schooling rate of basic education, which was 2.31 percentage points higher after 2010, and the percentage of students enroled in pre-primary public schools, which appears to have decreased by 1.71

[55] This specific approach enables extra robustness in dealing with model specifications when compared with other methods, such as the inverse probability weighting or the outcome regression.

percentage points, considering everything else equal. In the first case, since basic education is mandatory for all students and this indicator concerns both public and private schools, the result may be due to an increase in the demand for education in a given municipality by children living in another municipality. In contrast, the latter result differs from what was expected regarding the decentralisation effects on education access.

Table 2: Effects of the 1st reform in municipal accounts - Baseline Model

VARIABLES	*Expenditures (per student)*			*Compensations Received (per student)*		
(level of education)	Pre-Primary	1st Cycle (Basic)	Total	Pre-Primary	1st Cycle (Basic)	Total
Decentralised(Year>=2010)	88.29	139.4	20.44	90.75**	244.9***	76.84***
	(1.069)	(1.438)	(0.358)	(2.051)	(6.777)	(5.351)
Observations	2,475	2,475	2,475	2,475	2,475	2,475
Number of municipality_id	275	275	275	275	275	275
Adjusted R-squared	0.021	0.088	0.025	0.128	0.132	0.091

Notes: All regressions include municipal and year-fixed effects, and regional-specific trends. All dependent variables are in real euros (at 2022 prices) *per* student. The estimations encompass 275 municipalities and consider only the 2004 - 2015 period. T-statistics, based on robust standard errors clustered by each municipality, are depicted in parentheses.

Significance level: *** p<0.01, ** p<0.05, * p.<0.10.

Table 3: Effects of the 1st reform on educational outcomes - Baseline Model

VARIABLES	*Retention Rates*			*Schooling Rates*	
(level of education)	1st Cycle (Basic)	2nd Cycle (Basic)	3rd Cycle (Basic)	Pre-Primary	Basic
Decentralised(Year>=2010)	-0.113	-0.307	0.304	1.145	2.309**
	(-0.649)	(-0.796)	(0.683)	(1.006)	(1.970)
Log(Population)$_{t-1}$	-3.500**	-3.176	4.787	-5.454	-15.92
	(-2.068)	(-0.726)	(1.074)	(-0.330)	(-1.167)
Log(Month.Earnings)$_{t-1}$	2.188	0.229	-0.255	-11.48	7.759
	(1.626)	(0.0900)	(-0.0889)	(-1.601)	(0.818)
%Unemploy.$_{t-1}$	0.0209	0.0611	-0.170	0.00467	-0.116
	(0.392)	(0.555)	(-1.248)	(0.0143)	(-0.351)
	(0.390)	(2.166)	(-0.324)	(-0.505)	(-0.600)
%Popula.Higher.Educ.$_{t-1}$	-0.0232	-0.373**	-0.153	-1.080*	0.263
	(-0.424)	(-2.450)	(-0.806)	(-1.893)	(0.573)
Observations	3,025	3,025	3,025	3,025	3,025
Number of municipality_id	275	275	275	275	275
Adjusted R-squared	0.164	0.330	0.334	0.259	0.338

Notes: All regressions include municipal and year-fixed effects, and regional-specific trends. The estimations encompass 275 municipalities and consider only the 2004 - 2015 period. T-statistics, based on robust standard errors clustered by each municipality, are depicted in parentheses.

Significance level: *** p<0.01, ** p<0.05, * p.<0.10.

Table 4: Effects of the 1st reform on educational outcomes - Baseline Model (cont.)

VARIABLES	*Public School Enrolment Rates*			
(level of education)	Pre-Primary	1st Cycle (Basic)	2nd Cycle (Basic)	3rd Cycle (Basic)
Decentralised(Year>=2010)	-1.709*	-0.539	-0.0388	0.272
	(-1.926)	(-1.141)	(-0.0352)	(0.350)
Log(Population)$_{t-1}$	8.793	1.606	-17.20	-2.723
	(0.902)	(0.233)	(-1.541)	(-0.212)
Log(Month.Earnings)$_{t-1}$	-9.671*	-7.209**	-4.059	-6.775
	(-1.740)	(-2.219)	(-0.505)	(-0.985)
%Unemploy.$_{t-1}$	0.323	0.123	-0.0747	0.0516
	(1.608)	(0.935)	(-0.292)	(0.191)
%Popula.Higher.Educ.$_{t-1}$	0.0613	-0.251*	-0.0410	-0.108
	(0.194)	(-1.699)	(-0.194)	(-0.422)
Observations	2,749	1,092	1,122	1,623
Number of municipality_id	255	130	151	243
Adjusted R-squared	0.066	0.063	0.079	0.204

Notes: All regressions include municipal and year-fixed effects, as well as regional-specific trends. The estimations consider only the 2004 - 2015 period and encompass 275 municipalities, but some regressions may include a smaller number due to missing data. T-statistics, based on robust standard errors clustered by each municipality, are depicted in parentheses.

Significance level: *** p<0.01, ** p<0.05, * p.<0.10.

2015 Contracts

Table 5 shows that the amounts received to cover education costs also seem to increase after 2016, contrasting with the apparent decrease in the expenditures made *per* student in pre-primary education. Notably, the decentralised municipalities started to receive 232.3 and 88.07 euros *per* student (at 2022 prices) more in the first cycle of basic education and total terms. In contrast, those municipalities appear to have spent less 240.5 euros *per* student (at 2022 prices) than expected in pre-primary education. Hence, as before, the results do not provide evidence that the municipalities receiving more competencies spent more on education after decentralisation.

In terms of educational outcomes, represented in Table 6 and Table 7, although the majority of variables are not statistically significant, there is evidence of a decrease in the average of the exam classifications obtained at the end of secondary education, which is about 1.93 points lower than it would be had decentralisation not happened. In contrast, it is observable an increase in the schooling rate of the same cycle of studies and the percentage of students enroled in pre-primary public education, which are 11.11 and 2.51 percentage points higher than what would be expected if those municipalities did not receive additional competencies.

The two latter results align with the previously presented hypotheses, representing the improvements in education access caused by decentralisation. Nonetheless, the national exam average decrease contrasts with the expected education quality enhancement.

Table 5: Effects of the 2nd reform in municipal accounts - Baseline Model

VARIABLES	*Expenditures (per student)*			*Compensations Received (per student)*		
(level of education)	Pre-Primary	1st Cycle (Basic)	Total	Pre-Primary	1st Cycle (Basic)	Total
Decentralised(Year>=2016)	-240.5**	143.90	18.93	80.54	232.3*	88.07*
	(-2.096)	(1.189)	(0.439)	(0.490)	(1.785)	(1.770)
Observations	3,611	3,614	3,614	3,611	3,614	3,614
Number of municipality_id	278	278	278	278	278	278
Adjusted R-squared	0.071	0.068	0.062	0.111	0.095	0.050

All regressions include municipal and year-fixed effects, and regional-specific trends. All dependent variables are in real euros (at 2022 prices) *per* student. The estimations encompass 278 municipalities. T-statistics, based on robust standard errors clustered by each municipality, are depicted in parentheses.
Significance level: *** p<0.01, ** p<0.05, * p.<0.10.

Table 6: Effects of the 2nd reform on educational outcomes - Baseline Model

VARIABLES	*Retention Rates*			*Transition Rate*	*Average Exam Classifications*		*Schooling Rate*
(level of education)	1st Cycle (Basic)	2nd Cycle (Basic)	3rd Cycle (Basic)	Secondary	3rd Cycle (Basic)	Secondary	Pre-Primary
Decentralised(Year>=2016)	-0.200	0.234	0.103	-0.164	-0.0209	-1.925***	1.811
	(-0.759)	(0.658)	(0.165)	(-0.224)	(-0.989)	(-2.715)	(0.736)
Log(Population)$_{t-1}$	-4.035***	-6.174**	-1.142	-7.248	-0.204	-11.37	28.48**
	(-2.728)	(-2.015)	(-0.367)	(-1.532)	(-1.401)	(-1.570)	(2.324)
Log(Month.Earnings)$_{t-1}$	1.437	-0.206	1.630	3.014	0.227**	9.200*	-3.273
	(1.406)	(-0.0810)	(0.730)	(1.130)	(2.520)	(1.676)	(-0.545)
%Unemploy.$_{t-1}$	0.00887	0.0928	-0.0606	-0.0825	-0.00628	-0.201	-0.751***
	(0.227)	(1.134)	(-0.633)	(-0.623)	(-1.618)	(-1.198)	(-2.679)
%Popula.Higher.Educ.$_{t-1}$	0.0281	-0.122	0.237**	-0.254*	-0.000525	-0.509***	-0.502
	(0.809)	(-1.405)	(2.542)	(-1.724)	(-0.120)	(-3.048)	(-1.210)
Observations	4,113	4,088	4,152	3,789	3,317	2,005	4,170
Number of municipality_id	278	278	278	262	277	218	278
Adjusted R-squared	0.227	0.391	0.534	0.597	0.580	0.588	0.235

Notes: All regressions include municipal and year-fixed effects, and regional-specific trends. The estimations encompass all 278 mainland municipalities, but some regressions may include a smaller number due to missing data. T-statistics, based on robust standard errors clustered by each municipality, are depicted in parentheses.
Significance level: *** p<0.01, ** p<0.05, * p.<0.10.

Table 7: Effects of the 2nd reform on educational outcomes - Baseline Model (cont.)

VARIABLES	*Schooling Rates*		*Public School Enrolment Rates*				
(level of education)	Basic	Secondary	Pre-Primary	1st Cycle (Basic)	2nd Cycle (Basic)	3rd Cycle (Basic)	Secondary
Decentralised(Year>=2016)	1.694	11.11*	2.506**	1.918	1.661	0.0801	0.705
	(0.499)	(1.702)	(2.359)	(1.608)	(0.695)	(0.0412)	(0.252)
Log(Population)$_{t-1}$	-12.93	-33.19	14.28	-5.126	-15.49*	-2.039	-23.19**
	(-0.985)	(-1.205)	(1.576)	(-0.882)	(-1.780)	(-0.241)	(-2.256)
Log(Month.Earnings)$_{t-1}$	4.850	20.06	-9.893**	-3.622	-3.629	-15.18	-15.59
	(0.526)	(1.184)	(-2.117)	(-1.272)	(-0.618)	(-1.372)	(-1.287)
%Unemploy.$_{t-1}$	-0.0934	-0.508	0.0825	0.166	-0.276	-0.114	0.316
	(-0.319)	(-0.847)	(0.398)	(1.206)	(-0.987)	(-0.408)	(1.106)
%Popula.Higher.Educ.$_{t-1}$	-0.139	1.252	0.214	-0.266**	-0.212	-0.154	-0.222
	(-0.281)	(0.989)	(0.848)	(-2.134)	(-1.038)	(-0.703)	(-0.876)
Observations	4,170	3,948	3,754	1,510	1,534	2,144	2,292
Number of municipality_id	278	275	257	139	158	246	244
Adjusted R-squared	0.361	0.305	0.107	0.108	0.128	0.189	0.070

Notes: All regressions include municipal and year-fixed effects, and regional-specific trends. The estimations encompass all 278 mainland municipalities, but some regressions may include a smaller number due to missing data. T-statistics, based on robust standard errors clustered by each municipality, are depicted in parentheses.

Significance level: *** p<0.01, ** p<0.05, * p.<0.10.

6.2 Flexible model

As previously mentioned, the estimation of a flexible model allows the verification of potential differences in the effects throughout the years. Moreover, observing the coefficients for the years before decentralisation provides an additional test for the validity of the parallel trends assumption. The results of the flexible model estimation are presented in Table 8 to Table 13.

Concerning the first reform, the placebo tests suggest the validity of that assumption for most outcomes, as portrayed in Table 8, Table 9 and Table 10. One exception appears to be the schooling rate of basic education, for which the coefficients are significant and negative in some pre-treatment years. This result might indicate differences between municipalities that signed and those that did not, even before decentralisation.

Additionally, some of the coefficients associated with compensations received are significant and negative in the periods immediately before the reform. Those coefficients start to be positive in the years after decentralisation, indicating the ampler amounts received by decentralised municipalities. The same is observed for the case of municipal expenses in education, which are equally higher after 2010. Therefore, one might argue that there were differences between municipalities, but after decentralisation, those who

assumed additional responsibilities started to receive higher compensations and spend more on education, contrasting with the lower values observed before the reform. In addition, these results might indicate that those municipalities which spent less on education and received lower amounts of compensation before decentralisation were the ones which adopted the reform. Therefore, the selection of municipalities to participate in the reform might not have been entirely random.

There seems to be also an increase in the percentage of students enroled in the second cycle of public education, even though it was only verified in 2013 and 2014. Furthermore, the results of the flexible model do not provide evidence of considerable variations in the impacts and their intensity over time, even though some fluctuations are observed over time. That is especially true in the case of municipal expenses and compensations received. For those variables, the coefficients' magnitude appears to decrease after 2011, indicating a reduction in the difference in amounts registered between decentralised and non-decentralised municipalities.

As described, the model was estimated between 2004 and 2015 due to the possibility of overlapping effects. Nonetheless, to check the robustness of results and identify the likeliness of impacts simultaneity, the same model was estimated for the entire analysis period until 2019. Those results are presented in Table 19, Table 20 and Table 21 of Appendix D. Even though no significant differences are spotted in most educational outcomes, the results for municipal expenses appear to differ. When including in the analysis the years after 2015, the coefficients of expenses and compensations are statistical significant and negative from 2015 onwards. Remarkably, those values suggest that decentralised municipalities have spent less on education after 2015 than expected in the case of not signing the contracts. Those results are contrary to the expectations and might evidence the likely overlapping of effects with the second reform since the negative coefficients are only significant after 2015.

Regarding the second decentralisation moment, the analysis is not so straightforward since the estimation of pre-treatment coefficients for the dummy variable representing 2015's contracts is also likely to be confounded by the annual effects of the first reform. Therefore, the results depicted in Table 11, Table 12 and Table 13 might be a potential consequence of that overlap. Along with the sporadic significance observed for some dependent variables, there seem to be many significant coefficients in the periods before treatment for specific indicators. That is the case of education expenses and the percentage of public school enrolment regarding pre-primary education, the schooling rate and the average of national exams in secondary education as well as the retention rates of the second and third cycles of basic education.

Table 8: Effects of the 1st reform in municipal accounts - Flexible Model

VARIABLES	*Expenditures (ps)*			*Compensations Received (ps)*		
(level of education)	Pre-Primary	1st Cycle (Basic)	Total	Pre-Primary	1st Cycle (Basic)	Total
Decentralised(Year=2007)	2.740	-111.2	22.48	-193.0***	-247.5***	-87.33***
	(0.0224)	(-0.915)	(0.329)	(-2.797)	(-5.345)	(-4.764)
Decentralised(Year=2008)	36.04	-143.7	14.25	-110.4	-277.4***	-89.53***
	(0.320)	(-1.227)	(0.216)	(-1.498)	(-6.093)	(-4.535)
Decentralised(Year=2009)	171.6	150.6	126.4*	-102.2	58.46	8.666
	(1.365)	(1.208)	(1.703)	(-1.506)	(0.962)	(0.435)
Decentralised(Year=2010)	181.7*	107.0	93.10***	-60.70	134.3*	31.75*
	(1.768)	(1.398)	(2.771)	(-0.786)	(1.832)	(1.743)
Decentralised(Year=2011)	198.4**	219.1***	114.9***	-100.1	169.4***	39.70**
	(2.317)	(2.895)	(3.573)	(-1.478)	(2.889)	(2.181)
Decentralised(Year=2012)	109.5	132.2**	69.17***	-54.97	125.6***	29.00**
	(1.474)	(2.224)	(3.009)	(-0.956)	(2.716)	(2.188)
Decentralised(Year=2013)	437.1	98.81	132.6	19.69	65.66	21.73*
	(1.283)	(1.574)	(1.586)	(0.308)	(1.618)	(1.767)
Decentralised(Year=2014)	4.432	58.50	28.47*	-54.39	28.70	0.341
	(0.0896)	(1.234)	(1.748)	(-1.071)	(0.830)	(0.0274)
Observations	2,475	2,475	2,475	2,475	2,475	2,475
Number of municipality_id	275	275	275	275	275	275
Adjusted R-squared	0.024	0.097	0.031	0.130	0.162	0.115

Notes: All regressions include municipal and year-fixed effects, and regional-specific trends. All dependent variables are in real euros (at 2022 prices) *per* student. The estimations encompass 275 municipalities, but consider only the period 2004 - 2015. T-statistics, based on robust standard errors clustered by each municipality, are depicted in parentheses.

Significance level: *** p<0.01, ** p<0.05, * p.<0.10.

Table 9: Effects of the 1st reform on educational outcomes - Flexible Model

VARIABLES	*Retention Rates*			*Schooling Rates*	
(level of education)	1st Cycle (Basic)	2nd Cycle (Basic)	3rd Cycle (Basic)	Pre-Primary	Basic
Decentralised(Year=2005)	0.321	0.0571	-0.376	-1.874	-3.348*
	(0.853)	(0.0756)	(-0.468)	(-0.999)	(-1.757)
Decentralised(Year=2006)	0.140	0.384	-0.00627	-0.301	-2.653
	(0.405)	(0.472)	(-0.00647)	(-0.157)	(-1.409)
Decentralised(Year=2007)	-0.0934	0.490	-0.486	0.328	-2.981*
	(-0.279)	(0.750)	(-0.631)	(0.189)	(-1.707)
Decentralised(Year=2008)	-0.218	-0.0703	-0.782	-0.539	-3.370*
	(-0.614)	(-0.109)	(-1.075)	(-0.291)	(-1.792)
Decentralised(Year=2009)	-0.322	-0.171	-0.333	1.007	-4.938*
	(-0.939)	(-0.276)	(-0.489)	(0.601)	(-1.891)
Decentralised(Year=2010)	-0.396	-0.745	0.275	0.792	-3.052
	(-1.333)	(-1.174)	(0.407)	(0.509)	(-1.021)
Decentralised(Year=2011)	-0.131	-0.320	-0.467	1.625	-1.802
	(-0.437)	(-0.563)	(-0.666)	(1.004)	(-0.803)
Decentralised(Year=2012)	-0.400	0.398	-0.585	2.735	-1.316
	(-1.407)	(0.614)	(-0.825)	(1.544)	(-0.913)
Decentralised(Year=2013)	-0.400	0.398	-0.585	2.735	-1.316
	(-1.407)	(0.614)	(-0.825)	(1.544)	(-0.913)
Decentralised(Year=2014)	0.275	0.491	-0.565	-0.835	0.303
	(0.882)	(0.891)	(-0.975)	(-0.949)	(0.497)
Log(Population)$_{t-1}$	-3.512**	-3.340	4.885	-5.337	-16.64
	(-2.056)	(-0.757)	(1.094)	(-0.322)	(-1.224)
Log(Month.Earnings)$_{t-1}$	2.230*	0.212	-0.0908	-11.68	7.960
	(1.655)	(0.0828)	(-0.0317)	(-1.618)	(0.841)
%Unemploy.$_{t-1}$	0.0222	0.0643	-0.176	-0.0142	-0.110
	(0.414)	(0.587)	(-1.275)	(-0.0428)	(-0.334)
%Popula.Higher.Educ.$_{t-1}$	-0.0229	-0.368**	-0.156	-1.082*	0.285
	(-0.415)	(-2.390)	(-0.811)	(-1.886)	(0.626)
Observations	3,025	3,025	3,025	3,025	3,025
Number of municipality_id	275	275	275	275	275
Adjusted R-squared	0.165	0.331	0.334	0.260	0.338

Notes: All regressions include municipal and year-fixed effects, and regional-specific trends. The estimations encompass 275 municipalities, but consider only the period 2004 - 2015. T-statistics, based on robust standard errors clustered by each municipality, are depicted in parentheses.

Significance level: *** p<0.01, ** p<0.05, * p.<0.10.

Table 10: Effects of the 1st reform on educational outcomes - Flexible Model (cont.)

VARIABLES	*Public School Enrolment Rates*			
(level of education)	Pre-Primary	1st Cycle (Basic)	2nd Cycle (Basic)	3rd Cycle (Basic)
Decentralised(Year=2005)	2.314	0.333	1.239	-0.331
	(1.597)	(0.396)	(0.735)	(-0.241)
Decentralised(Year=2006)	2.300*	0.644	1.125	-0.542
	(1.661)	(0.817)	(0.656)	(-0.348)
Decentralised(Year=2007)	1.501	0.865	1.499	-0.868
	(1.161)	(1.164)	(0.878)	(-0.657)
Decentralised(Year=2008)	1.297	0.892	1.418	-0.222
	(1.091)	(1.321)	(0.892)	(-0.185)
Decentralised(Year=2009)	-0.112	0.881	0.562	-1.319
	(-0.103)	(1.376)	(0.357)	(-0.618)
Decentralised(Year=2010)	0.253	0.284	0.507	-0.852
	(0.267)	(0.519)	(0.354)	(-0.437)
Decentralised(Year=2011)	-0.451	0.415	1.012	-1.574
	(-0.537)	(0.813)	(0.904)	(-0.936)
Decentralised(Year=2012)	-0.271	0.113	1.389	-0.788
	(-0.372)	(0.269)	(1.449)	(-0.587)
Decentralised(Year=2013)	-0.963	0.249	2.093**	1.271
	(-1.490)	(0.744)	(2.266)	(1.268)
Decentralised(Year=2014)	-0.401	0.101	1.333***	0.0999
	(-0.867)	(0.451)	(2.700)	(0.167)
Log(Population)$_{t-1}$	9.588	1.580	-17.01	-3.234
	(0.972)	(0.225)	(-1.481)	(-0.251)
Log(Month.Earnings)$_{t-1}$	-9.503*	-7.368**	-4.079	-6.663
	(-1.686)	(-2.220)	(-0.509)	(-0.961)
%Unemploy.$_{t-1}$	0.327	0.118	-0.116	0.0584
	(1.615)	(0.861)	(-0.458)	(0.215)
%Popula.Higher.Educ.$_{t-1}$	0.0388	-0.251*	-0.0461	-0.0928
	(0.122)	(-1.699)	(-0.218)	(-0.356)
Observations	2,749	1,092	1,122	1,623
Number of municipality_id	255	130	151	243
Adjusted R-squared	0.068	0.058	0.076	0.202

Notes: All regressions include municipal and year-fixed effects, and regional-specific trends. The estimations consider only the 2004 - 2015 period and encompass 275 municipalities, but some regressions may include a smaller number due to missing data. T-statistics, based on robust standard errors clustered by each municipality, are depicted in parentheses.

