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Too Much, Too Soon? The Changes in Greece's Land Administration Organizations during the Economic Crisis Period 2009 to 2018

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Abstract: Land administration is the managing of spatial and legal data pertaining to land. Land administration organizations provide services for land ownership and are essential to a well-functioning land administration system to secure land and property rights for all and support real estate markets. This article reviews the case of the Hellenic Land Administration Reform and the associated changes in the land administration organizations during the economic crisis period (2009–2018). We qualitatively analyze these changes and their actual effects through a set of legislative initiatives according to the orders of change of the enactive theory of reforms and the concept of isomorphism. The study is informed by interviews with key informants involved in the land administration policy domain, and by secondary data, such as legislative documents and reports. Findings show that the legislative initiatives aimed to bring efficiency, transparency, and rationalization to the land administration policy domain by centralizing the collection of land transaction fees and nationalizing the land administration organizations., The enacted legislative initiatives encompassed organizational (second-order) changes within a short period, instead of incremental technical or managerial measures (first-order) to improve ineffective practices and services for citizens. They ended with a drastic organizational transformation, resulting in "premature load bearing" in the involved organizations, which complexified the implementation of an ambitious land administration reform and impacted the smooth operation of the real estate market. The article increases the current insight on the merger of land administration organizations and its implications. It contributes to the land administration scholarly literature on the establishment of new organizations to create a modern cadastral system from a public policy perspective through the orders of change of the enactive theory of reforms.

Keywords: land administration reform; land administration organizations; Hellenic Cadastre System; first-order change; second-order change; third-order change; isomorphism; premature load-bearing; Greece; sustainable real estate markets

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1. Introduction

Land administration is the process of "recording and disseminating information about the ownership, value, and use of land and its associated resources. Such process[es] includes the determination (sometimes known as the 'adjudication') of rights and other attributes of the land, the survey and description of these, their detailed documentation, and the provision of relevant information in support of land markets" [1] (p. 14). A land administration process is enacted to create a land administration system (LAS), a nationwide system based on a national legal framework. A LAS "administers property rights policies and information management through its various institutions. It establishes the administrative and legal procedures for land transfer, the physical attributes of territory, uses, land valuation and tax burdens, which provide security and legal certainty about ownership" [2]. More broadly, a LAS is defined as a "system [that] provides a country with the infrastructure to implement land-related policies and land management strategies" [3]

(p. 5). A LAS should ideally guarantee ownership and secure tenure; support the land and the property tax system; constitute security for credit systems; support the developing and monitoring of land markets; protect public lands; reduce land disputes; facilitate land reform; improve urban planning and infrastructure development; support land management based on consideration for the environment; and produce statistical data [1,4].

Building and sustaining a LAS to underpin sustainable development, particularly by focusing on measures to stimulate, stabilize, and enhance the land market, is one of the most crucial goals of government activities [5–7]. Sustainable development and management of resources depend on credible and accurate data contained in a cadastral system which is the engine of a LAS [3,8]. A cadastral system is usually "a parcel-based, and up-to-date land information system containing a record of interests in land (e.g., rights, restrictions, and responsibilities). It may be established for fiscal purposes (e.g., valuation and equitable taxation), legal purposes (conveyancing), to assist in the management of land and land use (e.g., for planning and other administrative purposes), and enables sustainable development and environmental protection" [9] (p. 1).

Such an ideal cadastral system serving multiple state purposes and functions emerged in the mid-1990s as the vision of the international surveying community, based on the advent of information technology [9–11]. However, the land administration status in most countries at that time was quite different from such an optimal situation. Three main styles or approaches could be identified in countries grouped according to their similar background and legal contexts: the French/Latin style, the German style, and the Torrens approach [3]. Each of these styles includes variations in the land registration and cadastre function. Registration puts the emphasis on the relation subject-right, whereas cadastre puts the emphasis on the relation on the right-object. The main difference between the French/Latin style and the German and Torrens approach is that the first is based on a deed registration system whereas the latter are title systems [12]. A "deed registration is concerned with the registration of the legal fact itself and title registration with the legal consequence of that fact" [12] (p. 8). In the French/Latin style, the cadastre function serves mainly taxation purposes, and land is not identified through cadastral surveys. In the German/Torrens approach, the cadastre function serves conveyancing purposes, and plot boundaries are generally more reliable [3].

In many countries, land registration and cadastre functions are maintained and operated by independent agencies [3,13]. These agencies, named land administration organizations (LAOs), are the civil service institutions that provide land ownership services, the key bodies being state property registries, national cadastral offices, and land registry office institutions [2]. Robust, efficient, and well-performing LAOs for securing land and property rights for all are essential to a well-functioning land administration system [14]. They are also considered decisive in supporting sustainable real estate markets, as has been asserted by the Addis Ababa declaration for "Good Land Governance for Agenda 2030" [15] and the ministerial meeting of Housing and Land Management of the United Nations Economic Commission for Europe in 2013 [16]. From the mid-1990s onwards, scholars, practitioners, and international organizations recommended that integrating land registry and cadastre functions into a single organizational structure instead of operating in agency silos would result in the building of strong land administration organizations [3,10,17–19].

The main argument for organizational mergers of cadastre and registry functions into single agencies was rationalistic: to improve governance by reducing the redundancy of existing organizations, increasing efficiency and benefitting from economies of scale and standardization gains, and aligning with a more customer-oriented strategic objective [18,20]. Thus, these mergers were driven mainly by the three Es of the new public management (NPM) paradigm, Efficiency, Economy, and Effectiveness, to combat the "silo" effect in agencies that were run independently [3]. NPM emerged as an approach in the mid-1980s aiming to convey private sector managerial practices and techniques to the public sector. Apart from improving efficiency, effectiveness, and economy, and reducing bureaucratic structures, NPM aimed to enhance the delivery of products and services and customer satisfaction [21–23].

Worldwide, customers of land administration organizations, despite differences subject to national contexts, seek reliable and easily accessible information, quick delivery times, a good service attitude, and up-to-date and value-for-money products and services. However, adopting customer orientation as a major strategic objective heavily impacts cadastre and mapping organizations, and implementing such changes requires much effort [24].

A few authors have studied the effects of organizational mergers of land registry, cadastre, and mapping responsibilities of the respective organizations [20,24,25]. However, these studies have only focused on the anticipated benefits, on techno-organizational aspects, and on cultural or human perspectives of these mergers in long-established, mature, and fully-grown land registry systems in countries using the German or Torrens title approach [3,10,17,20,26]. Even though the previous studies have shown that merging existing organizations takes time to enact and produce results, they have not addressed changes or merging of land administration organizations to introduce a modern cadastral system within a land administration reform program. Nor have they focused on countries with a Mediterranean influence [3], which, compared to their northern and western European counterparts, are often seen as laggards in implementing reforms [27].

Furthermore, large-scale reorganization in the land registry, cadastre, and mapping sector institutions can be accelerated during financial duress and public administration reforms, as the Irish case shows [28]. Greece initiated a land administration reform program in the mid-1990s—the Hellenic Land Administration Reform (HLAR), which encompasses the transition from a French-influenced person and paper-based deeds system operating in the largest part of the country's territory to a digital titling system composed of a land registry and a cadastre component. The purpose of the reform is the replacement of the existing land registry systems (LRS)—the Registrations and Mortgages System (RMS) and the Dodecanese Cadastre (DC)—with the Hellenic Cadastre System (HCS). The aim is to increase legal certainty on property rights. The existing LRS operate through diverse types of mortgage offices (public, private, and notary run) dispersed throughout the country, whereas the new HCS was assigned by law in the 1990s at the onset of the reform to be developed and operated by two cadastre organizations.