Significance level: *** p<0.01, ** p<0.05, * p.<0.10.

Table 11: Effects of the 2nd reform in municipal accounts - Flexible Model

VARIABLES	*Expenditures (per student)*			*Compensations Received (per student)*		
(level of education)	Pre-Primary	1st Cycle (Basic)	Total	Pre-Primary	1st Cycle (Basic)	Total
Decentralised(Year=2007)	567.7***	-173.1	23.31	-180.9	-317.1**	-116.5
	(3.468)	(-0.989)	(0.318)	(-0.628)	(-2.245)	(-1.617)
Decentralised(Year=2008)	515.8***	-246.3	-16.19	-185.2	-298.7**	-115.0
	(2.956)	(-1.465)	(-0.226)	(-0.671)	(-2.037)	(-1.564)
Decentralised(Year=2009)	358.8**	-76.16	-3.074	-3.411	-91.62	-46.47
	(2.449)	(-0.462)	(-0.0529)	(-0.0109)	(-0.521)	(-0.643)
Decentralised(Year=2010)	406.7***	-149.3	-10.89	-44.85	-125.7	-57.20
	(3.046)	(-0.876)	(-0.192)	(-0.136)	(-0.702)	(-0.763)
Decentralised(Year=2011)	451.1***	-174.2	3.476	-157.6	-208.8	-89.96
	(3.319)	(-1.248)	(0.0718)	(-0.567)	(-1.306)	(-1.331)
Decentralised(Year=2012)	407.0***	-131.1	10.69	-178.3	-194.6	-88.03
	(3.287)	(-0.983)	(0.203)	(-0.625)	(-1.220)	(-1.304)
Decentralised(Year=2013)	251.1	-173.7	-24.60	-310.3	-227.3	-110.8
	(1.321)	(-1.334)	(-0.413)	(-1.009)	(-1.584)	(-1.618)
Decentralised(Year=2014)	417.0***	-127.2	33.00	-282.8	-247.6*	-111.1
	(3.580)	(-1.135)	(0.772)	(-0.943)	(-1.758)	(-1.441)
Decentralised(Year=2015)	403.6***	-39.32	54.50	-256.6	-77.68	-53.79
	(3.455)	(-0.295)	(1.152)	(-0.997)	(-0.519)	(-0.843)
Decentralised(Year=2016)	382.6***	6.626	68.08**	-191.1	128.9	24.27
	(3.682)	(0.0853)	(2.094)	(-0.909)	(1.301)	(0.495)
Decentralised(Year=2017)	192.4**	3.835	30.87	-151.5	54.50*	0.513
	(2.296)	(0.0622)	(0.943)	(-0.774)	(1.665)	(0.0141)
Decentralised(Year=2018)	136.9**	-6.421	8.420	-49.43	-47.74	-22.94
	(2.074)	(-0.126)	(0.379)	(-0.297)	(-1.437)	(-0.800)
Observations	3,611	3,614	3,614	3,611	3,614	3,614
Number of municipality_id	278	278	278	278	278	278
Adjusted R-squared	0.069	0.066	0.059	0.111	0.096	0.049

Notes: All regressions include municipal and year-fixed effects, and regional-specific trends. All dependent variables are in real euros (at 2022 prices) *per* student. The estimations encompass 278 municipalities. T-statistics, based on robust standard errors clustered by each municipality, are depicted in parentheses.

Significance level: *** $p<0.01$, ** $p<0.05$, * $p.<0.10$.

Table 12: Effects of the 2nd reform on educational outcomes - Flexible Model

VARIABLES	*Retention Rates*			*Transition Rate*	*Average Exam Classifications*		*Schooling Rate*
(level of education)	1st Cycle (Basic)	2nd Cycle (Basic)	3rd Cycle (Basic)	Secondary	3rd Cycle (Basic)	Secondary	Pre-Primary
Decentralised(Year=2005)	0.238	-2.079**	0.986	2.960			-0.140
	(0.471)	(-2.100)	(0.659)	(0.962)			(-0.0382)
Decentralised(Year=2006)	0.250	-0.711	-2.071	3.222*			-3.088
	(0.573)	(-0.815)	(-1.624)	(1.699)			(-0.616)
Decentralised(Year=2007)	-0.494	-1.178	-2.514**	0.604			2.013
	(-1.033)	(-1.195)	(-2.022)	(0.277)			(0.587)
Decentralised(Year=2008)	0.591	-0.237	-1.537	1.067	-0.00911	0.661	-1.861
	(0.956)	(-0.249)	(-1.201)	(0.704)	(-0.185)	(0.302)	(-0.533)
Decentralised(Year=2009)	0.645	-0.232	0.139	0.805	0.0111	3.394***	-0.104
	(1.443)	(-0.326)	(0.130)	(0.526)	(0.251)	(2.615)	(-0.0256)
Decentralised(Year=2010)	0.0756	0.484	3.780**	0.414	0.0175	3.325*	-3.937
	(0.240)	(0.637)	(2.209)	(0.312)	(0.384)	(1.749)	(-1.274)
Decentralised(Year=2011)	0.170	-0.929	-0.782	-0.302	0.0532	3.485***	-3.179
	(0.375)	(-1.209)	(-0.853)	(-0.167)	(1.149)	(3.377)	(-1.044)
Decentralised(Year=2012)	-0.0812	-1.162	-0.0410	-0.246	0.0511	2.897*	1.123
	(-0.205)	(-1.355)	(-0.0325)	(-0.155)	(1.136)	(1.873)	(0.187)
Decentralised(Year=2013)	-0.214	-2.304**	-0.382	1.738	0.0357	1.711	2.211
	(-0.499)	(-2.465)	(-0.459)	(1.296)	(0.895)	(1.208)	(0.369)
Decentralised(Year=2014)	-0.00145	-1.250	0.601	0.645	0.0408	3.536**	-1.810
	(-0.00316)	(-1.116)	(0.441)	(0.297)	(0.699)	(2.126)	(-0.436)
Decentralised(Year=2015)	-0.616	-1.313*	0.0295	-0.245	-0.00886	2.944**	1.766
	(-1.078)	(-1.719)	(0.0309)	(-0.249)	(-0.393)	(2.104)	(0.636)
Decentralised(Year=2016)	-0.485	-1.373**	-1.031	1.308	0.0142	0.590	0.870
	(-1.285)	(-2.399)	(-0.971)	(1.079)	(0.280)	(0.470)	(0.456)
Decentralised(Year=2017)	-0.00602	-1.045	1.017	1.226	0.0164	1.763*	3.099*
	(-0.0204)	(-1.061)	(1.016)	(1.218)	(0.331)	(1.659)	(1.811)
Decentralised(Year=2018)	-0.113	-0.681	-0.198	0.260	-0.0178	1.112	0.812
	(-0.429)	(-0.725)	(-0.234)	(0.219)	(-0.564)	(1.366)	(0.791)
Log(Population)$_{t-1}$	-3.978***	-6.137**	-1.287	-6.791	-0.205	-11.28	28.34**
	(-2.676)	(-1.998)	(-0.413)	(-1.421)	(-1.400)	(-1.548)	(2.312)
Log(Month.Earnings)$_{t-1}$	1.367	-0.337	1.911	2.777	0.232***	9.363*	-3.132
	(1.330)	(-0.132)	(0.853)	(1.046)	(2.600)	(1.710)	(-0.523)
%Unemploy.$_{t-1}$	0.00862	0.0929	-0.0585	-0.0888	-0.00629	-0.197	-0.750***
	(0.220)	(1.132)	(-0.611)	(-0.671)	(-1.615)	(-1.169)	(-2.669)
%Popula.Higher.Educ.$_{t-1}$	0.0307	-0.121	0.231**	-0.242	-0.000654	-0.515***	-0.510
	(0.884)	(-1.392)	(2.462)	(-1.643)	(-0.148)	(-3.069)	(-1.230)
Observations	4,113	4,088	4,152	3,789	3,317	2,005	4,170
Number of municipality_id	278	278	278	262	277	218	278
Adjusted R-squared	0.226	0.391	0.536	0.596	0.580	0.587	0.234

Notes: All regressions include municipal and year-fixed effects, and regional-specific trends. The estimations encompass all 278 mainland municipalities, but some regressions may include a smaller number due to missing data. T-statistics, based on robust standard errors clustered by each municipality, are depicted in parentheses.

Significance level: *** p<0.01, ** p<0.05, * p.<0.10.

Table 13: Effects of the 2nd reform on educational outcomes - Flexible Model (cont.)

VARIABLES	*Schooling Rates*		*Public School Enrolment Rates*				
(level of education)	Basic	Secondary	Pre-Primary	1st Cycle (Basic)	2nd Cycle (Basic)	3rd Cycle (Basic)	Secondary
Decentralised(Year=2005)	-2.741	-9.294	-4.073*	-2.362	-5.385	-7.261	-4.468
	(-0.757)	(-0.931)	(-1.820)	(-1.576)	(-1.221)	(-1.619)	(-0.808)
Decentralised(Year=2006)	-2.456	-4.659	-3.330*	-2.463	-5.958	-7.152	-4.042
	(-0.639)	(-0.487)	(-1.911)	(-1.437)	(-1.371)	(-1.513)	(-0.782)
Decentralised(Year=2007)	-0.995	-10.49	-5.040**	-2.568	-4.804	-7.588	-4.764
	(-0.278)	(-1.091)	(-1.982)	(-1.492)	(-1.067)	(-1.624)	(-0.874)
Decentralised(Year=2008)	-2.669	-8.701	-4.957***	-2.265	-5.009	-7.262	-5.483
	(-0.696)	(-1.010)	(-2.758)	(-1.379)	(-1.149)	(-1.580)	(-1.086)
Decentralised(Year=2009)	1.251	-19.58*	-2.875**	-1.411	-2.756	0.128	-1.162
	(0.248)	(-1.811)	(-1.991)	(-1.028)	(-0.609)	(0.0297)	(-0.244)
Decentralised(Year=2010)	-1.666	-14.32	-4.142***	-1.099	-2.334	1.310	-1.859
	(-0.356)	(-1.649)	(-2.894)	(-1.284)	(-0.481)	(0.297)	(-0.408)
Decentralised(Year=2011)	-0.468	-18.31**	-3.565***	-0.582	-2.565	-2.060	-4.125
	(-0.106)	(-2.294)	(-2.985)	(-0.888)	(-0.526)	(-0.462)	(-0.977)
Decentralised(Year=2012)	1.417	-8.896	-2.329**	-0.217	-4.950	-2.183	-2.692
	(0.401)	(-1.360)	(-2.465)	(-0.367)	(-1.095)	(-0.511)	(-0.597)
Decentralised(Year=2013)	2.296	-11.42	-2.221***	-0.105	-5.905	-6.180	-6.485
	(0.901)	(-1.524)	(-2.643)	(-0.158)	(-1.336)	(-1.293)	(-1.618)
Decentralised(Year=2014)	2.428	-9.005	-2.200*	0.391	-4.511	-5.345	-6.823
	(0.997)	(-1.312)	(-1.795)	(0.405)	(-0.979)	(-1.151)	(-1.413)
Decentralised(Year=2015)	2.405	-6.185	-1.569	0.233	-5.103	-5.583	-6.801
	(1.076)	(-1.045)	(-1.604)	(0.389)	(-1.176)	(-1.243)	(-1.425)
Decentralised(Year=2016)	3.207	-2.334	-1.811*	0.808	-5.343	-6.443	-6.213
	(1.229)	(-0.524)	(-1.937)	(1.296)	(-1.274)	(-1.486)	(-1.289)
Decentralised(Year=2017)	2.383	2.343	-0.815	1.021	-3.350	-5.442	-5.401
	(0.832)	(0.450)	(-0.803)	(1.220)	(-1.113)	(-1.403)	(-1.386)
Decentralised(Year=2018)	1.064	0.122	-0.373	1.636	-1.900	-3.785*	-3.373
	(0.903)	(0.0385)	(-0.427)	(1.230)	(-1.199)	(-1.864)	(-1.216)
Log(Population)$_{t-1}$	-13.46	-33.04	13.92	-6.384	-15.62*	-2.234	-22.90**
	(-1.031)	(-1.205)	(1.528)	(-1.111)	(-1.816)	(-0.263)	(-2.180)
Log(Month.Earnings)$_{t-1}$	5.478	19.96	-9.479**	-2.448	-3.457	-14.35	-15.96
	(0.587)	(1.165)	(-2.019)	(-0.815)	(-0.573)	(-1.277)	(-1.305)
%Unemploy.$_{t-1}$	-0.0861	-0.502	0.0898	0.185	-0.257	-0.0769	0.323
	(-0.293)	(-0.833)	(0.432)	(1.289)	(-0.914)	(-0.275)	(1.123)
%Popula.Higher.Educ.$_{t-1}$	-0.166	1.255	0.202	-0.290**	-0.211	-0.159	-0.208
	(-0.339)	(0.984)	(0.807)	(-2.239)	(-1.025)	(-0.722)	(-0.816)
Observations	4,170	3,948	3,754	1,510	1,534	2,144	2,292
Number of municipality_id	278	275	257	139	158	246	244
Adjusted R-squared	0.360	0.304	0.106	0.122	0.129	0.197	0.068

Notes: All regressions include municipal and year-fixed effects, and regional-specific trends. The estimations encompass all 278 mainland municipalities, but some regressions may include a smaller number due to missing data. T-statistics, based on robust standard errors clustered by each municipality, are depicted in parentheses.

Significance level: *** p<0.01, ** p<0.05, * p.<0.10.

6.3 Multiple time periods approach

The results of the extension of the DD approach to a multiple time periods framework may be observed in Table 14 and Table 15. The results obtained with this extension are interesting and concern the development of further analyses. Those include the isolation of effects by each group of municipalities, and the estimation of the overall ATT by group and over the years, derived with an event study.

The computation of the overall ATT demonstrates that the retention rate in the second cycle of basic education is lower than it would be had decentralisation not happened, as detailed in Table 14. This variation corresponded to a 1.41 percentage points decrease in general terms, but the isolation of effects by different groups did not provide any statistical evidence of differences in the impacts faced. This table also shows evidence of decentralisation effects on the schooling rate of pre-primary education, which was 4.71 percentage points higher after decentralisation. When isolating the effects by group, it is observable that the *2010 Group* experienced a considerable variation of 13.22 percentage points in its pre-primary schooling rate, for which the ATT of the *2009 Group* is not statistically significant. The *2010 Group* seems also to have faced a decrease of 3.77 percentage points in the retention rate of the third cycle of basic education, even though the same did not verify in the case of the *2009 Group* and general terms.

Regarding the percentage of students enroled in public education, the results displayed in Table 15 demonstrate no evidence of the effects prompted by decentralisation on those enrolment rates in general terms. Nonetheless, the computation of the ATT by each treated group suggests that those rates increased after the reform, but only on one group: the *2009 Group* registered higher rates in the case of the second and the third cycles of basic education, while the *2010 Group* faced an increase in that rate only in the first cycle of basic education.

Additional results from this approach may be found in Table 34 to Table 39, available in Appendix E. Starting with the estimations for each group of municipalities, it is observable that, for the *2009 Group*, there is statistical evidence of the effects that decentralisation had on the retention rate in the second cycle of basic education. As portrayed in Table 34, the coefficients resulting from the successive comparisons of two different years started to be significant in 2011, two years after this group started to experience the effects. As hypothesised, the retention rates are lower after 2011 than if no decentralisation has happened. The variations in this indicator correspond to a more than one percentage point difference, increasing to a variation of about three percentage points in periods further away from decentralisation.

Moreover, the *2009 Group* appear to have also experienced an increase in the percentage of students enroled in public schools regarding the second cycle of basic education, as observable in Table 35. As expected, there is evidence of an increase in this indicator when the years after decentralisation are used

to compare the outcomes, with those variations ranging from seven to fifteen percentage points in the periods after 2010. Nonetheless, the same table also shows that the coefficients related to this rate in the third cycle of basic education are statistically significant when the periods before treatment are used to compute the ATT. Such results suggest differences between municipalities regarding their public enrolment rates even before decentralisation. Therefore, the estimation of this group's ATT for the following years in this specific indicator may be biased.

For the municipalities that first experienced effects in 2010, there is also statistical evidence of decentralisation impacts on retention rates, in addition to the effects verified on the pre-primary schooling rate. Table 36 demonstrates that retention rates are lower than they would be without decentralisation. Those variations range from one to six percentage points differences, depending on the year post-reform used to compute the coefficient and the level of education considered. The effects faced by the *2010 Group* appear thus to be more intense than the ones experienced by the *2009 Group*, in addition to the largest number of significant coefficients obtained. In turn, there was also a considerable increase in the schooling rate of pre-primary education after the signing of contracts. This effect corresponded to an about fifteen percentage points variation in years further away from decentralisation, as observable in the same table.

In addition, Table 37 shows that the coefficients associated with the percentage of students enroled in the first and second cycles of public education are statistically significant when computed with pre-treatment periods. Hence, as before, there seem to be differences between municipalities before decentralisation in terms of enrolment in public schools, which may bias the post-decentralisation results[56].

The extension of the DD to a multiple time periods framework also allows the computation of the overall ATT by periods before and after treatment through an event study. The results of that analysis are represented in Table 38 and Table 39 of Appendix E. As observable, the ATT is statistically significant in almost all periods after decentralisation in the case of the retention rates registered in the second cycle of basic education, which appears to have decreased in the years following the reform. Moreover, the coefficients associated with the pre-primary education schooling rate are statistically significant and positive in most post-treatment periods. As before, the statistical significance of the coefficients related to the ratio of public school enrolment regarding the second cycle of basic education in the periods before decentralisation renders interpreting the post-reform values impossible due to the likelihood of bias issues.

[56] In addition, the hypothesis stating that the pre-treatment trends are equal to zero in the statistical test presented by Callaway and Sant'Anna (2021) is rejected in the case of the public enrolment ratio in the second cycle of basic education. These results suggest that this variable's coefficients may be biased, even if the regional-specific trends are included in the regressions. This conclusion follows the observed in section 5.

The graphs displayed in Figure 3 facilitate visualising those results. Each graph corresponds to a specific educational outcome and depicts the evolution of the ATT by periods before and after the signature of contracts.

Table 14: Average Treatment Effect on Treated

VARIABLES	*Retention Rates*			*Schooling Rates*	
(level of education)	1st Cycle (Basic)	2nd Cycle (Basic)	3rd Cycle (Basic)	Pre-Primary	Basic
ATT	-0.320	-1.414*	-0.446	4.713*	2.470
	(-0.85)	(-1.80)	(-0.48)	(1.68)	(0.73)
ATT by group					
2009 Group	-0.246	-1.403	0.242	2.950	2.048
	(-0.58)	(-1.64)	(0.24)	(1.00)	(0.58)
2010 Group	-0.675	-1.465	-3.766**	13.221**	4.504
	(-1.48)	(-0.89)	(-1.98)	(2.37)	(0.64)
Observations	3,025	3,025	3,025	3,025	3,025
Number of municipality_id	275	275	275	275	275

Notes: The estimations encompass 275 municipalities, excluding the three municipalities that signed contracts after 2011, and cover the 2004-2015 period. The control group considers all municipalities that did not sign a contract in 2009 or 2010. All regressions include a vector of control variables and regional-specific trends. Z-statistics, based on standard errors clustered by each municipality, are depicted in parentheses.

Significance level: *** $p<0.01$, ** $p<0.05$, * $p.<0.10$.

Table 15: Average Treatment Effect on Treated (cont.)

VARIABLES	*Public School Enrolment Rates*			
(level of education)	Pre-Primary	1st Cycle (Basic)	2nd Cycle (Basic)	3rd Cycle (Basic)
ATT	-0.825	-0.679	4.764	4.107
	(-0.27)	(-0.43)	(0.99)	(1.08)
ATT by group				
2009 Group	-0.0.582	-1.857	9.425**	5.518*
	(-0.18)	(-1.10)	(2.12)	(1.88)
2010 Group	-1.945	4.0319**	-10.726	-1.771
	(-0.27)	(2.26)	(-0.92)	(-0.13)
Observations	2,749	1,092	1,122	1,623
Number of municipality_id	255	130	151	243

Notes: The estimations encompass 275 municipalities, excluding the three municipalities that signed contracts after 2011, and cover the 2004-2015 period. Some regressions may include a smaller number of municipalities due to missing data. The control group considers all municipalities that did not sign a contract in 2009 or 2010. All regressions include a vector of control variables and regional-specific trends. Z-statistics, based on standard errors clustered by each municipality, are depicted in parentheses. Significance level: *** p<0.01, ** p<0.05, * p.<0.10.

Figure 3: Event Study Analysis - 1st reform

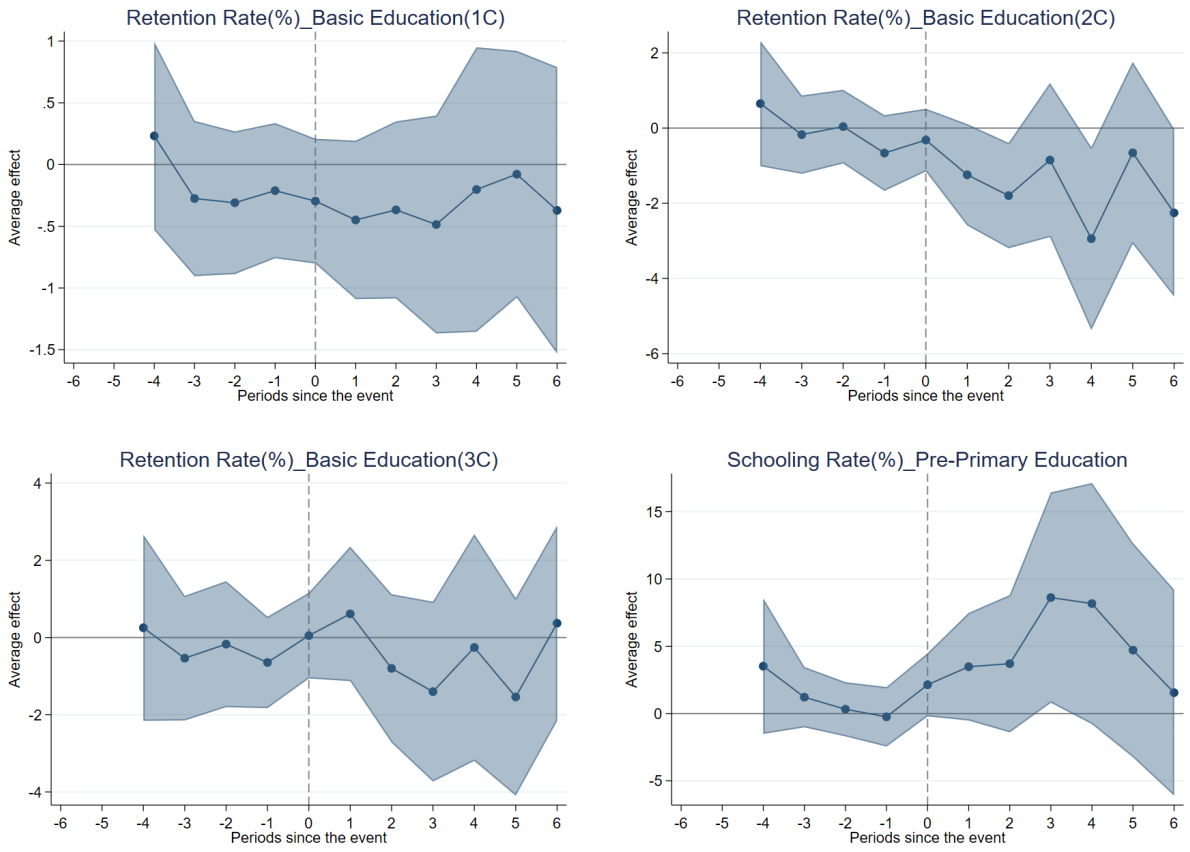
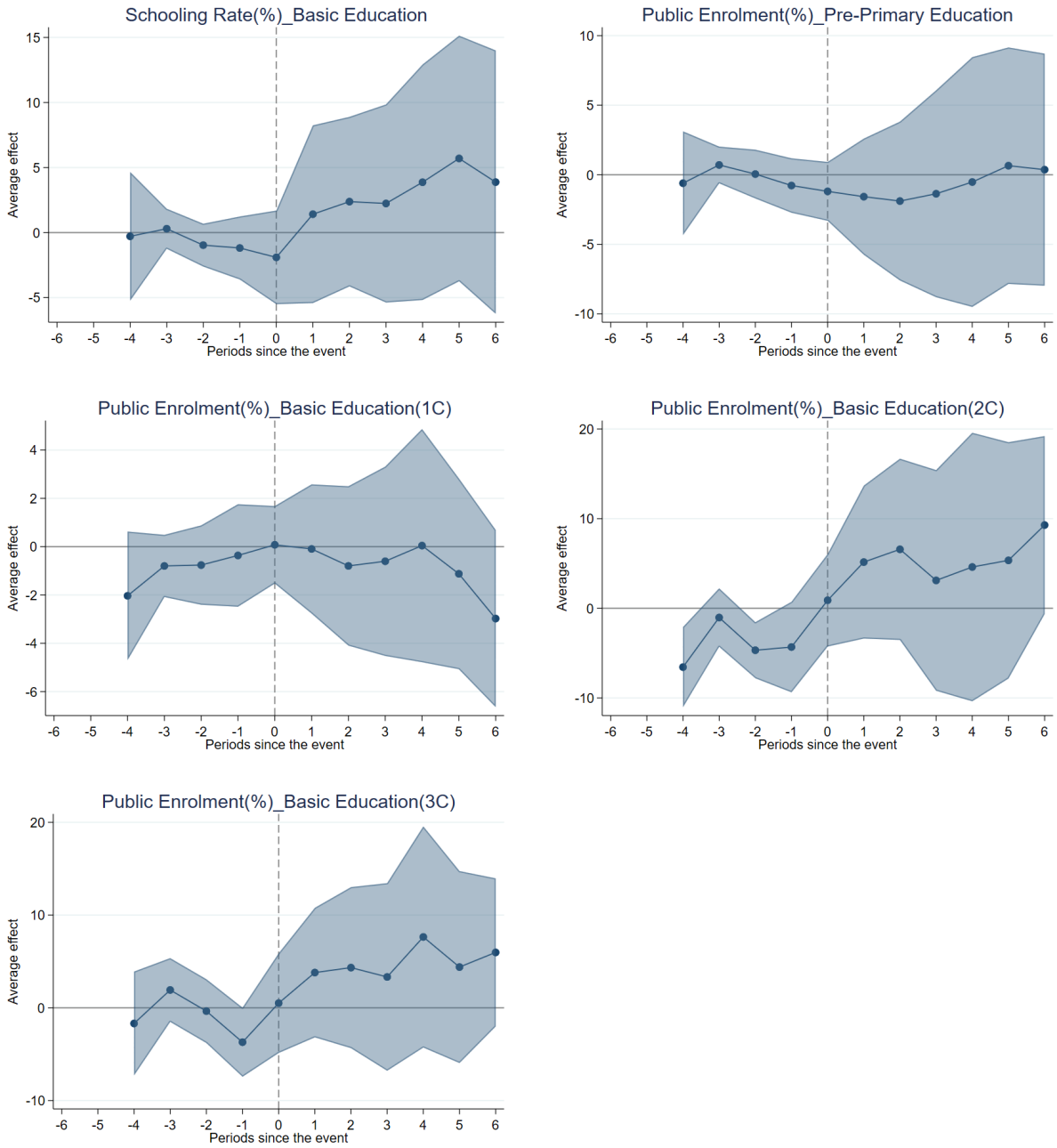


Figure 3: Event Study Analysis - 1st reform (cont.)



6.4 Robustness tests

As previously mentioned, the particularities of the decentralisation process may call into question the validity of the outcomes. Hence, several robustness tests were performed. Considering that the problems affecting the results differ depending on the moment in analysis, the checks were applied to each reform. These results may be found in Appendix D.

On the one hand, the validity of the baseline model's results for the first reform was assessed through three different tests. Firstly, the same regressions were estimated for the entire sample, including the three municipalities that only signed contracts after 2011 and were previously excluded. Secondly, since significantly more municipalities signed contracts at the end of 2008 than during 2009, the decentralisation variable included in the re-estimation considered only the first group, the early adopters, for which the contracts produced effects from 2009 onwards. Thirdly, the empirical analysis was repeated for the entire period (2004-2019) to confirm the results obtained when the analysis stopped in 2015 and to check the potential existence of confounding results when the effects are not isolated[57].

As observable in Table 22 to Table 30, there were no significant changes in the outcomes resulting from the described alterations. In the limit, there was a sporadic gain of significance in some indicators, such as those representing municipal expenses, when the regressions considered only the municipalities that experienced effects first (early adopters). Therefore, it is possible to prove the robustness of the obtained results.

On the other hand, checking the validity of the estimations concerning the 2015's contracts is not so direct, nor is it possible to rely on many tests as before. Such difficulties are mainly due to the great temporal proximity to the first reform and the time needed to note its effects. Consequently, it is impossible to guarantee that all time periods before 2015 are free from the first reform's impacts. The solution consisted of simultaneously including the dummy variables representing the participation in both reforms[58]. By introducing this dummy, the estimations also consider which municipalities experienced decentralisation effects after 2009/2010 and the potential existence of a dual impact.

As portrayed in Table 31 to Table 33, minor differences in significance gain or loss are noted for municipalities' educational expenses and the compensations received or for educational outcomes. Hence, these results reinforce the ones derived from the baseline model for 2015's reform.

[57] The same robustness test was performed for the estimations resulting of the flexible model and its results were already discussed in the previous subsection.

[58] The variable for 2010 is the same as the one used in the first estimations.

7 Discussion and Conclusion

The hypotheses that underpin this research suggest a positive impact of the 2009 and 2015 decentralisation reforms on education outcomes, both in terms of quality and access to education. The empirical results partially support those expectations. There is statistical evidence that decentralisation led to increased amounts of compensations received, as well as improvements in some indicators of quality and access to education. Some aspects of the empirical methodology or the decentralisation process in Portugal may help explain the results obtained.

On the one hand, the results highlight the importance of clearly understanding the setup surrounding the analysis and choosing the adequate empirical methodology. As demonstrated, the perception of the one-year gap between the date when decentralisation started to produce effects in certain municipalities allowed the extension of the baseline DD approach to a framework that considers the attribution of treatment in multiple time periods. Re-estimating the resulting model with this extension revealed distinctions in results depending on the group of municipalities under analysis, particularly in the case of retention, schooling and public enrolment rates. Therefore, considering all the particularities of the decentralisation process and choosing the correct framework enhanced the significance of the results, which proved to be robust. Nevertheless, even after applying the correct design and performing all the adequate robustness checks, overcoming the likely overlap of effects resulting from the significant temporal proximity of the two decentralisation moments under analysis is still hard.

On the other hand, the mismatch between expectations and observed results may stem from how the decentralisation process was structured. Even though there is evidence of higher compensations received by the municipalities that signed the contracts in 2008/2009, the empirical analysis does not provide information on whether these increases were adequate to address the additional competencies transferred effectively. Thus, the municipalities' complaints about insufficient funds (ANMP, 2010), which prevented the continuation of the decentralisation reform, were not assessed. Nonetheless, if these complaints were accurate, they could help explain why some education outcomes did not improve despite the higher compensations received. Remarkably, it is possible that even with the higher amounts, municipalities still did not have enough resources to cover all their new responsibilities, as suggested in the report presented by ANMP (2010).

In addition, the new responsibilities assigned to municipalities may not have been significant enough to impact educational outcomes. As detailed in section 3, the new competencies transferred primarily involved maintaining school buildings, responsibility for extra-curricular activities, and managing non-

teaching staff. While these functions might promote a better school environment, which could improve the learning experience and make it more enjoyable, their impact on the quality of education provided and, therefore, student outcomes might not be so straightforward.

In contrast, the decentralised functions defined in the contracts are more likely to impact parents' decisions regarding their children's type of education. In addition to the generally cost-free nature of public education, improving school conditions and extending school hours by offering after-school activities may be decisive factors for parents when selecting public schools. However, there is limited evidence on the impact of decentralisation on access to education. This may be due to the difficulty of assessing such effects due to pre-existing trends in these variables. The robustness checks, which included the placebo test provided by the flexible model and the validity test of the parallel trends assumption in the DD with multiple time periods framework, demonstrated that pre-existing trends in the percentage of students enrolled in public schools are likely to exist, regarding particular levels of education.

Furthermore, the transfer of competencies may have been too broad. If adequate financial and human resources were not provided along with the transfer, it may have hindered the efficient management of responsibilities. Consequently, the quality of education may suffer, leading to a negative effect on student achievements. Hence, the negative impact that decentralisation appears to have caused in some indicators may result from congestion, as previously discussed in the literature (Guerra & Lastra-Anadón, 2019).

In summary, the results presented in this empirical research suggest that it may take some time to observe the impacts of decentralisation and that the Portuguese process may have consisted merely of an administrative transfer of functions to a different level of governance. This means that the transfer of competencies may not have significantly impacted the type and amount of available resources managed by municipalities. Moreover, it does not seem to have significantly increased municipalities' autonomy about functions that have a higher impact on educational outcomes. For example, municipalities are not responsible for hiring teachers, investing in innovative and didactic learning materials, or changing the educational curriculum.

To conclude, the successive decentralisation of government functions that have taken place in the past years in Portugal occurred under particular circumstances, with many specificities that, along with short periods between reforms, make the empirical analysis of their effects a very challenging task. This dissertation provides a pioneering attempt to estimate the impacts of decentralisation on education in Portuguese municipalities, and its results may have policy implications. Nonetheless, further investigation is needed to corroborate the findings and fully disentangle the effects of each reform.

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Appendix A

Table 16: List of contracts signed by Portuguese municipalities

	2009 Contracts			**2015 Contracts**		
Municipality	*Contract Number*	*Celebration Date*	*Effects Date*	*Contract Number*	*Celebration Date*	*Effects Date*
Arcos de Valdevez	239/2009	16/09/2008	01/2009			
Melgaço	249/2009	16/09/2008	01/2009			
Monção	250/2009	16/09/2008	01/2009			
Paredes de Coura	255/2009	16/09/2008	01/2009			
Ponte da Barca	256/2009	16/09/2008	01/2009			
Ponte de Lima	335/2009	16/02/2009	03/2009			
Valença	262/2009	16/09/2008	01/2009			
Viana do Castelo	269/2009	16/09/2008	01/2009			
Vila Nova de Cerveira	264/2009	16/09/2008	01/2009			
Amares	336/2009	16/02/2009	03/2009			
Braga	242/2009	16/09/2008	01/2009			
Terras de Bouro	260/2009	16/09/2008	01/2009			
Cabeceiras de Basto	267/2009	16/09/2008	01/2009			
Fafe	202/2009	16/09/2008	01/2009			
Guimarães	204/2009	16/09/2008	01/2009			
Vila Nova de Famalicão				562/2015	18/05/2015	07/2015

Table 16: List of contracts signed by Portuguese municipalities, continued

	2009 Contracts			**2015 Contracts**		
Municipality	*Contract Number*	*Celebration Date*	*Effects Date*	*Contract Number*	*Celebration Date*	*Effects Date*
Vizela	266/2009	16/09/2008	01/2009			
Espinho	245/2009	16/09/2008	01/2009			
Gondomar	247/2009	16/09/2008	01/2009			
Maia				554/2015	18/05/2015	07/2015
Matosinhos	205/2009	16/09/2008	01/2009	555/2015	9/06/2015	08/2015
Oliveira de Azeméis				559/2015	18/05/2015	07/2015
Paredes	254/2009	16/09/2008	01/2009			
Santo Tirso	230/2009	16/09/2008	01/2009			
Trofa	208/2009	16/09/2008	01/2009			
Vila do Conde	209/2009	16/09/2008	01/2009			
Montalegre	207/2009	16/09/2008	01/2009			
Baião	241/2009	16/09/2008	01/2009			
Cinfães	244/2009	16/09/2008	01/2009			
Felgueiras	203/2009	16/09/2008	01/2009			
Lousada	248/2009	16/09/2008	01/2009			
Paços de Ferreira	253/2009	16/09/2008	01/2009			
Resende	257/2009	16/09/2008	01/2009			
Armamar	240/2009	17/09/2008	01/2009			
Carrazeda de Ansiães	243/2009	16/09/2008	01/2009			
Freixo de Espada à Cinta	246/2009	16/09/2008	10/2008			
Murça	252/2009	16/09/2008	01/2009			

Table 16: List of contracts signed by Portuguese municipalities, continued

	2009 Contracts			2015 Contracts		
Municipality	*Contract Number*	*Celebration Date*	*Effects Date*	*Contract Number*	*Celebration Date*	*Effects Date*
Peso da Régua	338/2009	16/09/2008	01/2009			
Sabrosa	339/2009	16/09/2008	01/2009			
Santa Marta de Penaguião	268/2009	16/09/2008	01/2009			
Tabuaço	258/2009	16/09/2008	01/2009			
Tarouca	259/2009	16/09/2008	01/2009			
Torre de Moncorvo	261/2009	16/09/2008	01/2009			
Vila Nova de Foz Côa	265/2009	16/09/2008	01/2009			
Mirandela	206/2009	16/09/2008	01/2009			
Vila Flor	263/2009	16/09/2008	01/2009			
Vimioso	259/2012	19/04/2012	09/2012			
Alenquer	186/2009	16/09/2008	01/2009			
Arruda dos Vinhos	190/2009	16/09/2008	01/2009			
Lourinhã	195/2009	16/09/2008	01/2009			
Nazaré	471/2009	24/09/2009	01/2010			
Óbidos	197/2009	16/09/2008	01/2009	557/2015	18/05/2015	07/2015
Águeda	169/2009	16/09/2008	01/2009	549/2015	29/06/2015	08/2015
Ílhavo	470/2009	31/08/2009	01/2010			
Oliveira do Bairro	472/2009	31/08/2009	01/2010	560/2015	18/05/2015	07/2015
Góis	469/2009	31/08/2009	01/2010			
Mealhada	173/2009	16/09/2008	01/2009	556/2015	1/07/2015	09/2015
Mira	175/2009	16/09/2008	01/2009			

Table 16: List of contracts signed by Portuguese municipalities, continued

	2009 Contracts			2015 Contracts		
Municipality	*Contract Number*	*Celebration Date*	*Effects Date*	*Contract Number*	*Celebration Date*	*Effects Date*
Mortágua	176/2009	16/09/2008	01/2009			
Batalha				551/2015	18/05/2015	07/2015
Porto de Mós	179/2009	16/09/2008	03/2009			
Castelo Branco	171/2009	16/09/2008	01/2009			
Vila Velha de Ródão	185/2009	16/09/2008	01/2009			
Entroncamento	25/2012	12/10/2011	01/2012			
Ourém	473/2009	23/09/2009	01/2010			
Sardoal	200/2009	01/04/2009	05/2009			
Sertã	181/2009	16/09/2008	01/2009			
Tomar	367/2009	23/09/2009	01/2010			
Torres Novas	166/2009	16/09/2008	03/2009			
Vila de Rei	184/2009	16/09/2008	01/2009	563/2015	18/05/2015	07/2015
Vila Nova da Barquinha	201/2009	16/09/2008	01/2009			
Celorico da Beira	467/2009	31/08/2009	01/2010			
Mêda	174/2009	16/09/2008	03/2009			
Amadora	189/2009	16/09/2008	01/2009	550/2015	1/06/2015	08/2015
Cascais				552/2015	18/05/2015	07/2015
Loures	194/2009	16/09/2008	01/2009			
Mafra	365/2009	09/09/2009	10/2009			
Montijo	196/2009	16/09/2008	01/2009			
Odivelas	366/2009	23/09/2009	01/2010			
Oeiras				558/2015	17/07/2015	09/2015
Sintra	486/2009	21/09/2009	01/2010			

Table 16: List of contracts signed by Portuguese municipalities, continued

	2009 Contracts			**2015 Contracts**		
Municipality	*Contract Number*	*Celebration Date*	*Effects Date*	*Contract Number*	*Celebration Date*	*Effects Date*
Grândola	221/2009	16/09/2008	01/2009			
Sines	228/2009	16/09/2008	01/2009			
Alvito	211/2009	16/09/2008	01/2009			
Cuba	216/2009	16/09/2008	01/2009			
Ferreira do Alentejo	219/2009	16/09/2008	01/2009			
Ourique	224/2009	16/09/2008	01/2009			
Vidigueira	690/2011	19/01/2011	03/2011			
Almeirim	187/2009	16/09/2008	01/2009			
Alpiarça	188/2009	16/09/2008	01/2009			
Azambuja	191/2009	16/09/2008	01/2009			
Cartaxo	192/2009	16/09/2008	01/2009			
Coruche	468/2009	24/09/2009	01/2010			
Golegã	193/2009	16/09/2008	01/2009			
Rio Maior	198/2009	16/09/2008	01/2009			
Santarém	199/2009	16/09/2008	01/2009			
Arronches	212/2009	16/09/2008	01/2009			
Campo Maior	214/2009	16/09/2008	01/2009			
Crato	215/2009	16/09/2008	01/2009	553/2015	30/06/2015	08/2015
Gavião	220/2009	16/09/2008	01/2009			
Nisa	223/2009	16/09/2008	01/2009			
Ponte de Sor	225/2009	16/09/2008	01/2009			
Sousel				561/2015	18/05/2015	07/2015
Alandroal	210/2009	16/09/2008	01/2009			
Borba	213/2009	16/09/2008	01/2009			
Estremoz	217/2009	16/09/2008	01/2009			
Évora	218/2009	16/09/2008	01/2009			

Table 16: List of contracts signed by Portuguese municipalities, continued

	2009 Contracts			2015 Contracts		
Municipality	*Contract Number*	*Celebration Date*	*Effects Date*	*Contract Number*	*Celebration Date*	*Effects Date*
Mourão	222/2009	16/09/2008	01/2009			
Portel	226/2009	16/09/2008	01/2009			
Reguengos de Monsaraz	227/2009	16/09/2008	01/2009			
Albufeira	170/2009	16/09/2008	01/2009			
Alcoutim	474/2009	22/09/2009	10/2009			
Faro	172/2009	16/09/2008	01/2009			
Lagos	475/2009	24/09/2009	10/2009			
Loulé	476/2009	24/09/2009	10/2009			
Monchique	251/2009	16/09/2008	01/2009			
Olhão	177/2009	16/09/2008	01/2009			
Portimão	178/2009	16/09/2008	01/2009			
São Brás de Alportel	180/2009	16/09/2008	01/2009			
Silves	182/2009	16/09/2008	01/2009			
Tavira	183/2009	16/09/2008	01/2009			
Vila do Bispo	477/2009	22/09/2009	10/2009			
Vila Real de Santo António	478/2009	24/09/2009	10/2009			

Example of 2009 Contract

Despacho n.º 17360/2009

Nos termos do n.º 5 do artigo 21.º e do n.º 2 do artigo 24.º do Decreto-Lei n.º 75/2008, de 22 de Abril, nomeio Adjunto do Director da Escola Secundária de Loulé o Professor do grupo de recrutamento 510, Alexandre José da Costa Ferreira, com efeitos a partir do dia 1 de Julho de 2009.

22 de Julho de 2009. — O Director, *Fernando Manuel Marques Magalhães*.