At the end of 2009, a sovereign debt crisis broke out in Greece, leading to subsequent bailout agreements accompanied by a policy conditionality that targeted macroeconomic stabilization and structural adjustment. Policy conditionality links financial support to the implementation of a program of reforms considered critical for a country's economic and social development [29]. Macroeconomic stabilization "typically involves fiscal adjustment and austerity policies," whereas structural adjustment "encompasses various microeconomic and institutional reforms to remove allocative inefficiencies and is expected to ensure adequate growth rates" [30] (p. 5). Policy conditionality usually implies a creditor–debtor relation and is closely associated with technical assistance programs on behalf of the creditor or donor [31]. The onset of the crisis highlighted the lack of integrated digital data on both public and private property. Thus, each of the consecutive bailout programs in 2010, 2012, and 2015, and the accompanying Memoranda of Understanding (MoUs) on Specific Economic Policy Conditionality, prioritized the completion of the Hellenic Cadastre (HC) set for 2020, arguing that the lack of legal certainty about property rights obstructed proper taxation, exploitation of public property, economic development, and investment [32]. The development of the HC during the years of financial duress 2009–2018 was affected by the crisis and the fast-paced cycle of implementation and evaluation via ever-changing deadlines to deliver outputs, election outcomes, and inputs from foreign technical assistance. The date of 20 August 2018 signaled Greece's official completion of the Third Economic Adjustment Programme (2015–2018), ending the so-called eight "memoranda years" full of changes to several facets of various public policies in the country.

As part of the dynamic Hellenic Land Administration Reform from 2009 to 2018, the land administration organizations (LAOs) have undergone drastic changes. This paper focuses on how the LAOs changed in Greece during the sovereign crisis period from 2009 to 2018 and to what effect. We examine these changes through a set of legislative initiatives,

drafted or approved between 2009 and 2018, affecting Greece's LAOs. The paper seeks to contribute to the land administration literature concerning changes in the LAOs within a broader land administration reform to establish and operate a modern cadastral system, especially in financial duress and political instability.

The rest of the paper is structured as follows. Section 2 describes the conceptual approach, and Section 3 presents the data collection and analysis methods. In Section 4, we give an account of the historical context of the land administration reform in Greece and the broader context in which the institutional changes occurred, namely the sovereign debt crisis period. Section 5 presents the empirical case of the legislative initiatives enacted or attempted in chronological order. In Section 6, we discuss the results and reflect on the implications of the findings, summarising the conclusion and the study's contribution in Section 7.

2. Theoretical Framework: Policy Reforms, Organizational Change, and Isomorphism

Public administration comprises activities having as their purpose the fulfillment or enforcement of public policy [33]. Public policy reforms are deliberate government efforts to effect change in a policy domain and deliver public goods to citizens. Reform entails changes to the formal "rules of the game"—including laws, regulations, and institutions—to address perceived problems, e.g., economic stagnation, environmental degradation, or land tenure insecurity. A policy reform usually entails a complex political process, because it redistributes economic, political, or social power [34]. Scholars have dedicated substantial attention to explaining partially successful or failed reforms in the past decades, especially for polities with weak state capacity.

A theory that has served successfully as a lens to understand other policy reforms in southern Europe is the enactive theory of reforms, which captures three different levels of change involved in the reform process [35,36]. The first order of change refers to adopting technical or managerial measures to solve problems and improve current organizational practices that prevent a system from being effective. Thus, a first-order change "involves a variation that occurs within a given system which itself remains unchanged" [37] (pp. 10–11). Ref. [38] (p. 81) describes it as "successive limited comparisons that continually build-out of the current situation, step-by-step and by small degrees." For instance, electronic prescribing (e-prescribing or e-Rx), the digital creation and conveyance of a medical prescription, provides various benefits to physicians, pharmacists, patients, and the state. The replacement of a previous paper-based medical prescription aims, among others, to tackle inefficiency and possibly fraud.

The second order of change commonly refers to an organizational transformation that usually encompasses the modification of an organization's underlying norms, policies, and objectives which marks an alteration of an organization's governing values intending to improve the delivery of a collective good [36]. Ref. [35] argues that the new values are seemingly more aligned to aspects of modernity, such as "efficiency, performance management, accountability, transparency". For example, the privatization of a state-owned organization to transform it into a more customer- and performance-oriented entity is one example of second-order change [39].

Last, the third-order change is the policy reform, which frequently involves drastically altering a policy domain's foundational rules and values, established ways of operation, worldviews, and general policy objectives. It not only involves an organizational transformation, but through this change, "*it impacts on the broader institutional field in which an organization is embedded*" [36] (p. 77). A third-order change is frequently a part of a broader political endeavor to revamp a country's institutions. Third-order change is the most complex, since it involves multiple actors, challenges key institutional understandings, and is recursive. Ref [36] argues that in third-order change, the organization contributes to changing its institutional field as it transforms itself. The three orders of change suggested by [36] are nested within one another, in ascending order. However, how they actually are aligned "is a contingent, empirical matter" [36] (p. 80).

The transition from first- (problem-solving) to second- (organizational transformation) and third-order (policy reform) change leads to higher levels of conflict, complexity, and recursivity. Conflict might arise over the reform's goals, the means of implementation, or even the description of the problem that the reform intends to solve. Conflict can range from low to high, depending on how diverse the values, viewpoints, and interests are among those affected by the reform. Thus, conflict increases as the problems become less technical, context-dependent, value-laden, and political [36]. The complexity of the issues involved in a reform depends on how tame a particular problem is. The more discrete, solid, and isolatable the problems the reform intends to remedy, the more analyzable they will be. Interchangeably, the more messy, ill-defined, unstable, and interconnected problems are, the less analyzable and more wicked they will be [40]. Last, recursivity arises insofar as policy reform functions both as a medium to effect broader change in the institutional–political–cultural template of the country and as an outcome of the change itself. Ref. [36] contends that the less complex, conflicting, or recursive a change is, the higher the possibility of being adopted. Else, the change process becomes more ambivalent, political, and open-ended.

The earlier mentioned enactive theory of reforms provides a "process theory" to explain the temporal order and sequence in which a discrete set of events occurred based on a story or historical narrative [36,41]. It focuses on how the different orders of change emerge, develop, grow or terminate over time [42]. However, it does not explain how and why organizations change [43]. Scholars in management and many other disciplines have consistently sought to throw light upon how and why organizations change. Management scholars have adopted concepts and theories from other disciplines, such as evolutionary theory from biology. Isomorphic mimicry is how one organism imitates another to acquire an evolutionary advantage [44]. The authors of [45], who tried to explain what makes organizations look so alike in modern times, contended that instead of a functional need for rationalization and competition driven by a Weberian model of bureaucracy, organizational change is driven by mimicry. When a group of organizations emerges as a field, a paradox appears: rational actors make their organizations more similar as they attempt to change them (ibid). Thus, isomorphism or isomorphic mimicry captures the process of homogenization.

Isomorphic mimicry fuses form and function: passing a law is viewed as a success, even if lack of (or partial) implementation does not bring any actual changes on the ground. Creating new boxes in organigrams or fostering new administrative processes only resembles reform, serving to enhance the external legitimacy of an organizational field without demonstrably improving performance [46,47]. Thus, "looks like" substitutes for "does" [48]. Some scholars focus their attention on what organizations and institutions do, as opposed to what they look like, and privilege bottom-up reform interventions, such as "problem-driven iterative adaptation" (ibid.) and "working with the grain" approaches to governance reform and development policymaking [46,49].

Isomorphic mimicry tends to put too much weight on a structure before it can support it, leading thus to premature load-bearing and organizational failure. "Too Much, Too Soon" may be a great title for a classic movie (Errol Flynn & Dorothy Malone, 1958) or may inspire bestseller books [50]. However, it also leads to premature load-bearing, which, combined with isomorphic mimicry, can cause countries to be caught in capability traps, despite conscientious endeavors by domestic reform drivers and external international donors [47]. When newly formed organizations are asked to undertake activities that similar organizations in affluent countries accomplish—but which put them under enormous pressure right away—the fragility of premature load bearing becomes obvious. Putting pressure on organizations and institutions to perform tasks before they are ready can put too much strain on the organization and its agents, causing the organization and its agents to collapse, even if only a modest capability has been established [48]. Because their robustness under stress is lower and they frequently interact with external actors who serve

as vectors transmitting high ambition and conveying best practices, weak-capability or fledging states are particularly prone to premature load bearing (ibid).