202089552

Despacho n.º 17361/2009

Nos termos previstos nos artigos 21.º, 22.º, 23.º, 24.º e 25.º do Decreto-Lei n.º 75/2008 de 22 de Abril, Por eleição do Conselho Geral Transitório de 28 de Maio de 2009, homologada por despacho do Senhor Director Regional Adjunto de 2 de Junho de 2009, no dia 9 de Junho de 2009, tomou posse como Director da Escola Secundária de Loulé o Professor Titular Fernando Manuel Marques Magalhães, por um período de 4 anos.

22 de Julho de 2009. — O Presidente do Conselho Geral Transitório, *Alexandre José da Costa Ferreira*.

202089033

Despacho n.º 17362/2009

Nos termos do n.º 5 do artigo 21.º e do n.º 2 do artigo 24.º do Decreto-Lei n.º 75/2008, de 22 de Abril, nomeio Subdirectora da Escola Secundária de Loulé a Professora Titular do grupo de recrutamento 300, Maria Ermelinda Figueira Travia, com efeitos a partir do dia 12 de Junho de 2009.

22 de Julho de 2009. — O Director, *Fernando Manuel Marques Magalhães.*

202089244

Agrupamento de Escolas de Monchique

Despacho (extracto) n.º 17363/2009

Nos termos do ponto 5 do artigo 21.º do Decreto-Lei n.º 75/2008, de 22 de Abril, e em conformidade com a alínea *a*) do ponto 1, do artigo 2.º, do Despacho n.º 9745/2009, de 8 de Abril, nomeio Subdirectora, a Professora do Quadro de Escola do grupo 200, Maria Adelaide Serrão Correia Fernandes da Costa, e Adjunta, a Professora Titular do grupo 100, Maria de Lurdes Rosa Martins de Almeida Lopes.

21 de Julho de 2009. — A Directora, *Maria Irene Escudeiro Dias*.

202084149

Agrupamento Vertical Professora Diamantina Negrão

Despacho n.º 17364/2009

Na sequência do procedimento concursal prévio e da eleição a que se referem os artigos 21.º a 23.º do Decreto-Lei n.º 75/2008, de 22 de Abril, cujo resultado foi homologado por Despacho do Director Regional Adjunto da Direcção Regional do Algarve, datado de 12 de Junho de 2009, foi conferida posse ao professor Dominique Nunes Palma para o exercício das funções de Director do Agrupamento Vertical Professora Diamantina Negrão — Albufeira, por um período de 4 anos, conforme previsto no artigo 25.º, n.º 1 do referido diploma legal.

9 de Julho de 2009. — O Presidente do Conselho Geral Transitório, *Paulo Jorge Rodrigues Gonçalves*.

202084416

Despacho n.º 17365/2009

Por despacho de 9 de Julho de 2009, do Director do Agrupamento Vertical Professora Diamantina Negrão — Albufeira, foi nomeado Subdirector da Escola, nos termos do n.º 5 do artigo 21.º e do n.º 2 do artigo 24.º do Decreto-Lei n.º 75/2008 de 22 de Abril, o Professor David Rodrigues Pereira, por um período de quatro anos.

9 de Julho de 2009. — O Director, *Dominique Nunes Palma*.

202084579

Despacho n.º 17366/2009

Por despacho de 9 de Julho de 2009, do director do Agrupamento Vertical Professora Diamantina Negrão — Albufeira, foram nomeadas adjuntas do director, nos termos do n.º 5 do artigo 21.º e do n.º 2 do artigo 24.º do Decreto-Lei n.º 75/2008, de 22 de Abril, a professora Maria Teresa Sequeira dos Santos Silva e a educadora Lola Flores Socorro Couto do Rosário, por um período de quatro anos.

9 de Julho de 2009. — O Director, *Dominique Nunes Palma*.

202084587

MINISTÉRIO DA EDUCAÇÃO E CÂMARA MUNICIPAL DE SANTO TIRSO

Contrato n.º 230/2009

O Decreto-Lei n.º 144/2008, de 28 de Julho, que estabelece o novo quadro de transferência de atribuições e competências para os municípios em matéria de educação, determina que esta transferência depende da existência de carta educativa e da celebração de contratos de execução entre o Ministério da Educação e cada um dos municípios.

Tais contratos têm por objectivo a identificação das condições em concreto que, nos diversos domínios em causa, asseguram o efectivo exercício das atribuições e competências, agora transferidas, por parte de cada município.

Assim, dando cumprimento ao referido diploma, em especial ao determinado no seu artigo 12.º, entre o Ministério da Educação, representado pela Ministra da Educação, Maria de Lurdes Rodrigues, e o Município de Santo Tirso, neste acto representado pelo Presidente da Câmara Municipal de Santo Tirso, António Alberto de Castro Fernandes, é subscrito e reciprocamente aceite o presente contrato de execução, o qual se rege nos termos e cláusulas seguintes:

Cláusula 1.ª

Objecto do contrato

O presente contrato define as condições de transferência, para o município, das atribuições a que se referem as alíneas *a*), *c*) e *d*) do artigo 2.º do Decreto-Lei n.º 144/2008, de 28 de Julho, designadamente nos seguintes domínios:

a) Pessoal não docente das escolas básicas e da educação pré-escolar;

b) Actividades de enriquecimento curricular no 1.º ciclo do ensino básico;

c) Gestão do parque escolar nos 2.º e 3.º ciclos do ensino básico.

Cláusula 2.ª

Gestão do pessoal não docente

1 — O pessoal não docente identificado nas listagens do Anexo 1 é transferido, a partir da data de assinatura do presente contrato, para o município, que assumirá a competência da respectiva gestão.

2 — Estas listagens têm em conta a situação profissional de cada trabalhador, o *rácio* definido na portaria a que se refere o n.º 3 do artigo 4.º do Decreto-Lei n.º 144/2008, para o ensino básico, bem como as necessidades relativas à educação pré-escolar e às actividades de enriquecimento curricular promovidas pelo município.

3 — Sem prejuízo do disposto no Decreto-Lei n.º 75/2008, de 22 de Abril, que aprovou o novo regime de autonomia, administração e gestão das escolas, relativamente a esse pessoal a Câmara Municipal passa a exercer as competências de recrutamento, afectação, colocação, remuneração, homologação da avaliação do desempenho, poder disciplinar para aplicação de pena superior a multa e decisão de recursos hierárquicos.

4 — A partir do dia 1 de Janeiro de 2009, o Ministério da Educação transfere para o município o montante relativo aos vencimentos base e encargos sociais dos funcionários constantes da listagem em anexo, através das dotações inscritas no seu orçamento para pagamento dos encargos globais com aquele pessoal.

5 — Os encargos sociais referidos na cláusula anterior incluem, designadamente, os encargos com a Caixa Geral de Aposentações e Segurança Social.

6 — A situação dos funcionários relativamente à ADSE mantém-se, correndo os respectivos encargos por conta da Administração Central.

7 — Os encargos que resultarem de progressões obrigatórias ou outros encargos resultantes da lei serão oportunamente definidos e transferidos.

8 — São transferidas, de igual modo, as verbas correspondentes aos encargos relativos ao acordo de cooperação para a educação pré-escolar celebrado com o município.

9 — Em 2009 as verbas a transferir serão actualizadas nos termos equivalentes à variação prevista para as remunerações da função pública.

10 — O pessoal não docente transferido mantém o direito ao vínculo, à carreira, à categoria, ao escalão e ao índice detido à data da entrada em vigor do Decreto-Lei n.º 144/2008, bem como ao regime de mobilidade geral para quaisquer serviços ou organismos da administração central ou local e ao regime de mobilidade especial por solicitação, prevista no n.º 5 do artigo 11.º da Lei n.º 53/2006, de 7 de Dezembro.

Cláusula 3.ª

Actividades de enriquecimento curricular

1 — O município assume a competência de implementação das actividades de enriquecimento curricular no 1.º ciclo do ensino básico, constantes no Anexo 2, sem prejuízo da responsabilidade que cabe ao Ministério da Educação relativamente à tutela pedagógica, orientações programáticas e definição do perfil de formação e habilitações dos professores.

2 — O Ministério da Educação transfere para o município o montante de € 755 737,50 através das dotações inscritas no seu orçamento para pagamento dos encargos globais com aquelas actividades, em função do número de alunos inscritos nos estabelecimentos de ensino.

3 — Em 2009 a transferência dos recursos para pagamento das despesas a que se refere a presente cláusula será actualizada nos termos equivalentes à inflação prevista.

Cláusula 4.ª

Gestão do parque escolar

1 — Tendo em conta que a Carta Educativa Municipal já foi aprovada, são transferidas para o município as competências de construção e ampliação, das escolas básicas nos termos do n.º 2 do artigo 8.º do Decreto-Lei n.º 144/2008.

2 — São igualmente objecto de transferência as competências relativas à manutenção e apetrechamento das escolas básicas, de acordo com o estabelecido nos quadros do *Anexo 3*, já consensualizados entre o Ministério da Educação e a Câmara Municipal.

3 — Para os efeitos relativos à manutenção e apetrechamento, o Ministério da Educação transfere para o município o montante de € 100 000 através das dotações inscritas no seu orçamento para pagamento dos encargos globais com aquelas competências.

4 — Em 2009 as verbas a transferir serão actualizadas nos termos equivalentes à inflação prevista.

5 — O contratualizado nesta cláusula não prejudica os concursos públicos, já abertos pelo Ministério da Educação, que se destinem à construção, ampliação, substituição, manutenção ou apetrechamento das escolas básicas e identificados no Anexo 3.

Cláusula 5.ª

Acompanhamento e controlo da execução do contrato

1 — Com a assinatura deste contrato é constituída uma comissão de acompanhamento e controlo do contrato composta por um representante do Ministério da Educação, que coordenará, um representante da Câmara Municipal e um representante do conjunto dos agrupamentos de escolas do concelho.

2 — A comissão referida no número anterior deve apresentar às partes contratantes relatórios anuais sobre o grau de execução do contrato, bem assim como sugestões e propostas para a respectiva actualização.

Cláusula 6.ª

Direitos e obrigações das partes contratantes

1 — Ambas as partes têm os deveres e direitos de consulta e informação recíprocos, bem como de pronúncia sobre o eventual incumprimento do contrato.

2 — O incumprimento das obrigações previstas neste contrato determina a retenção do duodécimo das transferências do Fundo Social Municipal em valor correspondente até à regularização da situação.

3 — Nos casos em que o município não realize despesa elegível de montante pelo menos igual às transferências financeiras consignadas a um fim específico, efectuadas nos termos do presente contrato e da legislação que o suporta, no ano subsequente é-lhe deduzida à verba a que teria direito ao abrigo do Fundo Social Municipal a diferença entre a receita deste e a despesa correspondente.

4 — Nos casos em que o município não assegure o exercício das competências e atribuições transferidas e que são objecto deste contrato, pode o Ministério da Educação assegurar, a título supletivo, as referidas competências.

Cláusula 7.ª

Actualização do contrato

Por proposta fundamentada de qualquer uma das partes e aceite pela outra, e com base nos relatórios produzidos pela comissão de acompanhamento referida na Cláusula 5.ª, o presente contrato pode ser alterado ou actualizado no final do seu primeiro ano de vigência ou no final dos anos seguintes.

Cláusula 8.ª

Publicação do contrato

O presente contrato e respectivos anexos, que dele fazem parte integrante, são publicados no *Diário da República*. O mesmo procedimento será tomado para as alterações e actualizações que venham a ocorrer.

Depois de lido e aprovado vai o presente contrato de execução ser assinado pelas partes.

16 de Setembro de 2008. — A Ministra da Educação, *Maria de Lurdes Reis Rodrigues*. — O Presidente da Câmara Municipal de Santo Tirso, *António Alberto de Castro Fernandes*.

ANEXO 1

Pessoal não docente a transferir

1 — Lista de pessoal não docente com relação laboral ao ME, à Câmara Municipal e às escolas, em exercício de funções em Junho de 2008 nos estabelecimentos de educação e ensino do município.

Estabelecimento de ensino	Nome do funcionário ou agente	Entidade e tipo de vínculo laboral actual	Carreira	Categoria	Índice
EB1/JI Lamelas	Ilda Oliveira Pacheco	Quadro — ME	A.A.E.	A.A.E.	204
EB1/JI Lamelas	Maria Elisabete S. Martins Matos	Quadro — ME	A.A.E.	A.A.E.	151
EB1/JI Igreja Guimarei	Maria Emília B. Brandão Gomes	Quadro — ME	A.A.E.	A.A.E.	151
EB1/JI Igreja Guimarei	Teresinha Jesus Gonçalves Almeida	Quadro — ME	A.A.E.	A.A.E.	160
EB1/JI Parada Carreira	Maria Conceição Monteiro Soares	Quadro — ME	A.A.E.	A.A.E.	204
EB1/JI Parada Carreira	Filomena da Conceição A. F. Roriz Machado.	Quadro — CMST	A.A.E.	A.A.E.	151
EB1/JI S. José Refojos	Maria de Lurdes Oliveira Costa	Quadro — ME	A.A.E.	A.A.E.	204
EB1/JI S. José Refojos	Rosa Moreira Ribeiro	Quadro — CMST	A.A.E.	A.A.E.	151
EB1/JI de Cantim Reguenga	Maria Estela M. D. Rocha Cunha	Termo Certo — ME	A.A.E.	A.A.E.	142
EB1/JI de Cantim Reguenga	Carla Sofia Alves Victor	Ter. Certo — CMST	Assi. A. E.	Assi. A. E.	199
EB1/JI de Campinhos — Agrela	Maria Inês Moreia Rosas	Termo Certo — ME	A.A.E.	A.A.E.	142
EB1/JI de Campinhos — Agrela	Maria Conceição Carneiro Couto	Quadro — CMST	A.A.E.	A.A.E.	151
EB1/JI Arcozelo Água Longa	Maria Cândida Andrade Gomes	CIT — ME	A.A.E.	A.A.E.	151
EB1/JI Arcozelo Água Longa	Sílvia Patrícia Gonçalves Ferreira	Ter. Certo — CMST	Assi. A. E.	Assi. A. E.	199
EB 2,3 de Agrela	Joaquim da Silva Araújo	Quadro — ME	Guarda N.	Guarda N.	151
EB 2,3 de Agrela	Manuel Oliveira Dias	Quadro — ME	A. A. E.	A. A. E.	189

Estabelecimento de ensino	Nome do funcionário ou agente	Entidade e tipo de vínculo laboral actual	Carreira	Categoria	Índice
EB 2,3 de Agrela	Luís Manuel Pinto Soares	Quadro — ME	A. A. E.	A. A. E.	151
EB 2,3 de Agrela	Delfina dos Santos Moreira Costa	Quadro — ME	E.C.P.A.A.E	E.C.P.A.A.E	228
EB 2,3 de Agrela	Maria Irene Pereira Pinto Sousa	CIT — ME	A. A. E.	A. A. E.	142
EB 2,3 de Agrela	António Manuel Dias da Silva	CIT — ME	A. A. E.	A. A. E.	142
EB 2,3 de Agrela	Maria Goreti Machado S. Moreira	CIT — ME	A. A. E.	A. A. E.	151
EB 2,3 de Agrela	Maria Lucília Moreira Rosas	CIT — ME	A. A. E.	A. A. E.	151
EB 2,3 de Agrela	Maria Manuela Ribeiro C. Vieira	CIT — ME	A. A. E.	A. A. E.	151
EB 2,3 de Agrela	Núria Martins Ferreira	CIT — ME	A. A. E.	A. A. E.	151
EB 2,3 de Agrela	Isabel Maria dos S. F. Escobar	CIT — ME	A. A. E.	A. A. E.	151
EB 2,3 de Agrela	Maria de Fátima B. C. Rodrigues	CIT — ME	A. A. E.	A. A. E.	151
EB 2,3 de Agrela	Maria Isabel Alves Dias	CIT — ME	A. A. E.	A. A. E.	151
EB 2,3 de Agrela	Sandra Cristina Lírio Dias	Termo Certo — ME	A. A. E.	A. A. E.	142
EB 2,3 de Agrela	Paula Maria Borges Ferreira	Termo Certo — ME	A. A. E.	A. A. E.	142
EB 2,3 de Agrela	Fátima Goreti Pinto Rocha	Termo Certo — ME	A. A. E.	A. A. E.	142
EB 2,3 de Agrela	Sandra Cristina Almeida Martins	Termo Certo — ME	A. A. E.	A. A. E.	142
EB 2,3 de Agrela	Maria Natália Ferreira D. Monteiro	Termo Certo — ME	A. A. E.	A. A. E.	142
EB 2,3 de Agrela	João Paulo Martins Correia	Termo Certo — ME	A.Ad. Esc.	A.Ad. Esc.	199
EB 2,3 de Agrela	Márcia Maria de Sousa e Silva	Quadro — ME	A.A.E.P.	A.A.E.P.	244
EB 2,3 de Agrela	Cândida Amélia O. Sousa Santos	Quadro — ME	A.A.E.P.	A.A.E.P.	222
EB 2,3 de Agrela	Maria Conceição T.G.R. Faria	Quadro — ME	CSAE	CSAE	500
EB 2,3 de Agrela	Carla Manuela Brandão Gomes	CIT — ME	A. Ad. Esc.	A. Ad. Esc.	209
EB 2,3 de Agrela	Dolores Monteiro Pereira Neto	CIT — ME	A. Ad. Esc.	A. Ad. Esc.	209
EB 2,3 de Agrela	José Jorge Oliveira Pires	CIT — ME	A. Ad. Esc.	A. Ad. Esc.	209
EB1/JI Aldeia do Monte	Maria Esmeraldina Gonçalves Costa Pereira.	CMST	Quadro	Auxiliar de Jardim	151
EB1/JI Aldeia do Monte	Alice Maria Da Costa Pereira Martins	C. TERMO	A.A.E.	A.A.E.	142
EB1/JI Ribeira	Maria Fernanda Costa Gonçalves	CMST	Quadro	Auxiliar de Jardim	151
EB1/JI Ribeira	Ermelinda Carvalho da Silva	QDV	A.A.E.	A.A.E.	151
EB1/JI Ribeira	Maria Manuela Machado Costa	CIT	A.A.E.	A.A.E.	151
JI Boca	Cláudia Marina Rocha Pimenta	CMST	CT	Auxiliar de Jardim	199
EB1/JI Paradela	Estela Luiza Alves Júnior Cruz	CMST	CT	Auxiliar de Jardim	228
EB1/JI Paradela	Rosa De Jesus Santos Ferreira	QDV	A.A.E.	A.A.E.	204
EB1/JI Rechâ	Martinha Graça Ferreira Teixeira	CMST	Quadro	Auxiliar de Jardim	151
EB1/JI Olival	Brasília De Lurdes Teixeira Barbosa	CMST	Quadro	Auxiliar de Jardim	151
EB1/JI Olival	Ana Maria Pereira da Costa	CIT	A.A.E.	A.A.E.	151
EB1 Costa	Natália Maria Ferreira Neves	CIT	A.A.E.	A.A.E.	151
EB1 Costa	Teodora Monteiro Neto	QDV	A.A.E.	A.A.E.	189
EB1/JI Entre-Estradas	Rosa Ângela Ferreira Castro	CMST	Quadro	Auxiliar de Jardim	151
EB1 Lage	Luzia Cristiana Salgado Ferreira Carneiro.	CIT	A.A.E.	A.A.E.	151
EB1 Lage	Sandra Bibiana Oliveira Carvalho	CIT	A.A.E.	A.A.E.	142
EB1/JI Quelha	Maria José Mendes Ferreira	CMST	Quadro	Auxiliar de Jardim	151
EB1/JI Quelha	Maria Isaura Machado Oliveira Monteiro.	CIT	A.A.E.	A.A.E.	151
EB1/JI da EBI	Margarida Cristina Pereira da Silva	CMST	CT	Auxiliar de Jardim	142
EB1/JI da EBI	Florinda Filomena S. Azevedo Peixoto	QDV	A.A.E.	A.A.E.	151
EB1/JI da EBI	Maria Rosa Carneiro Martins	QDV	A.A.E.	A.A.E.	151
EBI 2.º/3.º Ciclo S. Martinho	Rosa Maria De Sousa Ferreira	QDV	A.A.	CSAE	370
EBI 2.º/3.º Ciclo S. Martinho	Angelina Fernanda da Costa Santos	C. TERMO	A.A.	A.A.	199
EBI 2.º/3.º Ciclo S. Martinho	Célia Cristina Ferreira Marques	QDV	A.A.	A.A.P.	222
EBI 2.º/3.º Ciclo S. Martinho	Cláudia Cecília Machado Pereira Lima	QDV	A.A.	A.A.P.	222
EBI 2.º/3.º Ciclo S. Martinho	Gabriela Marina da Silva Ferreira	QDV	A.A.	A.A.P.	222
EBI 2.º/3.º Ciclo S. Martinho	Rita De Jesus Martins Barroso	CIT	A.A.	A.A.	218
EBI 2.º/3.º Ciclo S. Martinho	Sofia Angélica Machado Martins	CIT	A.A.	A.A.	209
EBI 2.º/3.º Ciclo S. Martinho	Sónia Marisa Machado Castro	C. TERMO	A.A.	A.A.	199
EBI 2.º/3.º Ciclo S. Martinho	Carla Manuela Loureiro Viana de Sousa	QDV	Técn. Profissional	Téc. Prof. 2.ª Cl.	400
EBI 2.º/3.º Ciclo S. Martinho	Alcina de Fátima Almeida Saavedra	CIT	A.A.E.	A.A.E.	142
EBI 2.º/3.º Ciclo S. Martinho	Alice Maria Ramos Leal Azevedo	QDV	A.A.E.	E.C.P.A.A.E.	243
EBI 2.º/3.º Ciclo S. Martinho	Ana da Conceição Machado Castro	QDV	A.A.E.	A.A.E.	151
EBI 2.º/3.º Ciclo S. Martinho	António Mário da Cunha Neto	C. TERMO	A.A.E.	A.A.E.	142
EBI 2.º/3.º Ciclo S. Martinho	Blandina de Lurdes Ferreira Coelho	QDV	A.A.E.	A.A.E.	160
EBI 2.º/3.º Ciclo S. Martinho	Célia Maria Cunha Abreu	CIT	A.A.E.	A.A.E.	151
EBI 2.º/3.º Ciclo S. Martinho	Joaquim Augusto Neto Fernandes	CIT	A.A.E.	A.A.E.	151
EBI 2.º/3.º Ciclo S. Martinho	Maria Adelaide da Costa Gonçalves	QDV	A.A.E.	A.A.E.	151
EBI 2.º/3.º Ciclo S. Martinho	Maria Alzira Pereira Ferreira	C. TERMO	A.A.E.	A.A.E.	142
EBI 2.º/3.º Ciclo S. Martinho	Maria Eduarda Ribeiro de Lemos	CIT	A.A.E.	A.A.E.	151
EBI 2.º/3.º Ciclo S. Martinho	Maria Emília Gonçalves Pimenta	C. TERMO	A.A.E.	A.A.E.	142
EBI 2.º/3.º Ciclo S. Martinho	Maria Eugenia Costa e Silva	C. TERMO	A.A.E.	A.A.E.	142

Estabelecimento de ensino	Nome do funcionário ou agente	Entidade e tipo de vínculo laboral actual	Carreira	Categoria	Índice
EBI 2.º/3.º Ciclo S. Martinho.	Maria Isaura Ferreira	CIT	A.A.E.	A.A.E.	151
EBI 2.º/3.º Ciclo S. Martinho.	Maria Luísa Gonçalves Peixoto. . . .	QDV	A.A.E.	A.A.E.	151
EBI 2.º/3.º Ciclo S. Martinho.	Nelson Asterio Freitas Almeida Ferreira	CIT	A.A.E.	A.A.E.	151
EBI 2.º/3.º Ciclo S. Martinho.	Susana Patrícia Machado Gomes. . .	CIT	A.A.E.	A.A.E.	151
EBI 2.º/3.º Ciclo S. Martinho.	Armandina do Céu Araújo Pereira	QDV	Cozinheira	Cozinheira	151
EBI 2.º/3.º Ciclo S. Martinho.	Maria Albertina Fernandes Martins	QDV	Cozinheira	Cozinheira	160
EBI 2.º/3.º Ciclo S. Martinho.	Rosa da Conceição Matos e Sousa	QDV	Cozinheira	Cozinheira	151
EBI 2.º/3.º Ciclo S. Martinho.	Teresa Maria Ramos Leal Leite. . . .	QDV	Cozinheira	Cozinheira	151
EBI 2.º/3.º Ciclo S. Martinho.	João Maria Pacheco Pereira.	QDV	Guarda-nocturno	Guarda-nocturno	151
EB1 Igreja, Areias	M.ª Natália Pereira M. Magalhães. . .	C.I.T.Ind. — ME	A.A.Educativa	A.A.Educativa	151
EB1 Igreja, Areias	Leopoldina Teixeira Marques	Quadro — ME	A.A.Educativa	A.A.Educativa	218
JI Igreja, Areias	M.ª Isolete Saldanha Sousa S. Roriz	Quadro — ME	A.A.Educativa	A.A.Educativa	155
EB1 Ramada, Burgães	Júlia Conceição Lopes Silva Costa	Quadro — ME	A.A.Educativa	A.A.Educativa	160
EB1 Ramada, Burgães	Maria Conceição Figueiredo Costa	C.I.T.Ind. — ME	A.A.Educativa	A.A.Educativa	151
JI Vinha, Burgães	Augusta Assunção Andrade Martins	Quadro — ME	A.A.Educativa	A.A.Educativa	181
EB1/JI Igreja, Lama.	Palmira Morais Nogueira.	Quadro — ME	A.A.Educativa	A.A.Educativa	204
EB1/JI Igreja, Lama.	Sílvia Ferreira Martins.	Quadro — ME	A.A.Educativa	A.A.Educativa	151
EB1/JI Quinchães, Monte Córdova	Maria Glória Monteiro Freitas Silva	Quadro-Câmara	A.A.Educativa	A.A.Educativa	151
EB1/JI Santa Luzia, Monte Córdova	Adelaide Maria Fernandes Carneiro	C.I.T.Ind. — ME	A.A.Educativa	A.A.Educativa	151
EB1/JI Santa Luzia, Monte Córdova	Sílvia Maria Carneiro Sampaio	Quadro-Câmara	A.A.Educativa	A.A.Educativa	151
EB1/JI Quintão, Palmeira	Rosa Maria Fonseca de Oliveira . . .	C.I.T.Ind. — ME	A.A.Educativa	A.A.Educativa	151
EB1/JI Quintão, Palmeira	Maria Celeste Guedes Barros Sousa	Quadro-Câmara	A.A.Educativa	A.A.Educativa	151
EB1 Quintão 1, Rebordões	Maria Conceição Gomes Parente. . .	Quadro — ME	A.A.Educativa	A.A.Educativa	151
JI Ribeiro, Rebordões.	Fátima Conceição Pinheiro de Sousa	Quadro-Câmara	A.A.Educativa	A.A.Educativa	151
JI Ribeiro, Rebordões.	Célia Patrícia Sousa Guedes	C.Termo — Câmara	A.A.Educativa	A.A.Educativa	142
EB1/JI Areal, S. Miguel Couto	Luzia Carneiro da Costa.	Quadro — ME	A.A.Educativa	A.A.Educativa	181
EB1/JI Areal, S. Miguel Couto	Maria Madalena Carneiro Andrade Silva.	Quadro — ME	A.A.Educativa	A.A.Educativa	160
EB1/JI Ermida, St.ª Cristina Couto	Aurora da Assunção Lima Magalhães Pinheiro.	Quadro — ME	A.A.Educativa	A.A.Educativa	151
EB1/JI Ermida, St.ª Cristina Couto	Emília Júlia de Sousa Carneiro	C.Termo — Câmara	A.A.Educativa	A.A.Educativa	142
EB1/JI Merouços, St.ª Cristina Couto	Cândida Gouveia Soares Silva.	Quadro — ME	A.A.Educativa	A.A.Educativa	218
EB1/JI Merouços, St.ª Cristina Couto	Maria Conceição Alves Neto	Quadro-Câmara	A.A.Educativa	A.A.Educativa	151
EB1/JI Tarrio, St.ª Cristina Couto	Rosa M.ª Dias M. Pereira Oliveira. .	Quadro — ME	A.A.Educativa	A.A.Educativa	181
EB1/JI Tarrio, St.ª Cristina Couto	Luciana Oliveira Pereira	Quadro-Câmara	A.A.Educativa	A.A.Educativa	151
EB1 Santo Tirso.	Alexandrina Maria Pereira de Sousa	Quadro — ME	A.A.Educativa	A.A.Educativa	151
EB1 Santo Tirso.	Irene de Lurdes Ruas de Sá Oliveira	Quadro — ME	A.A.Educativa	A.A.Educativa	204
EB1/JI Foral, Santo Tirso.	Maria Elsa Ferreira de Matos.	C.I.T.Ind. — ME	A.A.Educativa	A.A.Educativa	151
EB1/JI Foral, Santo Tirso.	Maria Manuela Martins Paiva	Quadro — ME	A.A.Educativa	A.A.Educativa	151
EB1/JI Foral, Santo Tirso.	Maria Albina Silva Lage	Quadro-Câmara	A.A.Educativa	A.A.Educativa	151
EB1/JI S. Bento Batalha, Santo Tirso	Maria Palmira Fernandes da Silva Costa	Quadro — ME	A.A.Educativa	A.A.Educativa	204
EB1/JI S. Bento Batalha, Santo Tirso	Carla Maria Borges Silva Santos. . .	C.Termo — Câmara	A.Técnica Educ.	A.Técnica Educ.	199
EB1/JI Sequeirô	Deolinda Conceição Bastos Marques Silva.	Quadro — ME	A.A.Educativa	A.A.Educativa	151
EB1/JI Sequeirô	Maria Lurdes Paiva Azevedo.	Quadro-Câmara	A.A.Educativa	A.A.Educativa	151
EB 2,3 de São Rosendo	Maria Bernardete de Sousa e Silva Ferreira de Peixoto.	Quadro — ME	A.A Escolar	A.A.Esc. Espec.	316
EB 2,3 de São Rosendo	Amélia Rosa Carneiro Noronha. . . .	Quadro — ME	A.A.Educativa	A.A.Educativa	218
EB 2,3 de São Rosendo	Domingos Magalhães Quaresma . . .	Quadro — ME	A.A.Educativa	A.A.Educativa	189
EB 2,3 de São Rosendo	Fernando José da Costa e Silva	Quadro — ME	E.C.P.A.A.Ed	E.C.P.A.A.Educ	243
EB 2,3 de São Rosendo	Maria Antónia da Silva Pinheiro . . .	Quadro — ME	A.A.Educativa	A.A.Educativa	233
EB 2,3 de São Rosendo	Miguel da Costa Carvalho	Quadro — ME	G. Noturno	Guarda Noturno	170
EB 2,3 de São Rosendo	Francisco Manuel de Almeida e Silva	Quadro — ME	A.A.Educativa	A.A.Educativa	160
EB 2,3 de São Rosendo	José Herculano da Costa e Silva . . .	Quadro — ME	A.A.Educativa	A.A.Educativa	160
EB 2,3 de São Rosendo	Maria Emília Alves Moreira Mieiro	Quadro — ME	A.A.Educativa	A.A.Educativa	151
EB 2,3 de São Rosendo	Ana da Glória Ribeiro Coelho	Quadro — ME	A.A.Educativa	A.A.Educativa	151
EB 2,3 de São Rosendo	Maria de Fátima Moreira Torres . . .	Quadro — ME	A.A.Educativa	A.A.Educativa	151
EB 2,3 de São Rosendo	Maria Fernanda Mesquita Santos. . .	Quadro — ME	A.A.Educativa	A.A.Educativa	151
EB 2,3 de São Rosendo	Maria La Salete Pereira Marques. . .	Quadro — ME	A.A.Educativa	A.A.Educativa	160
EB 2,3 de São Rosendo	Arnaldo Alves da Costa	Quadro — ME	A.A,Escolar	CSAE (reg. subst.)	370
EB 2,3 de São Rosendo	Ana Paula Azevedo Carneiro.	C.I.T.Ind.- ME	A.A.Educativa	A.A.Educativa	151
EB 2,3 de São Rosendo	Adelaide Fernanda da Costa Faria. . .	C.I.T.Ind.- ME	A.A.Educativa	A.A.Educativa	151
EB 2,3 de São Rosendo	José Augusto Fonseca Pereira	C.I.T.Ind.- ME	A.A.Educativa	A.A.Educativa	142
EB 2,3 de São Rosendo	Carlos Alberto Costa Silva Malheiro	C.I.T.Ind.- ME	A.A.Educativa	A.A.Educativa	151
EB 2,3 de São Rosendo	Maria Luísa da Silva Coelho	C.I.T.Ind.- ME	A.A.Educativa	A.A.Educativa	151
EB 2,3 de São Rosendo	Lucília de Jesus Ferreira Monteiro. . .	C.I.T.Ind.- ME	A.A.Educativa	A.A.Educativa	151
EB 2,3 de São Rosendo	Rosália Maria Rosário Oliveira	C.I.T.Ind.- ME	A.A.Educativa	A.A.Educativa	142
EB 2,3 de São Rosendo	Ernesto de Sousa Soares	C.I.T.Ind.- ME	A.A.Educativa	A.A.Educativa	142
EB 2,3 de São Rosendo	Ângela Patrícia Marques Oliveira. . .	C.I.T.Ind.- ME	A.A,Escolar	A.A,Escolar	209
EB 2,3 de São Rosendo	Abeldina Moreira Dias.	C.I.T.Ind.- ME	A.A,Escolar	A.A,Escolar	209
EB 2,3 de São Rosendo	Maria Isabel de Pinho Fernandes. . .	C.I.T.Ind.- ME	A.A,Escolar	A.A,Escolar	209
EB 2,3 de São Rosendo	Eva da Silva Oliveira	C.Termo — ME	A.A.Educativa	A.A.Educativa	142

Estabelecimento de ensino	Nome do funcionário ou agente	Entidade e tipo de vínculo laboral actual	Carreira	Categoria	Índice
EB 2,3 de São Rosendo	Maria José Silva Miranda	C.Termo — ME	A.A.Educativa	A.A.Educativa	142
EB 2,3 de São Rosendo	Maria de Lurdes da Silva M. Carneiro	C.Termo — ME	A.A.Educativa	A.A.Educativa	142
EB 2,3 de São Rosendo	Laura de Fátima Leite Teixeira Pimenta.	C.Termo — ME	A.A.Educativa	A.A.Educativa	142
EB 2,3 de São Rosendo	Filomena Maria da Costa Maia Mendes	C.Termo — ME	A.A.Educativa	A.A.Educativa	142
EB 2,3 de São Rosendo	Carina Moreira Mieiro	C.Termo — ME	A.A.Educativa	A.A.Educativa	142
EB 2,3 de São Rosendo	Sofia Raquel Mesquita Gonçalves Machado.	C.Termo — ME	A.A,Escolar	A.A,Escolar	199
EB 2,3 de São Rosendo	Catarina Isabel Machado Santos	C.Termo — ME	A.A,Escolar	A.A,Escolar	199
EB 2,3 de São Rosendo	Maria da Natividade da Costa Lemos	C.Termo — ME	A.A,Escolar	A.A,Escolar	199
EB 2,3 de São Rosendo	João Nuno Cardoso Brandão	C.Termo — ME	A.A,Escolar	A.A,Escolar	199
EB 2,3 de São Rosendo	Sandra Gorete Dias Santos.	C.Termo — ME	A.A,Escolar	A.A,Escolar	199
EB1/JI Bom Nome	Maria Goretti C.Machado Silva	ME / Quadro	Auxiliar	AAE	160
EB1/JI Bom Nome	Rosa Manuela Mota A. Magalhães	ME / CTC	Auxiliar	AAE	142
EB1/JI Bom Nome	Maria Irene Monteiro F. Lima	CM	Auxiliar	AAE	151
EB1/JI de Quintão n.º 1	Maria Goretti A. Alves Carneiro	ME / Quadro	Auxiliar	AAE	204
EB1/JI de Quintão n.º 1	Maria Antónia Ribeiro Nunes	ME / CIT	Auxiliar	AAE	151
EB1/JI de Quintão n.º 1	Carolina Alexandra Pereira Silva	CM	Auxiliar	AAE	151
EB1 de Giestal n.º 2	Maria Madalena Machado Carneiro	ME / CTC	Auxiliar	AAE	142
EB1 / JI Cense	Maria Inês S.M. Castro	ME / Quadro	Auxliar	AAE	181
EB1 / JI Cense	Maria de Lurdes S. Oliveira Soares	CM	Auxiliar	AAE	151
JI das Fontaínhas	Maria de Fátima Oliveira Pinto	ME / Quadro	Auxiliar	AAE	181
EB1 de Pombinhas	Laurinda Soares	ME / Quadro	Auxiliar	AAE	204
EB 1 / JI Giestal 1	Sónia Verónica Pereira Pinto	CM	Auxiliar	AAE	151
EB 2,3 de Vila das Aves	Cândida Liseta Oliveira Pereira	ME / Quadro	CSAE	CSAE(Subs)	370
EB 2,3 de Vila das Aves	Maria Eugénia Freitas de Sousa	ME / Quadro	Assistente	AAEP	244
EB 2,3 de Vila das Aves	Rogério Manuel Sousa Leite	ME / Quadro	Assistente	AAEP	244
EB 2,3 de Vila das Aves	Salomé Patrícia Oliveira Gomes	ME / CIT	Assistente	As.Adm.Esc.	218
EB 2,3 de Vila das Aves	Gabriel Silva Certo	ME / CIT	Assistente	As.Adm.Esc.	209
EB 2,3 de Vila das Aves	Ana Sofia Vieira Silva Ferreira	ME / CIT	Assistente	As.Adm.Esc.	209
EB 2,3 de Vila das Aves	Abílio Martins da Costa	ME / Quadro	Auxiliar	AAE	204
EB 2,3 de Vila das Aves	Benvinda Maria F. S. Baltazar	ME / Quadro	Auxiliar	AAE	181
EB 2,3 de Vila das Aves	Maria Assunção C. A. Torres	ME / Quadro	Auxiliar	AAE	189
EB 2,3 de Vila das Aves	Carlos Alberto Ferreira Lopes	ME / Quadro	Guarda	Guarda Noct.	170
EB 2,3 de Vila das Aves	Manuel Armindo B. M. Ferreira	ME / Quadro	Auxiliar	EPAAE	243
EB 2,3 de Vila das Aves	Maria Ernestina Rebelo Bessa	ME / CIT	Auxiliar	AAE	151
EB 2,3 de Vila das Aves	Maria Conceição Coelho Machado	ME / CIT	Auxiliar	AAE	151
EB 2,3 de Vila das Aves	Luís Adães de Sousa	ME / CIT	Auxiliar	AAE	151
EB 2,3 de Vila das Aves	Júlia M.ª C. M. P. Almeida	ME / CIT	Auxiliar	AAE	151
EB 2,3 de Vila das Aves	Maria Arminda Lopes Certo	ME / CIT	Auxiliar	AAE	151
EB 2,3 de Vila das Aves	Maria Emília Pereira Oliveira	ME / CIT	Auxiliar	AAE	151
EB 2,3 de Vila das Aves	Maria José Silva Machado	ME / CIT	Auxiliar	AAE	151
EB 2,3 de Vila das Aves	Alice Maria Fernandes da Cruz	ME / Quadro	Auxiliar	AAE	160
EB 2,3 de Vila das Aves	Paula Cristina M. C. Fernandes	ME / CTC	Auxiliar	AAE	142
EB 2,3 de Vila das Aves	Nelson Lázaro Correia Costa	ME / CTC	Auxiliar	AAE	142
EB 2,3 de Vila das Aves	Maria Emília P. F. Reis	ME / CTC	Auxiliar	AAE	142
EB 2,3 de Vila das Aves	Carla Arlete Ribeiro Ferreira	ME / CTC	Auxiliar	AAE	142
EB 2,3 de Vila das Aves	Célia de Jesus Silva Fernandes	ME / CTC	Auxiliar	AAE	142
EBI Aves / S. Tomé Negrelos	Cidália Odete Costa Alves Ribeiro	Quadro	A.A.	A.A.	370
EBI Aves / S. Tomé Negrelos	Alcinda de Fátima Ferreira Matos Ribeiro.	CIT	AAE	AAE	151
EBI Aves / S. Tomé Negrelos	Carlos Alberto de Almeida Gonçalves	CIT	AAE	AAE	142
EBI Aves / S. Tomé Negrelos	Elisabete Cristina dos Santos Alves	CIT	A.A.	A.A.	209
EBI Aves / S. Tomé Negrelos	Marta Susana Costa Teixeira	CIT	AAE	AAE	142
EBI Aves / S. Tomé Negrelos	Glória da Nazaré da Costa Oliveira Ribeiro.	CTTC	AAE	AAE	142
EBI Aves / S. Tomé Negrelos	Maria Helena Silva Gomes Alves	CTTC	AAE	AAE	142
EBI Aves / S. Tomé Negrelos	Maria Regina Pinhão Machado de Castro.	CTTC	AAE	AAE	142
EBI Aves / S. Tomé Negrelos	Paula Cristina Azevedo da Costa Ribeiro.	CTTC	A.A.	A.A.	199
EBI Aves / S. Tomé Negrelos	Teresa Maria Rego de Sousa	CTTC	AAE	AAE	142

2 — Quadro de referência de pessoal não docente a transferir para o concelho, tomando por base os estabelecimentos de educação e ensino, tendo em conta os rácios definidos.

Pessoal não docente:

Existentes (em funções):

Pessoal auxiliar — 172
Pessoal administrativo — 34

Necessários (rácio definido):

Pessoal auxiliar — 232
Pessoal administrativo — 35

Nota: As transferências financeiras previstas na Cláusula 2.ª com o pessoal não docente integram as verbas necessárias ao número de unidades em falta identificadas no quadro acima.

ANEXO 2

Actividades de enriquecimento curricular (1.º ciclo do ensino básico)

1 — Nota de encargos financeiros globais a transferir para o município.

Total de alunos — 2879
Valor a transferir — € 755 737,50

Nota: A autarquia deve garantir a oferta de actividades de enriquecimento curricular a todos os alunos do concelho a tempo integral.

ANEXO 3

Construção, manutenção e apetrechamento das escolas básicas

1 — Lista de escolas dos 2.º e 3.º ciclos do ensino básico a transferir:

Escola Básica de Vila das Aves;
Escola Básica da Agrela;
Escola Básica Integrada deTomé de Negrelos;
Escola Básica de S. Martinho do Campo;
Escola Básica de Rosendo.

Nota: A DREN compromete-se a delegar na Câmara a capacidade de concorrer aos fundos comunitários com a comparticipação do Ministério da Educação.

2 — Situações especiais

Os encargos assumidos com pessoas singulares, nos termos do artigo 43.º do Decreto-Lei n.º 184/2004, de 29 de Julho, a transferir são de € 19.896,66.

ANEXO 4

Residências de Estudantes — pessoal a transferir

Lista de pessoal com relação laboral à(s) Residência(s) de Estudantes.

Nome	Tipo de vínculo laboral	Índice
Maria Adelina Coutinho Lopes	Contratada	290
Maria Emília Domingues Pinto	Contratada	165
Maria de Fátima Andrade Silva Pinto	Contratada	165
Maria de Lurdes Teixeira Artilheiro Rebouta	Contratada	244

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MINISTÉRIO DA CIÊNCIA, TECNOLOGIA E ENSINO SUPERIOR

Gabinete do Ministro

Despacho n.º 17367/2009

Nos termos e ao abrigo do disposto no artigo 7.º da Lei Orgânica do XVII Governo Constitucional, aprovada pelo Decreto-Lei n.º 79/2005, de 15 de Abril, e ao abrigo das disposições conjugadas dos artigos 35.º a 41.º do Código do Procedimento Administrativo, aprovado pelo Decreto-Lei n.º 442/91, de 15 de Novembro, na redacção dada pelo Decreto-Lei n.º 6/96, de 31 de Janeiro, do artigo 151.º da Lei n.º 62/2007, de 10 de Setembro (Regime Jurídico das Instituições de Ensino Superior), da alínea *c*) do n.º 1 do artigo 17.º do Decreto-Lei n.º 197/99, de 8 de Junho, e da alínea *c*) do n.º 3 do mesmo artigo, por força do disposto na alínea *f*) do n.º 1 do artigo 14.º do Decreto-Lei n.º 18/2008, de 29 de Janeiro (aprova o Código dos Contratos Públicos), e, ainda, dos artigos 109.º e 110.º deste Código:

1 — Delego no novo presidente do Instituto Politécnico de Castelo Branco, Professor Carlos Manuel Leitão Maia, com a possibilidade de subdelegar, as competências para a prática dos actos a que se refere o n.º 1 do despacho n.º 7938/2009, publicado no *Diário da República*, 2.ª série, n.º 55, de 19 de Março de 2009, desde que, em todos os casos, esteja assegurada a prévia cabimentação orçamental.