The enactive theory on policy reform outlined above is useful for our empirical case because it allows us to identify how the LAOs were supposed to change by examining the orders of change within the broader land administration reform context. An enactive approach urges us to study the complexity of reforms by looking at the different orders of change and how they interact over time. When we look at the reform process as a whole, we can identify what is at stake at each level and how to create possible alignment or interaction [36]. Last, an enactive approach allows investigation of how external restrictions above the national institutional landscape, e.g., the EU institutional field, are translated into change triggers [35]. Overall, an enactive perspective encapsulates the notion of change and aligns with a methodological view of land administration reform as a process. Thus, it ultimately supports our intention to study how and why the legislative initiatives to change LAOs emerged, developed, grew, or terminated over time, seeking to understand and explain the world in terms of interlinked events, activity, temporality, and flow [41], especially in times of financial duress.

3. Methodology

As a research approach, we selected abductive reasoning (or approach). This approach builds on "surprising facts" or "puzzles" that may emerge when a researcher encounters empirical phenomena that an existing range of theories cannot explain. When following an abductive approach, the researcher seeks to choose the "best" explanation among many alternatives to explain "surprising facts" or "puzzles" identified at the start of the research process [51]. Several such "surprising facts" or "puzzles" were encountered by the first author, setting off the idea to undertake this study.

We adopted the case study as a research strategy, given that our study is empirical and investigates a contemporary phenomenon within a real-life context [52,53]. The specific case study can be considered as both retrospective and a snapshot, since (a) we look back at the phenomenon of a land administration reform program, and (b) the case is examined with regard to one particular period, i.e., the sovereign crisis period, so the emerging picture presents itself as a gestalt over a tight timeframe [54]. It is also an explanatory case study that answers "how" or "why" questions.

Data collection followed an event analysis approach (EAA), where each legislative initiative to change a land administration organization was considered an event. Event analysis, a qualitative research technique adapted from anthropology and sociology, can be used to describe and explain social interactions associated with complicated situations. Our analysis did not encompass other legislative acts that impacted the LAOs deriving from broader finance policies related to austerity measures (e.g., Laws 3871/2010 and 3899/2010, which impacted the administrative and financial operation of one of the cadastre organizations, i.e., the KTIMATOLOGIO SA).

The legislative initiative is exercised either by the Hellenic government (with bills) or the Hellenic Parliament (with proposals for laws). Bills and draft laws must be accompanied by an introductory report that analyses the proposed regulations' purposes and the texts of the existing provisions that are repealed or amended (Article 85 of the Hellenic Parliament Regulation). In Greece during the sovereign debt crisis, the implementation of several reforms, among them the Hellenic Land Administration Reform, was required by the Economic Adjustment Programs (EAP). In the analysis of these events, we considered that each event, i.e., each legislative initiative, had a trigger, an intended purpose, a content that described how the purpose, i.e., the change in the LAOs, would be achieved, and an actual change. To identify the trigger, the intended purpose, and the content of change, we collected the introductory reports of the legislative initiatives and the corresponding Economic Adjustment Programmes. In cases where an introductory report did not accompany a draft law/bill, we identified the intended purpose from the legal provisions,

the parliamentary proceedings, and other published material (e.g., newspaper articles, professional associations' announcements etc.).

We further collected primary data for the legislative initiatives and the overarching Land Administration Reform through interviews and discussions with thirty (30) individuals involved in the land administration policy domain. The first author conducted the interviews and discussions from July 2019 to January 2021 with three (3) members of the legislative committees, six (6) employees (current or former) at the Mortgage Offices, six (6) employees (current or former) at the Cadastre Organizations, six (6) senior level government officials (with former responsibility on the LAOs), four (4) politicians (with former responsibility on the LAOs), two (2) academics, two (2) employees at the Ministry of Justice and the Ministry of the Environment, and one (1) professional. We also obtained data from the Foreign Technical Assistance (FTA) reports. In Greece, the implementation of reforms required by the EAPs was supported by a program of technical assistance. The enacted legislative initiatives were assessed either by the portal of the Hellenic Parliament and the Hellenic National Printing Office or in a legal database (NOMOS). We collected the parliamentary proceedings from the Hellenic Parliament, either from its web portal or through correspondence with its Library. The draft laws were assessed through the Open Government portal of the Ministry of the Interior of the Hellenic Republic. The analysis and contextual interpretation of data has been facilitated by the empirical knowledge of the first author on the land administration policy domain in Greece. The paper is further informed by a review of selected official documents (presidential decrees, ministerial decisions, circulars, public consultation notes, parliamentary minutes, press releases, newspaper articles).

4. The Land Administration Reform in Greece: From Its Onset till the Start of the Crisis

In this section, we give a brief account of the evolution of the land administration reform in Greece till the commencement of the economic crisis in 2009. We explain the land administration organizations (LAOs) in the policy domain and how they were operating till the onset of the crisis.

Policy reforms in Greece have dominated public discourse since the country transitioned to democracy in 1974. Historically, the policy thrust has been to align Greek institutions and policies with those of more developed western European countries in a catch-up strategy [55]. The onset of Greece's land administration reform in the mid-1990s, co-financed by European structural funds, coincided with other land administration reforms in central eastern European countries under the thriving Europeanisation influence of that period. The Hellenic Land Administration Reform aimed to replace the existing land registry systems, the Registrations and Mortgages System and the Dodecanese Cadastre with the Hellenic Cadastre System. The design of the HCS was influenced by the most advanced cadastral paradigm of its time, the Cadastre 2014 [10], and by the concept of the multipurpose cadastre [56,57]. The development of the HCS marked a paradigmatic shift in Greece's land administration policy domain. The one paradigm was the person- and paper-based deed registry system serving the needs of transactors, operating through a plethora of loosely supervised mortgage offices scattered around the country, operated mainly by private registrars and notaries. This paradigm evolved and was influenced, by the prevailing localism in the country, among other factors [58]. The other paradigm was the property-based electronic cadastral system serving not only the needs of the private vendees, but also the state's need to reveal public property, secure revenue from land taxation and land transactions, underpin spatial planning, and support land policy and sustainable development; the system was intended to be operated by institutions of more robust governance at a central and regional level [11].

The initial design of the HLAR in 1994 included the provisions that the Hellenic Cadastre and Mapping Organization (HEMCO), a public legal entity established in 1986, would have the responsibility for the operation of the HCS through its regional cadastral offices; and that a more flexible private legal entity established a year later, namely KTI-

MATOLOGIO SA (KT), would contract out the cadastral surveying, i.e., the adjudication process [59]. At the onset of the HLAR reform in the mid-1990s, the RMS was operated in the country by three types of mortgage office: public mortgage offices, the privately-run mortgage offices, and the notary-run mortgage offices, all of which fell under the auspices of the Ministry of Justice. The latter also had the responsibility of supervising the two cadastral offices of the islands of Rhodes and Kos–Leros in the operation of the DC, which was developed during the Italian sovereignty in a small part of the Dodecanese territory. Thus, in the case of the HLAR, the LAOs that provided services for the existing LRS or that undertook the development and operation of the HCS were the mortgage offices (MOs), the cadastral offices of Rhodes and Kos–Leros, and the cadastre organizations.

The HLAR provided that introducing the new cadastral system in the country would be progressive: upon completion of the cadastral registration in an area, the registration system would change from the RMS to the HCS. The period of the parallel operation of the old and the new systems was named the interim. In the interim period, the new HCS would be operated by the existing mortgage offices, either public, private, or notary-run, which would continue to operate under their previous status, under the supervision of the Ministry of Justice and the logistics support of the KTIMATOLOGIO SA (Article 23, Law 2664/1998). The interim period of the MOs operating the HCS would end upon establishment of the cadastral offices under the HEMCO's administration. Thus, the finishing of the HLAR would require the completion of the adjudication process across the whole country; the establishment of the cadastral offices from HEMCO; and the transfer of competence from the Ministry of Justice and the mortgage offices to the Ministry of Environment, HEMCO, and the cadastral offices. Furthermore, the foundational 1998 Cadastral Law provided that private or public registrars could undertake duties as heads of the cadastral offices, and the employees of the existing MOs, either public or private, would be transferred to the new cadastral offices under HEMCO. The specific provision of the 1998 law aimed at a smooth transition from the RMS to the HCS "without disturbances . . . predominantly in the lawyers, notaries, and private registrars profession" [60] (p. 4).

From 2009 to 2018, the sovereign debt crisis forced the Greek government to sign three consecutive macro-economic adjustment programs with the lenders and implement several structural reforms whose volume—particularly under the first two adjustment programs—increased over time, often due to compliance delays [61]. Reforms were enacted in an institutional environment with a chronic legalistic approach to reforms. The prevailing legalism has been attributed to the transplantation of foreign institutions and the Napoleonic administrative tradition ever since the Hellenic State was formed [27]. A legalistic culture precludes policy reforms from evaluation, encourages a plethora of changing laws, and fosters informality as a coping mechanism [62,63]. The Hellenic Land Administration Reform (HLAR) was only one of the reforms that successive Greek governments were directed to implement. Each bailout program, and the accompanying Memorandum of Understanding (MoU), prioritized the completion of the HCS, arguing that it would enable legal certainty about property rights, secure fiscal revenue from real estate tax, boost economic development and foreign investment, and ease the country's way out of the crisis [32,64].

In the following section, we present the changes in the LAOs during the period of the crisis through the enacted or attempted legislative initiatives and their interpretation through the orders of change.

5. The Changes in Land Administration Organizations in 2009–2018

In the first section of the findings, we describe, for each of the enacted or attempted legislative acts, their main purpose, their motivation, what they intended to change, and how they actually changed, based on the introductory reports, legislation, other secondary data, as well as primary data. In the second part of our findings, we interpret the intended changes on LAOs through our theoretical lens of orders of change.

5.1. The Legislative Initiatives

5.1.1. Law 4164/2013: The Abolition of HEMCO and the Creation of the NCMA SA

The outbreak of the sovereign debt crisis in late 2009, followed by the introduction of the First Economic Adjustment Programme (EAP) in April 2010, was associated with a reform in public administration aiming at public sector downsizing, with the reorganization of the central government structures and the abolition or merging of public institutions [61]. The EAP review in May 2013 stated that "in view to establish a modern complete cadastre by 2020, the government should: i. put in place a clear and streamlined single political authority to oversee and coordinate the completion and operation of a modern, efficient and fully accessible nationwide Cadastre by 2020 (June 2013). . . . iii. transfer to Ktimatologio SA the exclusive competence for all issues related to development, establishment and operation of the cadastre and cadastre offices. (June 2013). iv. transform the temporary cadastre offices into final ones in the capital of the regions where cadastre is operational" [64] (p. 190).

In July 2013, the Hellenic parliament passed the 4164/2013 Law, intending to abolish the Hellenic Cadastre and Mapping Organization (HECMO) and transfer its responsibilities to the Ministry of Environment and the KTIMATOLOGIO SA. The latter was renamed the National Cadastre and Mapping Agency SA (NCMA SA). The Law provided that the prospective permanent cadastral offices would pertain to the Ministry of the Environment, and the NCMA SA would be responsible for providing them with administrative and logistical support. The reason for assigning the responsibility of the cadastral offices to the Ministry of Environment after the abolition of the HEMCO was that the NCMA SA "The existing legal status of EKXA as an SA [i.e., Société anonyme] is the reason that the Regional Cadastre Offices cannot be positioned directly under EKXA at this moment" [65] (p. 13).

The abolition of the HEMCO was intended to rationalize the existing organizational structures in the cadastre domain by reducing the number of organizations with similar and overlapping responsibilities. It was further intended to increase efficiency by bringing significant cost savings (reduction in payroll and other administrative or facilities costs); achieve economies of scale by concentrating administrative and support services in existing organizational structures; create a favorable climate for investors for the provision of comprehensive and valid geospatial data; and simplify the collection of cadastre registration fees [66].

After enacting the Law, HEMCO was abolished, and its 34 employees were transferred to the Ministry of the Environment. In addition, its responsibilities were transferred to the Ministry of the Environment and NCMA SA as the Law provided (Article 1). Furthermore, according to the provision of Law (Article 1 par. 6), a ministerial decision issued a few months later (Ministerial Decision 45246/22.08.2013, Government Gazette, 2203A) reorganized the responsibilities of the NCMA SA into the sector of geospatial information and cartography and the sector of cadastre and provided for the appointment of two vice presidents in these two sectors. However, "after the merge of the double structure created by HEMCO and Ktimatologio, the task of maintaining topographic maps and ortho-photo maps was not properly embedded or even defined, nor the provision of sufficient qualified staff to fulfill the additional duties" [67] (p. 18).

In practice, the NCMA's organizational structure and daily operation have not changed significantly after HECMO's abolition. Apart from undertaking the operation of two functions of HEMCO, the NCMA SA remained the same: "EKXA (i.e., NCMA) was established in 2013 by the Law 4164/2013 and the merger of HEMCO and Ktimatologio SA (Kt). EKXA is at present an organization very much similar to Kt; a project organization for cadastral projects" [65] (p. 9). In fact, "The new EKXA organization will be implemented step by step from 2015 till 2020. The implementation implies a change from a project organization to an organization responsible for providing services to the public, (governmental) institutions and others, and operating a number of Regional Cadastre Offices" [65] (p. 14). Furthermore, a year later, a new department was created within the organizational structure of the Ministry of the Environment (Presidential Decree 100/2014), namely the Department of Cadastral Offices, which was mandated to implement the directions of the 2013 Law

concerning the supervision of the nationwide cadastral offices to be operated with the logistical support of the NCMA SA.

5.1.2. Law 4277/2014 (Article 52): Towards the Creation of the Final Cadastral Offices

In August 2014, in accordance with the provisions of the second EAP to "transform the temporary cadastre offices into final ones in the capital of the regions where cadastre is operational" [64] (p. 190), the Hellenic Parliament passed an article (Article 52 par.2a Law 4277/2014) to bring an end to the interim period that the mortgage offices of Piraeus and Thessaloniki were assigned to operate the HCS, under the supervision of the Ministry of Justice. The legal provision aimed to evaluate the operating conditions of these "cadastral offices in a pilot phase" under the supervision of the Ministry of the Environment.

The specific legislative initiative provided that "from the enactment of the law, the interim period of the Public Mortgage Offices to operate as Cadastral Offices ends, and is defined the establishment of the Cadastral Offices of Piraeus and Thessaloniki" (Law 4277/2014, Article 52par.2a). The article provided further: that the heads of the public MOs would remain as heads of the COs; the fees for the registration of deeds remain the same as in the interim period; the legal, payroll, and insurance status of the employees remain unchanged; that the cadastral office was responsible for the cadastral registrations of its jurisdiction; that the COs pertain to the Ministry of the Environment; and that the NCMA SA would continue to provide logistical support to the COs.

The Law's enactment brought a change of accountability from the Ministry of Justice to the Ministry of the Environment. However, it did not lead to any other actual change in the so-called cadastre offices of Thessaloniki and Piraeus, which continued under their previous status, as the Law stipulated. In addition, the majority of the staff who served in the Thessaloniki and Piraeus offices continued to be accountable to the Ministry of Justice. The offices pertained to the Ministry of the Environment but remained logistically supported by the NCMA. Thus, the law "did not change anything. In essence, we continue to operate as Interim Cadastral Office" (Head of the Cadastral Office of Thessaloniki, October 2019). It did not result in any organizational transformation, change in the employees' legal, insurance, or payroll status, or change in the existing administrative routines or procedures. As of October 2019, the Cadastre Office of Thessaloniki faced significant staffing, organizational routines, and equipment challenges. In October 2019, almost 10,000 acts and deeds were pending registration, leading to over a year of severe delays in registering land transactions.

5.1.3. Draft Law 2014: Centralization and Control of Land Transaction Fees

In July 2013, the third review of the second EAP provided a prior action to modernize and simplify the fees from land transactions. The provision stated that "following the adoption of Law 4164/2013, the government will . . . ensure that the transaction fees that are due to the state are transferred automatically to the account of the Ministry of Finance. Data on all other transaction fees should be fully accounted and audited by the Ministry of Finance" [68] (p. 114). The commitment was reiterated in the fourth review of the MoU of April 2014 [69]. This initiative complied with the payment of various fees to the state, which had already begun to be implemented (e-fee) through digital applications at the General Secretariat for Information Systems (GSIS) of the Ministry of Finance.