2 — Autorizo o presidente do Instituto Politécnico de Castelo Branco, Professor Carlos Manuel Leitão Maia, a, dentro dos condicionalismos legais, subdelegar as competências referidas no n.º 1 do presente despacho:

a) Nos vice-presidentes do Instituto;
b) Nos órgãos de governo do Instituto e das suas unidades orgânicas.

3 — As adjudicações inerentes a empreitadas de obras públicas efectuadas nos termos das alíneas *d*) e *e*) do n.º 1 do despacho n.º 7938/2009, de 19 de Março, devem ser comunicadas, aquando da sua autorização, ao Gabinete de Planeamento, Estratégia, Avaliação e Relações Internacionais.

4 — O presente despacho produz efeitos a partir da data de entrada em funções do Professor Carlos Manuel Leitão Maia como presidente do Instituto Politécnico de Castelo Branco.

21 de Julho de 2009. — O Ministro da Ciência, Tecnologia e Ensino Superior, *José Mariano Rebelo Pires Gago*.

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Despacho n.º 17368/2009

I — Por despacho de 11 de Maio de 2009 da inspectora-geral do Ministério da Ciência, Tecnologia e Ensino Superior, cujos termos se dão por integralmente reproduzidos, para todos os efeitos legais, e no âmbito das suas competências legais, foi instaurado o processo de averiguações NI 01/05.029/2009, daquela Inspecção-Geral, ao abrigo do disposto no artigo 36.º da Lei n.º 62/2007, de 10 de Setembro (RJIES — Regime Jurídico das Instituições de Ensino Superior), na sequência de documentação recolhida no âmbito de uma auditoria realizada aos Serviços Académicos da Universidade de Évora, comprovando a titularidade do curso superior de Naturologia, emitido por uma instituição, de natureza privada, denominada Escola Superior de Biologia e Saúde, com sede na Rua do Professor Celestino da Costa, 10, 1170-323 Lisboa.

II — Foram realizadas as diligências descritas no capítulo II, «Diligências efectuadas», do relatório final, que aqui se dá por reproduzido, para todos os efeitos legais.

III — Assim, atentas as conclusões vertidas no relatório final, que se transcrevem, resultaram provados os seguintes factos:

> «15.12. 'Escola Superior de Biologia e Saúde' é a designação de uma sociedade anónima registada na Conservatória do Registo Comercial de Lisboa, 1.ª Secção, cujo objecto social é 'ensino superior nas áreas de naturologia, ecologia, saúde e biologia';
>
> 15.13. A entidade Escola Superior de Biologia e Saúde assegura, desde 1993, a leccionação do designado 'curso superior de Naturologia', tendo diplomado centenas de profissionais na área das terapêuticas não convencionais, não tendo requerido a acreditação e o registo do ciclo de estudos que ministra, violando a alínea *l*) do artigo 30.º do RJIES, nem solicitado reconhecimento de interesse público, nos termos dos artigos 32.º, 33.º e 34.º do RJIES;
>
> 15.14. Em 2004, a sociedade Escola Superior de Biologia e Saúde solicitou à Direcção-Geral do Ensino Superior a 'apreciação da nova estrutura do curso superior de Naturologia'; esta solicitação nunca foi respondida, pelo que, nos termos do n.º 2 do artigo 60.º do Estatuto do Ensino Superior Particular e Cooperativo, aprovado pelo Decreto-Lei n.º 16/94, de 22 de Janeiro, em vigor à data, a ausência de resposta no prazo máximo de seis meses deveria ter sido interpretada como indeferimento de pedido de funcionamento do curso e obrigado à cessação da sua ministração;
>
> 15.15. Embora na divulgação que faz do curso de Naturologia a entidade Escola Superior de Biologia e Saúde, S. A., afirme que não se trata de uma formação conferente de grau, o regulamento interno da entidade entregue aos alunos define o estabelecimento como de ensino superior e denomina a formação em Naturologia como curso superior de Naturologia, violando, assim, o disposto no n.º 3 do artigo 10.º da Lei n.º 62/2007, de 10 de Setembro (Regime Jurídico das Instituições de Ensino Superior), visto que, como já acima se mostrou, não sendo uma instituição de ensino superior com reconhecimento de interesse público concedido pelo Ministério da Ciência, Tecnologia e Ensino Superior (MCTES), nos termos dos artigos 33.º, 34.º e 35.º do referido RJIES, está-lhe vedada a utilização da palavra 'superior', pois a utilização da referida palavra transmite a ideia de que naquela entidade é ministrado ensino superior, o que, de facto, não acontece [...];
>
> 15.16. Desde o ano de 2003, a Lei n.º 45/2003, de 22 de Agosto, continua por regulamentar, o que, por si só, e sem a avaliação dos méritos ou deméritos do ensino e da aprendizagem das terapêuticas não convencionais, impede a sua legalização, em Portugal.»

IV — Analisado o processo e correspondente relatório final, que se dá na íntegra por reproduzido, ponderada a gravidade e amplitude dos factos apurados e do que ficou demonstrado no decurso do processo de averiguações instruído para o efeito;

V — Considerando-se inequivocamente demonstrado, nos termos do mencionado processo da Inspecção-Geral, que o funcionamento da Escola Superior de Biologia e Saúde decorreu, no período em apreciação, e continua a decorrer, no momento presente, com desrespeito dos normativos que são pressuposto legal do ensino e da necessária credibilidade pública dos seus cursos, nomeadamente o reconhecimento de interesse público dos estabelecimentos;

VI — Considerando, por outro lado, as obrigações cometidas ao Estado na defesa da qualidade, da credibilidade e da dignificação do ensino superior português, legitimando a acção fiscalizadora em toda a sua extensão e consequências;

Appendix B

Table 17: Descriptive Statistics - 1st reform

VARIABLES		N		Mean		p50		sd		Min		Max	
		Decent.	Non-Decent.	Decent.	Non-Decent.	Decent.	Non-Decent.	Decent.	Non-Decent.	Decent.	Non-Decent.	Decent.	Non-Decent.
Expenditures *(per student)*	Pre-Primary Educ.	1,466	2,106	1,653.01	1,491.57	1,497.87	1,377.20	1,246.43	770.71	83.75	0.00	38,677.48	6,459.23
	Basic Educ.(1st Cycle)	1,469	2,106	1,379.13	1,027.24	1,186.38	862.87	808.49	610.70	88.01	0.00	9,479.87	4,739.48
	Total	1,469	2,106	640.11	484.36	543.23	427.67	458.79	249.87	63.26	0.00	10,105.74	1,793.42
Compensations *(per student)*	Pre-Primary Educ.	1,466	2,106	873.55	737.72	849.93	758.74	563.61	420.50	0.00	0.00	4,479.85	2,835.23
	Basic Educ.(1st Cycle)	1,469	2,106	522.00	211.13	407.28	173.12	559.16	204.05	0.00	0.00	6,814.65	2,303.89
	Total	1,469	2,106	261.16	146.68	221.87	142.06	212.16	86.12	0.00	0.00	2,936.76	864.66
Retention(%)	Basic Educ.(1st Cycle)	2,240	3,205	5.35	5.01	4.70	4.30	3.36	3.21	0.00	0.00	44.50	30.40
	Basic Educ.(2nd Cycle)	2,234	3,184	10.13	9.34	9.50	8.90	6.06	5.61	0.00	0.00	33.30	37.40
	Basic Educ.(3rd Cycle)	2,249	3,233	15.21	14.89	14.90	14.50	7.08	6.85	0.00	0.00	45.10	46.90
Schooling(%)	Pre-Primary Educ.	1,808	2,592	93.37	96.60	94.60	97.00	17.56	15.79	42.70	33.70	225.00	190.90
	Basic Educ.	1,808	2,592	115.95	116.63	113.90	114.60	17.34	18.12	80.70	62.90	278.90	320.50
Public Enrolment(%)	Pre-Primary Educ.	2,058	2,917	61.28	61.75	63.37	62.57	17.67	17.90	6.65	8.26	96.26	97.62
	Basic Educ.(1st Cycle)	825	1,108	92.16	89.65	92.67	91.74	4.81	9.27	72.99	54.21	99.96	99.96
	Basic Educ.(2nd Cycle)	772	1,132	85.56	81.93	92.17	85.50	14.61	13.44	5.10	47.20	99.94	99.94
	Basic Educ.(3rd Cycle)	1,015	1,534	84.94	82.69	90.77	87.36	14.85	14.80	0.68	16.80	99.96	99.93
Log(Population)		2,260	3,240	9.80	9.80	9.74	9.62	1.11	1.11	7.68	7.40	12.88	13.24
Log(Month.Earnings)		1,808	2,592	6.89	6.90	6.88	6.87	0.15	0.17	6.57	6.53	7.62	7.85
%Unemploy.		1,808	2,592	5.35	5.05	5.03	4.79	2.27	1.96	0.98	0.92	13.48	14.05
%Popula.Higher.Educ.		2,260	3,240	8.77	9.21	7.95	7.95	4.58	5.71	1.51	1.34	29.28	47.25

Notes: The descriptive statistics concern all the variables used in the regressions, including educational outcomes, municipal expenses and compensations received, and control variables. All financial variables are in real euros (at 2022 prices). These statistics are presented for two groups of municipalities, that is, decentralised or non-decentralised.

Table 18: Descriptive Statistics - 2nd reform

VARIABLES		N		Mean		p50		sd		Min		Max	
		Decent.	Non-Decent.	Decent.	Non-Decent.	Decent.	Non-Decent.	Decent.	Non-Decent.	Decent.	Non-Decent.	Decent.	Non-Decent.
Expenditures *(per student)*	Pre-Primary Educ.	195	3,377	1,458.70	1,563.55	1,471.17	1,418.50	689.97	1,011.56	0.00	0.00	3,529.71	38,677.48
	Basic Educ.(1st Cycle)	195	3,380	1,099.02	1,176.04	1,003.30	999.37	582.78	726.78	0.00	0.00	2,711.11	9,479.87
	Total	195	3,380	495.52	551.41	450.05	477.40	264.17	363.84	0.00	0.00	1,267.71	10,105.74
Compensations *(per student)*	Pre-Primary Educ.	195	3,377	777.05	794.41	801.61	789.84	543.01	485.65	0.00	0.00	4,479.85	3,927.30
	Basic Educ.(1st Cycle)	195	3,380	425.03	333.90	311.96	272.73	422.29	419.32	0.00	0.00	1,902.88	6,814.65
	Total	195	3,380	206.44	192.99	167.96	169.74	171.14	160.75	0.00	0.00	1,132.34	2,936.76
Retention(%)	Basic Educ.(1st Cycle)	298	5,147	4.54	5.19	3.75	4.50	2.90	3.29	0.00	0.00	19.00	44.50
	Basic Educ.(2nd Cycle)	295	5,123	8.69	9.72	7.80	9.20	5.18	5.84	0.00	0.00	37.40	32.10
	Basic Educ.(3rd Cycle)	298	5,184	14.23	15.07	14.05	14.80	6.11	6.99	1.00	0.00	34.30	46.90
Transition(%)	Secondary Educ.	260	4,716	77.44	76.28	80.00	78.70	9.86	11.09	54.80	25.00	100.00	100.00
Exam Classific.	Basic Educ.(3rd Cycle)	180	3,101	2.82	2.77	2.86	2.78	0.23	0.26	2.29	1.66	3.35	3.52
	Secondary Educ.	121	1,873	101.05	96.99	102.07	97.72	7.87	8.44	80.26	55.57	120.70	120.63
Schooling(%)	Pre-Primary Educ.	240	4,160	92.37	95.44	91.55	96.50	18.91	16.46	47.60	33.70	193.10	225.00
	Basic Educ.	240	4,160	113.21	116.53	110.05	114.50	16.31	17.87	83.00	62.90	179.50	320.50
	Secondary Educ.	232	3,938	92.81	107.85	94.20	97.75	36.75	53.01	4.20	0.50	195.60	434.90
Public Enrolment(%)	Pre-Primary Educ.	300	4,675	47.36	62.46	48.03	64.02	15.60	17.55	12.37	6.65	82.98	97.62
	Basic Educ.(1st Cycle)	187	1,746	85.12	91.32	89.17	92.59	11.72	6.98	54.21	55.13	99.48	99.96
	Basic Educ.(2nd Cycle)	173	1,731	78.60	83.88	79.98	88.45	16.41	13.69	48.66	5.10	99.20	99.94
	Basic Educ.(3rd Cycle)	189	2,360	79.57	83.91	83.41	89.05	16.06	14.71	43.03	0.68	99.74	99.96
	Secondary Educ.	174	2,729	75.37	74.97	80.67	79.36	16.70	19.19	6.84	0.68	99.94	99.91
Log(Population)		300	5,200	10.52	9.76	10.78	9.62	1.45	1.07	8.05	7.40	12.27	13.24
Log(Month.Earnings)		240	4,160	7.03	6.89	6.98	6.87	0.22	0.15	6.62	6.53	7.64	7.85
%Unemploy.		240	4,160	4.56	5.21	4.30	4.92	1.79	2.11	1.22	0.92	10.40	14.05
%Popula.Higher.Educ.		300	5,200	12.66	8.82	10.78	7.85	8.05	5.00	1.51	1.34	38.42	47.25

Notes: The descriptive statistics concern all the variables used in the regressions, including educational outcomes, municipal expenses and compensations received, and control variables. All financial variables are in real euros (at 2022 prices). These statistics are presented for two groups of municipalities, that is, decentralised or non-decentralised.

Appendix C

Figure 4: Trends in municipal accounts before the 1st reform

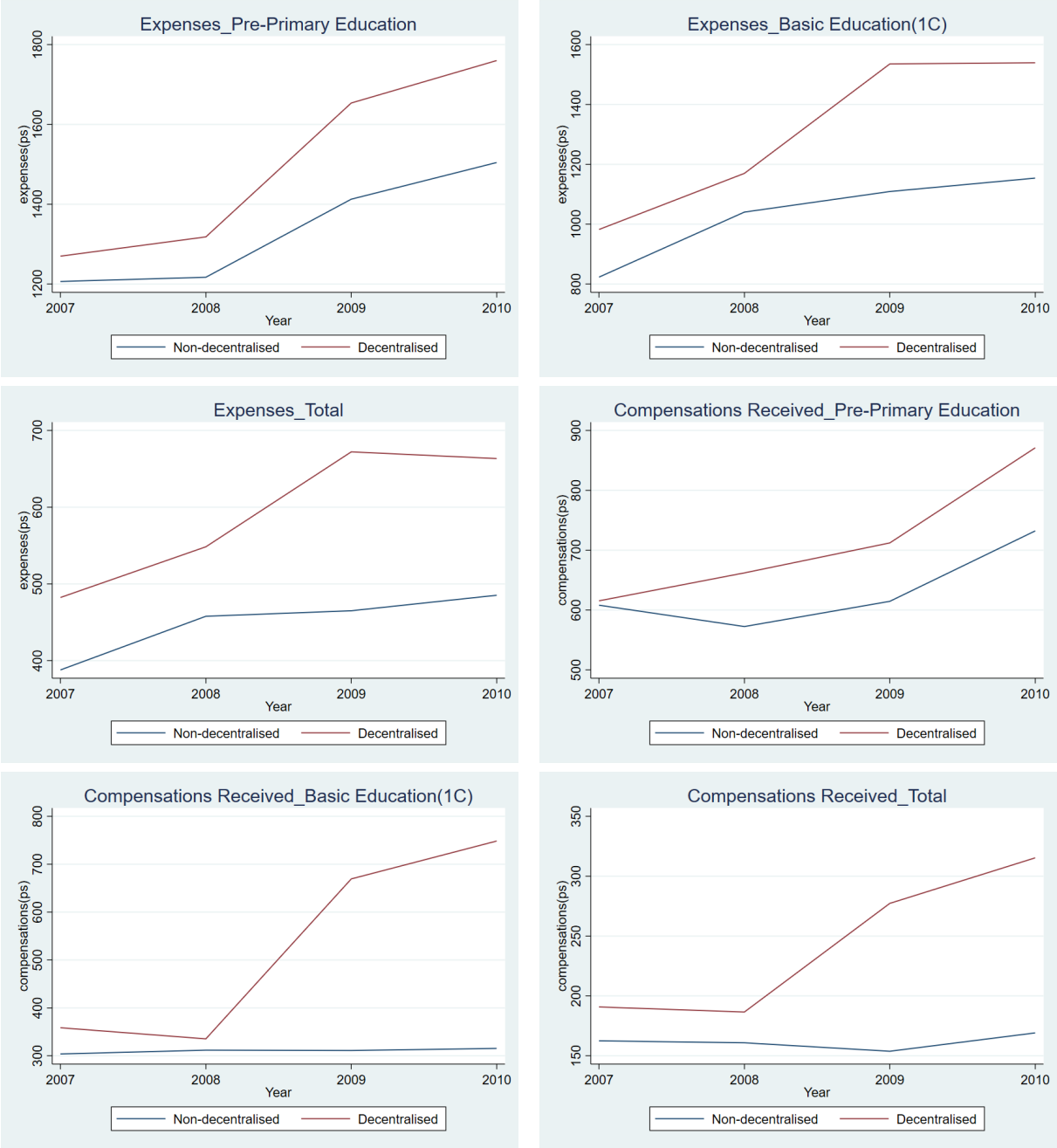
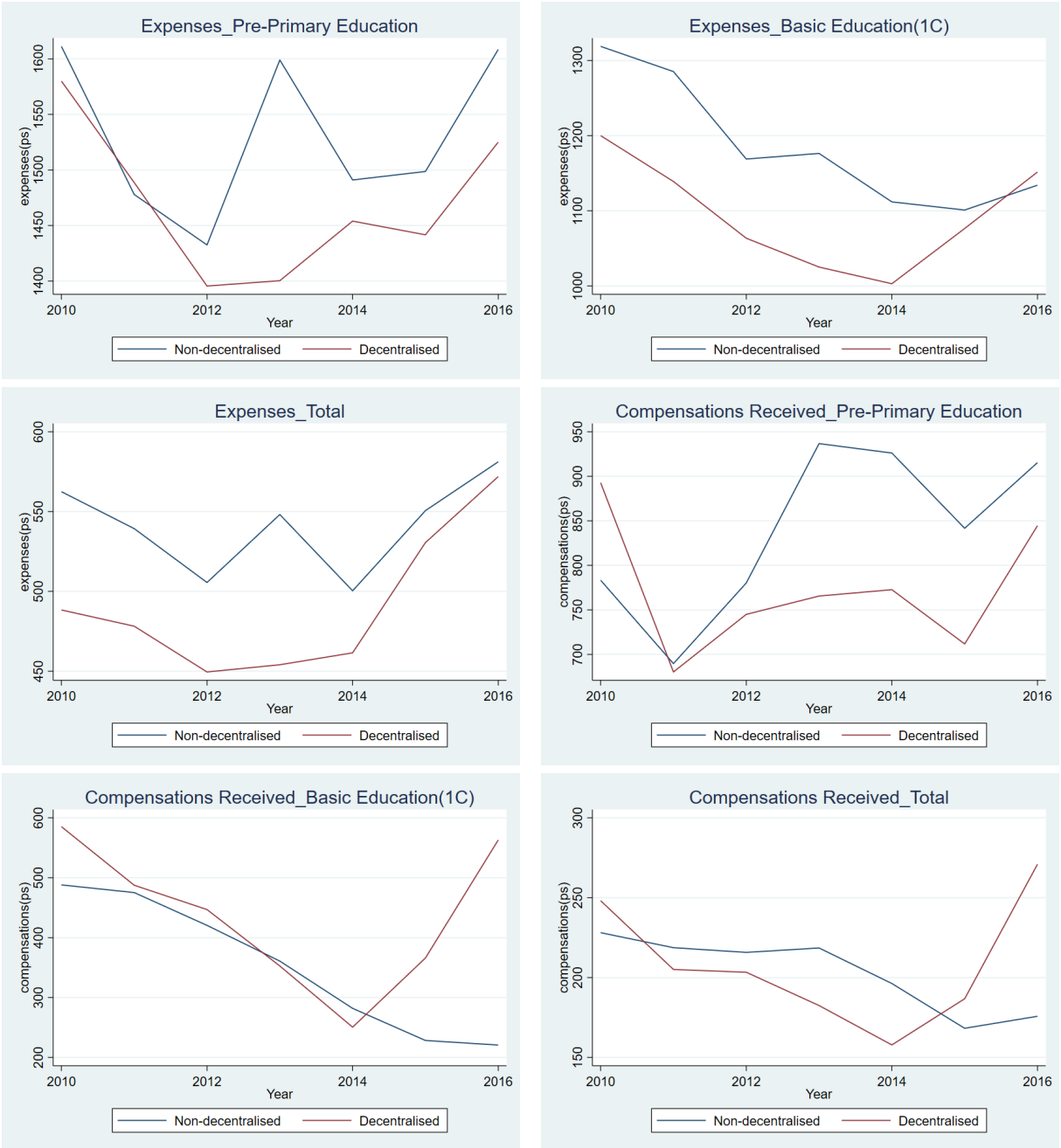


Figure 5: Trends in municipal accounts before the 2nd reform



Appendix D

Table 19: Effects of the 1st reform in municipal accounts - Flexible Model (2004 - 2019)

VARIABLES	*Expenditures (per student)*			*Compensations Received (per student)*		
(level of education)	Pre-Primary	1st Cycle (Basic)	Total	Pre-Primary	1st Cycle (Basic)	Total
Decentralised(Year=2007)	-61.94	-292.4**	-68.05	-224.7**	-300.3***	-119.2***
	(-0.422)	(-2.217)	(-0.984)	(-2.477)	(-5.066)	(-4.399)
Decentralised(Year=2008)	-20.91	-324.9**	-74.49	-139.0	-334.1***	-122.7***
	(-0.156)	(-2.564)	(-1.114)	(-1.502)	(-5.495)	(-4.277)
Decentralised(Year=2009)	122.3	-30.68	39.48	-127.8	-2.156	-25.80
	(0.809)	(-0.235)	(0.525)	(-1.429)	(-0.0306)	(-0.920)
Decentralised(Year=2010)	140.2	-74.31	7.950	-83.23	69.73	-4.023
	(1.030)	(-0.808)	(0.208)	(-0.835)	(0.817)	(-0.141)
Decentralised(Year=2011)	164.7	37.75	31.58	-119.6	100.9	2.627
	(1.303)	(0.420)	(0.798)	(-1.380)	(1.409)	(0.0922)
Decentralised(Year=2012)	83.41	-49.17	-12.38	-71.44	53.09	-9.380
	(0.708)	(-0.633)	(-0.371)	(-0.857)	(0.881)	(-0.367)
Decentralised(Year=2013)	418.7	-82.63	52.82	6.249	-10.77	-17.96
	(1.208)	(-0.981)	(0.617)	(0.0688)	(-0.185)	(-0.686)
Decentralised(Year=2014)	-6.193	-123.0*	-49.51	-64.79	-51.68	-40.66
	(-0.0596)	(-1.707)	(-1.581)	(-0.814)	(-0.902)	(-1.530)
Decentralised(Year=2015)	-2.902	-181.5***	-76.18**	-7.379	-84.34	-42.31
	(-0.0313)	(-2.922)	(-2.586)	(-0.103)	(-1.412)	(-1.508)
Decentralised(Year=2016)	12.18	-145.2***	-48.91*	-141.5**	-88.21	-56.17**
	(0.133)	(-2.666)	(-1.944)	(-2.143)	(-1.432)	(-1.971)
Decentralised(Year=2017)	-61.34	-117.7***	-43.85**	-55.78	-99.22**	-47.92**
	(-0.782)	(-2.613)	(-2.055)	(-0.944)	(-2.561)	(-2.413)
Decentralised(Year=2018)	-59.64	-123.1***	-47.55***	16.56	-42.09	-17.30
	(-0.811)	(-3.476)	(-2.611)	(0.291)	(-1.620)	(-1.437)
Observations	3,572	3,575	3,575	3,572	3,575	3,575
Number of municipality_id	275	275	275	275	275	275
Adjusted R-squared	0.074	0.079	0.066	0.114	0.126	0.070

Notes: All regressions include municipal and year-fixed effects, and regional-specific trends. All dependent variables are in real euros (at 2022 prices) *per* student. The estimations encompass 275 municipalities and cover the entire period of analysis. T-statistics, based on robust standard errors clustered by each municipality, are depicted in parentheses.
Significance level: *** p<0.01, ** p<0.05, * p.<0.10.