Thus, in March 2014, the Greek government set up a legislative committee to prepare a draft bill to modernize and simplify the collection of fees in Mortgage Offices related to land transactions in all land registration systems, i.e., RMS, DC, and HCS. The draft bill and a introductory report were presented for public consultation in September 2014. The introductory report pointed out that the existing procedure for collecting fees was complex and ambiguous. A decisive factor in the detected weaknesses was the large number of private MOs and the lack of modern and transparent procedures for collecting land transaction fees [70]. Thus, the bill required uniform fixed and proportional fees to be applied by all mortgage offices throughout the country. The fees would be attributed exclusively to the state and paid directly to credit institutions using modern electronic

payment methods. Then the remuneration of the private registrars, as a percentage of land transaction fees, would be returned from the state within a specific time. Furthermore, the draft law stated that it would not affect either the institutional or the financial status of the private registrars [70].

The draft law was never brought to Parliament. Several objections were drawn mainly from the private registrars during the public consultation procedure. In January 2015, general elections were held, and a change of government followed.

5.1.4. Draft Law 2016: A Delayed Endeavor to Modernize the Old LRS

Soon after the governmental change, following the elections of January 2015 and the turbulence in the Greek economic and political scene, which led to a referendum in July 2015, a third Economic Adjustment Programme (EAP) was signed in August 2015. The third bailout agreement was accompanied by a new MoU passed by the Hellenic Parliament with Law 4336/2015 (Government Gazette 94A/14.08.2015). The signing of the third EAP led to a new round of elections in September 2015. After the elections, the new leadership at the Ministry of Justice soon became aware of the chronic problems of the RMS and the effects of the economic crisis on the operation of private MOs. Firstly, the lack of a transparent and modern system for collecting fees for land transactions in private and notary-run MOs to yield revenue from transaction fees directly to the public budget. The private MOs, despite their large number, did not contribute sufficient revenue to the public budget.

In contrast, the public MOs, which represented at that time 4.5% of the total number of the MOs in the country, yielded 1/3 of the total revenues of the MOs' to the state over time [71]. Secondly, there were severe operational issues in many private MOs due to the retirements, resignations, or deaths of private registrars. In 2016, a total of 61 private registrars retired. The economic recession led to a drastic fall in land transactions and reduced revenues, so there was no incentive to undertake the operation of private MOs. Furthermore, the Ministry of Justice, from 2009 onwards, in view of the transition to the new HCS, did not proceed to assign duties to private registrars to fill the empty seats emerging in the existing private MOs. Thus, many private MOs could not operate satisfactorily (e.g., in Pyrgos, Amaliada, and Nea Ionia). The modernization of the RMS and nationalization of private MOs had been proposed in the past as a prerequisite before the transition to a system of cadastre books. Nevertheless, previous attempts to modernize the RMS along these lines in the 1960s failed due to reactions from the private registrars [11,72]. Thus, the Ministry of Justice's new political leadership decided to draft a law to end the concession of public authority to private registrars for the operation of the RMS with the nationalization of private MOs.

In June 2016, the Ministry of Justice set a bill on the "Reorganization of Mortgage Offices" under public consultation. The bill provided for: the merging and consolidation of 392 private, public, and notary-un MOs (and two COs of DC) into 75 Public MOs (and two COs of DC); the transfer of personnel from public/private MOs to merged public MOs; the procedure for appointing heads in the merged public MOs; the change of legal status, payroll, and insurance treatment of personnel of private MOs to those of public servants under the payroll of the Ministry of Justice; options for the employees and heads of private MOs who did not wish to opt in to the public MOs; options for the employees of the merged public MOs after the onset of operation of the final cadastral offices: to either opt in to the final cadastral offices or to apply for their transfer in courts and other judicial authorities.

The draft law intended to ensure: the public interest; transparency and effective control over the finances of mortgage offices; sustainability in the operation of the private mortgage offices; the job positions of private employees in private MOs; and the smooth transition to the Hellenic Cadastre System by 2020. The draft law was introduced in the central legislative committee of the Hellenic Parliament in October 2016 [73], but it never passed. In December 2016, the Secretary-General of the Ministry of Justice announced that: "following a new round of discussions initiated by the Ministry of Environment and Energy, we have reached an agreement on a joint draft law on cadastral offices, according to which

both the ownership and management of the cadastre and the registration responsibilities, which now are being exercised by the NCMA and the mortgagees respectively, will be exercised by a public body and in particular by a public legal entity which, in the first phase, will consist of a central agency and approximately 77 regional offices . . . The reform will start to be implemented from the beginning of April 2017. It is an even more large-scale reform than the one proposed in the summer [i.e., the 2016 draft law] by the Ministry of Justice. Consolidating the scattered but related services of the mortgage offices and the NCMA into a public sector legal entity as of 2017, not only is the interim period until the completion of the HCS is regulated, but at the same time the related issue—which, it should be noted, remains unresolved since 1998—is also definitively resolved regarding the period after the completion of the HCS, thus freeing the employees from uncertainty." [74].

5.1.5. Law 4456/2017 (Article 32): An Aftermath of the Economic Crisis

After the abandonment of the 2016 draft bill, the problems encountered by large private MOs due to the private land registrars' retirement were urging a solution. Thus, in March 2017, the Minister of Justice proposed an urgent provision to supplement and update an obsolete legal provision to convert a private mortgage office to a public mortgage office (Law Decree 811/1971). This extraordinary legislation by the Ministry of Justice aimed to address problems encountered due to death, retirement, or resignation of a private registrar. The Minister of Justice argued that this legislation "is a step in the right direction and even to the nationalization of the services of the Mortgage or of the Cadastral offices later, in the cases in which the mortgage office has virtually no investment interest in taking a private initiative, as is the case in many areas of the country due to the economic crisis" [75]. The provision passed with Article 32 of Law 4456/2017.

The article provided for: the transformation of a private MO into a public MO, through the issuance of a presidential decree; the procedure for appointing permanent and temporary heads for the nationalized MOs; the transfer of personnel from private MOs to public MOs; the change of legal status, payroll, and insurance treatment of personnel of private MOs to those of public servants; and the administrative procedures following the closure of a private MO (leasing of buildings, delivery of registration books, and administration of the archives and of the equipment).

In September 2017, a few months after the Parliament passed the respective article, twenty (20) presidential decrees were published: they merged and converted twenty (20) private MOs into sixteen (16) public MOs to solve operational issues in large MOs due to the lack of private registrars, which prohibited the registration of deeds. The article's initial version provided an administrative procedure to appoint heads of the newly converted public MOs, according to the Code of Judicial Employees (Article 72). However, since the administrative procedure is burdensome and time-consuming, the article provided for the temporary assignment of registration duties to employees with a law degree, or in case of a lack of employees of this category, to the magistrates of regional courts. Since the latter provision was ruled as not in compliance with the constitution (First Instance Court of Athens, 2/2017 Decision), the article was amended later, providing for the temporary assignment of registration duties to judicial employees of the regional courts, irrespective of whether they held a law degree. As of September 2019, the registration of deeds in 15 out of 16 public MOs, after subsequent amendments of the respective initial provision, was carried out temporarily by judicial employees of the regional courts, irrespective of whether they held a law degree.

Furthermore, the employees of the private MOs became public servants accountable to the Ministry of Justice: "wages are lower than the ones we used to have before the crisis . . . but from 2010 onwards when the crisis started, we used to take unpaid leave so that the Private registrar will not dismiss us. So now . . . after having experienced so many years of crisis and insecurity, we say "Thank God" (employee in a nationalized MO, August 2019). However, the nationalization of 20 private MOs did not improve the administrative routines or the quality of services to the citizens. One of the 16 nationalized

MOs we visited in August 2019 had difficulties due to a lack of staff. This understaffing led to delays in the registration of deeds: "we have 2.500 unregistered deeds pending to be registered from January 2019 . . . the [economic] growth is depending on us, and we cannot issue a certificate of registration . . . there are so many foreign property investors and waiting for their deeds to be registered" (employee at a nationalized MO, August 2019). Furthermore, a modern way to pay the land transaction fees was still absent.

5.1.6. Law 4512/2018: A New Public Organization Responsible for the Country's LRS

Following the abandonment of the draft law 2016 and while the nationalization of specific private MOs was being carried out by the Ministry of Justice in 2017, the Minister of Environment set up a lawmaking committee in February 2017 to draft "a law for the creation of a single public organization, which will take over the cadastral services and the registration of citizens' rights" (Decision of the Minister of the Environment 891/09.02.2017). In December 2016, the Secretary-General of Justice announced the agreement between the Ministries of Environment and Justice to set up a legislative committee [74]. Following this development, the draft bill of 2016 of the Ministry of Justice was abandoned. This legislative initiative of the Ministry of the Environment was responding to a provision in the third EAP, which provided that "the authorities will by February 2016 adopt the legal framework for nationwide cadastral offices on the basis of the business plan, the experience of the two pilot offices and recent technical assistance advice and ensure adequate financial independence and administrative capacity of the cadastral agency" [76] (p. 25). In December 2017, the legal provisions prepared by the lawmaking committee were presented for public consultation for 13 days. In January 2018, the provisions were included as Articles 1 to 42 in the Draft Law "Provisions for the implementation of the Structural Reforms of The Economic Adjustment Program and other Provisions" of the Ministry of Finance. The draft law was passed as Law 4512/2018 by the Hellenic Parliament in January 2018.

Law 4512/2018 (Articles 1–42) stipulated: the abolition of the NCMA SA and the creation of a public legal entity, the HELLENIC CADASTRE, which the Ministry of Environment would supervise; the organizational structure of the new organization to consist of a central agency and regional agencies, namely 17 cadastral offices and 75 branches; the abolition of 392 private, public and notary-run MOs (RMS) and two COs (DC) within two years, upon the enactment of operation of cadastral offices and their branches; the transfer of personnel from the NCMA SA to the central agency and from the public/private MOs to cadastral offices and branches; the revenues of the public organization would be from the fixed and proportionate fees of land transactions; and defined them for each type of land transaction; the administrative procedures for the phasing out of the MOs and for the appeals against the acts of heads of the cadastral offices.

The Law intended predominantly: "to provide the two (sic) land registry systems from the regional services of one unified entity, organized as a public legal entity, staffed in a modern and rational way, with highly qualified personnel" [77]; to ensure the financial independence of the (new) organization from the fees of the service recipients; to introduce a rational and uniform method of organization of the registration services throughout the territory applying uniform rules concerning the registration and publicity of property rights and the manner of calculating the fees; to ensure high quality of services and security of transactions were in place before the complete transition to the status of the Hellenic Cadastre, through gradual and controlled transition to a decentralized structure [77].

Law 4512/2018 resulted in the de facto abolition of the NCMA and the creation of the public legal entity HELLENIC CADASTRE. The public administrative law applies in the new organization (instead of the private law of the NCMA SA). The new organization has the same organigram as the NCMA SA, with two more directorates and many more departments; some remain under- or even unstaffed. Furthermore, the employees of the NCMA SA were transferred to the new organization.

As of January 2020, eight private MOs have been abolished and replaced by one cadastral office and five branches. The initial deadline of January 2020 for abolishing

392 MOs and creating 17 cadastral offices and 75 branches was considered because it "ensures the necessary operational conditions for the transition to the new regime" [77] (p. 2). However, the initial deadline was extended three times. The latest extension that took place in July 2021 moved the deadline for the creation of the new cadastral offices and branches to January 2023 (Law 4821/2021): "one of the difficulties of this law is that it forces you to create 92 regional structures of the organization . . . and in fact, that is what you have to do from the Mortgage Offices; to merge them. It is not sustainable for an entity to open 92 structures in 2 years . . . It is impossible to establish so many structures" (cadastre employee, July 2019).

Table 1 provides an overview of the legislative initiatives analyzed in this section, their intended effects, and the actual effects.

Table 1. Overview of legislative initiatives aimed at changing Greece's LAOs from 2009 to 2018.

EAP	Law	Land Registry System	Intended Effect	Actual Effect
M2	4164/2013	HCS	Rationalization efficiency	Public organization abolished Transfer of responsibilities happened but was not adequately embedded Increase in efficiency not measured
M2	4277/2014 (Article 52)	HCS	Pilot for evaluation	No actual effect No evaluation took place
M2	Draft Law 2014	RMS, DC, HCS	Modernization, rationalization transparency, effectiveness, ensure the public interest, transparency, effectiveness	The law was not enacted
-	Draft Law 2016	RMS, DC, HCS	Ensure job positions of employees of private MOs Sustainability of private MOs	The law was not enacted
-	4456/2017 (Article 32)	RMS	Sustainability of Private MOs	20 Private MOs converted to 16 Public MOs Private employees became public servants Temporary execution of registration in 15 MOs by non-competent judicial employees
M3	4512/2018	RMS, DC, HCS	Rationalization Uniformity, transparency, effectiveness	Public organization created Employees from NCMA SA transferred to public organization Private & public MOs under merger and conversion process to be incorporated into the authority of the public organization Employees of the MOs to be transferred to the new cadastral offices & branches

5.2. The Changes in the Hellenic LAOs through the Orders of Change

This section discusses the intended changes in LAOs through the lens of the orders of change within the broader land administration reform context. The 2014 draft law can be seen as a first-order change (Table 2), since it was problem-solving-oriented, intended to tackle the weaknesses in the system for collecting fees from land transactions that did not allow for efficiency, uniformity, and transparency. The 2014 legislative provision (Article 52 of Law 4277/2014) encompassed a change of accountability from the Ministry of Justice to the Ministry of the Environment in the Interim Cadastral Offices of Piraeus and Thessaloniki, and named them "Final Cadastral Offices". However, it did not alter any procedures, nor did it bring any actual change on the ground in the daily operation of the offices. Thus, it cannot be classified into an order of change.

Table 2. Legislative initiatives in Greece's LAOs from 2009 to 2018 through the orders of change.

Legal Framework	Land Registry System	Type of Change	Organizational Transformation	Order of Change
L.4164/2013	HCS	Organizational change in the organizational structure of the HCS subdomain	Public to agency	2nd in the subdomain of the HCS
L.4277/2014 (Article 52)	HCS	–	Public to public	–
Draft Law 2014	RMS, DC, HCS	Problem solving (Procedures, new administrative routines, uniform land transaction fees)	–	1st
Draft Law 2016	RMS, DC, HCS	Organizational change in the organizational structure of the RMS & DC subdomain (values, culture)	Private to public	2nd in RMS and DC
L.4456/2017 (Article 32)	RMS, HCS	Organizational change in the organizational structure of a small part of the RMS subdomain (values, culture)	Private to public (Conversion of private MOs to public MOs)	2nd in a small part of the RMS subdomain
L.4512/2018	RMS, DC and HCS	Organizational transformation in the organizational structure of the whole land administration policy domain (procedures, values, culture)	1. Private to public (*392 mostly private MOs to 17 Cadastral Offices and 75 Branches*) 2. Agency to public (*NCMA SA to Hellenic Cadastre*)	2nd in RMS, DC, and HCS

Four legislative initiatives are classified as second-order change with variations regarding the LAOs involved. Specifically, one legislative initiative enacted in 2013 (Law 4164/2013) and three legislative initiatives in three subsequent years from 2016 to 2018 (Draft Law 2016, Article 32 of Law 4456/2017, and Law 4512/2018) involved second-order changes. All were intended to change the LAOs in the diverse land registry systems, i.e., the RMS, DC, and HCS.

Law 4164/2013 altered the cadastre's subdomain organizational structure by abolishing the HEMCO and transferring its responsibilities to the Ministry of the Environment and the KTIMATOLOGIO SA., which was then renamed NCMA SA. The draft law of 2016 falls into the second-order change in the old RMS and DC, aiming at merging, consolidating, and transforming all the diverse types of 392 MOs and two cadastral offices of the DC into 75 public ones. Similarly, Law 4456/2017 (Article 32) merged and consolidated 20 private MOs into 16 Public MOs. These second-order changes either enacted (as in the case of the 4456/2017 Law) or attempted (as in the Draft Law 2016) encompassed changes affecting the predominating culture and values, such as the change from private to public employees.