Table 20: Effects of the 1st reform on educational outcomes - Flexible Model (2004 - 2019)

VARIABLES	*Retention Rates*			*Schooling Rates*	
(level of education)	1st Cycle (Basic)	2nd Cycle (Basic)	3rd Cycle (Basic)	Pre-Primary	Basic
Decentralised(Year=2005)	0.577*	-0.192	-0.149	-1.390	-1.813
	(1.737)	(-0.284)	(-0.203)	(-0.732)	(-0.914)
Decentralised(Year=2006)	0.407	0.138	0.210	0.102	-1.137
	(1.218)	(0.178)	(0.218)	(0.0524)	(-0.587)
Decentralised(Year=2007)	0.185	0.249	-0.282	0.649	-1.482
	(0.598)	(0.359)	(-0.389)	(0.362)	(-0.817)
Decentralised(Year=2008)	0.0729	-0.303	-0.585	-0.406	-1.878
	(0.208)	(-0.518)	(-0.882)	(-0.209)	(-0.942)
Decentralised(Year=2009)	-0.0222	-0.402	-0.141	1.104	-3.475
	(-0.0768)	(-0.748)	(-0.221)	(0.600)	(-1.287)
Decentralised(Year=2010)	-0.0879	-0.977*	0.454	0.975	-1.629
	(-0.287)	(-1.662)	(0.705)	(0.626)	(-0.534)
Decentralised(Year=2011)	0.193	-0.544	-0.309	1.786	-0.395
	(0.648)	(-0.994)	(-0.461)	(0.961)	(-0.171)
Decentralised(Year=2012)	-0.0660	0.176	-0.435	2.930	0.0563
	(-0.225)	(0.281)	(-0.609)	(1.509)	(0.0355)
Decentralised(Year=2013)	0.110	-0.999	0.904	1.114	0.588
	(0.363)	(-1.447)	(1.430)	(0.588)	(0.493)
Decentralised(Year=2014)	0.628**	0.279	-0.418	-0.897	1.635
	(2.110)	(0.451)	(-0.687)	(-0.509)	(1.539)
Decentralised(Year=2015)	0.358	-0.212	0.149	-0.298	1.320
	(1.014)	(-0.353)	(0.260)	(-0.179)	(1.393)
Decentralised(Year=2016)	0.265	-0.207	-0.0375	0.759	1.540
	(0.959)	(-0.418)	(-0.0701)	(0.517)	(1.597)
Decentralised(Year=2017)	0.369	0.427	0.161	1.035	0.920
	(1.400)	(0.825)	(0.322)	(0.809)	(1.192)
Decentralised(Year=2018)	0.481*	1.016**	-0.0581	1.174	0.641
	(1.903)	(2.336)	(-0.113)	(1.391)	(1.268)
Log(Population)$_{t-1}$	-4.194***	-7.750***	-2.077	23.98**	-17.24
	(-2.780)	(-2.622)	(-0.678)	(2.045)	(-1.269)
Log(Month.Earnings)$_{t-1}$	1.582	-0.331	1.745	-4.932	5.363
	(1.553)	(-0.134)	(0.781)	(-0.820)	(0.598)
%Unemploy.$_{t-1}$	0.00953	0.0863	-0.0757	-0.769***	-0.0930
	(0.239)	(1.052)	(-0.763)	(-2.691)	(-0.318)
%Popula.Higher.Educ.$_{t-1}$	0.0319	-0.0979	0.251***	-0.474	-0.0323
	(0.913)	(-1.167)	(2.604)	(-1.095)	(-0.0651)
Observations	4,070	4,043	4,107	4,125	4,125
Number of municipality_id	275	275	275	275	275
Adjusted R-squared	0.229	0.400	0.536	0.253	0.362

Notes: All regressions include municipal and year-fixed effects, and regional-specific trends. The estimations encompass 275 municipalities and cover the entire period of analysis. T-statistics, based on robust standard errors clustered by each municipality, are depicted in parentheses.
Significance level: *** p<0.01, ** p<0.05, * p.<0.10.

Table 21: Effects of the 1st reform on educational outcomes - Flexible Model (2004 - 2019) (cont.)

VARIABLES	*Public School Enrolment Rates*			
(level of education)	Pre-Primary	1st Cycle (Basic)	2nd Cycle (Basic)	3rd Cycle (Basic)
Decentralised(Year=2005)	2.334	0.797	1.546	0.441
	(1.479)	(1.031)	(0.664)	(0.187)
Decentralised(Year=2006)	2.311	1.145	1.431	0.550
	(1.542)	(1.561)	(0.615)	(0.248)
Decentralised(Year=2007)	1.495	1.366*	1.891	0.329
	(1.031)	(1.944)	(0.782)	(0.154)
Decentralised(Year=2008)	1.243	1.446**	1.847	0.704
	(0.933)	(2.175)	(0.798)	(0.357)
Decentralised(Year=2009)	-0.186	1.471**	0.607	-0.389
	(-0.147)	(2.310)	(0.274)	(-0.159)
Decentralised(Year=2010)	0.235	0.901	0.803	0.169
	(0.211)	(1.530)	(0.383)	(0.0724)
Decentralised(Year=2011)	-0.471	1.072*	1.343	-0.588
	(-0.454)	(1.869)	(0.738)	(-0.267)
Decentralised(Year=2012)	-0.286	0.806	1.933	0.269
	(-0.302)	(1.509)	(1.210)	(0.142)
Decentralised(Year=2013)	-0.987	1.094*	2.928*	2.421
	(-1.061)	(1.903)	(1.725)	(1.326)
Decentralised(Year=2014)	-0.507	0.923*	2.316	1.238
	(-0.597)	(1.737)	(1.429)	(0.736)
Decentralised(Year=2015)	-0.252	0.810*	1.182	1.159
	(-0.327)	(1.764)	(0.676)	(0.743)
Decentralised(Year=2016)	0.254	-0.0817	1.496	1.585
	(0.348)	(-0.225)	(0.926)	(1.104)
Decentralised(Year=2017)	-0.0347	-0.488	1.900*	0.320
	(-0.0559)	(-1.394)	(1.677)	(0.223)
Decentralised(Year=2018)	-0.133	-0.495	-0.113	1.274
	(-0.239)	(-1.595)	(-0.146)	(1.067)
Log(Population)$_{t-1}$	15.52*	-2.965	-14.04	-0.792
	(1.661)	(-0.446)	(-1.449)	(-0.0903)
Log(Month.Earnings)$_{t-1}$	-10.21**	-4.904*	-4.537	-15.90
	(-2.141)	(-1.693)	(-0.783)	(-1.445)
%Unemploy.$_{t-1}$	0.110	0.0564	-0.366	-0.0979
	(0.531)	(0.416)	(-1.346)	(-0.353)
%Popula.Higher.Educ.$_{t-1}$	0.196	-0.257**	-0.208	-0.139
	(0.764)	(-2.184)	(-1.025)	(-0.629)
Observations	3,724	1,495	1,525	2,121
Number of municipality_id	255	138	156	243
Adjusted R-squared	0.111	0.115	0.127	0.190

Notes: All regressions include municipal and year-fixed effects, and regional-specific trends. The estimations cover the entire period of analysis and encompass 275 municipalities, but some regressions may include a smaller number due to missing data. T-statistics, based on robust standard errors clustered by each municipality, are depicted in parentheses.
Significance level: *** p<0.01, ** p<0.05, * p.<0.10.

Table 22: Effects of the 1st reform in municipal accounts - All municipalities

VARIABLES	*Expenditures (per student)*			*Compensations Received (per student)*		
(level of education)	Pre-Primary	1st Cycle (Basic)	Total	Pre-Primary	1st Cycle (Basic)	Total
Decentralised(Year>=2010)	59.34	123.9	15.99	112.0**	200.3***	67.36***
	(0.661)	(1.340)	(0.292)	(2.471)	(5.896)	(4.665)
Observations	3,611	3,614	3,614	3,611	3,614	3,614
Number of municipality_id	278	278	278	278	278	278
Adjusted R-squared	0.070	0.071	0.062	0.114	0.106	0.059

Notes: All regressions include municipal and year-fixed effects, and regional-specific trends. All dependent variables are in real euros (at 2022 prices) *per* student. The estimations encompass 278 municipalities, including those that only signed contracts after 2011. T-statistics, based on robust standard errors clustered by each municipality, are depicted in parentheses.
Significance level: *** p<0.01, ** p<0.05, * p.<0.10.

Table 23: Effects of the 1st reform on educational outcomes - All municipalities

VARIABLES	*Retention Rates*			*Schooling Rates*	
(level of education)	1st Cycle (Basic)	2nd Cycle (Basic)	3rd Cycle (Basic)	Pre-Primary	Basic
Decentralised(Year>=2010)	0.00205	-0.0544	0.244	0.314	2.289*
	(0.0130)	(-0.149)	(0.597)	(0.247)	(1.747)
Log(Population)$_{t-1}$	-4.081***	-6.063*	-1.384	28.55**	-15.03
	(-2.734)	(-1.968)	(-0.446)	(2.311)	(-1.117)
Log(Month.Earnings)$_{t-1}$	1.463	-0.250	1.690	-3.396	5.325
	(1.436)	(-0.0994)	(0.756)	(-0.570)	(0.591)
%Unemploy.$_{t-1}$	0.00984	0.0919	-0.0622	-0.761***	-0.112
	(0.251)	(1.124)	(-0.649)	(-2.740)	(-0.390)
%Popula.Higher.Educ.$_{t-1}$	0.0270	-0.123	0.245**	-0.482	-0.0595
	(0.772)	(-1.413)	(2.544)	(-1.153)	(-0.121)
Observations	4,113	4,088	4,152	4,170	4,170
Number of municipality_id	278	278	278	278	278
Adjested R-squared	0.227	0.391	0.534	0.234	0.362

Notes: All regressions include municipal and year-fixed effects, and regional-specific trends. The estimations encompass all 278 municipalities, including those that only signed contracts after 2011. T-statistics, based on robust standard errors clustered by each municipality, are depicted in parentheses.
Significance level: *** p<0.01, ** p<0.05, * p.<0.10.

Table 24: Effects of the 1st reform on educational outcomes - All municipalities (cont.)

VARIABLES	*Public School Enrolment Rates*			
(level of education)	Pre-Primary	1st Cycle (Basic)	2nd Cycle (Basic)	3rd Cycle (Basic)
Decentralised(Year>=2010)	-1.583	-0.816	0.00974	0.330
	(-1.617)	(-1.519)	(0.00751)	(0.347)
Log(Population)$_{t-1}$	16.81*	-2.755	-14.06	-2.399
	(1.822)	(-0.437)	(-1.481)	(-0.279)
Log(Month.Earnings)$_{t-1}$	-10.64**	-4.928*	-4.544	-15.34
	(-2.272)	(-1.672)	(-0.792)	(-1.414)
%Unemploy.$_{t-1}$	0.0818	0.157	-0.285	-0.119
	(0.397)	(1.137)	(-0.983)	(-0.419)
%Popula.Higher.Educ.$_{t-1}$	0.178	-0.278**	-0.204	-0.144
	(0.703)	(-2.255)	(-0.996)	(-0.651)
Observations	3,754	1,510	1,534	2,144
Number of municipality_id	257	139	158	246
Adjusted R-squared	0.109	0.101	0.126	0.189

Notes: All regressions include municipal and year-fixed effects, and regional-specific trends. The estimations encompass all 278 municipalities, including those that only signed contracts after 2011, but some regressions may include a smaller number due to missing data. T-statistics, based on robust standard errors clustered by each municipality, are depicted in parentheses.
Significance level: *** p<0.01, ** p<0.05, * p.<0.10.

Table 25: Effects of the 1st reform in municipal accounts - Excluding late adopters

VARIABLES	*Expenditures (per student)*			*Compensations Received (per student)*		
(level of education)	Pre-Primary	1st Cycle (Basic)	Total	Pre-Primary	1st Cycle (Basic)	Total
Decentralised(Year>=2010)	122.3	221.0***	71.11***	86.07*	176.0***	55.70***
	(1.468)	(3.993)	(3.024)	(1.721)	(4.585)	(3.524)
Observations	3,289	3,289	3,289	3,289	3,289	3,289
Number of municipality_id	253	253	253	253	253	253
Adjusted R-squared	0.075	0.104	0.095	0.104	0.136	0.067

Notes: All regressions include municipal and year-fixed effects, and regional-specific trends. All dependent variables are in real euros (at 2022 prices) *per* student. The estimations encompass 266 municipalities and the decentralisation variable considers only the 91 that started experiencing effects at the beginning of 2009. T-statistics, based on robust standard errors clustered by each municipality, are depicted in parentheses.
Significance level: *** p<0.01, ** p<0.05, * p.<0.10.

Table 26: Effects of the 1st reform on educational outcomes - Excluding late adopters

VARIABLES	*Retention Rates*			*Schooling Rates*	
(level of education)	1st Cycle (Basic)	2nd Cycle (Basic)	3rd Cycle (Basic)	Pre-Primary	Basic
Decentralised(Year>=2010)	-0.0560	-0.377	0.00247	1.124	3.071*
	(-0.319)	(-0.945)	(0.00550)	(0.847)	(1.968)
Log(Population)$_{t-1}$	-2.742**	-6.559**	-1.671	21.96*	-12.00
	(-2.393)	(-2.023)	(-0.528)	(1.690)	(-0.826)
Log(Month.Earnings)$_{t-1}$	1.470	-0.470	0.909	-2.865	2.535
	(1.403)	(-0.188)	(0.397)	(-0.487)	(0.273)
%Unemploy.$_{t-1}$	0.0115	0.0433	-0.0548	-0.660**	-0.103
	(0.285)	(0.537)	(-0.538)	(-2.381)	(-0.337)
%Popula.Higher.Educ.$_{t-1}$	0.0391	-0.0959	0.275***	-0.406	-0.0787
	(1.140)	(-1.105)	(2.817)	(-0.915)	(-0.162)
Observations	3,742	3,717	3,779	3,795	3,795
Number of municipality_id	253	253	253	253	253
Adjusted R-squared	0.225	0.398	0.537	0.257	0.357

Notes: All regressions include municipal and year-fixed effects, and regional-specific trends. The estimations encompass 266 municipalities and the decentralisation variable considers only the 91 that started experiencing effects at the beginning of 2009. T-statistics, based on robust standard errors clustered by each municipality, are depicted in parentheses.
Significance level: *** p<0.01, ** p<0.05, * p.<0.10.

Table 27: Effects of the 1st reform on educational outcomes - Excluding late adopters (cont.)

VARIABLES	*Public School Enrolment Rates*			
(level of education)	Pre-Primary	1st Cycle (Basic)	2nd Cycle (Basic)	3rd Cycle (Basic)
Decentralised(Year>=2010)	-1.709	-0.870	-0.712	0.185
	(-1.565)	(-1.653)	(-0.945)	(0.230)
Log(Population)$_{t-1}$	10.08	-4.441	-10.76	5.242
	(1.001)	(-0.571)	(-1.015)	(0.597)
Log(Month.Earnings)$_{t-1}$	-10.69**	-5.201	-4.188	-13.36
	(-2.225)	(-1.550)	(-0.717)	(-1.169)
%Unemploy.$_{t-1}$	0.0558	0.194	-0.0735	0.0290
	(0.268)	(1.390)	(-0.287)	(0.112)
%Popula.Higher.Educ.$_{t-1}$	0.232	-0.273**	-0.201	-0.145
	(0.896)	(-2.185)	(-0.936)	(-0.643)
Observations	3,416	1,350	1,365	1,930
Number of municipality_id	234	125	143	224
Adjusted R-squared	0.099	0.119	0.145	0.191

Notes: All regressions include municipal and year-fixed effects, and regional-specific trends. The estimations encompass 266 municipalities, but some regressions may include a smaller number due to missing data. The decentralisation variable considers only the 91 municipalities that started experiencing effects at the beginning of 2009. T-statistics, based on robust standard errors clustered by each municipality, are depicted in parentheses.
Significance level: *** p<0.01, ** p<0.05, * p.<0.10.

Table 28: Effects of the 1st reform in municipal accounts - Time Period 2004 - 2019

VARIABLES	*Expenditures (per student)*			*Compensations Received (per student)*		
(level of education)	Pre-Primary	1st Cycle (Basic)	Total	Pre-Primary	1st Cycle (Basic)	Total
Decentralised(Year>=2010)	63.81	131.1	17.40	108.8**	200.7***	66.32***
	(0.696)	(1.387)	(0.310)	(2.350)	(5.780)	(4.484)
Observations	3,572	3,575	3,575	3,572	3,575	3,575
Number of municipality_id	275	275	275	275	275	275
Adjusted R-squared	0.070	0.072	0.062	0.112	0.107	0.057

Notes: All regressions include municipal and year-fixed effects, and regional-specific trends. All dependent variables are in real euros (at 2022 prices) *per* student. The estimations encompass 275 municipalities and cover the entire period of analysis. T-statistics, based on robust standard errors clustered by each municipality, are depicted in parentheses.
Significance level: *** p<0.01, ** p<0.05, * p.<0.10.

Table 29: Effects of the 1st reform on educational outcomes - Time Period 2004 - 2019

VARIABLES	*Retention Rates*			*Schooling Rates*	
(level of education)	1st Cycle (Basic)	2nd Cycle (Basic)	3rd Cycle (Basic)	Pre-Primary	Basic
Decentralised(Year>=2010)	-0.0224	-0.0538	0.236	0.869	2.386*
	(-0.141)	(-0.149)	(0.576)	(0.737)	(1.796)
Log(Population)$_{t-1}$	-4.166***	-7.440**	-2.131	23.79**	-16.80
	(-2.776)	(-2.545)	(-0.701)	(2.038)	(-1.239)
Log(Month.Earnings)$_{t-1}$	1.521	-0.491	1.645	-4.811	5.154
	(1.483)	(-0.197)	(0.737)	(-0.810)	(0.569)
%Unemploy.$_{t-1}$	0.00756	0.0695	-0.0712	-0.749***	-0.0968
	(0.191)	(0.863)	(-0.735)	(-2.682)	(-0.332)
%Popula.Higher.Educ.$_{t-1}$	0.0304	-0.108	0.253***	-0.467	-0.0462
	(0.872)	(-1.301)	(2.640)	(-1.087)	(-0.0927)
Observations	4,070	4,043	4,107	4,125	4,125
Number of municipality_id	275	275	275	275	275
Adjested R-squared	0.228	0.398	0.536	0.253	0.363

Notes: All regressions include municipal and year-fixed effects, and regional-specific trends. The estimations encompass 275 municipalities and cover the entire period of analysis. T-statistics, based on robust standard errors clustered by each municipality, are depicted in parentheses.
Significance level: *** p<0.01, ** p<0.05, * p.<0.10.

Table 30: Effects of the 1st reform on educational outcomes - Time Period 2004 - 2019 (cont.)

VARIABLES	*Public School Enrolment Rates*			
(level of education)	Pre-Primary	1st Cycle (Basic)	2nd Cycle (Basic)	3rd Cycle (Basic)
Decentralised(Year>=2010)	-1.636*	-0.712	0.0601	0.411
	(-1.657)	(-1.359)	(0.0460)	(0.429)
Log(Population)$_{t-1}$	15.20	-3.365	-13.92	-0.460
	(1.644)	(-0.509)	(-1.460)	(-0.0528)
Log(Month.Earnings)$_{t-1}$	-10.42**	-4.635	-4.611	-16.04
	(-2.211)	(-1.543)	(-0.804)	(-1.472)
%Unemploy.$_{t-1}$	0.0985	0.122	-0.297	-0.0959
	(0.475)	(0.911)	(-1.025)	(-0.338)
%Popula.Higher.Educ.$_{t-1}$	0.204	-0.251**	-0.197	-0.146
	(0.797)	(-2.113)	(-0.963)	(-0.660)
Observations	3,724	1,495	1,525	2,121
Number of municipality_id	255	138	156	243
Adjusted R-squared	0.111	0.105	0.127	0.192

Notes: All regressions include municipal and year-fixed effects, and regional-specific trends. The estimations cover the entire period of analysis and encompass 275 municipalities, but some regressions may include a smaller number due to missing data. T-statistics, based on robust standard errors clustered by each municipality, are depicted in parentheses.
Significance level: *** p<0.01, ** p<0.05, * p.<0.10.

Table 31: Effects of the 2nd reform in municipal accounts - Including 1st reform effects

VARIABLES	*Expenditures (per student)*			*Compensations Received (per student)*		
(level of education)	Pre-Primary	1st Cycle (Basic)	Total	Pre-Primary	1st Cycle (Basic)	Total
Decentralised(Year>=2010)	68.54	128.5	17.07	107.4**	196.5***	64.72***
	(0.748)	(1.356)	(0.303)	(2.330)	(5.618)	(4.378)
Decentralised(Year>=2016)	-246.7**	133.6	17.67	72.30	219.1	83.53*
	(-2.141)	(1.093)	(0.403)	(0.440)	(1.625)	(1.650)
Observations	3,572	3,575	3,575	3,572	3,575	3,575
Number of municipality_id	275	275	275	275	275	275
Adjusted R-squared	0.071	0.073	0.061	0.112	0.112	0.063

Notes: All regressions include municipal and year-fixed effects, and regional-specific trends. All dependent variables are in real euros (at 2022 prices) *per* student. The estimations encompass 275 municipalities and include two dummy variables to represent the effects of the two decentralisation moments. T-statistics, based on robust standard errors clustered by each municipality, are depicted in parentheses.
Significance level: *** p<0.01, ** p<0.05, * p.<0.10.

Table 32: Effects of the 2nd reform on educational outcomes - Including 1st reform effects

VARIABLES	*Retention Rates*			*Transition Rate*	*Average Exam Classifications*		*Schooling Rate*
(level of education)	1st Cycle (Basic)	2nd Cycle (Basic)	3rd Cycle (Basic)	Secondary	3rd Cycle (Basic)	Secondary	Pre-Primary
Decentralised(Year>=2010)	-0.0194	-0.0573	0.234	-0.354	-0.00873	-0.939	0.843
	(-0.123)	(-0.159)	(0.572)	(-0.652)	(-0.547)	(-1.440)	(0.710)
Decentralised(Year>=2016)	-0.188	0.321	0.138	-0.202	-0.0221	-1.978***	1.685
	(-0.717)	(0.925)	(0.224)	(-0.279)	(-1.032)	(-2.814)	(0.686)
Log(Population)$_{t-1}$	-4.125***	-7.509**	-2.161	-5.811	-0.193	-8.724	23.41**
	(-2.736)	(-2.564)	(-0.706)	(-1.235)	(-1.311)	(-1.202)	(2.003)
Log(Month.Earnings)$_{t-1}$	1.497	-0.453	1.661	2.639	0.232***	8.604	-4.611
	(1.457)	(-0.180)	(0.744)	(1.001)	(2.596)	(1.577)	(-0.772)
%Unemploy.$_{t-1}$	0.00664	0.0711	-0.0706	-0.103	-0.00509	-0.183	-0.741***
	(0.168)	(0.882)	(-0.730)	(-0.772)	(-1.300)	(-1.104)	(-2.642)
%Popula.Higher.Educ.$_{t-1}$	0.0316	-0.110	0.252***	-0.273*	-0.000689	-0.534***	-0.477
	(0.906)	(-1.322)	(2.626)	(-1.841)	(-0.158)	(-3.219)	(-1.120)
Observations	4,070	4,043	4,107	3,763	3,281	1,994	4,125
Number of municipality_id	275	275	275	260	274	217	275
Adjusted R-squared	0.228	0.398	0.536	0.600	0.582	0.588	0.253

Notes: All regressions include municipal and year-fixed effects, and regional-specific trends. The estimations encompass 275 municipalities, but some regressions may include a smaller number due to missing data. Two dummy variables are included to represent the effects of the two decentralisation moments. T-statistics, based on robust standard errors clustered by each municipality, are depicted in parentheses.
Significance level: *** p<0.01, ** p<0.05, * p.<0.10.

Table 33: Effects of the 2nd reform on educational outcomes - Including 1st reform effects (cont.)

VARIABLES	*Schooling Rates*		*Public School Enrolment Rates*				
(level of education)	Basic	Secondary	Pre-Primary	1st Cycle (Basic)	2nd Cycle (Basic)	3rd Cycle (Basic)	Secondary
Decentralised(Year>=2010)	2.363*	0.189	-1.685*	-0.679	0.0454	0.412	-0.883
	(1.783)	(0.0773)	(-1.711)	(-1.328)	(0.0346)	(0.427)	(-0.883)
Decentralised(Year>=2016)	1.475	10.93*	2.726**	1.958*	1.683	-0.0349	0.848
	(0.437)	(1.670)	(2.527)	(1.657)	(0.702)	(-0.0177)	(0.302)
Log(Population)$_{t-1}$	-17.13	-28.82	14.57	-4.822	-15.39*	-0.437	-23.53**
	(-1.277)	(-1.030)	(1.576)	(-0.763)	(-1.712)	(-0.0505)	(-2.194)
Log(Month.Earnings)$_{t-1}$	5.328	19.56	-10.04**	-3.517	-3.676	-16.06	-15.42
	(0.585)	(1.152)	(-2.138)	(-1.196)	(-0.625)	(-1.450)	(-1.269)
%Unemploy.$_{t-1}$	-0.0904	-0.435	0.110	0.128	-0.288	-0.0962	0.397
	(-0.309)	(-0.723)	(0.531)	(0.959)	(-0.998)	(-0.340)	(1.395)
%Popula.Higher.Educ.$_{t-1}$	-0.0556	1.239	0.188	-0.261**	-0.205	-0.146	-0.246
	(-0.112)	(0.977)	(0.749)	(-2.172)	(-1.003)	(-0.662)	(-0.946)
Observations	4,125	3,916	3,724	1,495	1,525	2,121	2,267
Number of municipality_id	275	272	255	138	156	243	242
Adjusted R-squared	0.363	0.310	0.114	0.121	0.129	0.192	0.076

Notes: All regressions include municipal and year-fixed effects, and regional-specific trends. The estimations encompass 275 municipalities, but some regressions may include a smaller number due to missing data. Two dummy variables are included to represent the effects of the two decentralisation moments. T-statistics, based on robust standard errors clustered by each municipality, are depicted in parentheses.
Significance level: *** p<0.01, ** p<0.05, * p.<0.10.

Appendix E

Table 34: Effects of the 1st reform on educational outcomes - *2009 Group*

VARIABLES		*Retention Rates*		*Schooling Rates*	
(level of education)	1st Cycle (Basic)	2nd Cycle (Basic)	3rd Cycle (Basic)	Pre-Primary	Basic
t_2005_2006	-0.339	-0.0113	-0.0745	1.736	0.788
	(-0.923)	(-0.0176)	(-0.0747)	(1.261)	(0.963)
t_2006_2007	-0.366	0.217	-0.210	0.839	-0.811
	(-1.128)	(0.367)	(-0.209)	(0.724)	(-0.925)
t_2007_2008	-0.223	-0.716	-0.852	-1.501	-0.606
	(-0.644)	(-1.149)	(-1.161)	(-1.191)	(-0.435)
t_2008_2009	-0.159	-0.291	0.438	1.610	-1.371
	(-0.508)	(-0.581)	(0.674)	(1.254)	(-0.694)
t_2008_2010	0.147	-0.271	-1.622**	0.985	1.724
	(-0.713)	(-2.145)	(0.981)	(0.868)	(0.323)
t_2008_2011	-0.138	-1.627**	-0.164	1.394	1.922
	(-0.331)	(-2.040)	(-0.156)	(0.537)	(0.549)
t_2008_2012	-0.486	-0.477	-0.744	5.875	1.528
	(-0.957)	(-0.454)	(-0.598)	(1.411)	(0.388)
t_2008_2013	-0.370	-3.043**	1.294	6.346	2.386
	(-0.560)	(-2.187)	(0.771)	(1.236)	(0.494)
t_2008_2014	0.0619	0.0715	-0.506	-0.487	2.148
	(0.121)	(-0.382)	(-0.331)	(0.482)	(0.908)
t_2008_2015	-0.371	-2.255**	0.370	1.550	3.877
	(-0.627)	(-1.984)	(0.287)	(0.397)	(0.751)
Observations	3,025	3,025	3,025	3,025	3,025
Number of municipality_id	275	275	275	275	275

Notes: The estimations encompass 275 municipalities, excluding the three municipalities that signed contracts after 2011, and cover the 2004-2015 period. The control group considers all municipalities that did not sign a contract in 2009 or 2010. All regressions include a vector of control variables and regional-specific trends. Z-statistics, based on standard errors clustered by each municipality, are depicted in parentheses.
Significance level: *** p<0.01, ** p<0.05, * p.<0.10.

Table 35: Effects of the 1st reform on educational outcomes - *2009 Group* (cont.)

VARIABLES	*Public School Enrolment Rates*			
(level of education)	Pre-Primary	1st Cycle (Basic)	2nd Cycle (Basic)	3rd Cycle (Basic)
t_2005_2006	0.859	0.0450	1.932	3.404*
	(1.107)	(0.0651)	(1.404)	(1.771)
t_2006_2007	-0.869	-0.160	-1.914	-0.983
	(-0.982)	(-0.187)	(-1.324)	(-0.582)
t_2007_2008	-0.506	-0.101	-3.716	-4.382***
	(-0.426)	(-0.0723)	(-1.443)	(-2.773)
t_2008_2009	-0.846	-0.558	1.252	-0.355
	(-0.861)	(-0.584)	(0.563)	(-0.163)
t_2008_2010	-1.015	-1.362	7.151*	5.429
	(-0.461)	(-0.906)	(1.647)	(1.608)
t_2008_2011	-1.694	-2.013	10.57**	4.836
	(-0.584)	(-1.106)	(2.335)	(1.364)
t_2008_2012	-0.560	-2.343	10.75**	5.721
	(-0.154)	(-1.149)	(1.986)	(1.604)
t_2008_2013	-0.308	-1.573	13.45*	11.23**
	(-0.0646)	(-0.569)	(1.843)	(2.286)
t_2008_2014	-0.0201	-2.318	15.24**	6.847
	(-0.00422)	(-1.037)	(2.333)	(1.448)
t_2008_2015	0.366	-2.977	9.286*	5.974
	(0.0859)	(-1.590)	(1.834)	(1.466)
Observations	2,749	1,092	1,122	1,623
Number of municipality_id	255	130	151	243

Notes: The estimations encompass 275 municipalities, excluding the three municipalities that signed contracts after 2011, and cover the 2004-2015 period. Some regressions may include a smaller number of municipalities due to missing data. The control group considers all municipalities that did not sign a contract in 2009 or 2010. All regressions include a vector of control variables and regional-specific trends. Z-statistics, based on standard errors clustered by each municipality, are depicted in parentheses.
Significance level: *** p<0.01, ** p<0.05, * p.<0.10.

Table 36: Effects of the 1st reform on educational outcomes - *2010 Group*

VARIABLES		*Retention Rates*		*Schooling Rates*	
(level of education)	1st Cycle (Basic)	2nd Cycle (Basic)	3rd Cycle (Basic)	Pre-Primary	Basic
t_2005_2006	0.232	0.651	0.253	3.521	-0.289
	(0.597)	(0.767)	(0.206)	(1.371)	(-0.114)
t_2006_2007	-0.0122	-0.844	-2.438*	-0.937	-1.755
	(-0.0174)	(-1.032)	(-1.828)	(-0.593)	(-0.829)
t_2007_2008	-0.0747	-0.696	-0.0132	-1.837	-1.616
	(-0.106)	(-0.894)	(-0.0109)	(-0.892)	(-0.791)
t_2008_2009	-0.163	-0.449	0.205	4.952**	-3.589
	(-0.379)	(-0.631)	(0.226)	(1.998)	(-1.183)
t_2009_2010	-0.862***	-0.431	-1.552	4.326	-4.135
	(-2.628)	(-0.557)	(-1.325)	(1.504)	(-1.031)
t_2009_2011	-1.183***	0.332	-0.928	10.74**	1.927
	(-2.981)	(0.222)	(-0.556)	(1.970)	(0.378)
t_2009_2012	-1.316***	-2.495*	-3.428	13.26**	4.262
	(-3.278)	(-1.809)	(-1.588)	(2.052)	(0.585)
t_2009_2013	-0.484	-2.393	-4.120	19.97**	5.161
	(-0.658)	-0.817)	(-1.441)	(2.176)	(0.557)
t_2009_2014	0.492	-2.518	-6.680***	15.72**	10.00
	(0.454)	(-1.106)	(-2.703)	(2.291)	(1.007)
t_2009_2015	-0.698	-1.284	-5.890***	15.32**	9.810
	(-1.156)	(-0.452)	(-2.787)	(2.433)	(1.071)
Observations	3,025	3,025	3,025	3,025	3,025
Number of municipality_id	275	275	275	275	275

Notes: The estimations encompass 275 municipalities, excluding the three municipalities that signed contracts after 2011, and cover the 2004-2015 period. The control group considers all municipalities that did not sign a contract in 2009 or 2010. All regressions include a vector of control variables and regional-specific trends. Z-statistics, based on standard errors clustered by each municipality, are depicted in parentheses.
Significance level: *** p<0.01, ** p<0.05, * p.<0.10.

Table 37: Effects of the 1st reform on educational outcomes - *2010 Group* (cont.)

VARIABLES	*Public School Enrolment Rates*			
(level of education)	Pre-Primary	1st Cycle (Basic)	2nd Cycle (Basic)	3rd Cycle (Basic)
t_2005_2006	-0.608	-2.034	-6.561***	-1.690
	(-0.320)	(-1.498)	(-2.878)	(-0.592)
t_2006_2007	0.0992	-3.372**	-7.731**	-1.690
	(0.0745)	(-2.372)	(-2.155)	(-0.508)
t_2007_2008	3.612	-2.632	-10.61***	1.301
	(1.642)	(-1.592)	(-3.654)	(0.296)
t_2008_2009	-1.820	-1.165	-5.648	-1.696
	(-0.791)	(-0.898)	(-0.886)	(-0.290)
t_2009_2010	-2.570	2.387*	-0.171	3.165
	(-0.769)	(1.776)	(-0.0218)	(0.352)
t_2009_2011	-3.798	4.346***	-1.100	-3.187
	(-0.813)	(3.242)	(-0.109)	(-0.294)
t_2009_2012	-2.671	4.001**	-5.405	2.370
	(-0.361)	(1.985)	(-0.415)	(0.151)
t_2009_2013	-4.558	5.569**	-20.17	-6.428
	(-0.443)	(2.106)	(-1.341)	(-0.320)
t_2009_2014	-1.375	5.221**	-19.39	-4.721
	(-0.134)	(2.208)	(-1.192)	(-0.246)
t_2009_2015	3.303	2.582	-18.94	-3.377
	(0.392)	(1.161)	(-1.492)	(-0.234)
Observations	2,749	1,092	1,122	1,623
Number of municipality_id	255	130	151	243

Notes: The estimations encompass 275 municipalities, excluding the three municipalities that signed contracts after 2011, and cover the 2004-2015 period. Some regressions may include a smaller number of municipalities due to missing data. The control group considers all municipalities that did not sign a contract in 2009 or 2010. All regressions include a vector of control variables and regional-specific trends. Z-statistics, based on standard errors clustered by each municipality, are depicted in parentheses.
Significance level: *** p<0.01, ** p<0.05, * p.<0.10.

Table 38: Event Study - ATT by periods before and after treatment

VARIABLES	*Retention Rates*			*Schooling Rates*	
(level of education)	1st Cycle (Basic)	2nd Cycle (Basic)	3rd Cycle (Basic)	Pre-Primary	Basic
Avg_Pre_Treat	-0.140	-0.0368	-0.275	1202	-0.538
	(-1.03)	(-0.15)	(-0.75)	(1.47)	(-0.70)
Avg_Post_Treat	-0.321	-1.437*	-0.424	4.625	2.508
	(-0.85)	(-1.82)	(-0.45)	(1.64)	(0.74)
4Y_Before_Treat	0.232	0.651	0.253	3.521	-0.289
	(0.60)	(0.77)	(0.21)	(1.37)	(-0.11)
3Y_Before_Treat	-0.275	-0.173	-0.535	1.215	0.293
	(-0.86)	(-0.33)	(-0.65)	(1.06)	(0.37)
2Y_Before_Treat	-0.309	0.0395	-0.172	0.318	-0.968
	(-1.05)	(0.08)	(-0.21)	(0.31)	(-1.15)
1Y_Before_Treat	-0.211	-0.664	-0.646	-0.244	-1.187
	(-0.76)	(-1.29)	(-1.07)	(-0.22)	(-0.96)
Treat_Year	-0.296	-0.318	0.0503	2.139*	-1.909
	(-1.15)	(-0.75)	(0.09)	(1.79)	(-1.04)
1Y_After_Treat	-0.449	-1.242*	0.612	3.479*	1.411
	(-1.37)	(-1.81)	(0.69)	(1.71)	(0.40)
2Y_After_Treat	-0.367	-1.796**	-0.799	3.704	2.377
	(-1.01)	(-2.51)	(-0.82)	(1.42)	(0.72)
3Y_After_Treat	-0.486	-0.850	-1.402	8.619	2.235
	(-1.08)	(-0.81)	(-1.18)	(2.16)	(0.58)
4Y_After_Treat	-0.202	-2.941**	-0.259	8.172**	3.869
	(-0.34)	(-2.37)	(-0.17)	(1.79)	(0.84)
5Y_After_Treat	-0.0783	-0.658	-1.539	4.713*	5.698
	(-0.15)	(-0.53)	(-1.18)	(1.16)	(1.18)
6Y_After_Treat	-0.371	-2.255**	0.370	1.550	3.877
	(-0.63)	(-1.98)	(0.29)	(0.40)	(0.75)
Observations	3,025	3,025	3,025	3,025	3,025
Number of municipality_id	275	275	275	275	275

Notes: The estimations encompass 275 municipalities, excluding the three municipalities that signed contracts after 2011, and cover the 2004-2015 period. The control group considers all municipalities that did not sign a contract in 2009 or 2010. All regressions include a vector of control variables and regional-specific trends. Z-statistics, based on standard errors clustered by each municipality, are depicted in parentheses.
Significance level: *** p<0.01, ** p<0.05, * p.<0.10.

Table 39: Event Study - ATT by periods before and after treatment (cont.)

VARIABLES	*Public School Enrolment Rates*			
(level of education)	Pre-Primary	1st Cycle (Basic)	2nd Cycle (Basic)	3rd Cycle (Basic)
Avg_Pre_Treat	-0.158	-0.989	-4.147***	-0.959
	(-0.22)	(-1.34)	(-3.46)	(-0.79)
Avg_Post_Treat	-0.791	-0.781	4.998	4.281
	(-0.26)	(-0.49)	(1.04)	(1.13)
4Y_Before_Treat	-0.608	-2.0339	-6.561***	-1.690
	(-0.32)	(-1.50)	(-2.88)	(-0.59)
3Y_Before_Treat	0.703	-0.798	-1.0294	1.92
	(1.04)	(-1.21)	(-0.62)	(1.10)
2Y_Before_Treat	0.0489	-0.762	-4.676***	-0.358
	(0.05)	(-0.91)	(-2.94)	(-0.20)
1Y_Before_Treat	-0.775	-0.363	-4.322*	-3.711*
	(-0.78)	(-0.34)	(-1.68)	(-1.95)
Treat_Year	-1.195	0.0780	0.897	0.504
	(-1.11)	(0.10)	(0.34)	(0.18)
1Y_After_Treat	-1.577	-0.0936	5.156	3.799
	(-0.74)	(-0.07)	(1.18)	(1.07)
2Y_After_Treat	-1.891	-0.796	6.579	4.332
	(-0.65)	(-0.47)	(1.28)	(0.98)
3Y_After_Treat	-1.368	-0.604	3.112	3.328
	(-0.36)	(-0.30)	(0.50)	(0.64)
4Y_After_Treat	-0.524	0.0449	4.606	7.640
	(-0.11)	(0.02)	(0.60)	(1.26)
5Y_After_Treat	0.651	-1.122	5.348	4.393
	(0.15)	(-0.56)	(0.80)	(0.83)
6Y_After_Treat	0.366	-2.977	9.286*	5.974
	(0.09)	(-1.59)	(1.83)	(1.47)
Observations	2,749	1,092	1,122	1,623
Number of municipality_id	255	130	151	243

Notes: The estimations encompass 275 municipalities, excluding the three municipalities that signed contracts after 2011, and cover the 2004-2015 period. Some regressions may include a smaller number of municipalities due to missing data. The control group considers all municipalities that did not sign a contract in 2009 or 2010. All regressions include a vector of control variables and regional-specific trends. Z-statistics, based on standard errors clustered by each municipality, are depicted in parentheses.
Significance level: *** $p<0.01$, ** $p<0.05$, * $p.<0.10$.