The 2018 Law is a notable case of organizational transformation that affects the whole land administration policy domain and the existing operating LAOs: it encompasses changes in the procedures of collecting the fees (i.e., the provisions of the 2014 Draft law); it affects the culture and values by changing the legal status of the involved organizations from agency (NCMA SA) and private (MOs) to public; it alters the diverse types of employee status (private, semi-public, judicial civil servants) to civil servants; it creates a central organization responsible for the country's LRS; it provides for the creation of regional services, i.e., the regional cadastral offices, which are responsible for the country's LRS, i.e., RMS, DC, and HCS, and for merging, consolidating, and transforming all the diverse types of 392 MOs of the RMS and two cadastral offices of the DC into 17 public cadastral offices and 75 branches.

6. Discussion

On the one hand, the legislative initiatives in the period 2009–2018 intended to address the effects of the economic crisis in the operation of the RMS and the collection of land

transaction fees. On the other hand, they intended to accelerate the completion of the new HCS, aspiring to secure fiscal revenue from the real estate tax but also to attract new investment, including foreign direct investments, by providing legal certainty on property rights in the domestic real estate market.

The draft law of 2014 from the Ministry of Finance intended to ensure the collection of land transaction fees directly to the public budget. The other two legislative initiatives on behalf of the Ministry of Justice (draft Law of 2016 Law and the 2017 Law) aimed to tackle the operational issues in the private MOs, which resulted from the economic crisis, by nationalizing them: the first (draft Law of 2016) holistically focused on all private MOs, and the second (Law 4456/2017, Article 32) focused spasmodically and fragmentarily on specific private MOs with the most severe operational problems at that time. Interestingly, the problems that these legislative initiatives intended to solve, such as the rationalization of land transaction fees, the setting up of procedures that would facilitate audit and control from the competent public authorities, and the sustainability problems of private MOs due to their vast scattering throughout the territory, existed before the crisis. Thus, the draft laws of 2014 and 2016 can be viewed as delayed endeavors to modernize the predominant LRS in the country [78].

Through Law 4164/2013, the Ministry of the Environment intended to simplify and clarify the political and administrative responsibilities of the competent organizations for the HCS by abolishing the public organization, HEMCO, as one of the two organizations in the cadastre domain. Thus, this enacted legislative initiative signaled a strategic turning point compared to the initial design of the reform back in the mid 1990s. By preserving the private legal entity, the NCMA SA, the Ministry promoted, at least implicitly, a preference for agencification. Agencification became very popular from the 1980s onwards as part of the new public management reforms [79,80]. It was the driving force behind the creation of the KTIMATOLOGIO SA, among other new public agencies in the mid-1990s in Greece, to circumvent the central state apparatus. These agencies, which operated under private law, had gradually emerged outside the official bounds of the public sector, assuming the form of "joint-stock companies," where the state was the only (or the principal) shareholder. They disposed of increased autonomy and resources to fulfill new missions and combat bureaucratic stagnation, bypassing ministerial or public entity organizations [27].

The abolition of HEMCO intended ultimately to pave the way for the establishment of a central cadastre organization to operate by "2020 a complete relative system according to the standards of other European countries" [66] (p. 1) by addressing the implications of Janus's face at the cadastre domain pragmatically: the overlapping responsibilities and increasing competition between the two organizations (HEMCO and KTIMATOLOGIO SA), and the greater operational capacity of the KTIMATOLOGIO SA compared to HEMCO, built in the previous period; but also the elimination of differences between the two, especially after the flexibility loss of the KTIMATOLOGIO SA at the onset of the crisis, as a result of other laws (Laws 3871/2010 and 3899/2010), which brought changes horizontally to all state-owned organizations in the context of austerity measures. Thus, the decision to abolish HEMCO was in alignment with the general trend of reducing public organizations during the crisis period [61], while it intended to address the problems that emerged gradually from the preservation of the two organizations. Moreover, by 2013, HEMCO had not been involved in maintaining and updating the new HCS as foreign experts proposed in 1996, in case a new agency (i.e., KTIMATOLOGIO SA) would be established to develop the new system [81].

Law 4277/2014 tried to implement the strategic change of Law 4164/2013 by formally shifting the accountability from the Ministry of Justice to the Ministry of the Environment and renaming the Interim Cadastre Offices as Final Cadastre Offices. This symbolic legislative initiative signaled the smooth shift to create the final cadastral offices under the Ministry of the Environment auspices, similarly to the supervision of the MOs by the Ministry of Justice. However, even though it was advertised as a significant step to the reform, it has not been accompanied by any other actual change or improvement in the

daily operation of the cadastral offices of Thessaloniki and Piraeus, nor in the legal status of the employees. Soon after, the governmental change at the beginning of 2015 and the subsequent political developments that led to a third bailout agreement resulted in the legislation of Law 4512/2018, which signaled a new strategic change. The 2018 Law redirected the reform back to its initial design, at least partly, by creating a new public law entity, the HELLENIC CADASTRE. The 2013 and 2018 laws might also be viewed as a back-and-forth trend (or a reversal) from private to public: the 4164/2013 Law implied a preference for agencification through the preservation of the NCMA SA as a private legal entity "since its establishment it has developed a state of the art know-how and infrastructure enabling it to manage the related issues more effectively" [66] (p. 1), whereas the 4512/2018 brought the system back closer to the public domain, by converting the NCMA SA to a public law entity, as HEMCO had been. Additionally, all the legislative initiatives signaled a trend towards the centralization of fees and the nationalization of the land administration policy domain, accompanied by a change in the legal status of the employees from private to public. Interestingly, the state's legibility over the property domain increased [82], but employees' job positions were also secured.

One of the more significant findings from this period was the abundance of laws intended to bring changes in the LAOs from 2009 to 2018. Too many legislative initiatives were either attempted or enacted in a short period, marked by extreme financial duress and political instability [78]. The legislative overregulation in the policy domain was accompanied mainly by drastic second-order changes, which escalated till the 2018 Law, instead of incremental first-order changes to improve ineffective practices and services to the citizens. The 4512/2018 Law, which promises to end the interim period of the parallel operation of the diverse LRS, contains too many radical changes in the land administration policy domain to be implemented concurrently. The latest law is a notable exemplar of organizational transformation, which impacts the historical dispositions of the broader institutional field in which the LAOs are embedded. It is not simply the merging of long-established, mature, and fully grown land registry and cadastre organizations, which, even in such a case, takes time to implement and induce results [24]. It is a revolutionary shift from the almost 400 different organizations of a French-influenced land registry system (RMS) scattered throughout the territory to a central public organization with regional public cadastral offices operating a German-like land registry system of cadastral books, and beyond that, a digital cadastre system. The magnitude of organizational transformation that the 2018 law intends has no other precedent in Greece since the 1950s, when the Public Power Corporation (PPC) was founded and nationalized some 400 small private and municipal companies to modernize the country's electrification infrastructure [83]. The PPC was founded in a turbulent decade after World War II and the Greek Civil War. At that time, Greece was receiving substantial American aid as part of the Marshall Plan for the reconstruction of Europe, and American experts were active in various social and economic activities, including the energy industry. EBASCO, an American firm, was in charge of the corporation's organization and management, significantly impacting energy policies and investment plans and passing down modern management methods and organizational policies [39,83]. Similarly, the new public organization HELLENIC CADASTRE was founded at the end of the turbulent decade of the sovereign debt crisis in Greece, in which reforms were enacted under policy conditionality and the support of foreign technical assistance [31,32].

The authors of [39] argue that the transformational change of the PPC in the opposite direction at the beginning of the 2000s decade, reflecting the values of a "conventional" rather than a state–political firm, following the energy market liberalization, involved a simultaneous change in the broader institutional environment as the organization transformed itself, and constituted a third-order change. However, the current study found that the transformational change of the LAOs will not complete the HLAR and the transition to the HCS through creating the HELLENIC CADASTRE and its regional cadastral offices. The reform, marked by the complexity that such a large-system change [40,84] from

RMS (and DC) to HCS entails, still depends on completing the cadastral registration and forests delineation, which are still in progress in the vast part of the country's territory. An implication of this is that the whole reform might be further bogged down due to the new public organization's enormous load: to run the cadastral registration and formalize property rights in the territory; to merge and convert the different types of mortgage offices into cadastral offices and their branches; to operate the RMS (and pledges system) till the HCS will be fully operable throughout the whole territory; to embed the governing values and administrative procedures of a public organization as it transformed itself from the private legal entity of the former NCMA SA; to homogenize and streamline the different labor relations, values, and cultures of the employees from public and private MOs and the former NCMA SA.

Putting too much pressure too soon on organizations to undertake tasks before they are capable of them leads to premature load-bearing and causes the organization and its agents to collapse, even if only a modest capability has been established [48]. Evidence of premature load bearing becomes apparent either in the operation of the public organization or in the real estate market. Extreme delays in the registration of deeds ranging from a few months to almost a year became a routine in many cadastral offices, causing significant problems in land transactions [85–89]. Similarly, the employees of the central organization described incidents of a collapsed organization four years after creating the new legal entity under public law [90,91]. Thus, the study illustrates that the changes in the land administration organizations in the crisis period led to premature load bearing. The rapid shift from first- to second-order changes in the diverse LRS led to organizational transformations in the plethora of discrete organizations throughout the land administration policy domain, which is highly recursive. The ultimate goal was to establish the form of cadastre organization that other European countries, with different socio-cultural and legal traditions and development paths, have gradually built over the years, "fulfilling a timeless historical pending and at the same time respecting the MoUs commitments on completing the cadastre as they have been in effect since 2011" [66] (p. 1).

Nevertheless, the current outcome impacts the smooth operation of the real estate market to serve the actual needs of the users of the LRS, and also complexifies the land administration reform itself, signifying the importance of aligning with the famous design principle that form should follow function [92–94]. Many eyes are directed not only to the Greek coasts but to their physical territorial extension the real estate assets: either from the domestic population or international property investors [95]. Furthermore, the HLAR is taking place when the Greek economy lusts for investments—among others—in real estate and activities that require quick access to land as well as legal certainty on property rights. Thus, the sustainability of the real estate market underpinned by a well-functioning LAS is of utmost importance.

7. Conclusions

Even though the integration of cadastral and land registry organizations into a single institutional structure has been proposed in the past as a key institutional lesson [18,19,96] and has been attempted in several European countries [3,20,25,97], our empirical findings suggest that integration is not a panacea. It encompasses great complexity, primarily when integration refers to organizations of diverse and not fully grown land registry systems in the context of land administration reform to establish a new land registry system, which is still in progress. The case of Greece provides an empirical insight into the complexification and premature load bearing that such an organizational merger might result in. Led by an overarching isomorphic trend to emulate the organizational forms of other countries, second-order changes were prioritized instead of incremental first-order changes in the diverse LRS, which would have increased efficiency and transparency and improved customer services in the real estate market. The legislative overregulation in Greece during the sovereign debt crisis in the land domain undermined the effort to identify the root

causes and obscured the wicked nature of the problem [98]: the large system change that the HLAR entailed, shifting from RMS (and DC) to HCS.

Many of the problems of land governance are complex and demand innovation, emergent practices, and debate to address the unknown. Legal certainty and security on property rights are highly desirable, but how to achieve them, what are the most appropriate steps, which set of goals have a priority, how to agree on them, how to assign appropriately and coordinate the diverse roles and available resources effectively for implementing land administration reform, and how to define reasonably the societal benefits constitute complex challenges, which require visioning logic [84,99]. It "includes methodologies to change how and what people see and make sense of data and their world, identify previously unimagined goals and possibilities, and experiment with radically innovative ways of doing and organizing. It involves, that is, changing the memes or cultural norms that apply in a given situation. Applying the wrong action logic undermines the ability to address wicked problems" [84] (pp. 13–14). Ultimately, there is a "need for humility, policy diversity, selective and modest reforms, and experimentation" [100] (p. 974), far away from blueprints, confident assertions, and the search for elusive best practices (ibid).

The findings from this study make several contributions to the contemporary land administration literature. First, it contributes to understanding how the development of a cadastral system within a state-led land administration reform and the associated changes in the land administration organizations operating it might affect the operation and sustainability of a real estate market. Second, it theorizes the organizational merger of land registry and cadastre organizations (second order changes) within the context of an overarching (third order) land administration reform. Third, the enactive perspective illuminates the current understanding of land administration reforms that are rarely enacted in vitro. External restrictions, deriving either from the national institutional landscape or from forces beyond it, such as political instability, elections, change of political leadership, state, financial, pandemic, or climate crisis, constitute critical junctures [101] that influence decisions and choices, and can open policy windows [102] to overcome path dependence [103] intrinsic to land-related institutions and systems [104]. Fourth, it develops an improved understanding of the theoretical rationale of the third order of change [36], and provides linkages with concepts from development intervention literature [47–49], building on the findings from [11], and from the current inquiry on the origin of HLAR and the ultimate overarching goal behind the organizational changes of the LAOs during the sovereign debt crisis period.

As the strive to reach indicator 1.4.2 of the Sustainable Development Goals to bring land tenure security to everyone in the world continues, the Greek case illustrates that going through a land administration reform involves more than just challenges in cadastral surveying and the largely technocratic expert solutions attempted to date [105]. The establishment of new organizations for the operation of a modern cadastral system needs at least as much, if not more, attention, due to its potential implications in the real estate market. Furthermore, the Greek case shows the impact of the macroeconomic situation and international influence on a state's cadastral system development. Ultimately, the theorization of the development of a modern cadastral system and its organizations through the lens of the orders of change of the enactive theory of reforms focuses on how reforms are enacted over time [36]. This "is critical if we are to understand the process of bringing reform about (or failing to do so). In the world of practice, enacting reform (and, thus, understanding and shaping the process) is more [or equally] important as explaining reform outcomes" [36] (p. 67).

The lessons on premature load bearing as we see in the Greek case, call for attention to other reforms that are inspired by best practices to emulate the organizational forms of other countries. The current discourse focusing on countries with mature land registry and cadastre systems has shown that merging existing organizations takes time to enact and produce results. Thus, it is anticipated that this endeavor would be more complex and time-consuming for changes or mergers of land administration organizations within

a paradigmatic land administration reform to replace a French-influenced deed system with a modern digital cadastral system. Adopting best practices in laws, policies, and organizational forms might look impressive, but they are unlikely to fit in all country contexts, administrative traditions, and legal styles. Nevertheless, land administration policy needs to move away from preconceptions that countries using the Napoleonic state model, those with a Mediterranean influence, and also perhaps those in other parts of the world, are resisting or are slow in implementing NPM reforms or in developing modern cadastral systems [63,106]. Addressing the "wrong" policy problem might lead to intractable controversies and capability traps [48,107]. Thus, identifying and solving the right policy problem within a country's specific context and features might lead to stronger, workable, and sustainable institutions for governing and serving land market transactions [49].

The study leaves several research questions open about the HLAR. Further research on the interplay between domestic and external actors and how their preferences or dissensus influenced the decisions on the legislative activity and how the LAOs will evolve, or on other aspects of the HLAR, will shed light on the dimension of conflict that a large-scale system change entails. The issue of policy conditionality is an intriguing one that could be further explored as to how it facilitates the adoption or even advancement of (land) reforms by counteracting actors, interest groups, or even civil society's resistance. To advance the debate on the complexity dimension of land reforms, it would be interesting to explore further how complexity and wicked problem theories can throw light upon how to avoid crossing over the "edge of chaos", a hazard that leads to disintegration and collective avoidance or even collapse [108]. In other words how to restore creativity, innovation, and experimentation to reveal the challenges' underlying cause-and-effect patterns and find compelling solutions to complex issues, how to keep a steady and dynamic equilibrium and a constant state of innovation, operating at the "edge of chaos" but not beyond that [84,99,108]. At this threshold is where hope lies, an endless, virtuous circle of cumulative change can begin, and a new and forward momentum can be regained [49]. The more we study and understand where such a reform has been implemented with success or similar challenges, the more relevant we become, promoting academic knowledge that can be put into practice.

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